



DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA





DATA SHEETS

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TYPE 1



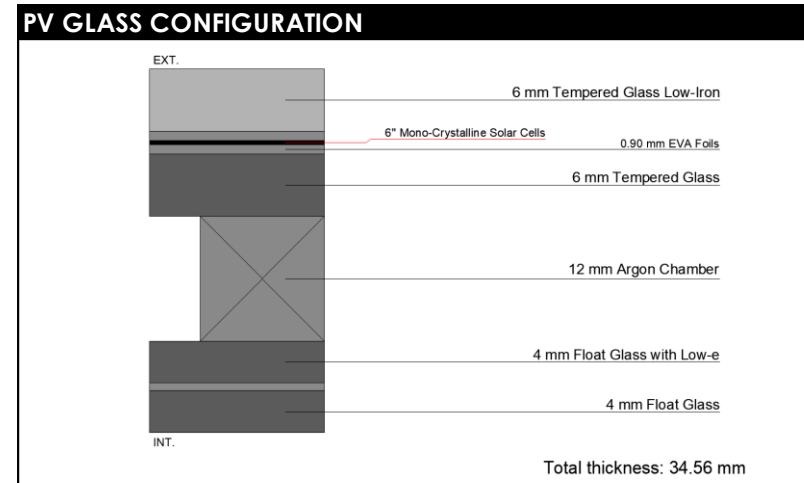
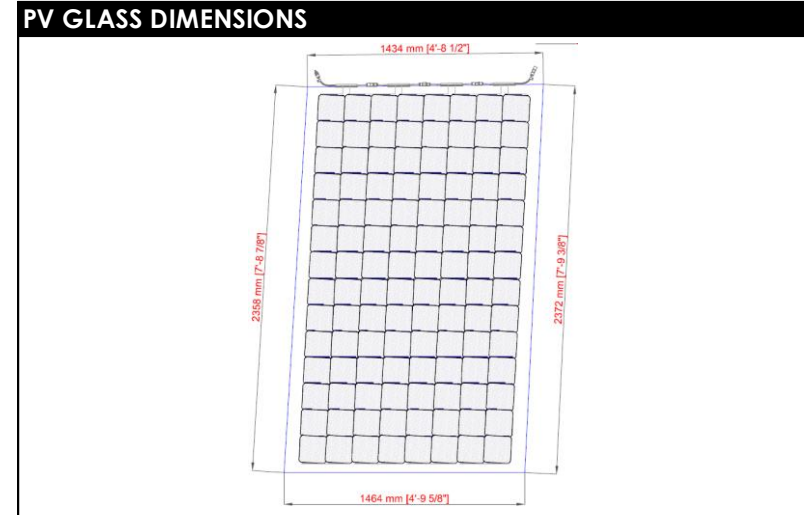
TYPE 1 – A1

M01



PHOTOVOLTAIC GLASS		2.369 x 1577	
M1 / TYPE 1 - A1		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2369	mm	
Width	1577	mm	
Thickness	34,56	mm	
Surface area	3,74	sqm	
Weight	187	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	137,9

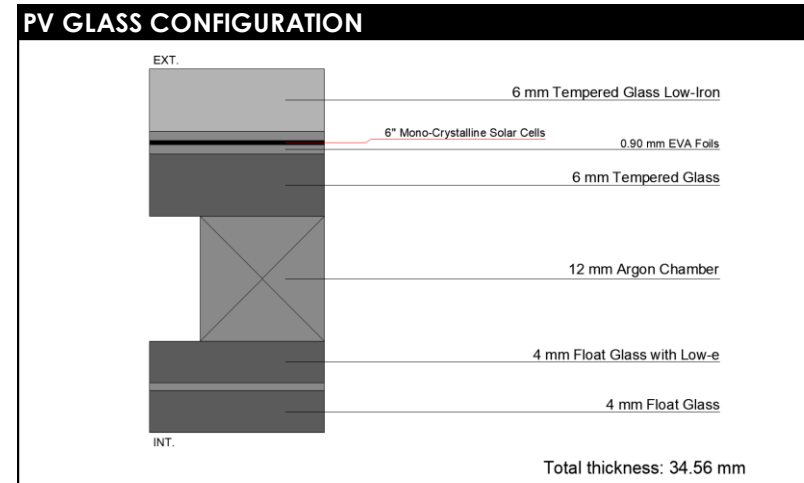
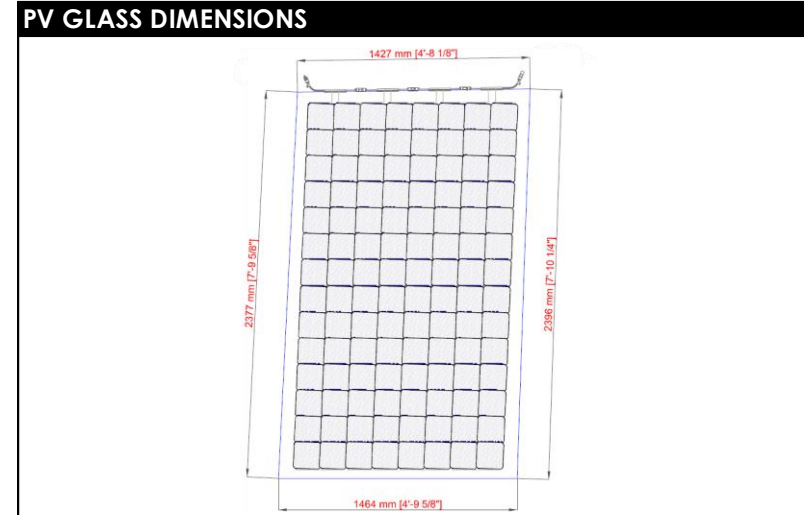


TYPE 1 – A2

M02



PHOTOVOLTAIC GLASS		2.394 x 1544
M2 / TYPE 1 - A2	Mono 3BB	Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2394	mm
Width	1544	mm
Thickness	34,56	mm
Surface area	3,70	sqm
Weight	185	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	30%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,4

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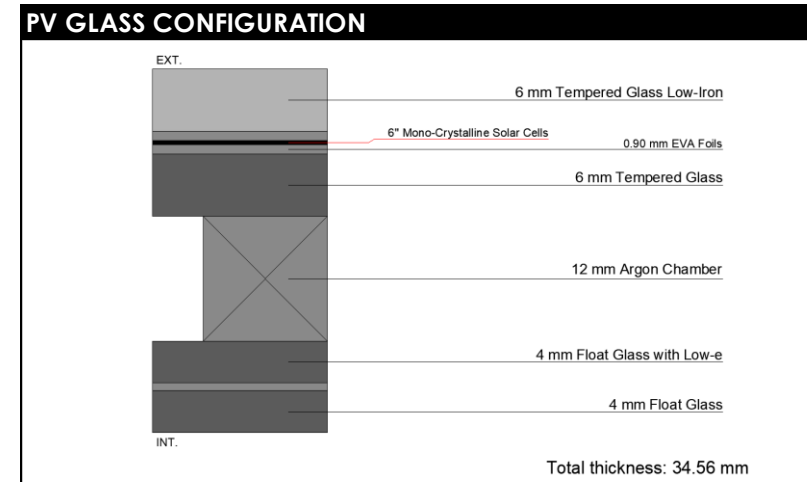
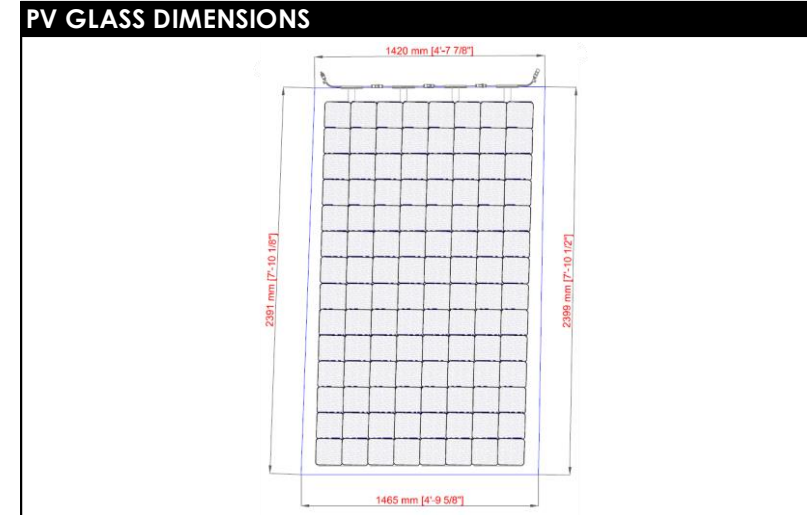
TYPE 1 – A3

M03



PHOTOVOLTAIC GLASS		2.398 x 1504	
M3 / TYPE 1 - A3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2398	mm	
Width	1504	mm	
Thickness	34,56	mm	
Surface area	3,61	sqm	
Weight	180	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,8

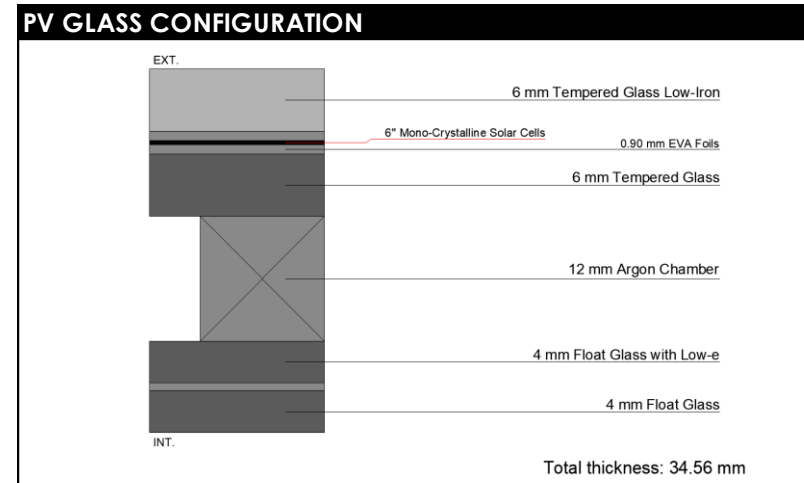
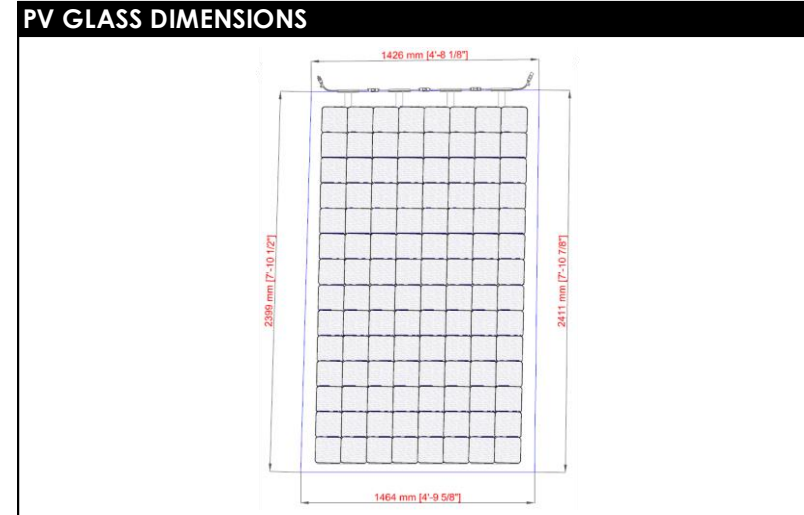


TYPE 1 – A4

M04



PHOTOVOLTAIC GLASS		2.411 x 1492	
M4 / TYPE 1 - A4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2411	mm	
Width	1492	mm	
Thickness	34,56	mm	
Surface area	3,60	sqm	
Weight	180	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	143,2

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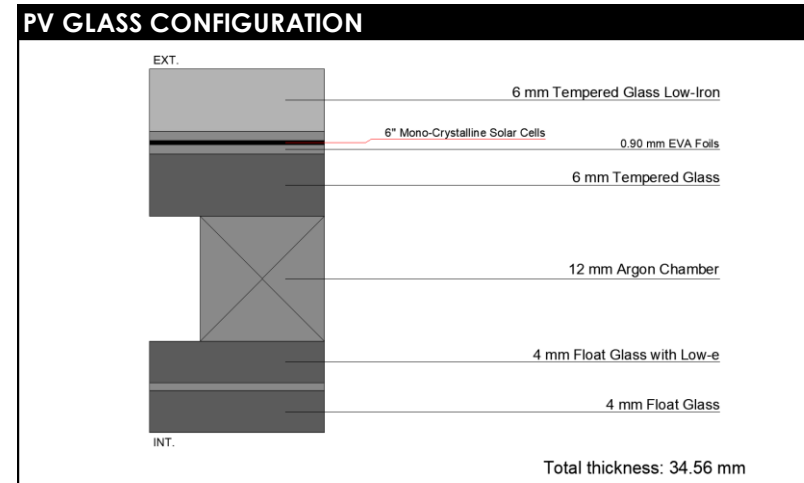
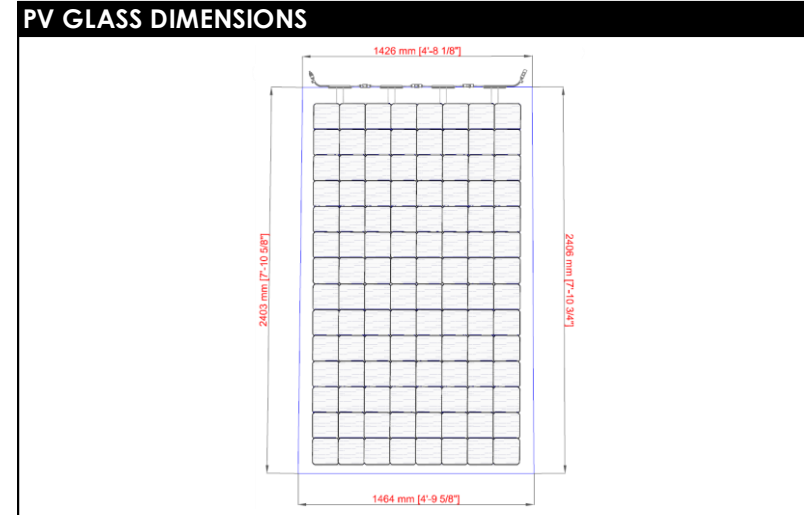
TYPE 1 – A5

M05



PHOTOVOLTAIC GLASS		2.406 x 1464	
M5 / TYPE 1 - A5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2406	mm	
Width	1464	mm	
Thickness	34,56	mm	
Surface area	3,52	sqm	
Weight	176	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,2



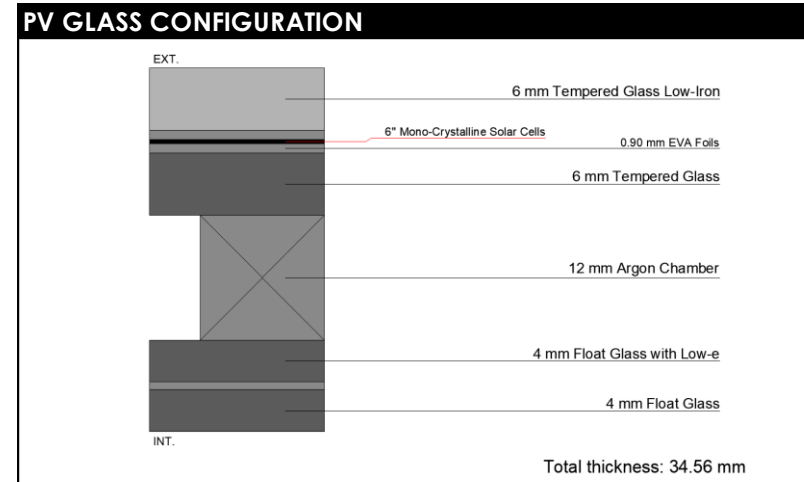
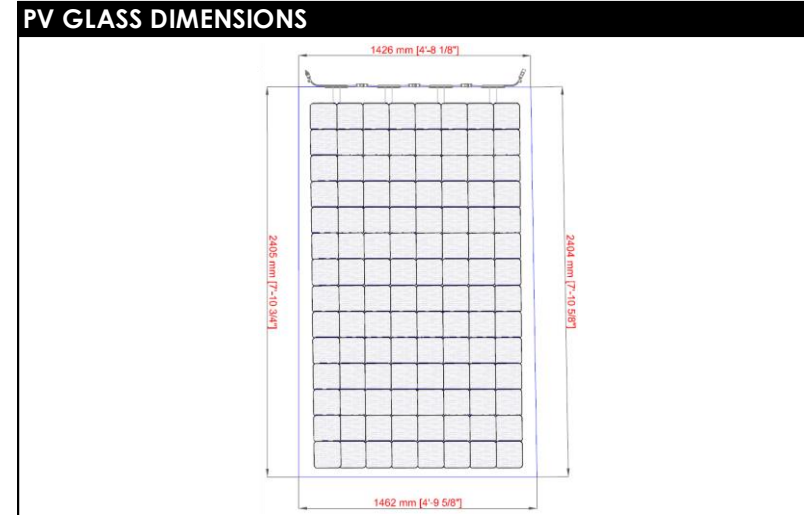
TYPE 1 – A6

M06



PHOTOVOLTAIC GLASS		2.405 x 1464	
M6 / TYPE 1 - A6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2405	mm	
Width	1464	mm	
Thickness	34,56	mm	
Surface area	3,52	sqm	
Weight	176	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,3

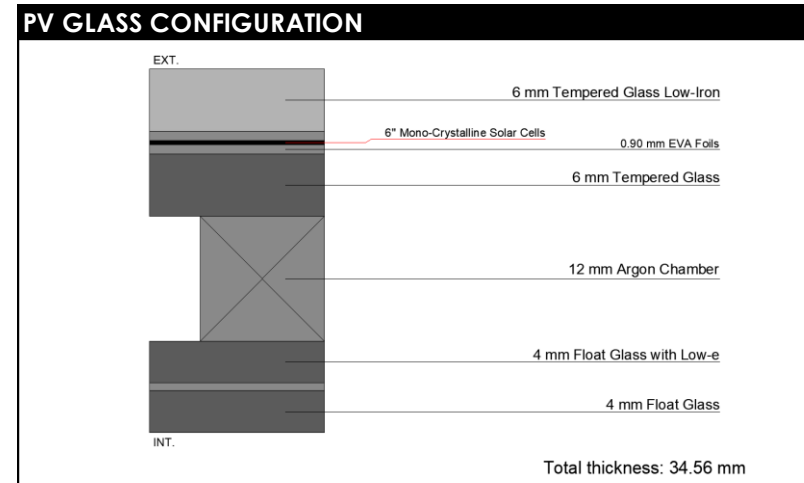
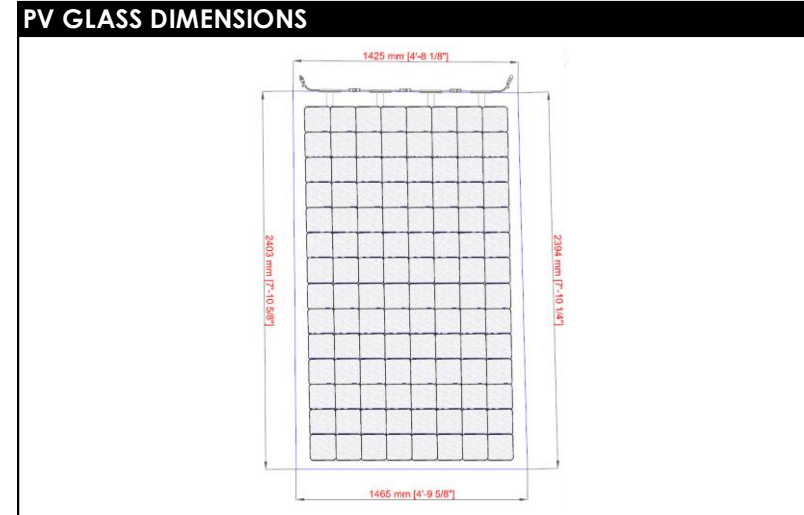


TYPE 1 – A7

M07



PHOTOVOLTAIC GLASS		2.403 x 1484
M7 / TYPE 1 - A7		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2403	mm
Width	1484	mm
Thickness	34,56	mm
Surface area	3,57	sqm
Weight	178	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	28%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,5

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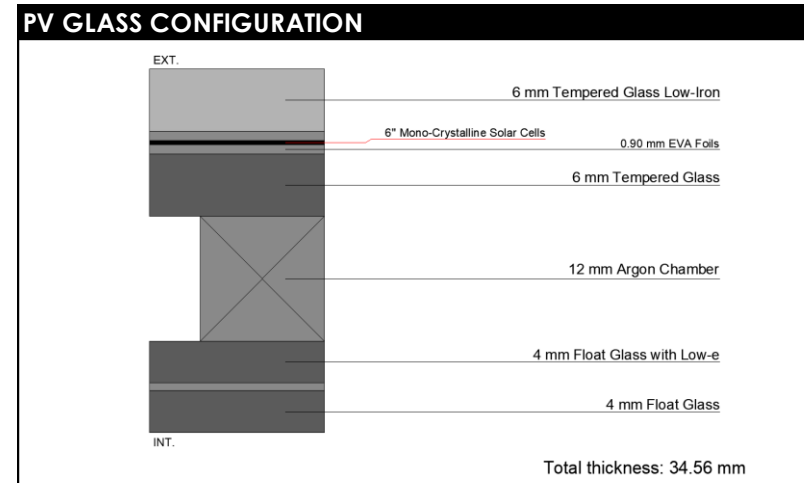
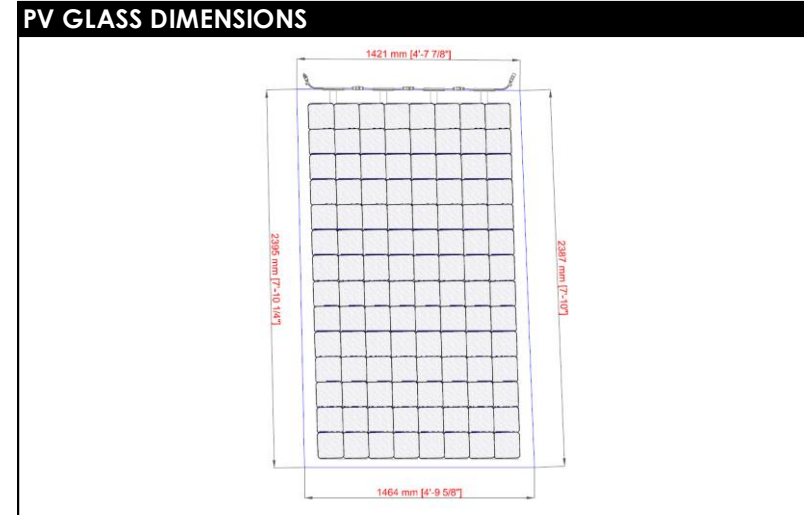
TYPE 1 – A8

M08



PHOTOVOLTAIC GLASS		2.395 x 1512	
M8 / TYPE 1 - A8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2395	mm	
Width	1512	mm	
Thickness	34,56	mm	
Surface area	3,62	sqm	
Weight	181	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,3

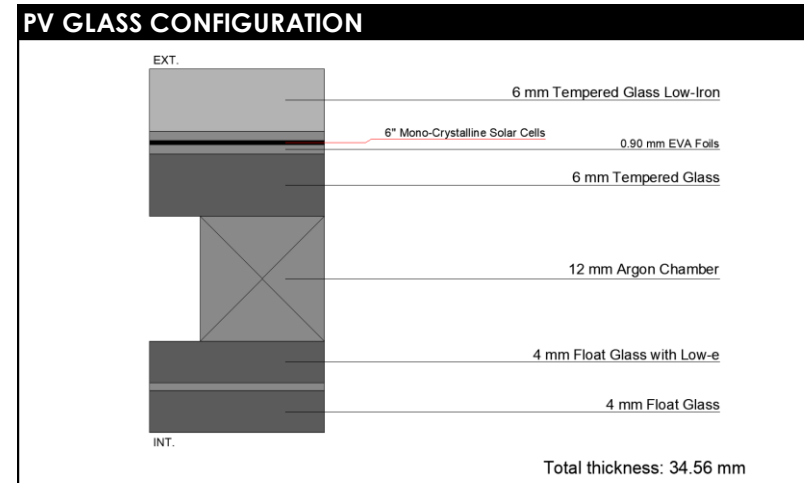
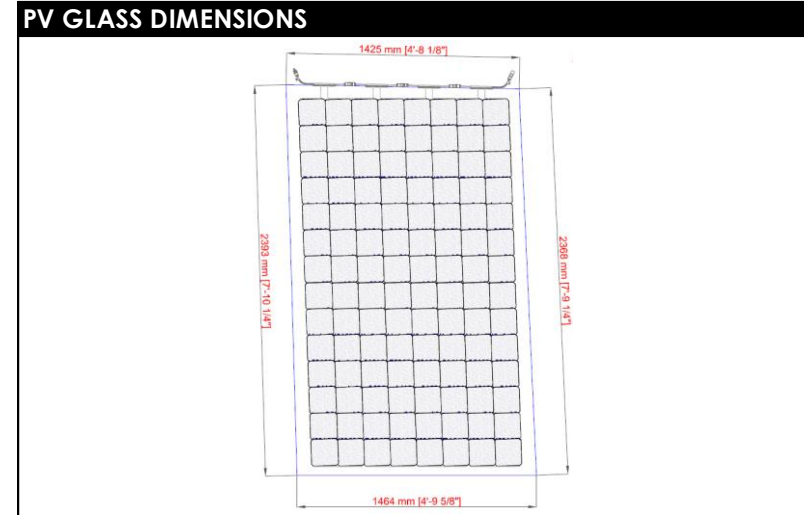


TYPE 1 – A9

M09



PHOTOVOLTAIC GLASS		2.342 x 1591	
M9 / TYPE 1 - A9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2342	mm	
Width	1591	mm	
Thickness	34,56	mm	
Surface area	3,73	sqm	
Weight	186	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	138,3

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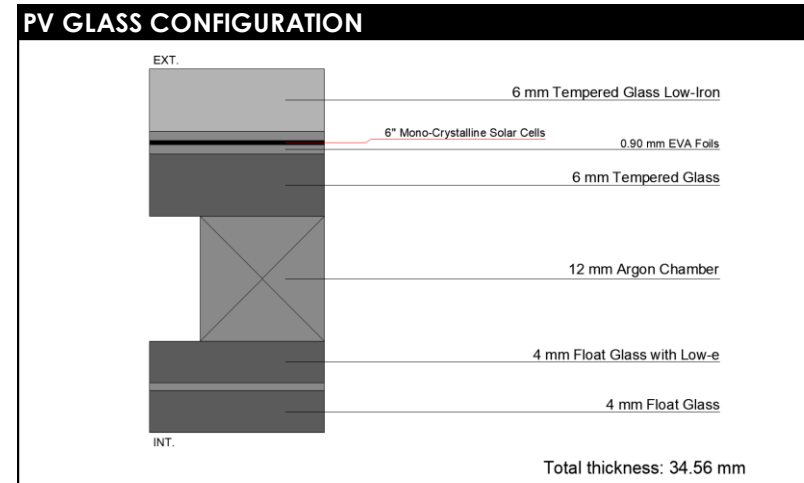
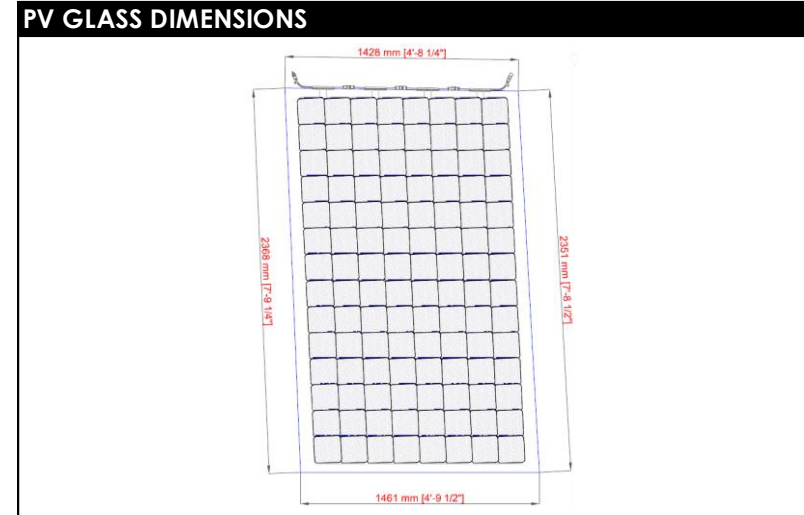


TYPE 1 – A10

M10



PHOTOVOLTAIC GLASS		2.366 x 1557	
M10 / TYPE 1 - A10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2366	mm	
Width	1557	mm	
Thickness	34,56	mm	
Surface area	3,68	sqm	
Weight	184	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,8

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TYPE 2

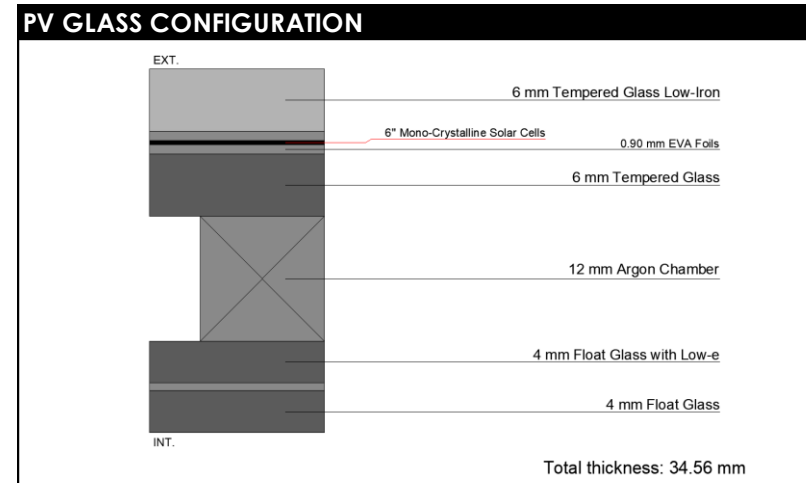
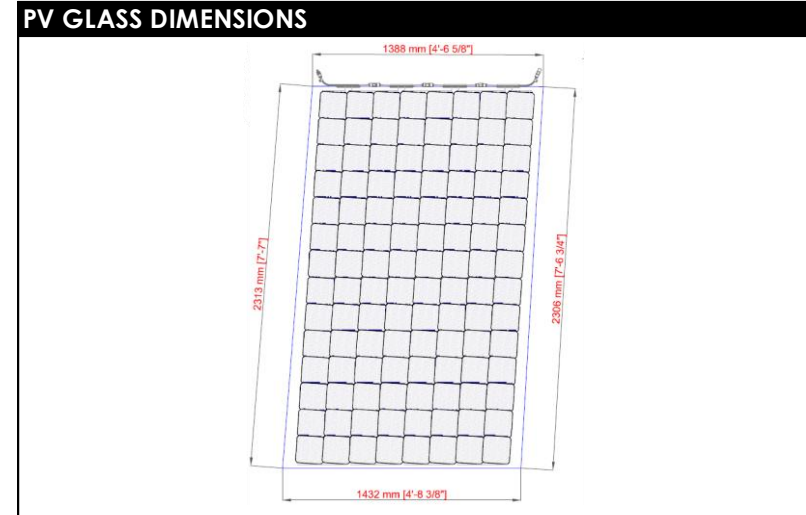


TYPE 2 – B1

M11



PHOTOVOLTAIC GLASS		
M11 / TYPE 2 - B1	2.306 x 1567	
	Mono 3BB	Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2306	mm
Width	1567	mm
Thickness	34,56	mm
Surface area	3,61	sqm
Weight	181	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	29%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,6

* All technical specifications are subject to change without notice by Onyx Solar

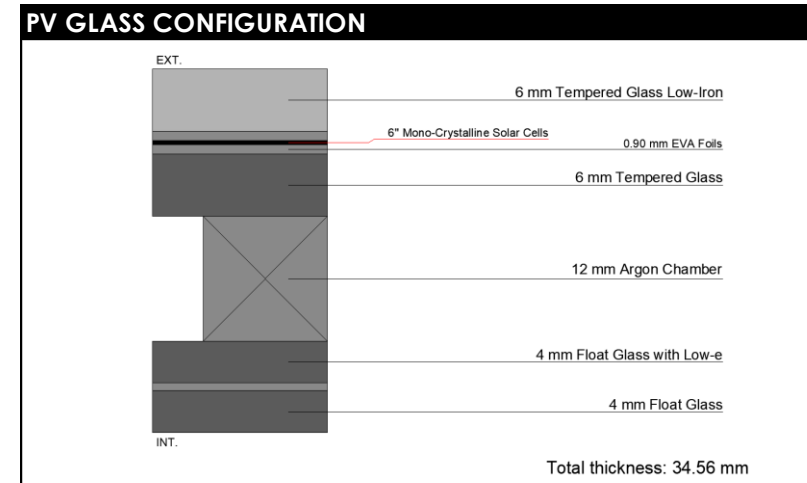
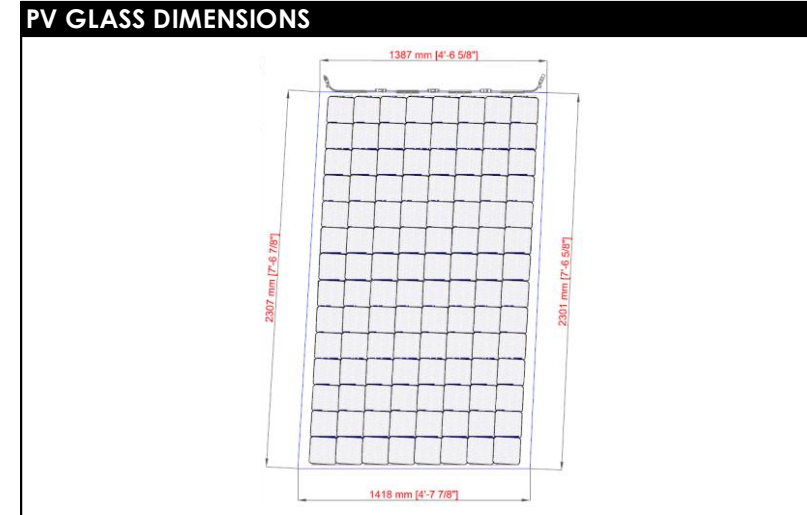


TYPE 2 – B2

M12



PHOTOVOLTAIC GLASS		2.303 x 1522
M12 / TYPE 2 - B2		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2303	mm
Width	1522	mm
Thickness	34,56	mm
Surface area	3,51	sqm
Weight	175	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	27%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	147,0

* All technical specifications are subject to change without notice by Onyx Solar

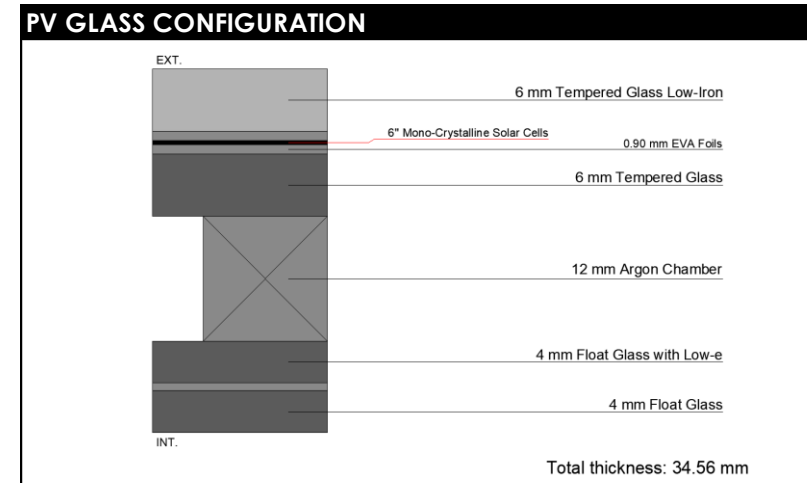
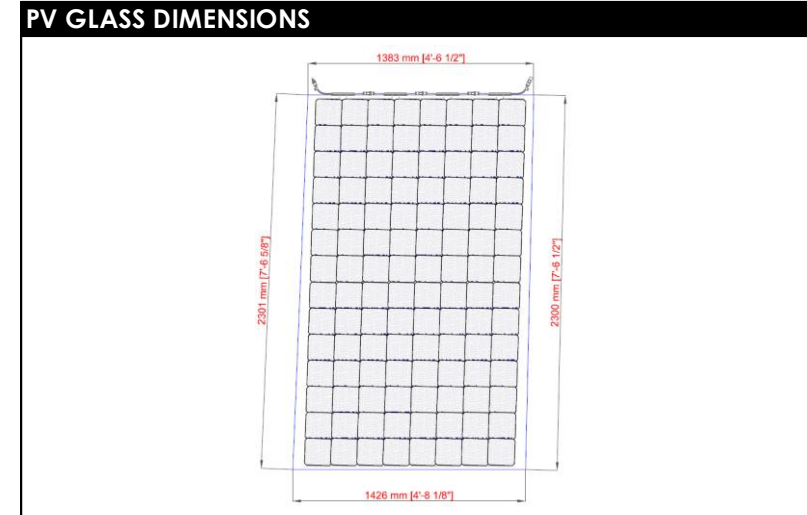


TYPE 2 – B3

M13



PHOTOVOLTAIC GLASS		
M13 / TYPE 2 - B3	2.299 x 1477	
	Mono 3BB	Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2299	mm
Width	1477	mm
Thickness	34,56	mm
Surface area	3,40	sqm
Weight	170	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	24%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,7

* All technical specifications are subject to change without notice by Onyx Solar

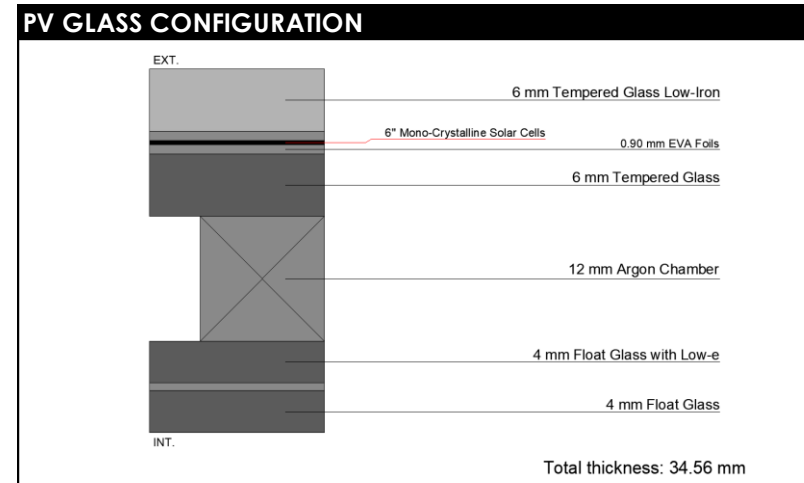
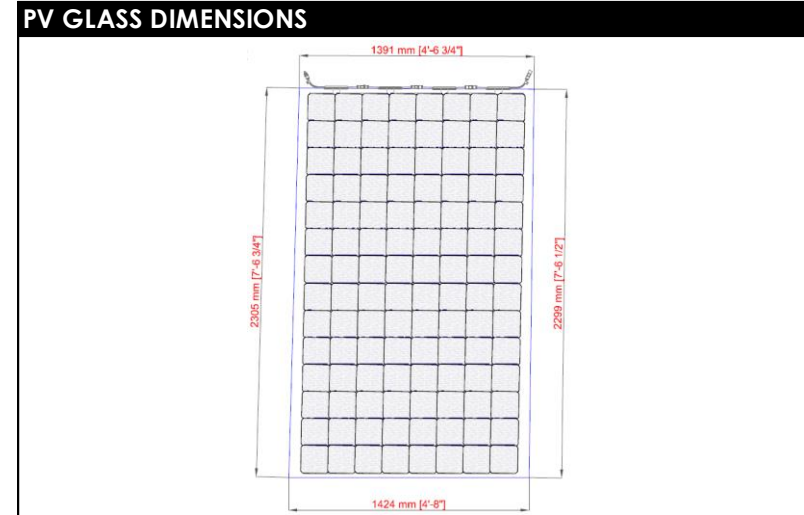


TYPE 2 – B4

M14



PHOTOVOLTAIC GLASS		2.304 x 1454	
M14 / TYPE 2 - B4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2304	mm	
Width	1454	mm	
Thickness	34,56	mm	
Surface area	3,35	sqm	
Weight	168	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	153,8



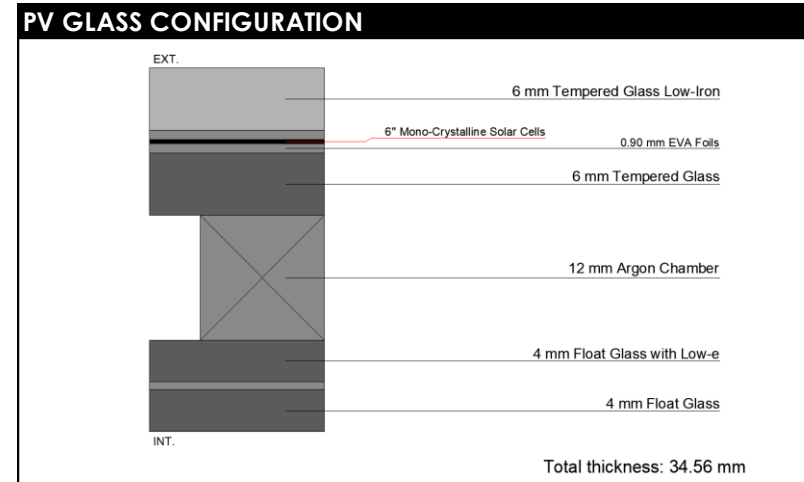
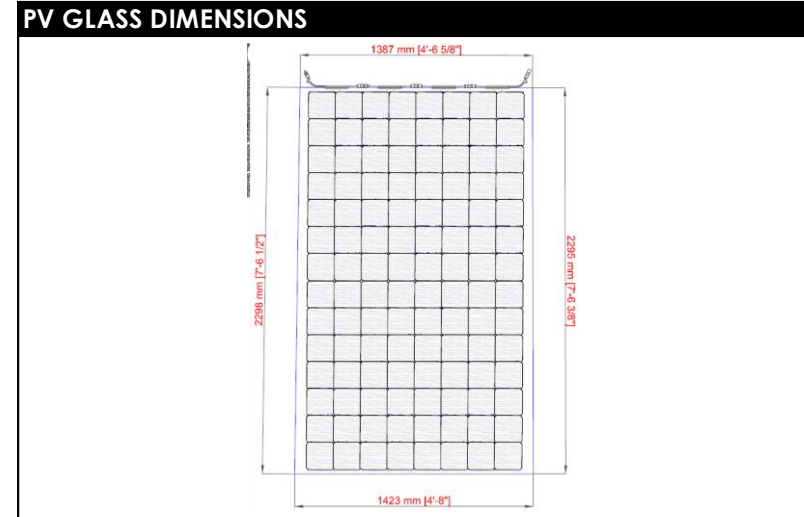
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 2 – B5

M15



PHOTOVOLTAIC GLASS		2.298 x 1423	
M15 / TYPE 2 - B5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2298	mm	
Width	1423	mm	
Thickness	34,56	mm	
Surface area	3,27	sqm	
Weight	164	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,5

* All technical specifications are subject to change without notice by Onyx Solar



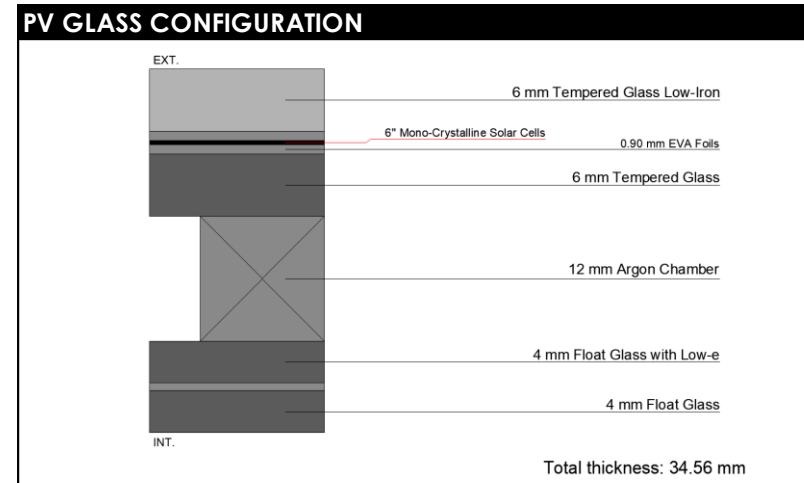
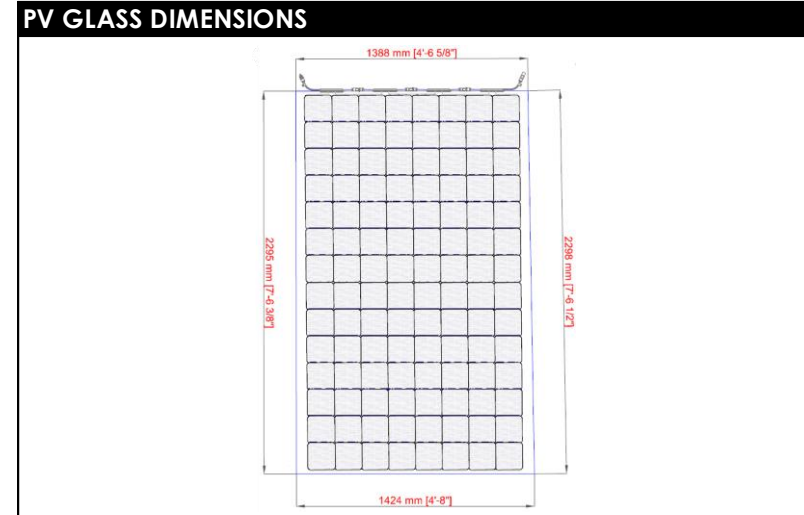
TYPE 2 – B6

M16



PHOTOVOLTAIC GLASS		2.298 x 1427	
M16 / TYPE 2 - B6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2298	mm	
Width	1427	mm	
Thickness	34,56	mm	
Surface area	3,28	sqm	
Weight	164	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,1

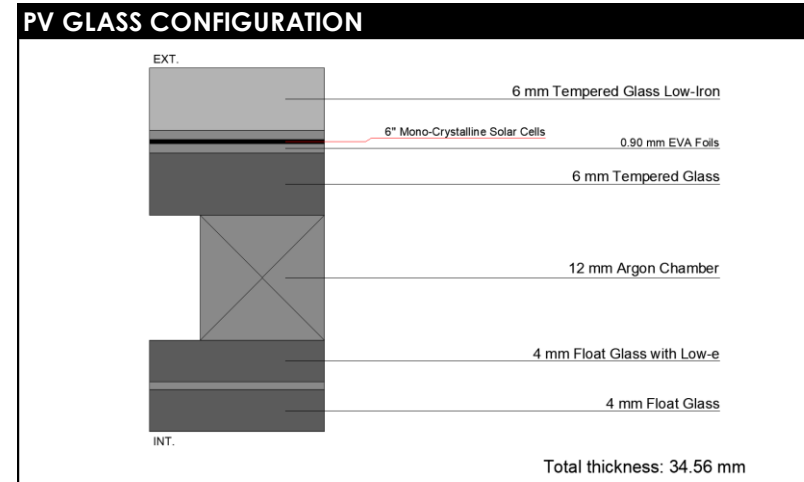
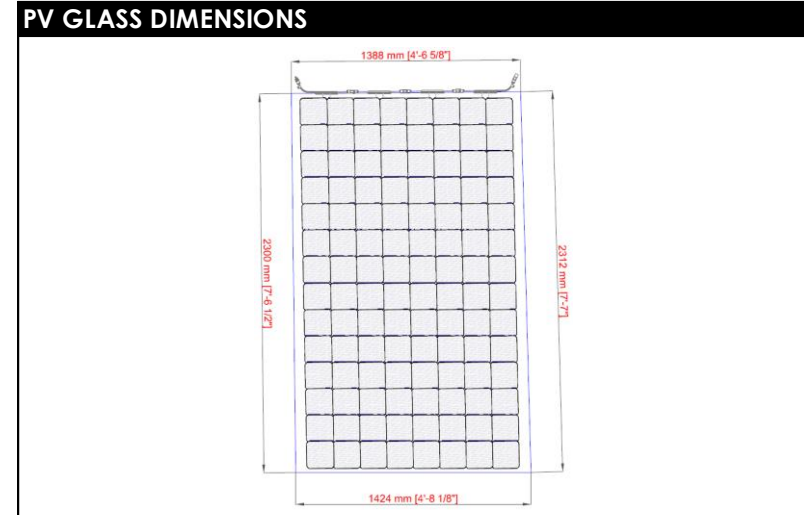


TYPE 2 – B7

M17



PHOTOVOLTAIC GLASS		2.311 x 1449	
M17 / TYPE 2 - B7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2311	mm	
Width	1449	mm	
Thickness	34,56	mm	
Surface area	3,35	sqm	
Weight	167	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	153,8



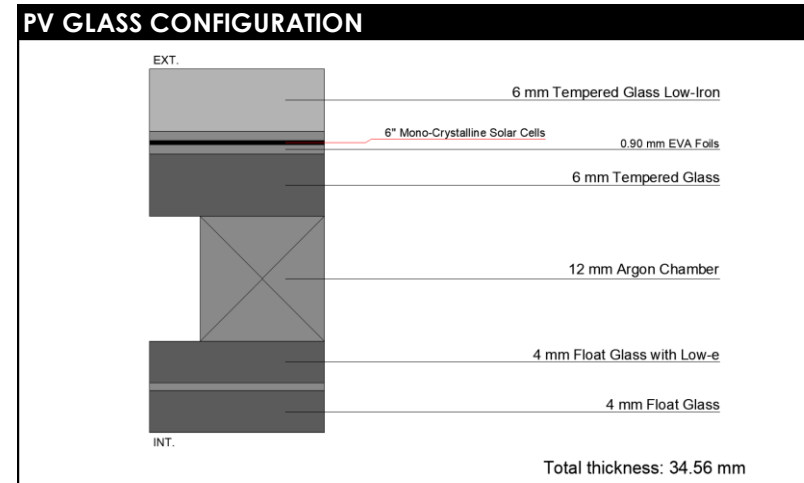
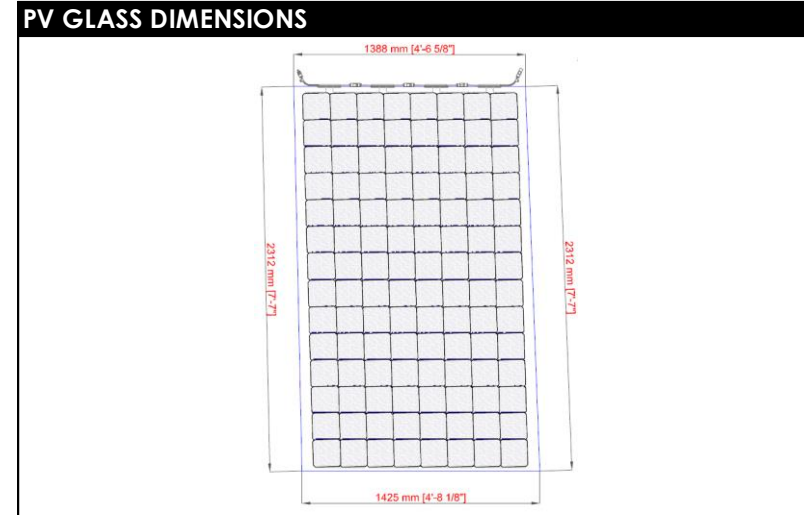
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 2 – B8

M18



PHOTOVOLTAIC GLASS		2.311 x 1474	
M18 / TYPE 2 - B8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2311	mm	
Width	1474	mm	
Thickness	34,56	mm	
Surface area	3,41	sqm	
Weight	170	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,2

* All technical specifications are subject to change without notice by Onyx Solar

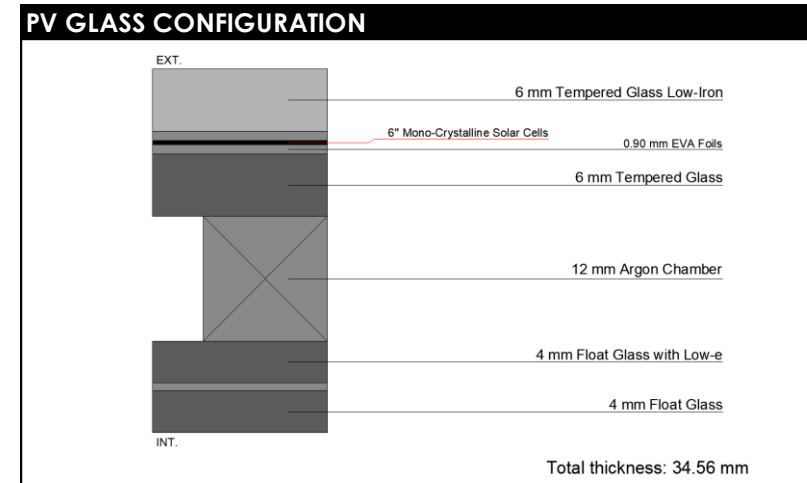
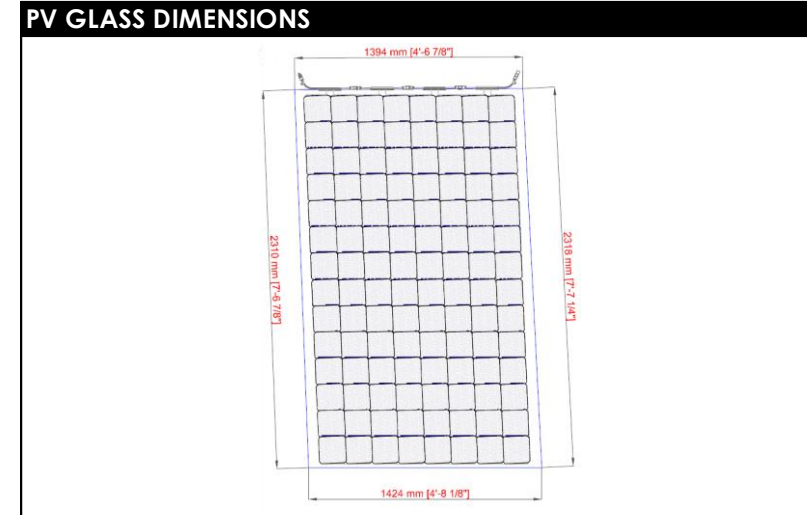


TYPE 2 – B9

M19



PHOTOVOLTAIC GLASS		
M19 / TYPE 2 - B9	2.315 x 1509	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2315	mm
Width	1509	mm
Thickness	34,56	mm
Surface area	3,49	sqm
Weight	175	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	26%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	147,5



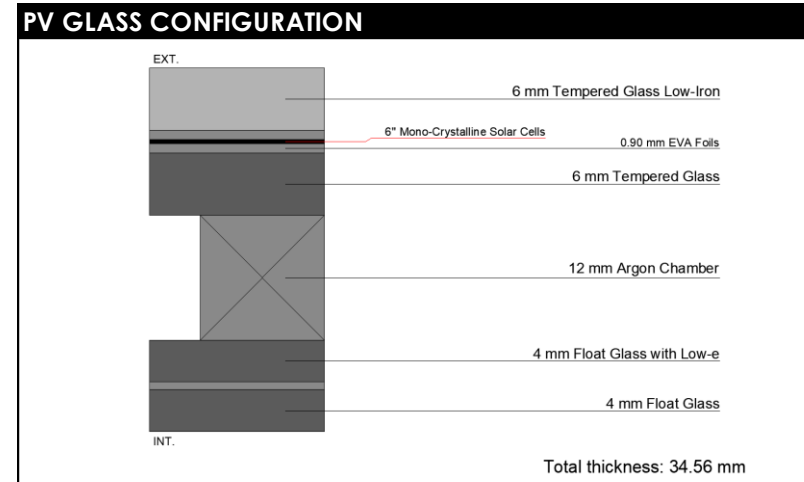
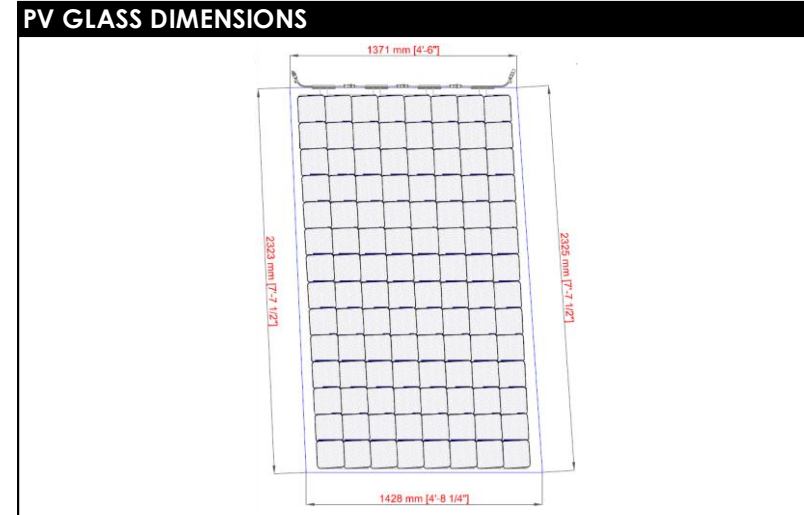
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 2 – B10

M20



PHOTOVOLTAIC GLASS		2.320 x 1526	
M20 / TYPE 2 - B10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2320	mm	
Width	1526	mm	
Thickness	34,56	mm	
Surface area	3,54	sqm	
Weight	177	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,5

* All technical specifications are subject to change without notice by Onyx Solar





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 3

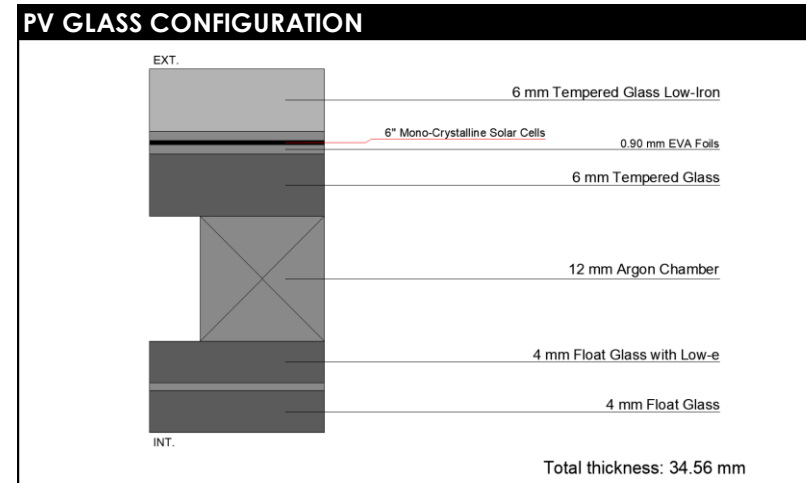
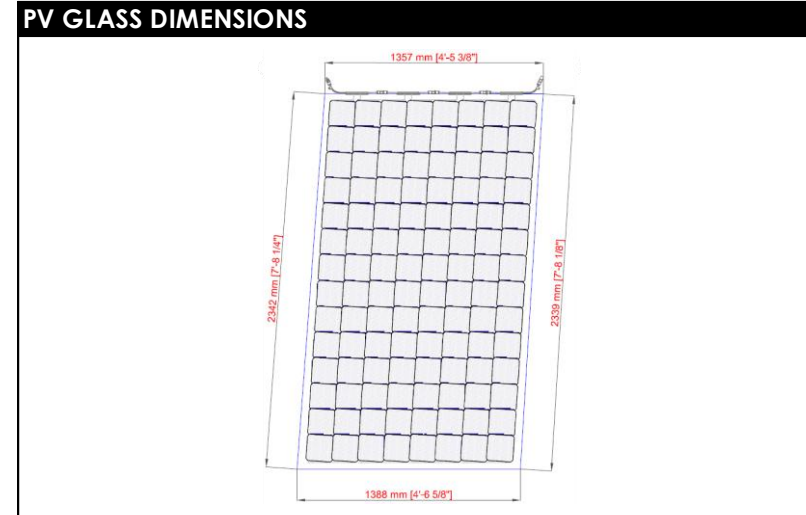


TYPE 3 – C1

M21



PHOTOVOLTAIC GLASS		2.336 x 1530	
M21 / TYPE 3 - C1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2336	mm	
Width	1530	mm	
Thickness	34,56	mm	
Surface area	3,57	sqm	
Weight	179	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,1

* All technical specifications are subject to change without notice by Onyx Solar

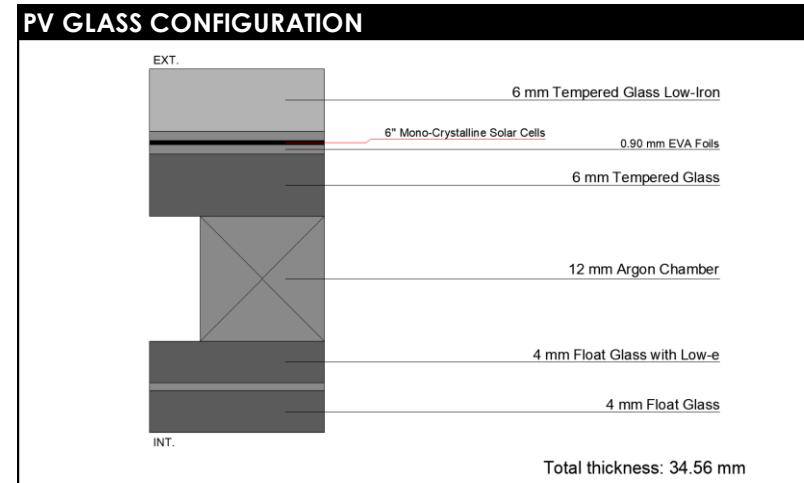
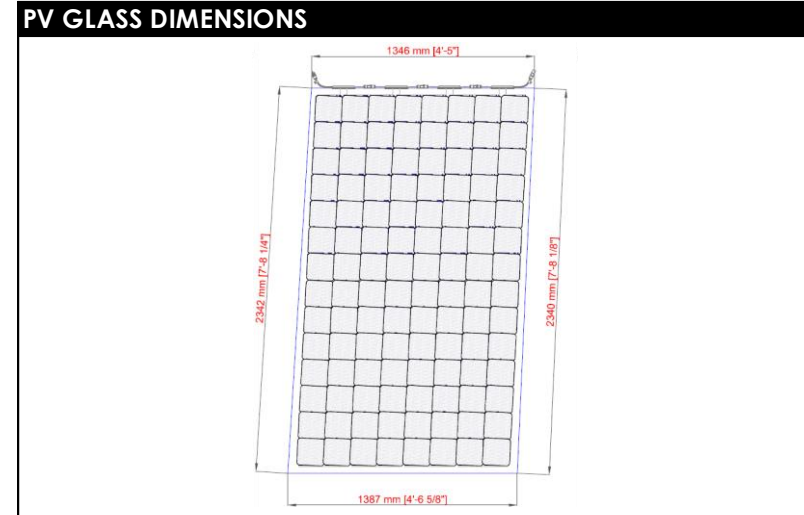


TYPE 3 – C2

M22



PHOTOVOLTAIC GLASS		
M22 / TYPE 3 - C2	2.338 x 1489	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2338	mm
Width	1489	mm
Thickness	34,56	mm
Surface area	3,48	sqm
Weight	174	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	26%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	148,0

* All technical specifications are subject to change without notice by Onyx Solar



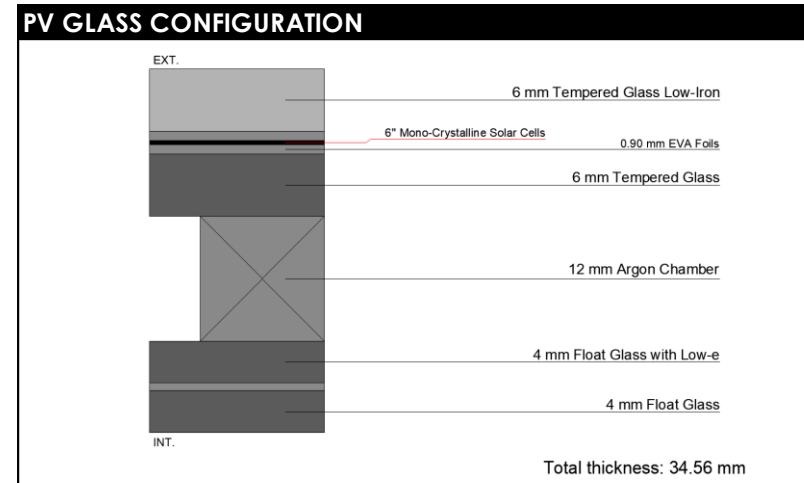
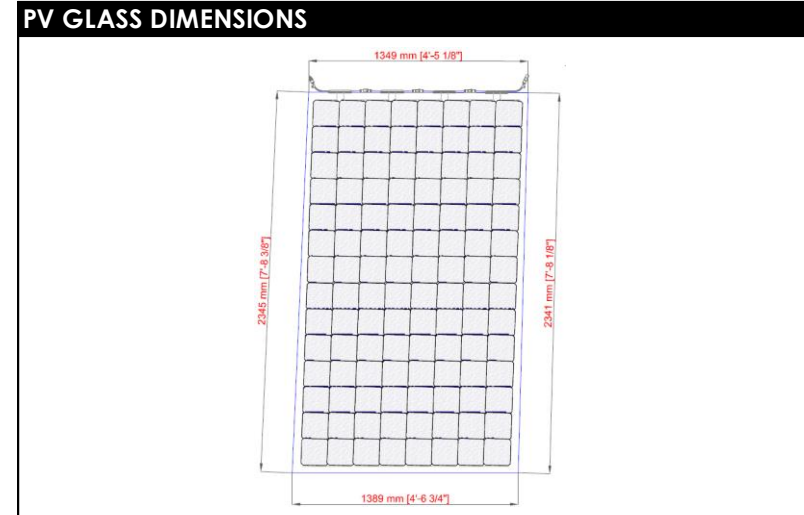
TYPE 3 – C3

M23



PHOTOVOLTAIC GLASS		2.343 x 1450	
M23 / TYPE 3 - C3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2343	mm	
Width	1450	mm	
Thickness	34,56	mm	
Surface area	3,40	sqm	
Weight	170	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,6

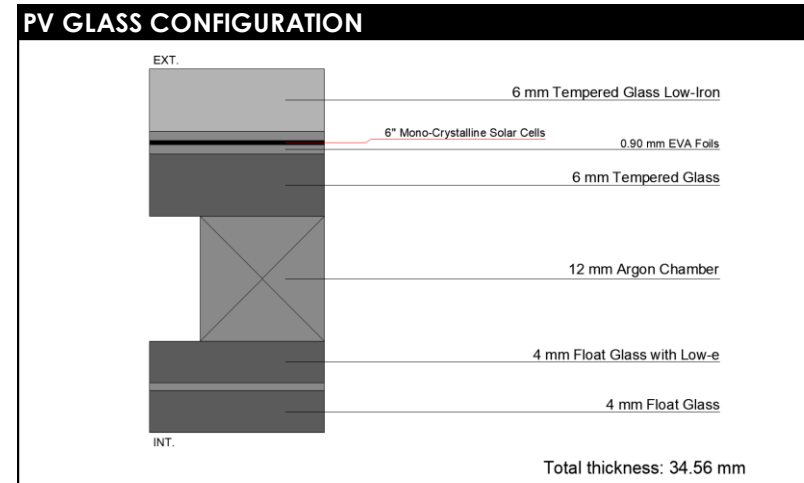
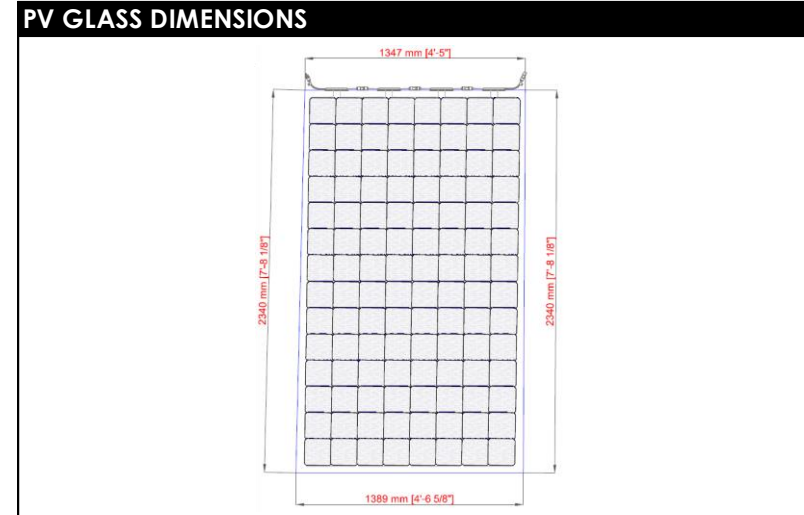


TYPE 3 – C4

M24



PHOTOVOLTAIC GLASS		
M24 / TYPE 3 - C4	2.339 x 1402	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2339	mm
Width	1402	mm
Thickness	34,56	mm
Surface area	3,28	sqm
Weight	164	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	21%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,1

* All technical specifications are subject to change without notice by Onyx Solar

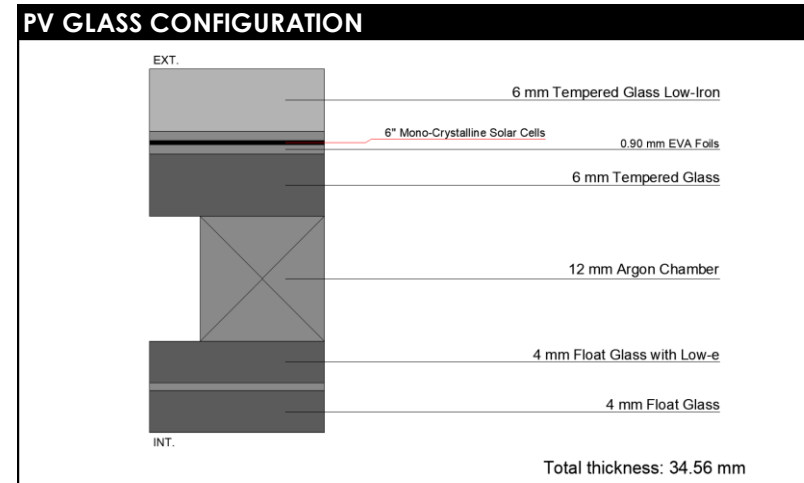
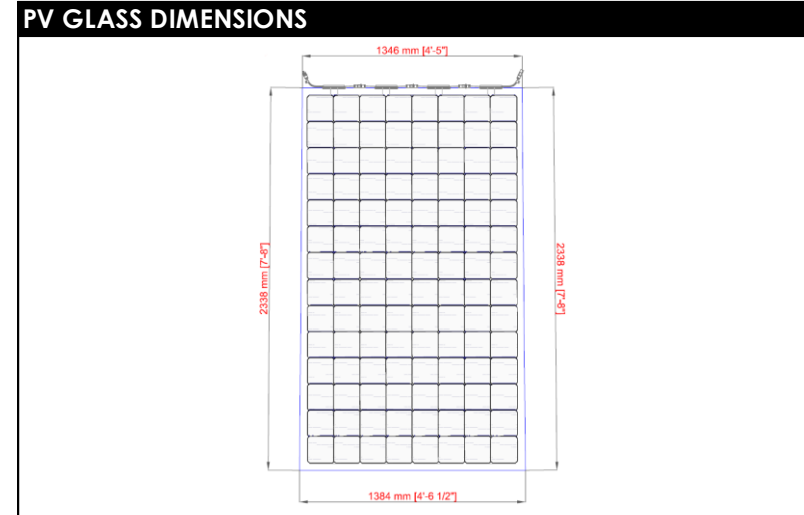


TYPE 3 – C5

M25



PHOTOVOLTAIC GLASS		2.338 x 1384	
M25 / TYPE 3 - C5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2338	mm	
Width	1384	mm	
Thickness	34,56	mm	
Surface area	3,24	sqm	
Weight	162	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,2

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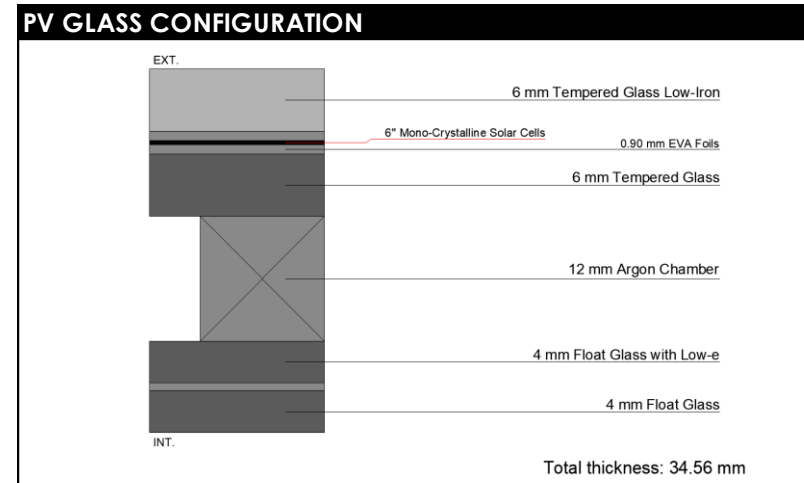
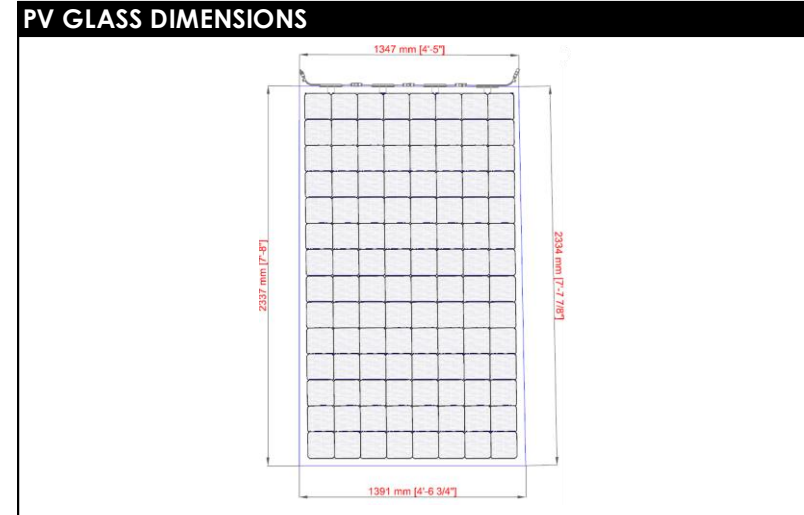


TYPE 3 – C6

M26



PHOTOVOLTAIC GLASS		2.337 x 1391	
M26 / TYPE 3 - C6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2337	mm	
Width	1391	mm	
Thickness	34,56	mm	
Surface area	3,25	sqm	
Weight	163	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	158,5

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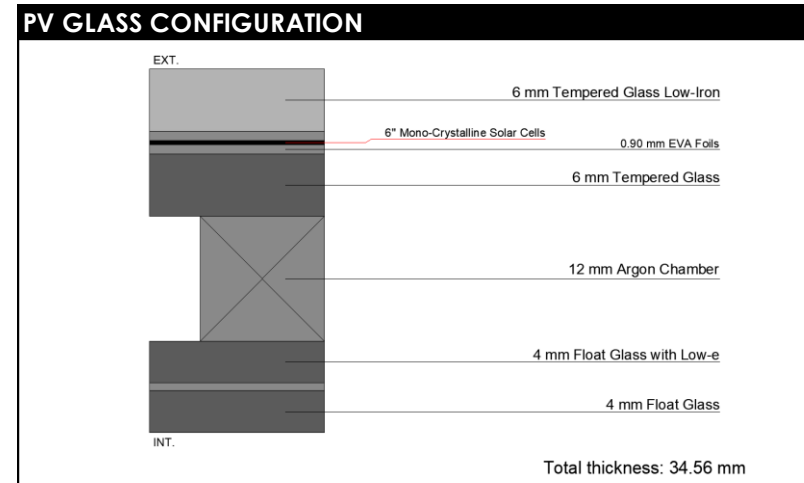
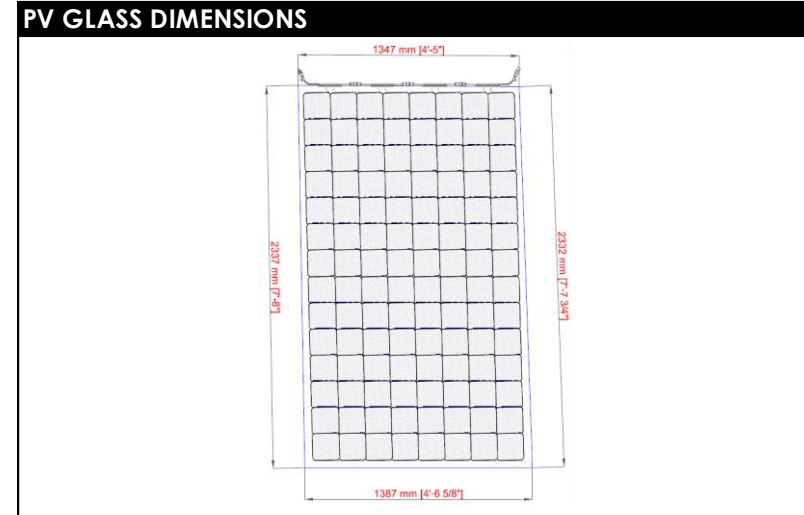


TYPE 3 – C7

M27



PHOTOVOLTAIC GLASS		2.337 x 1428	
M27 / TYPE 3 - C7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2337	mm	
Width	1428	mm	
Thickness	34,56	mm	
Surface area	3,34	sqm	
Weight	167	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	154,4



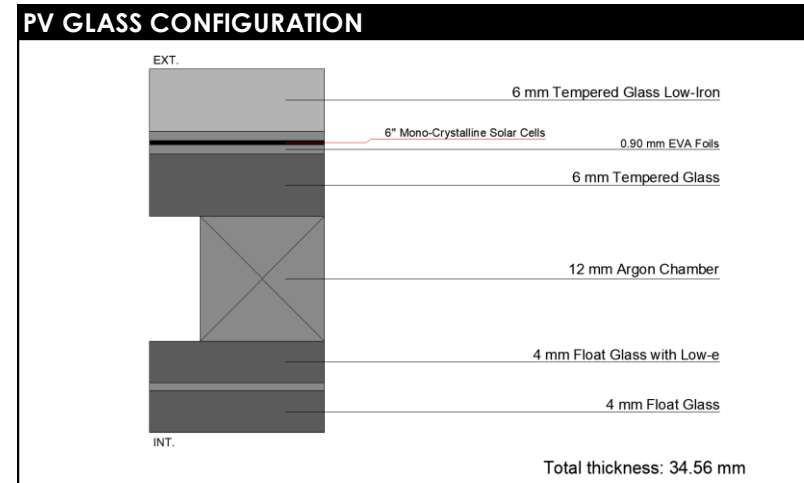
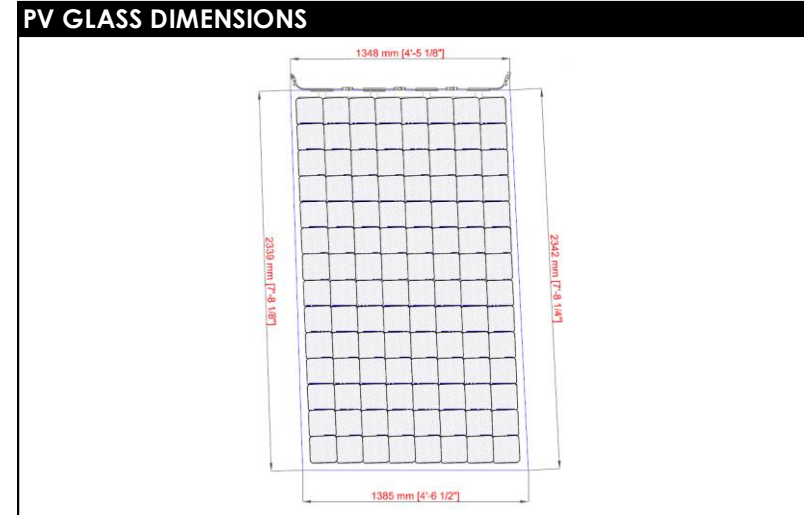
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 3 – C8

M28



PHOTOVOLTAIC GLASS		2.342 x 1460	
M28 / TYPE 3 - C8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2342	mm	
Width	1460	mm	
Thickness	34,56	mm	
Surface area	3,42	sqm	
Weight	171	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	150,7

* All technical specifications are subject to change without notice by Onyx Solar



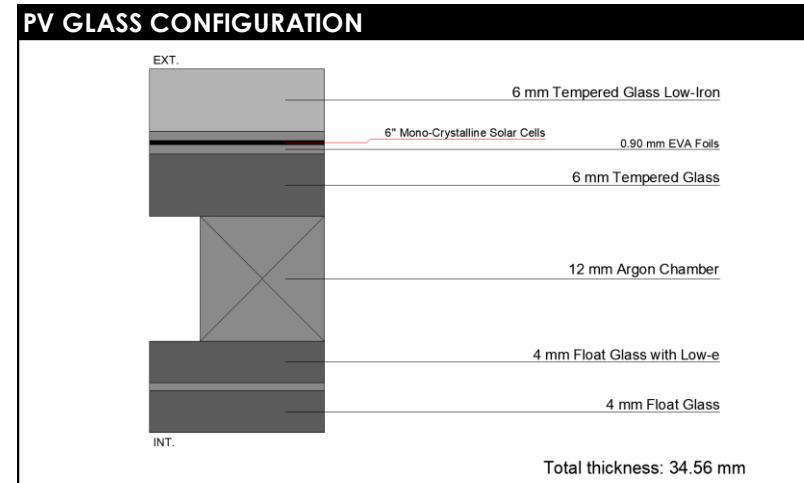
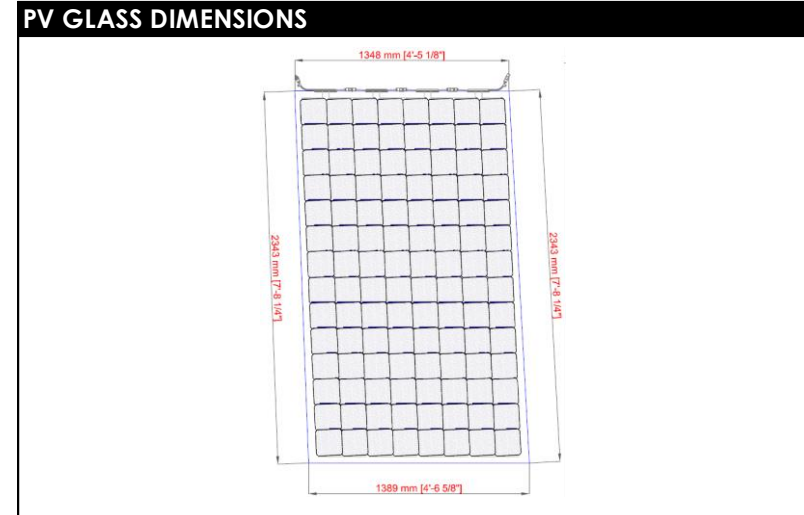
TYPE 3 – C9

M29



PHOTOVOLTAIC GLASS		2.341 x 1476	
M29 / TYPE 3 - C9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2341	mm	
Width	1476	mm	
Thickness	34,56	mm	
Surface area	3,46	sqm	
Weight	173	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,1

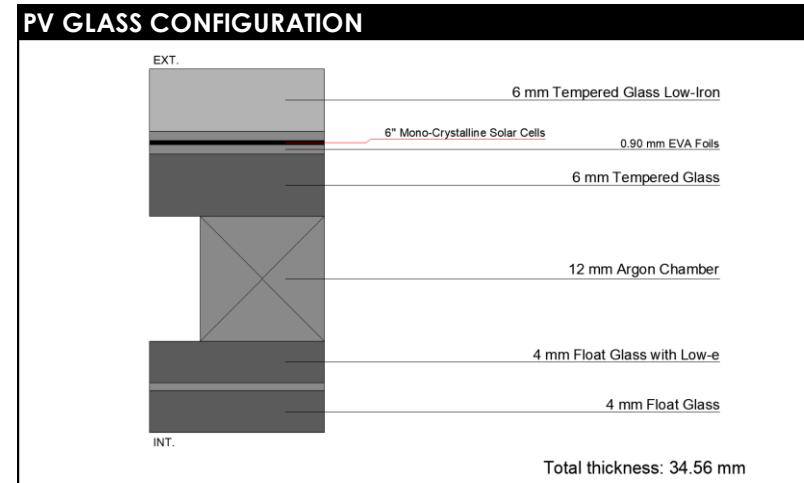
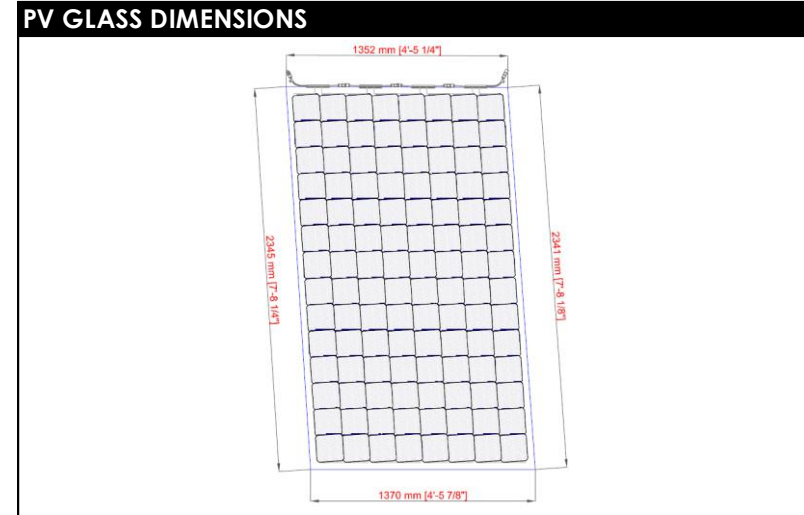


TYPE 3 – C10

M30



PHOTOVOLTAIC GLASS		2.340 x 1519	
M30 / TYPE 3 - C10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2340	mm	
Width	1519	mm	
Thickness	34,56	mm	
Surface area	3,55	sqm	
Weight	178	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,9

* All technical specifications are subject to change without notice by Onyx Solar





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 4

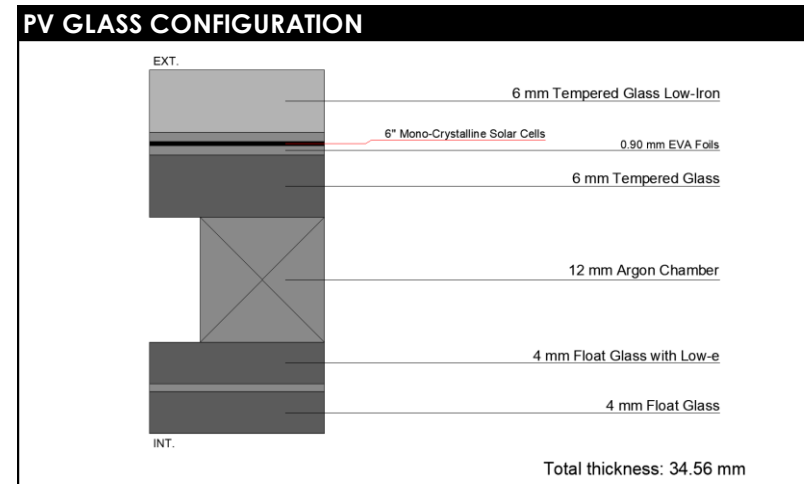
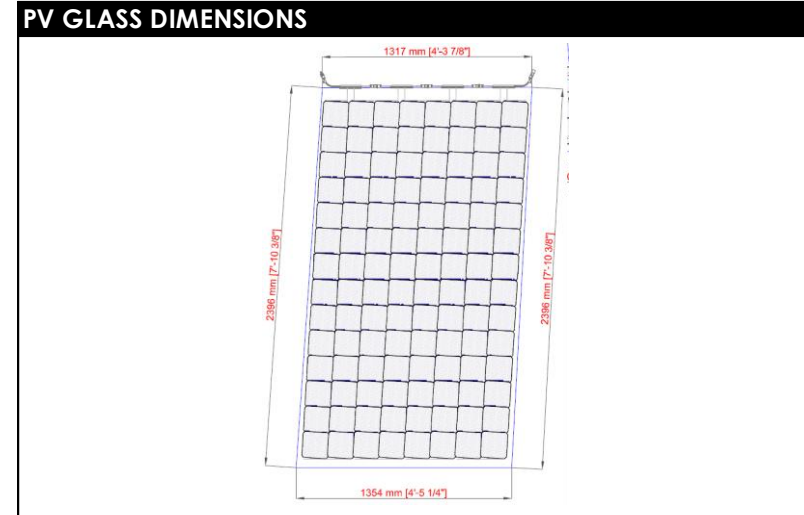


TYPE 4 – D1

M31



PHOTOVOLTAIC GLASS		2.393 x 1482	
M31 / TYPE 4 - D1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2393	mm	
Width	1482	mm	
Thickness	34,56	mm	
Surface area	3,55	sqm	
Weight	177	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,3



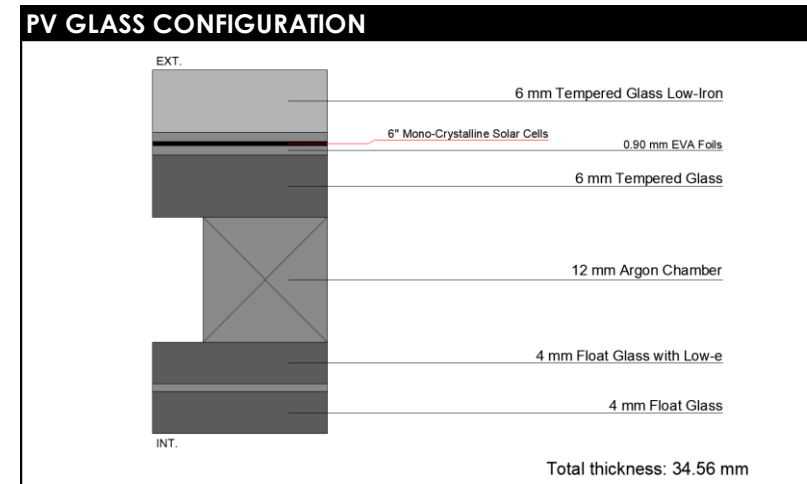
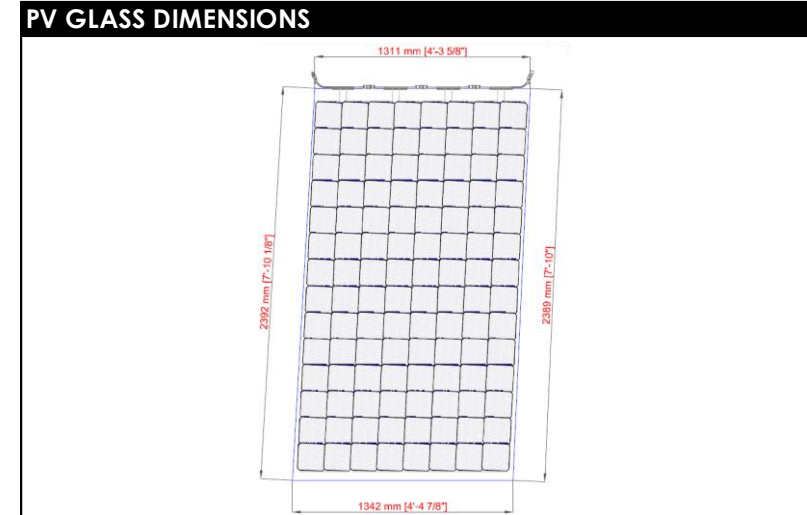
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 4 – D2

M32



PHOTOVOLTAIC GLASS		2.388 x 1447	
M32 / TYPE 4 - D2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2388	mm	
Width	1447	mm	
Thickness	34,56	mm	
Surface area	3,46	sqm	
Weight	173	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,1

* All technical specifications are subject to change without notice by Onyx Solar



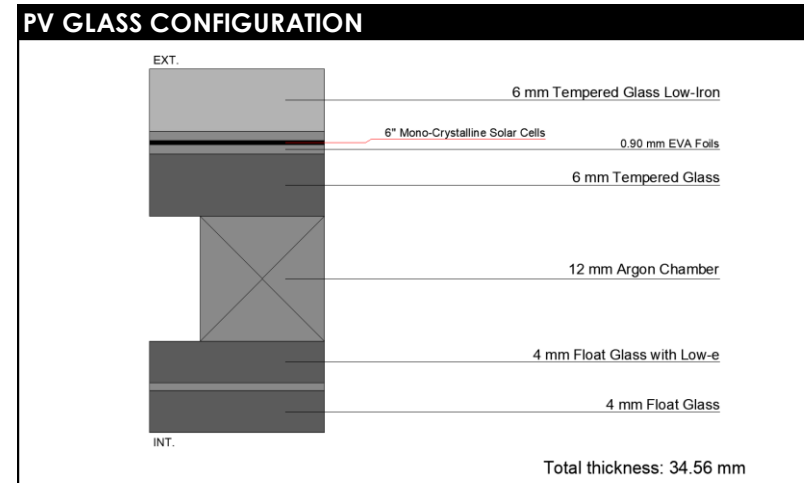
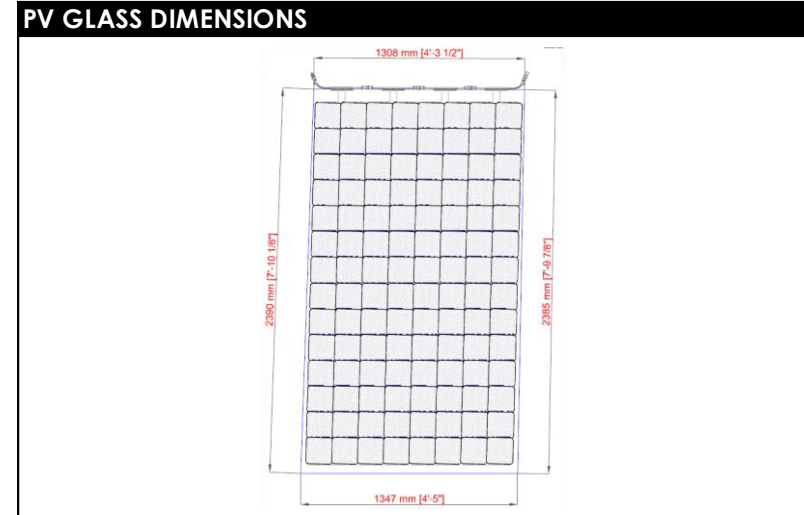
TYPE 4 – D3

M33



PHOTOVOLTAIC GLASS		2.389 x 1390	
M33 / TYPE 4 - D3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2389	mm	
Width	1390	mm	
Thickness	34,56	mm	
Surface area	3,32	sqm	
Weight	166	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	22%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	22%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	155,1

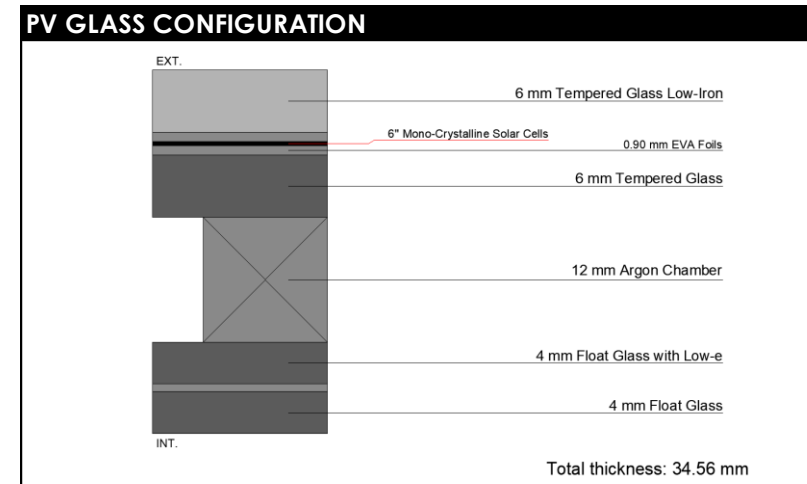
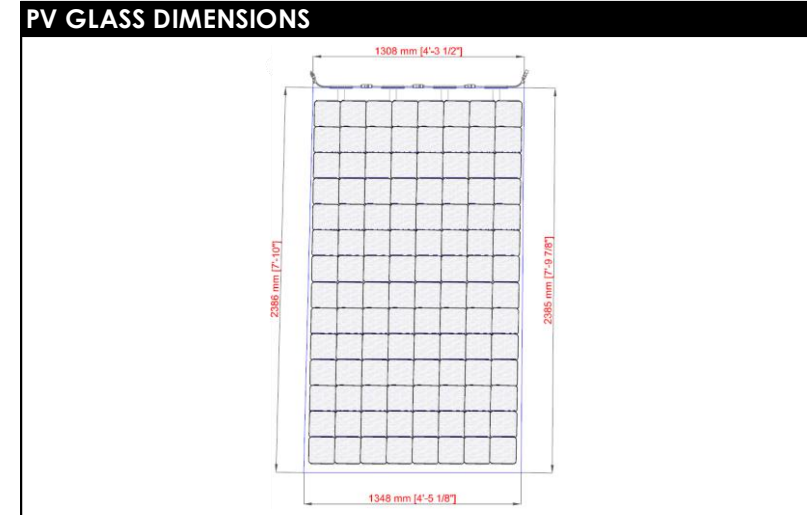


TYPE 4 – D4

M34



PHOTOVOLTAIC GLASS		2.386 x 1367
M34 / TYPE 4 - D4		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2386	mm
Width	1367	mm
Thickness	34,56	mm
Surface area	3,26	sqm
Weight	163	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	21%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,9

* All technical specifications are subject to change without notice by Onyx Solar

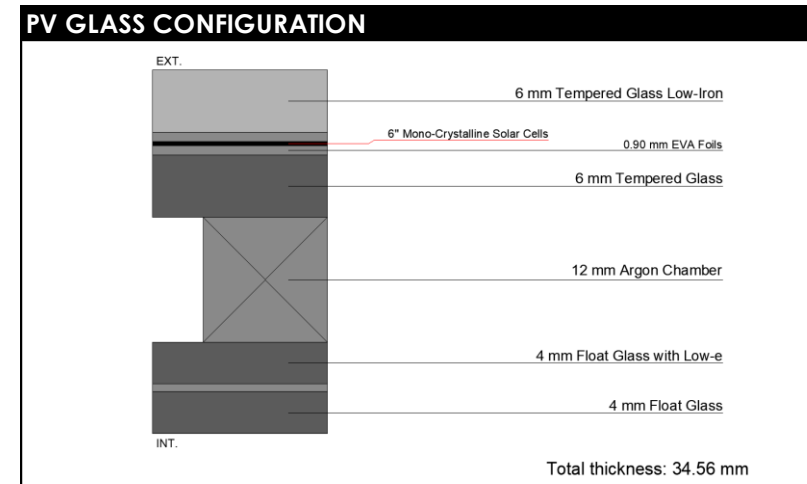
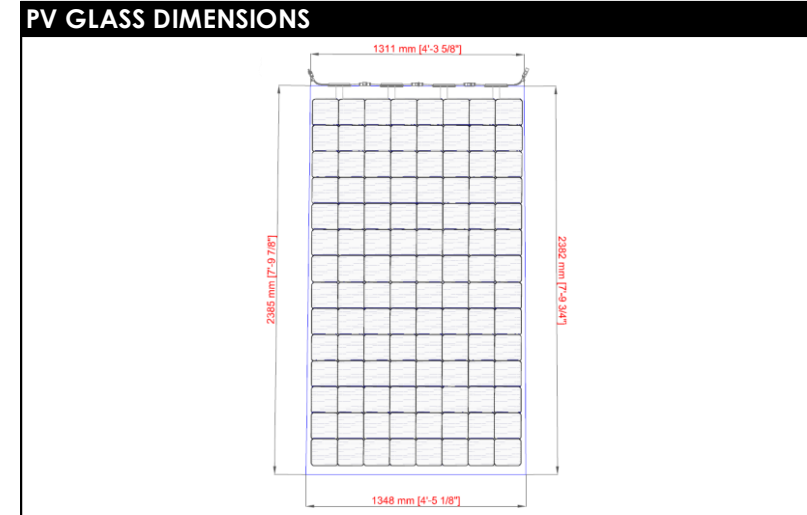


TYPE 4 – D5

M35



PHOTOVOLTAIC GLASS		2.385 x 1355	
M35 / TYPE 4 - D5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2385	mm	
Width	1355	mm	
Thickness	34,56	mm	
Surface area	3,23	sqm	
Weight	162	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,4

* All technical specifications are subject to change without notice by Onyx Solar



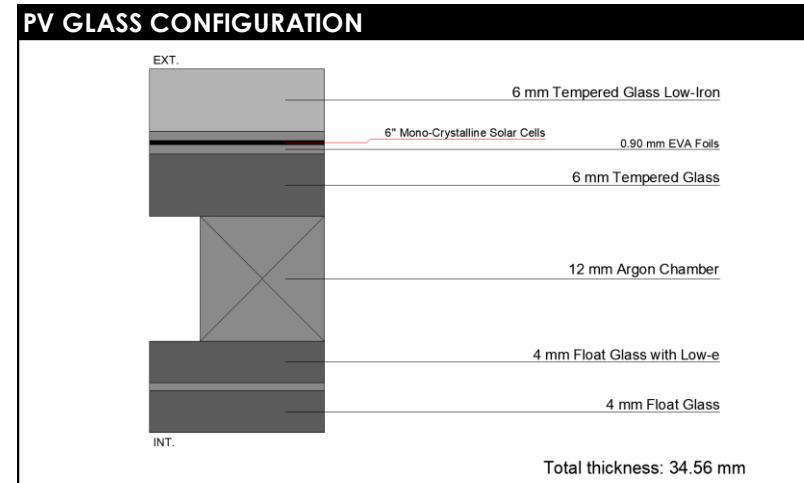
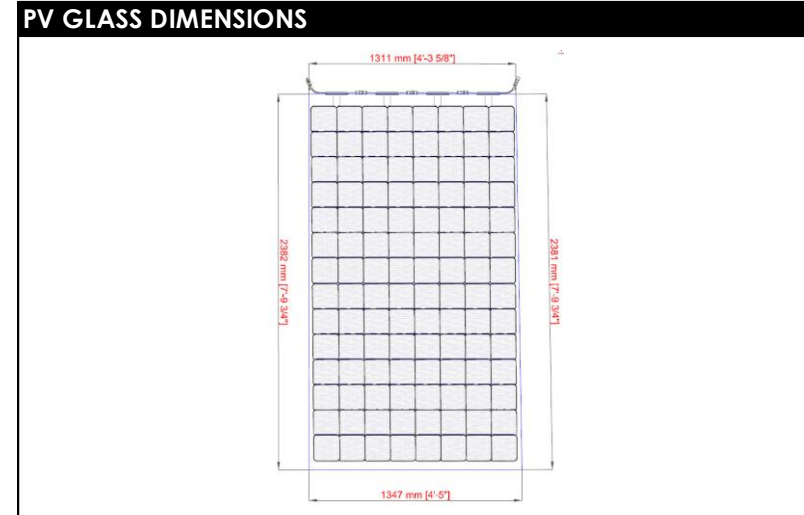
TYPE 4 – D6

M36



PHOTOVOLTAIC GLASS		2.342 x 1349	
M36 / TYPE 4 - D6		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2342	mm	
Width	1349	mm	
Thickness	34,56	mm	
Surface area	3,16	sqm	
Weight	158	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	18%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	18%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	163,1

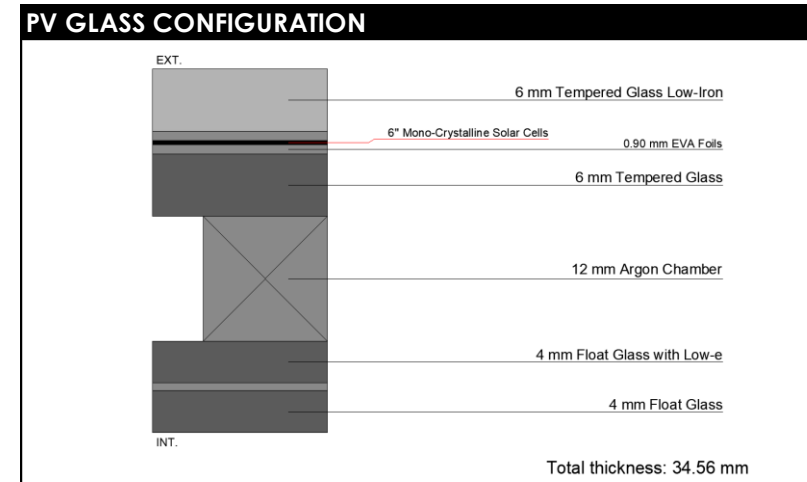
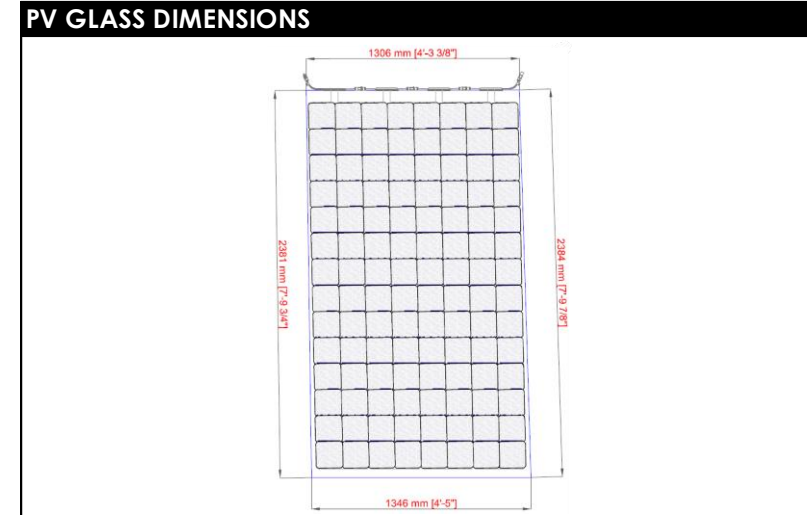


TYPE 4 – D7

M37



PHOTOVOLTAIC GLASS		2.383 x 1378	
M37 / TYPE 4 - D7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2383	mm	
Width	1378	mm	
Thickness	34,56	mm	
Surface area	3,28	sqm	
Weight	164	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	22%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	22%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	156,9



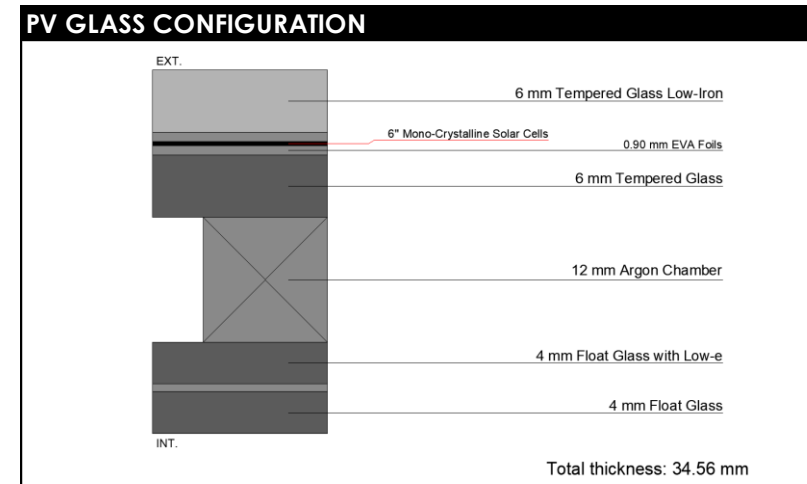
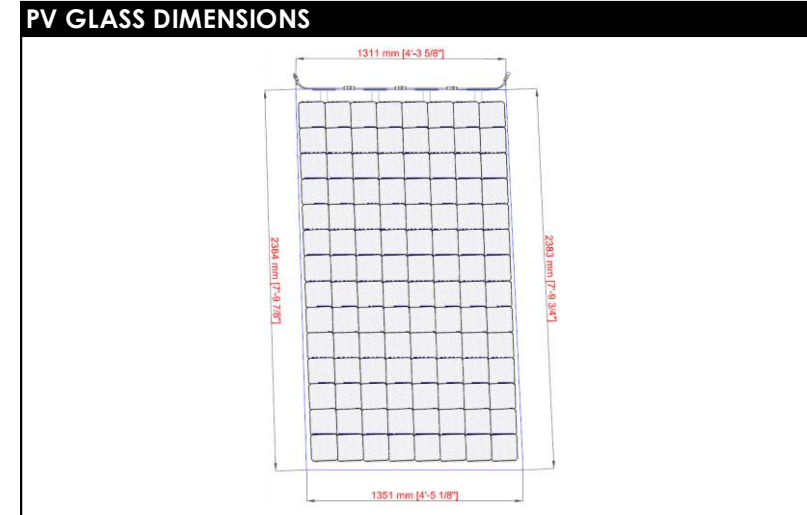
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TYPE 4 – D8

M38



PHOTOVOLTAIC GLASS		2.383 x 1418	
M38 / TYPE 4 - D8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2383	mm	
Width	1418	mm	
Thickness	34,56	mm	
Surface area	3,38	sqm	
Weight	169	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	152,5

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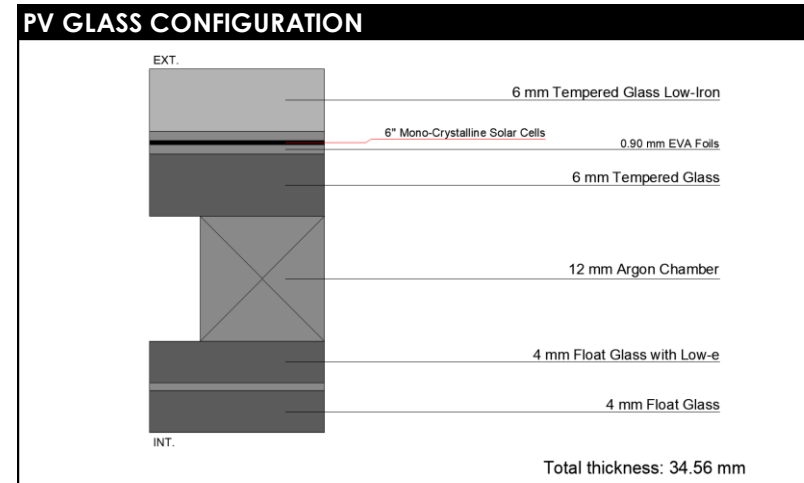
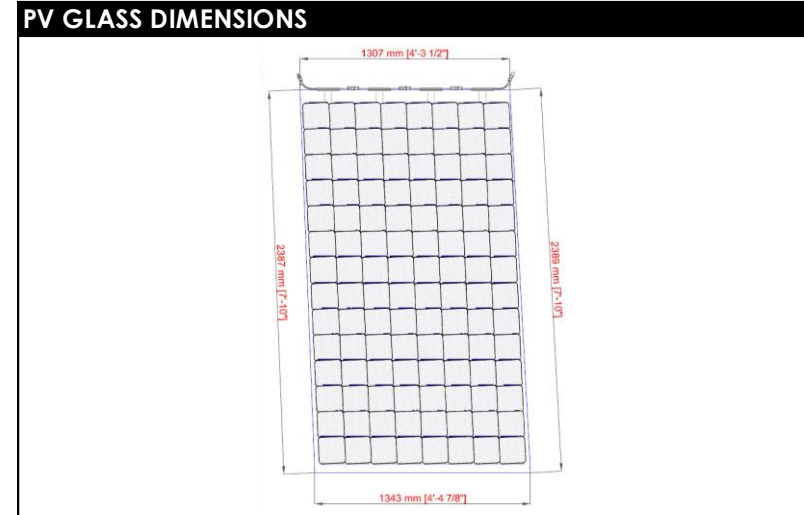
TYPE 4 – D9

M39



PHOTOVOLTAIC GLASS		2.385 x 1436	
M39 / TYPE 4 - D9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	515	P_{mpp} (Wp)	
Open-circuit voltage	75	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	63	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2385	mm	
Width	1436	mm	
Thickness	34,56	mm	
Surface area	3,42	sqm	
Weight	171	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	112	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	150,4

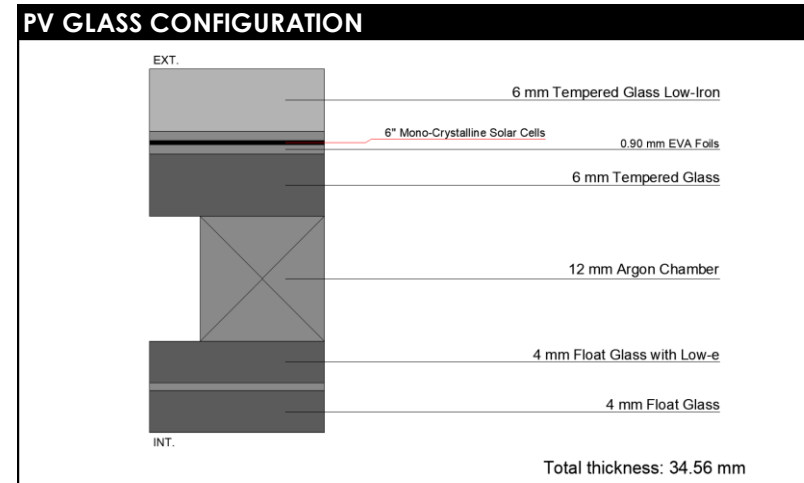
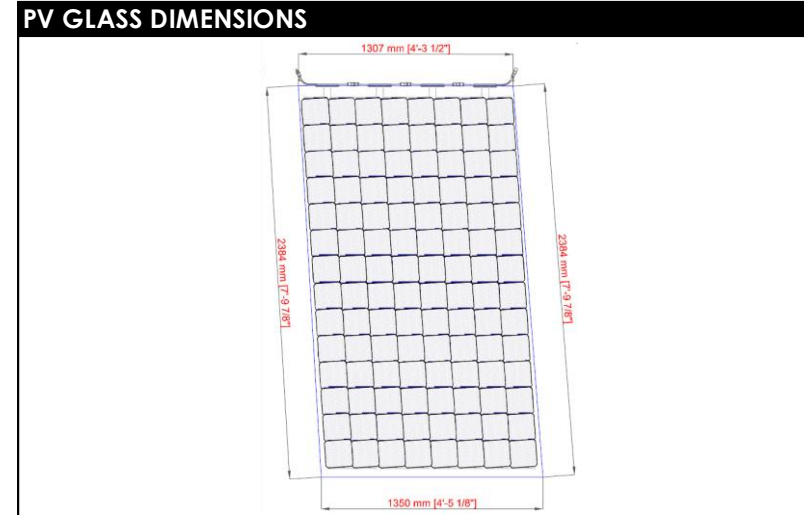


TYPE 4 – D10

M40



PHOTOVOLTAIC GLASS		
M40 / TYPE 4 - D10		2.380 x 1489
		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	515	P_{mpp} (Wp)
Open-circuit voltage	75	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	63	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2380	mm
Width	1489	mm
Thickness	34,56	mm
Surface area	3,54	sqm
Weight	177	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	112	27%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,4



* All technical specifications are subject to change without notice by Onyx Solar



DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 5

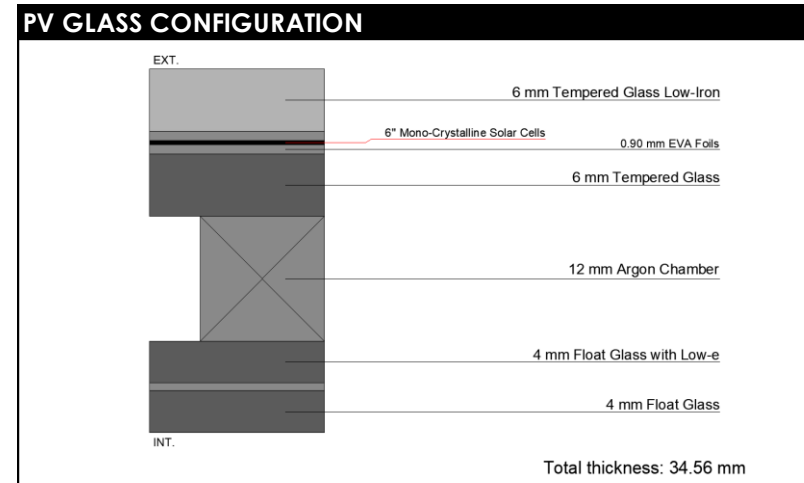
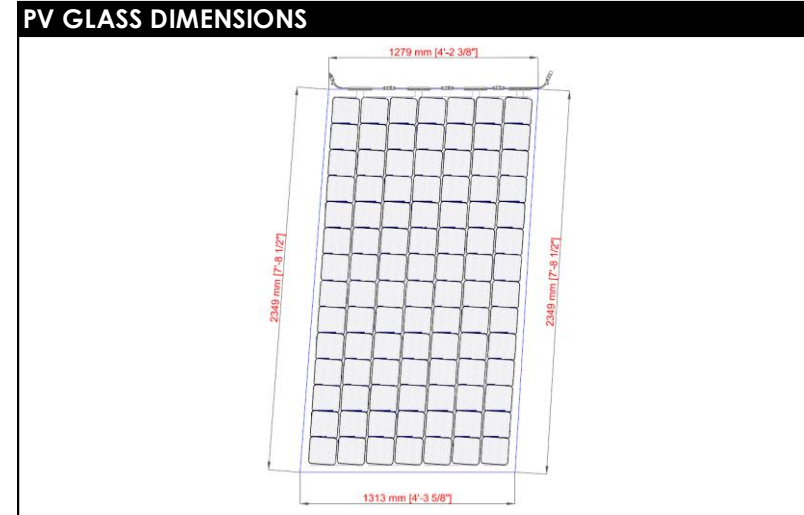


TYPE 5 – E1

M41



PHOTOVOLTAIC GLASS		2.345 x 1454	
M41 / TYPE 5 - E1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1454	mm	
Thickness	34,56	mm	
Surface area	3,41	sqm	
Weight	170	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	132,2

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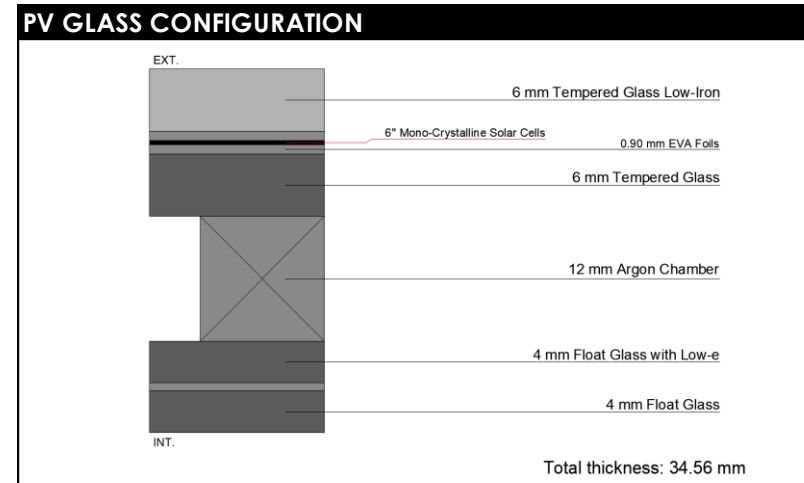
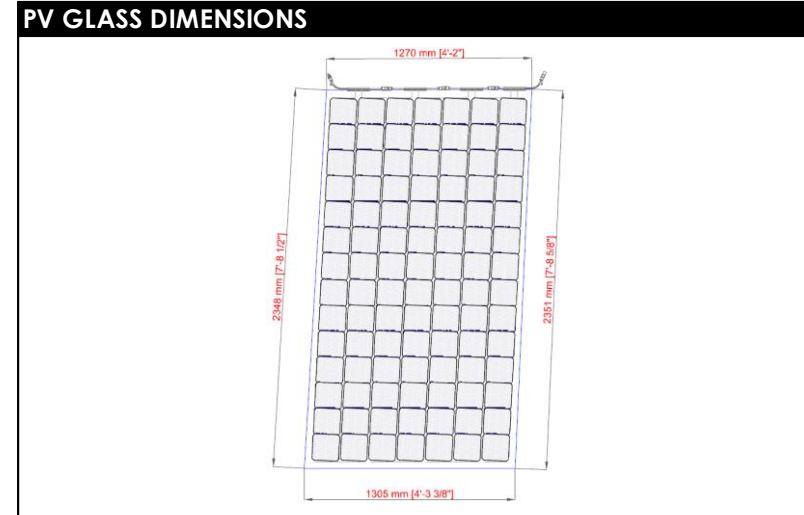
TYPE 5 – E2

M42



PHOTOVOLTAIC GLASS		2.349 x 1408	
M42 / TYPE 5 - E2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2349	mm	
Width	1408	mm	
Thickness	34,56	mm	
Surface area	3,31	sqm	
Weight	165	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	136,3

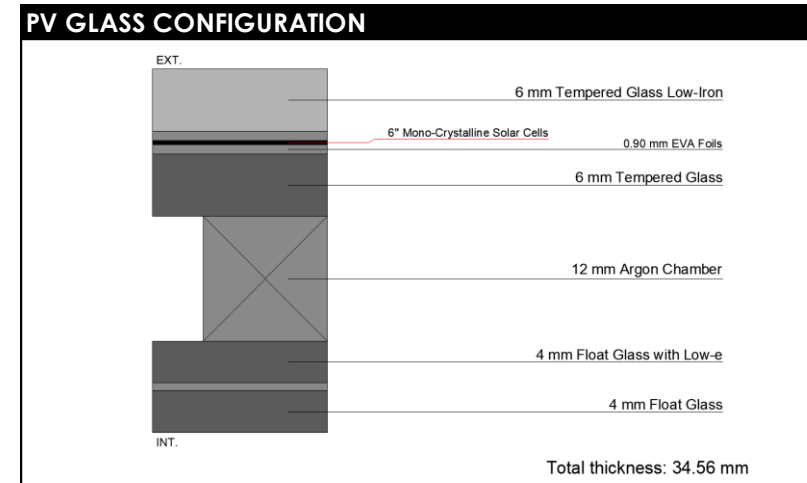
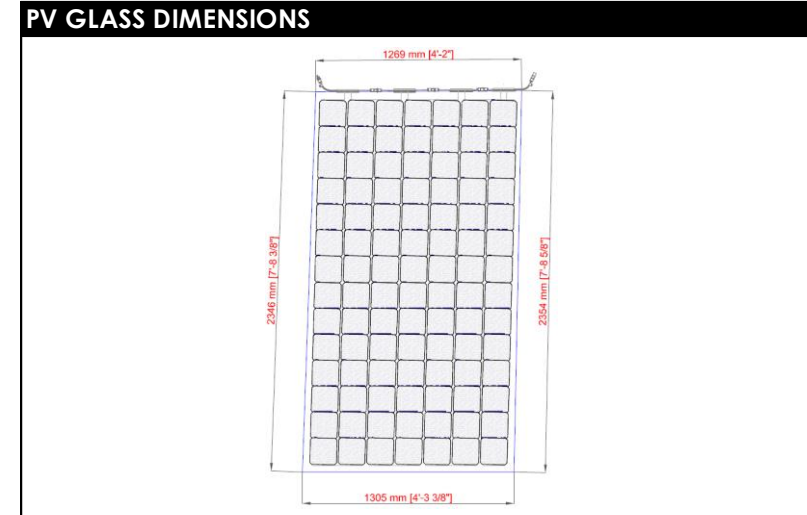


TYPE 5 – E3

M43



PHOTOVOLTAIC GLASS		2.353 x 1351	
M43 / TYPE 5 - E3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2353	mm	
Width	1351	mm	
Thickness	34,56	mm	
Surface area	3,18	sqm	
Weight	159	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,8

* All technical specifications are subject to change without notice by Onyx Solar



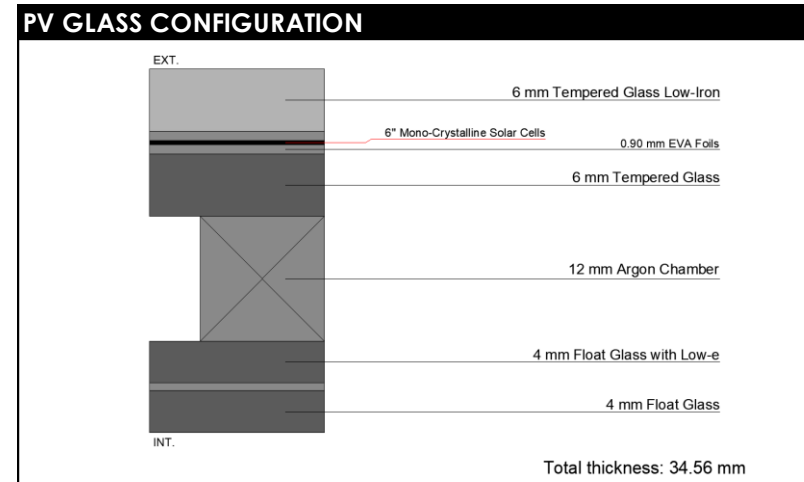
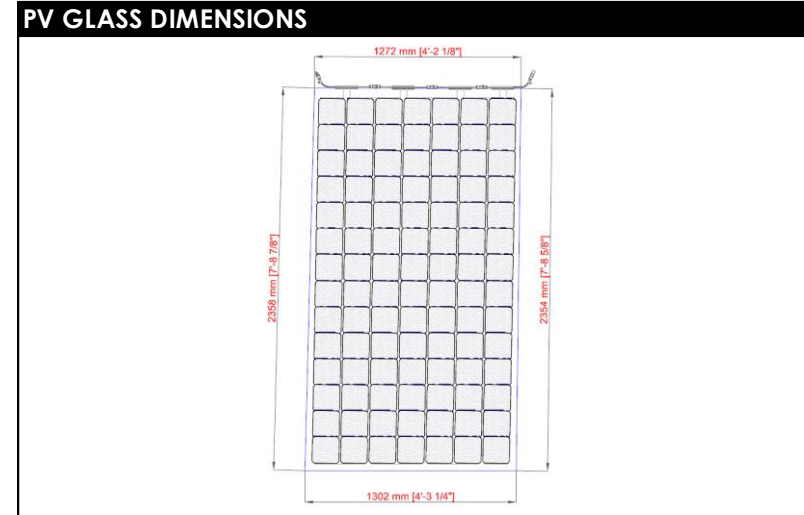
TYPE 5 – E4

M44



PHOTOVOLTAIC GLASS		2.357 x 1330	
M44 / TYPE 5 - E4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2357	mm	
Width	1330	mm	
Thickness	34,56	mm	
Surface area	3,13	sqm	
Weight	157	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	143,8



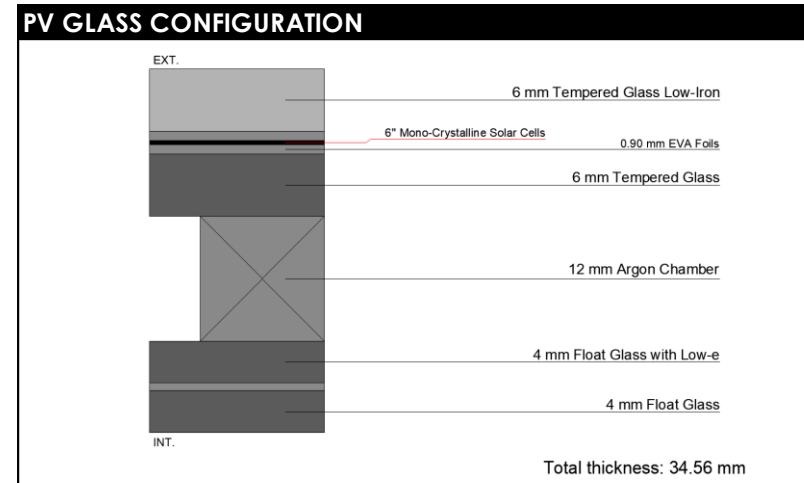
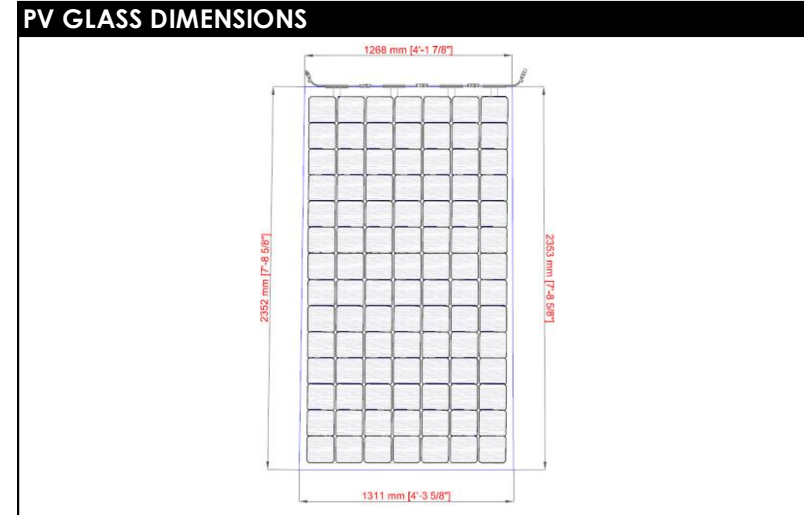
TYPE 5 – E5

M45



PHOTOVOLTAIC GLASS		2.353 x 1311	
M45 / TYPE 5 - E5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2353	mm	
Width	1311	mm	
Thickness	34,56	mm	
Surface area	3,08	sqm	
Weight	154	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,1

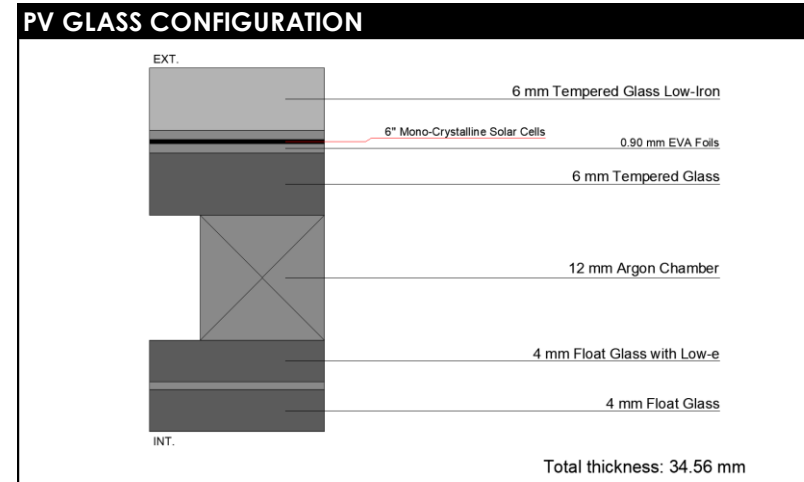
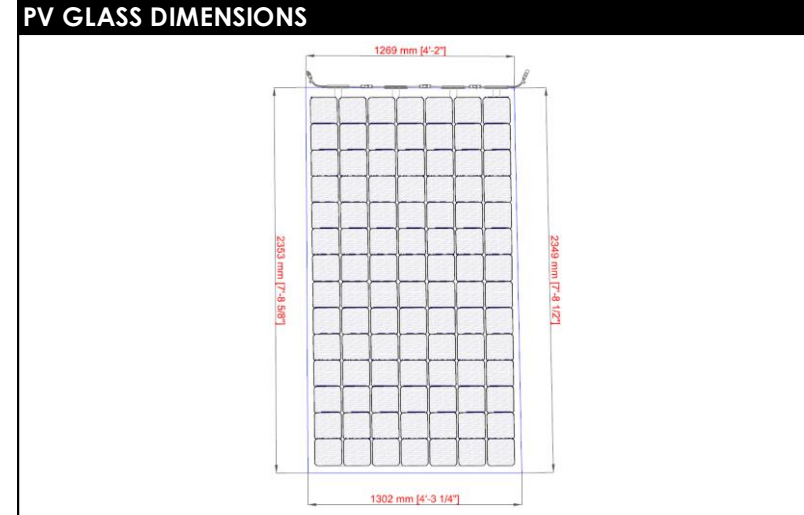


TYPE 5 – E6

M46



PHOTOVOLTAIC GLASS		2.353 x 1316	
M46 / TYPE 5 - E6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2353	mm	
Width	1316	mm	
Thickness	34,56	mm	
Surface area	3,10	sqm	
Weight	155	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,6

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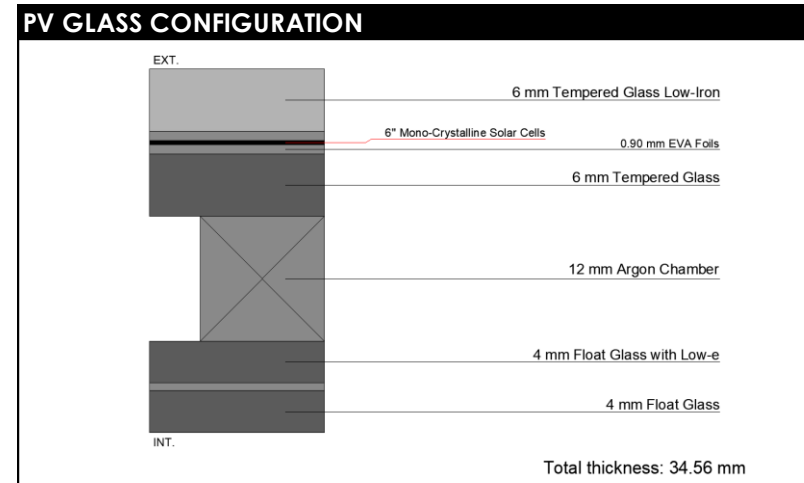
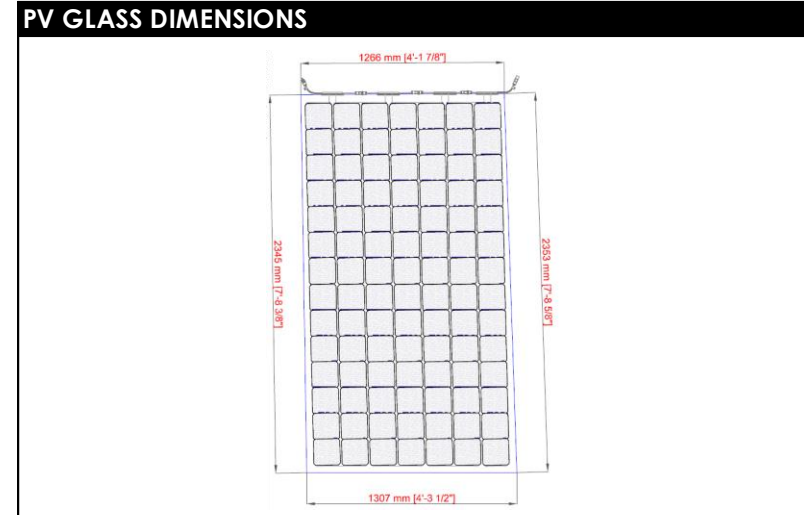
TYPE 5 – E7

M47



PHOTOVOLTAIC GLASS		2.351 x 1344	
M47 / TYPE 5 - E7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2351	mm	
Width	1344	mm	
Thickness	34,56	mm	
Surface area	3,16	sqm	
Weight	158	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,7



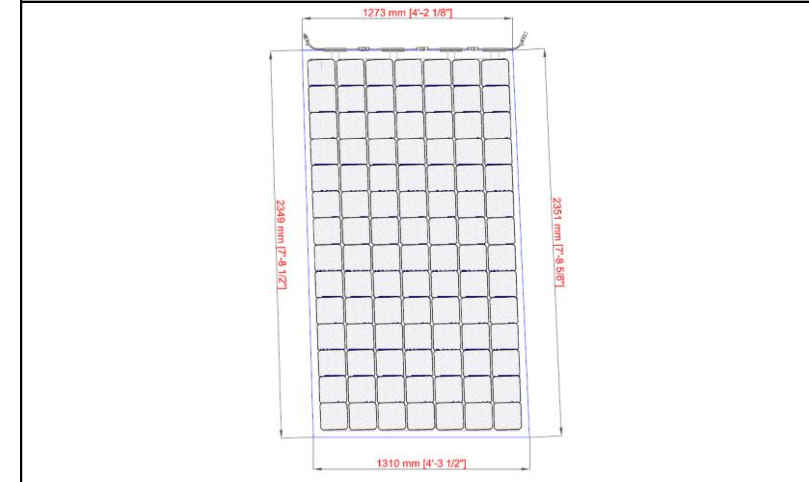
TYPE 5 – E8

M48

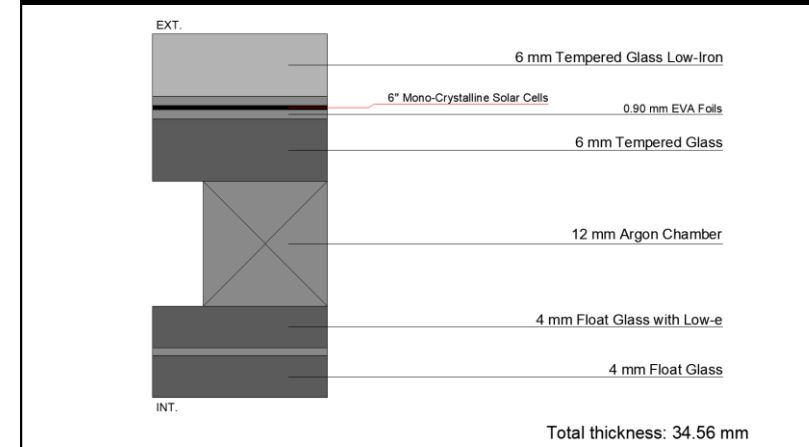


PHOTOVOLTAIC GLASS		2.349 x 1376
M48 / TYPE 5 - E8		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P_{mpp} (Wp)
Open-circuit voltage	65	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	55	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2349	mm
Width	1376	mm
Thickness	34,56	mm
Surface area	3,23	sqm
Weight	162	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	30%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C

PV GLASS DIMENSIONS



PV GLASS CONFIGURATION



GLASS PROPERTIES

	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,5



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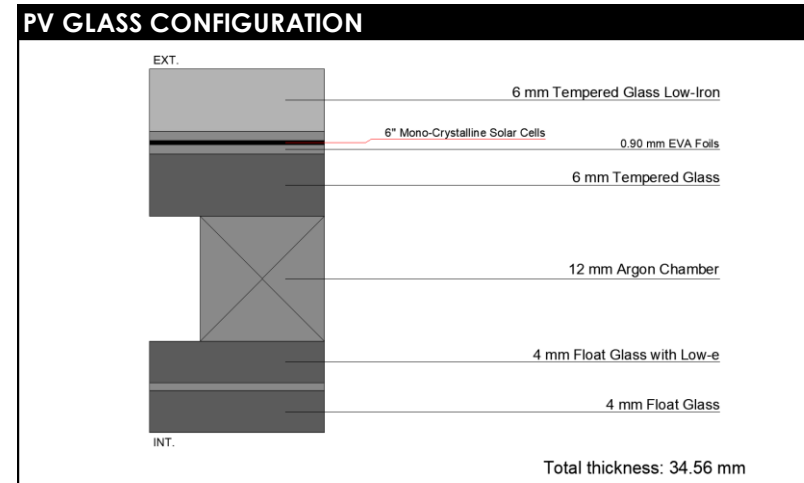
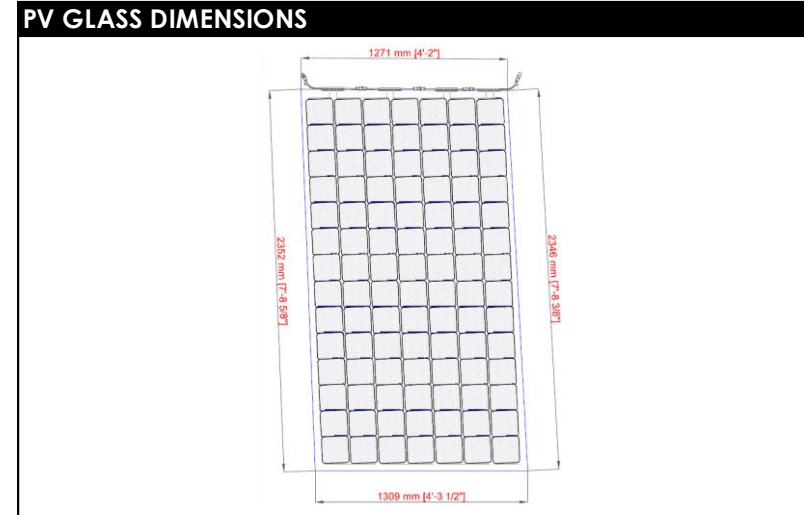
TYPE 5 – E9

M49



PHOTOVOLTAIC GLASS		2.350 x 1397	
M49 / TYPE 5 - E9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2350	mm	
Width	1397	mm	
Thickness	34,56	mm	
Surface area	3,28	sqm	
Weight	164	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	137,3



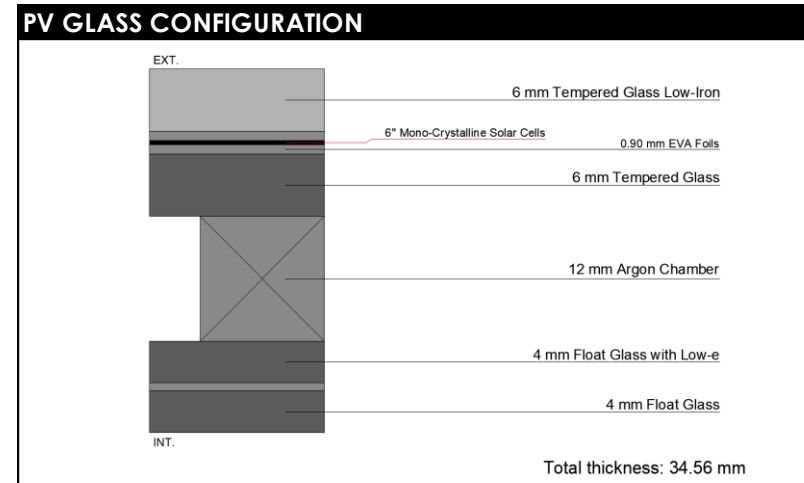
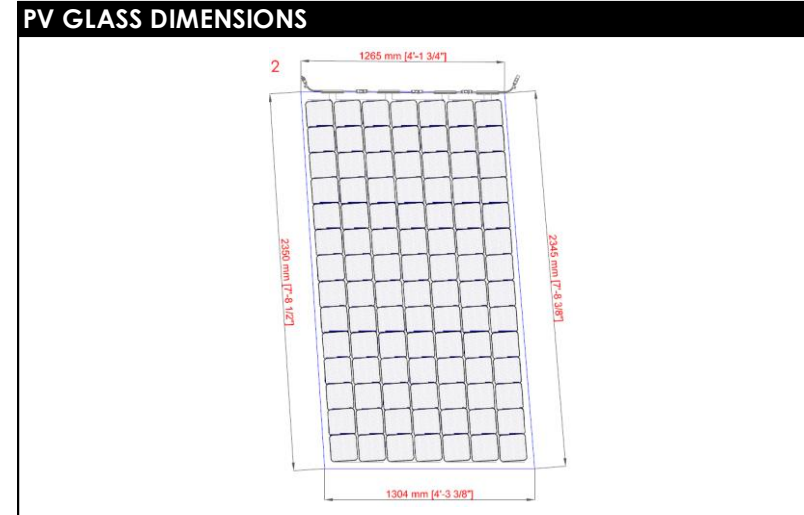
TYPE 5 – E10

M50



PHOTOVOLTAIC GLASS		2.345 x 1453	
M50 / TYPE 5 - E10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1453	mm	
Thickness	34,56	mm	
Surface area	3,41	sqm	
Weight	170	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	132,3





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 6



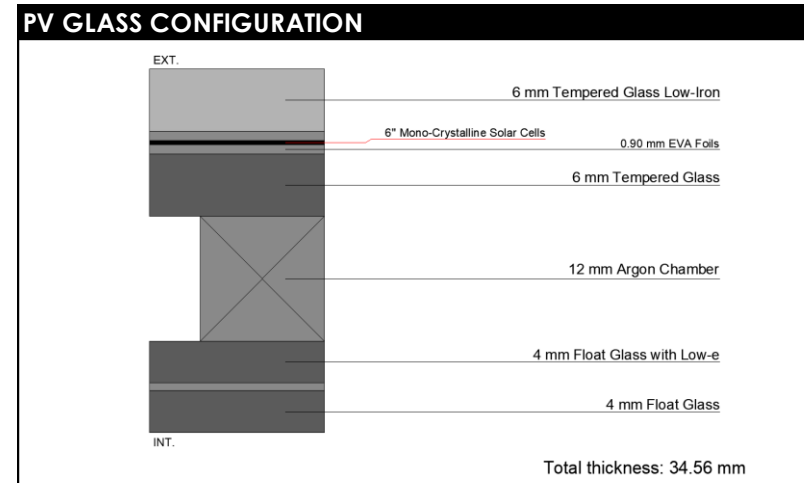
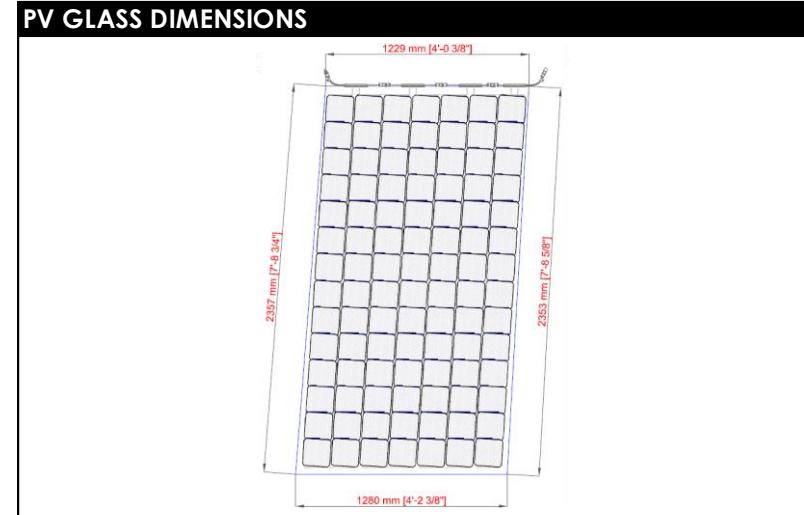
TYPE 6 – F1

M51



PHOTOVOLTAIC GLASS		2.350 x 1411	
M51 / TYPE 6 - F1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2350	mm	
Width	1411	mm	
Thickness	34,56	mm	
Surface area	3,32	sqm	
Weight	166	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	135,9



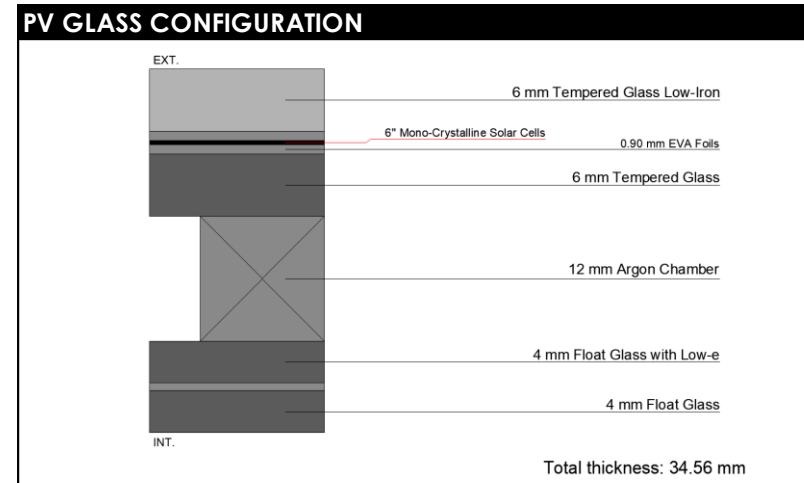
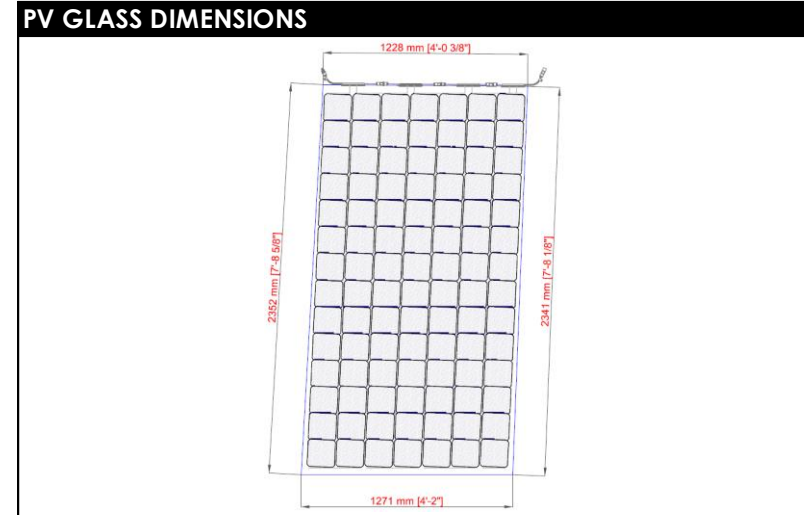
TYPE 6 – F2

M52



PHOTOVOLTAIC GLASS		2.348 x 1360	
M52 / TYPE 6 - F2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2348	mm	
Width	1360	mm	
Thickness	34,56	mm	
Surface area	3,19	sqm	
Weight	160	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,2

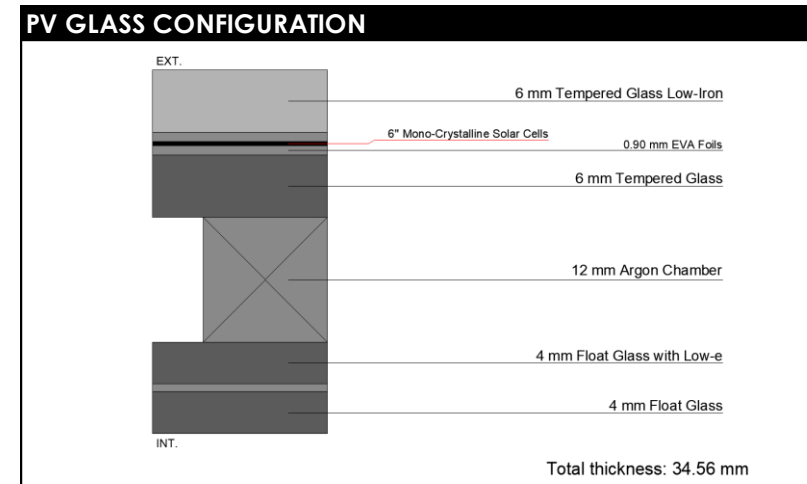
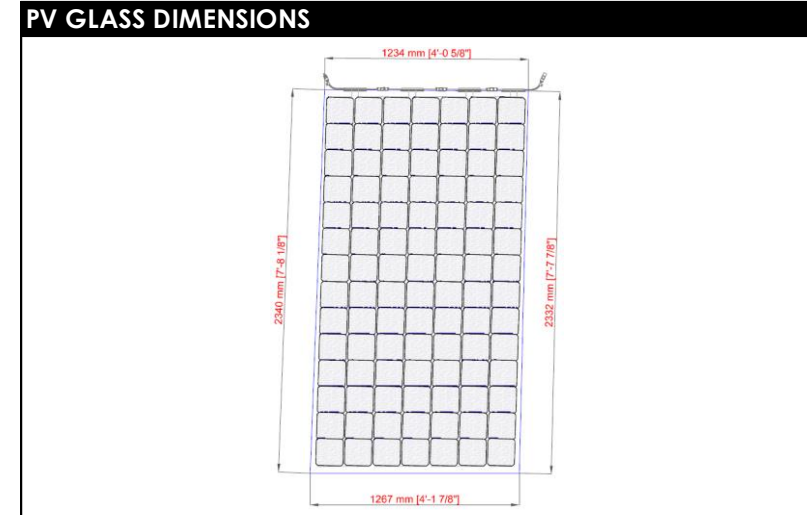


TYPE 6 – F3

M53



PHOTOVOLTAIC GLASS		
M53 / TYPE 6 - F3	2.339 x 1321	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P_{mpp} (Wp)
Open-circuit voltage	65	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	55	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2339	mm
Width	1321	mm
Thickness	34,56	mm
Surface area	3,09	sqm
Weight	154	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	27%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,9

* All technical specifications are subject to change without notice by Onyx Solar

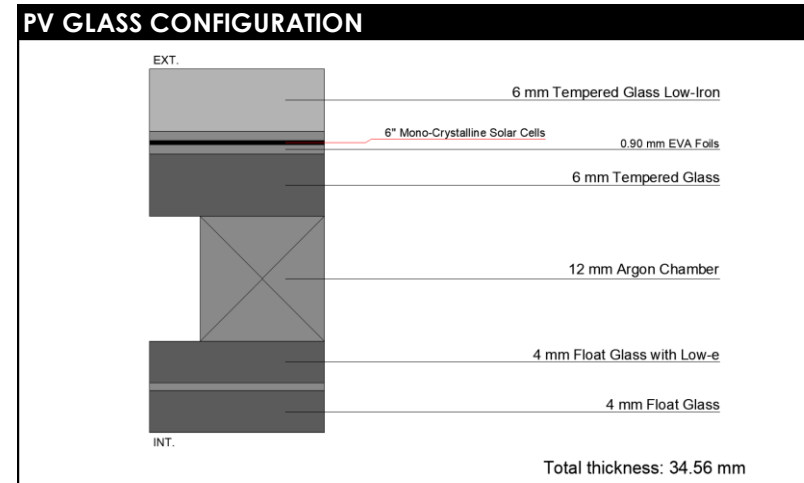
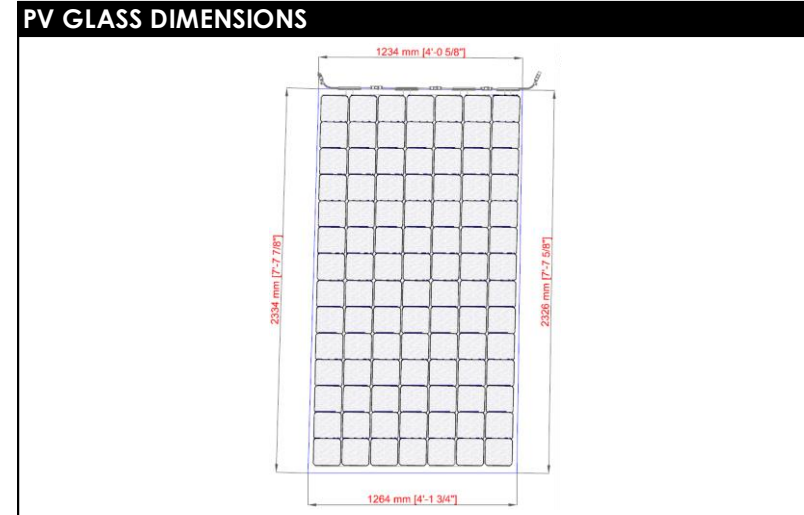


TYPE 6 – F4

M54



PHOTOVOLTAIC GLASS		2.333 x 1300	
M54 / TYPE 6 - F4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2333	mm	
Width	1300	mm	
Thickness	34,56	mm	
Surface area	3,03	sqm	
Weight	152	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	26%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	148,6



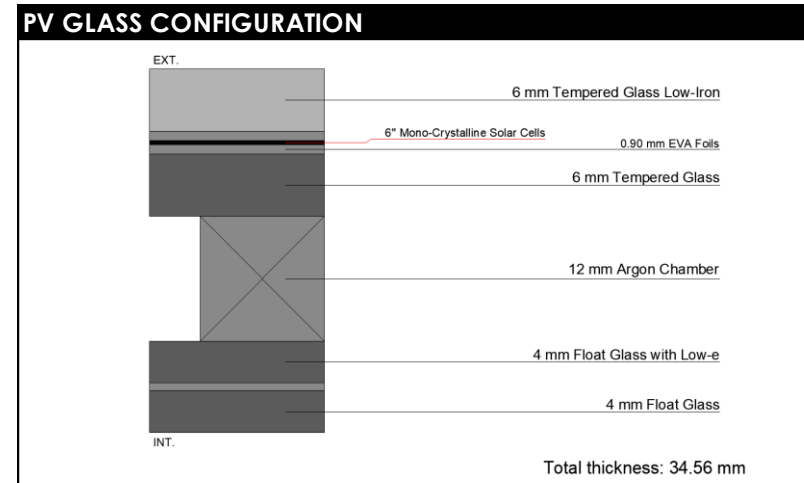
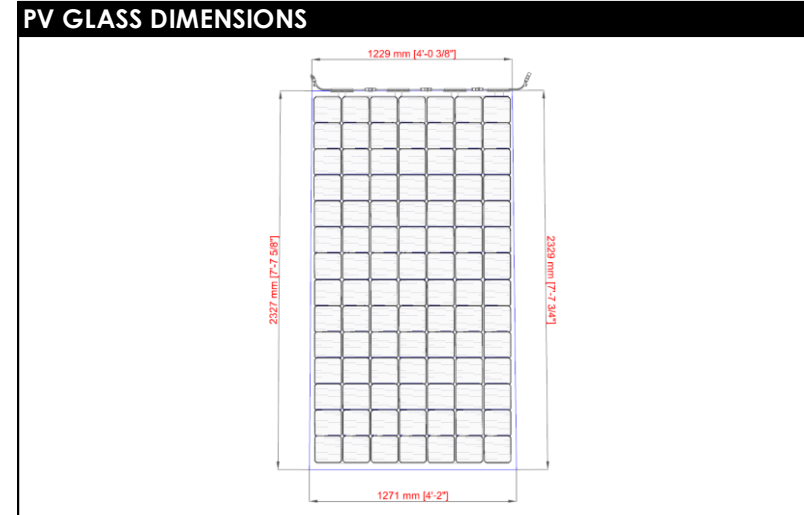
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 6 – F5

M55



PHOTOVOLTAIC GLASS		2.329 x 1271	
M55 / TYPE 6 - F5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2329	mm	
Width	1271	mm	
Thickness	34,56	mm	
Surface area	2,96	sqm	
Weight	148	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	152,3

* All technical specifications are subject to change without notice by Onyx Solar



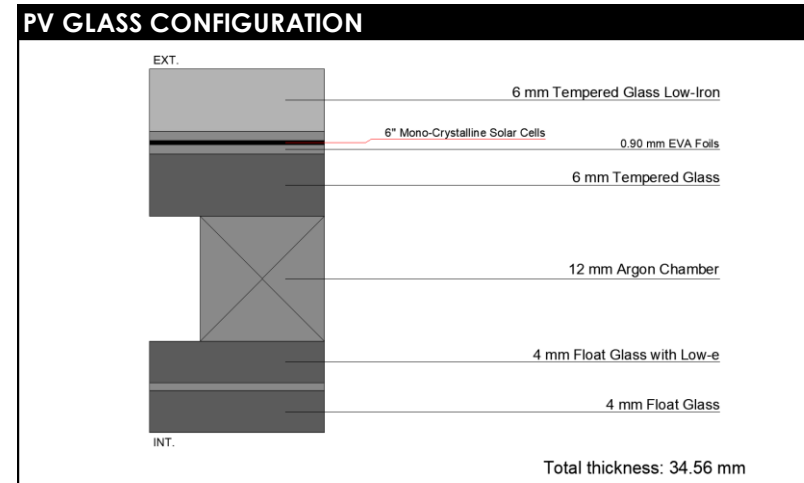
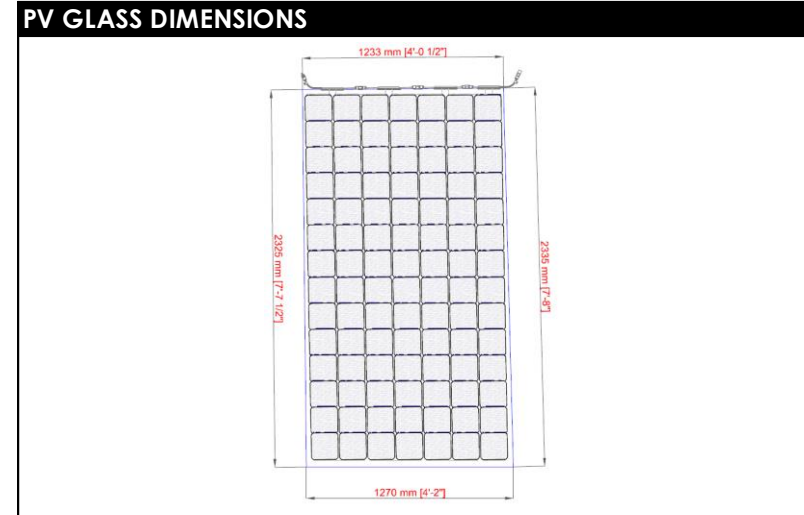
TYPE 6 – F6

M56



PHOTOVOLTAIC GLASS		2.335 x 1293	
M56 / TYPE 6 - F6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	1293	mm	
Thickness	34,56	mm	
Surface area	3,02	sqm	
Weight	151	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,3



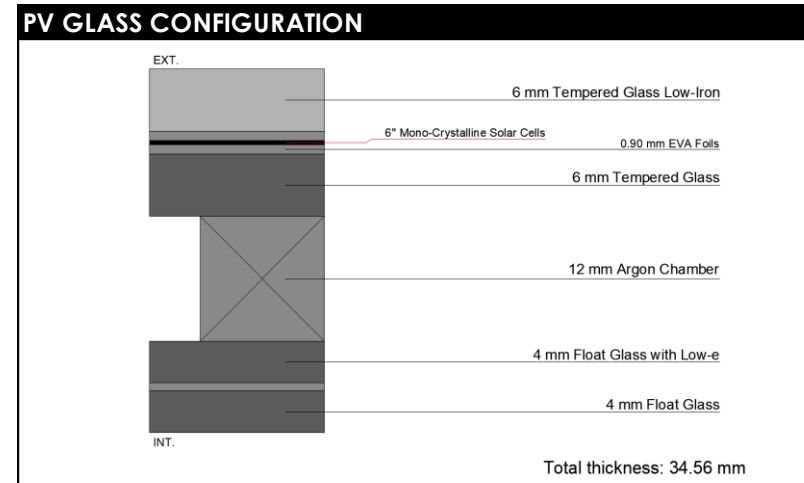
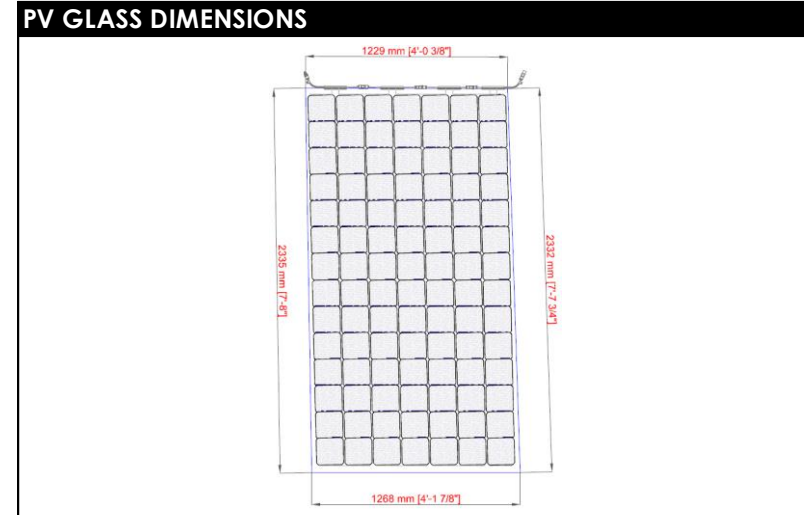
TYPE 6 – F7

M57



PHOTOVOLTAIC GLASS		2.335 x 1306	
M57 / TYPE 6 - F7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	1306	mm	
Thickness	34,56	mm	
Surface area	3,05	sqm	
Weight	152	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	26%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	147,8



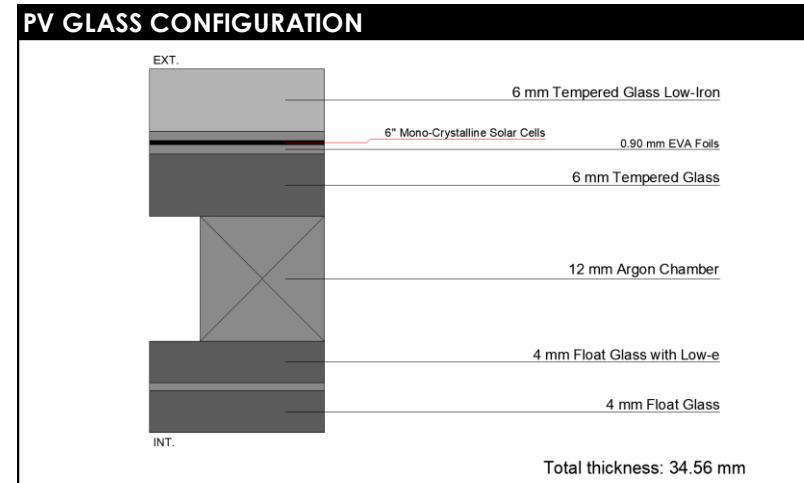
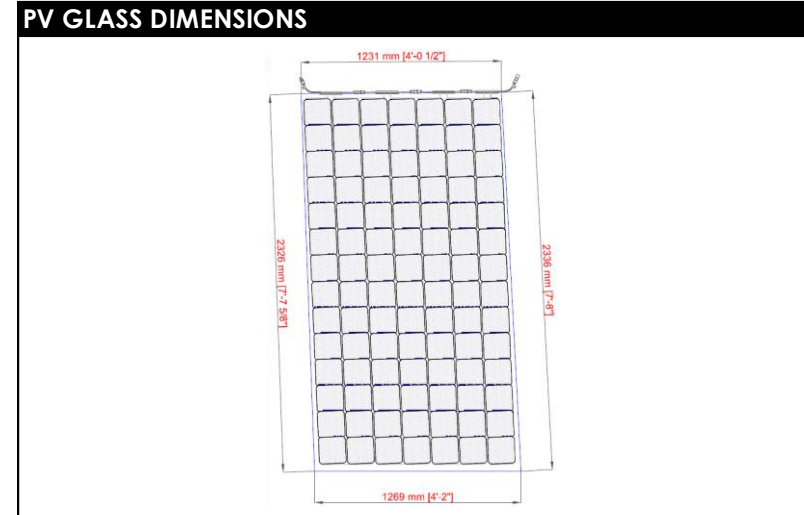
TYPE 6 – F8

M58



PHOTOVOLTAIC GLASS		2.333 x 1351	
M58 / TYPE 6 - F8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2333	mm	
Width	1351	mm	
Thickness	34,56	mm	
Surface area	3,15	sqm	
Weight	158	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	143,0



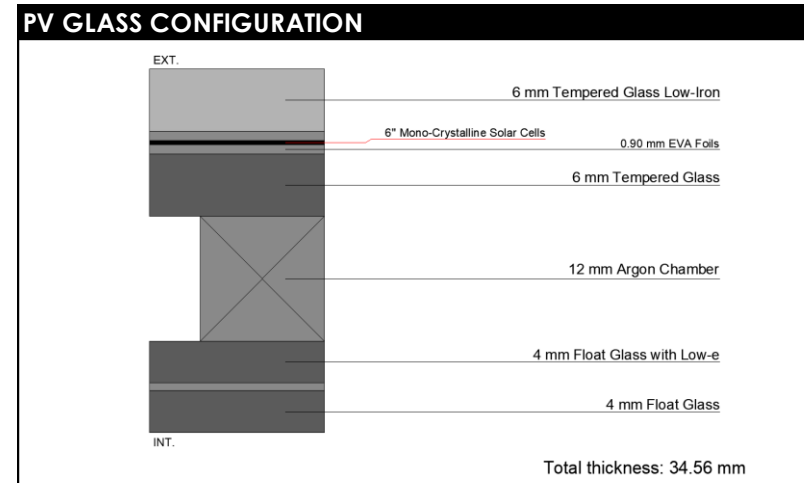
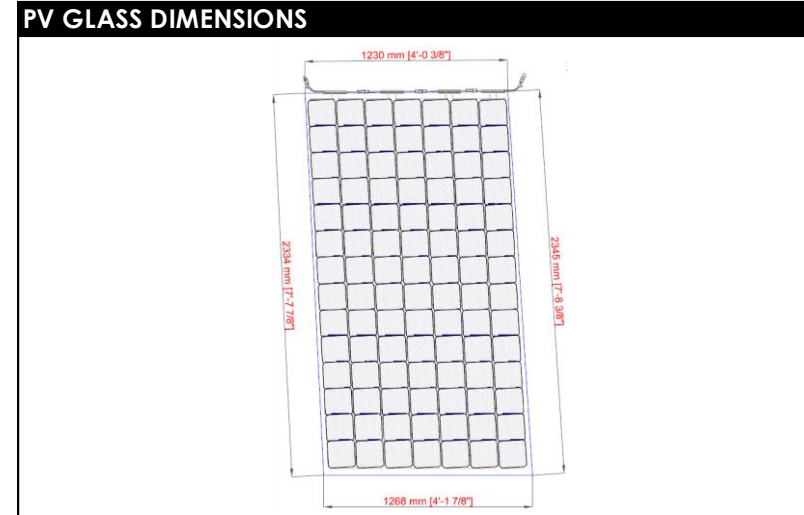
TYPE 6 – F9

M59



PHOTOVOLTAIC GLASS		2.341 x 1380	
M59 / TYPE 6 - F9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2341	mm	
Width	1380	mm	
Thickness	34,56	mm	
Surface area	3,23	sqm	
Weight	162	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,5



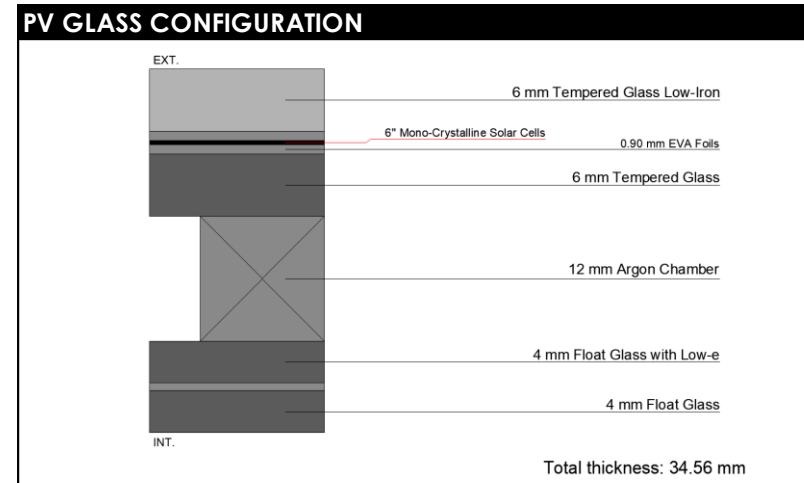
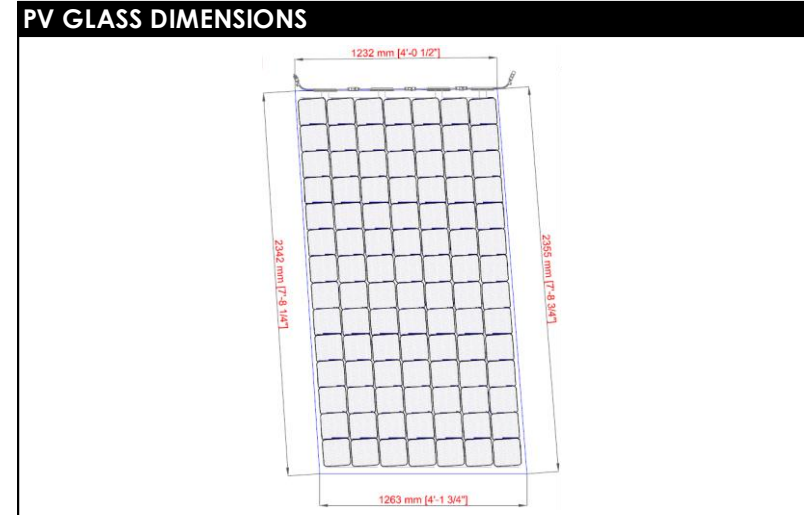
TYPE 6 – F10

M60



PHOTOVOLTAIC GLASS		2.348 x 1413	
M60 / TYPE 6 - F10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2348	mm	
Width	1413	mm	
Thickness	34,56	mm	
Surface area	3,32	sqm	
Weight	166	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	135,9





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 7

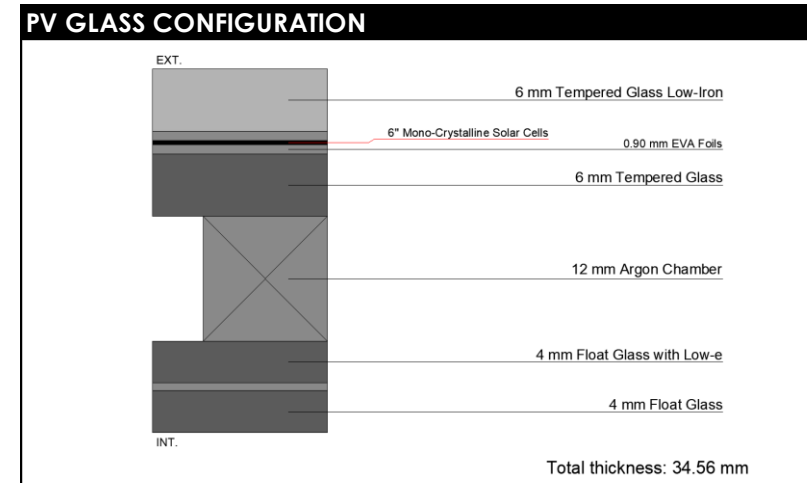
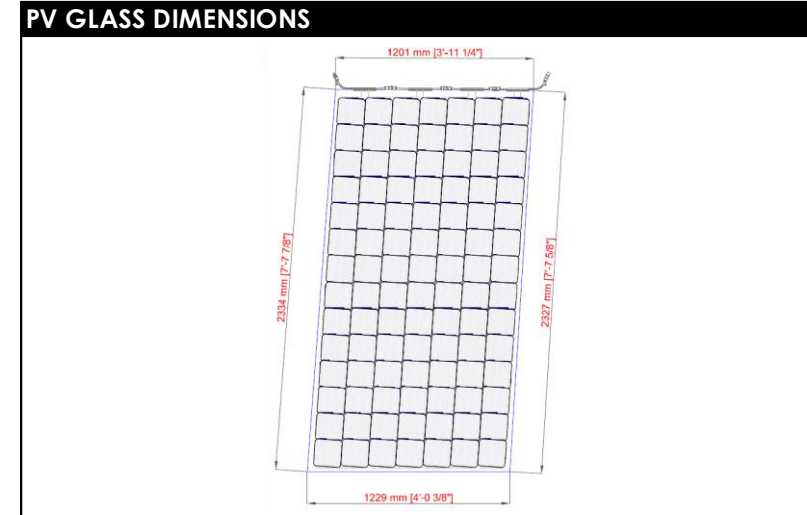


TYPE 7 – G1

M61



PHOTOVOLTAIC GLASS		2.328 x 1373
M61 / TYPE 7 - G1		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P _{mpp} (Wp)
Open-circuit voltage	65	V _{oc} (V)
Short-circuit current	8,71	I _{sc} (A)
Voltage at nominal power	55	V _{mpp} (V)
Current at nominal power	8,20	I _{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2328	mm
Width	1373	mm
Thickness	34,56	mm
Surface area	3,20	sqm
Weight	160	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	29%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V _{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P _{mpp}	-0,38	%/°C
Temperature Coefficient of V _{oc}	-0,29	%/°C
Temperature Coefficient of I _{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,0



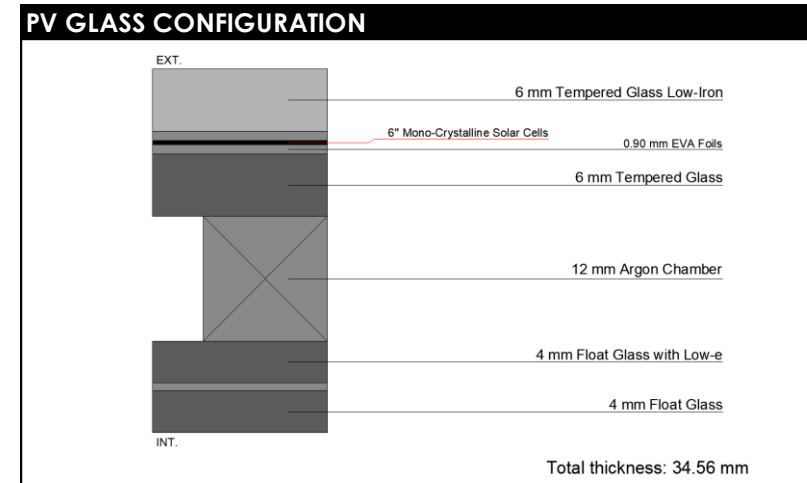
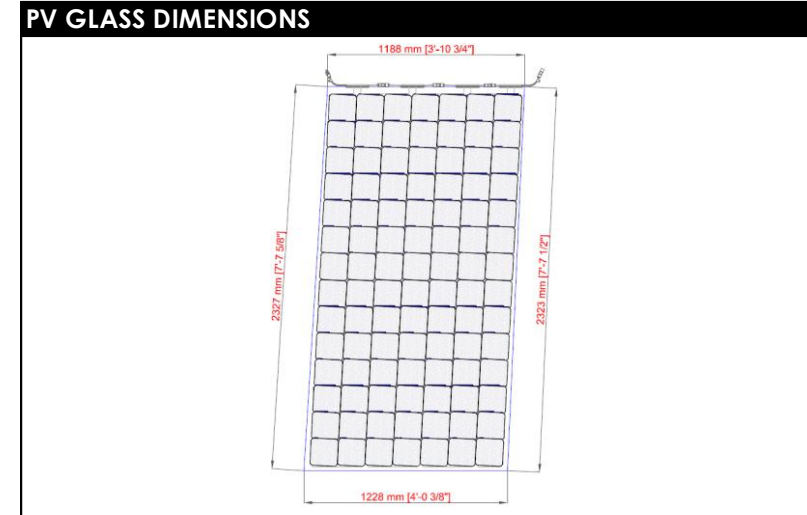
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TYPE 7 – G2

M62



PHOTOVOLTAIC GLASS		
M62 / TYPE 7 - G2	2.332 x 1331	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P_{mpp} (Wp)
Open-circuit voltage	65	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	55	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2332	mm
Width	1331	mm
Thickness	34,56	mm
Surface area	3,10	sqm
Weight	155	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	27%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,2

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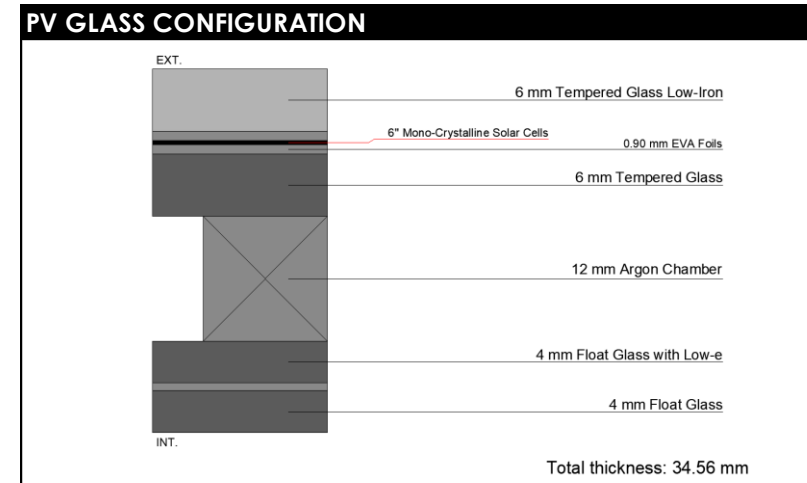
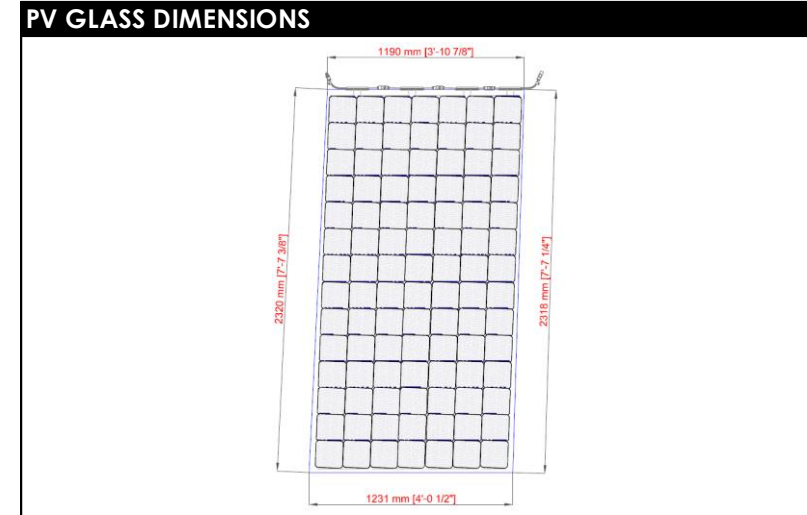


TYPE 7 – G3

M63



PHOTOVOLTAIC GLASS		2.318 x 1300	
M63 / TYPE 7 - G3		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp}	(Wp)
Open-circuit voltage	65	V_{oc}	(V)
Short-circuit current	8,71	I_{sc}	(A)
Voltage at nominal power	55	V_{mpp}	(V)
Current at nominal power	8,20	I_{mpp}	(A)
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2318	mm	
Width	1300	mm	
Thickness	34,56	mm	
Surface area	3,01	sqm	
Weight	151	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys}	(V)
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,6

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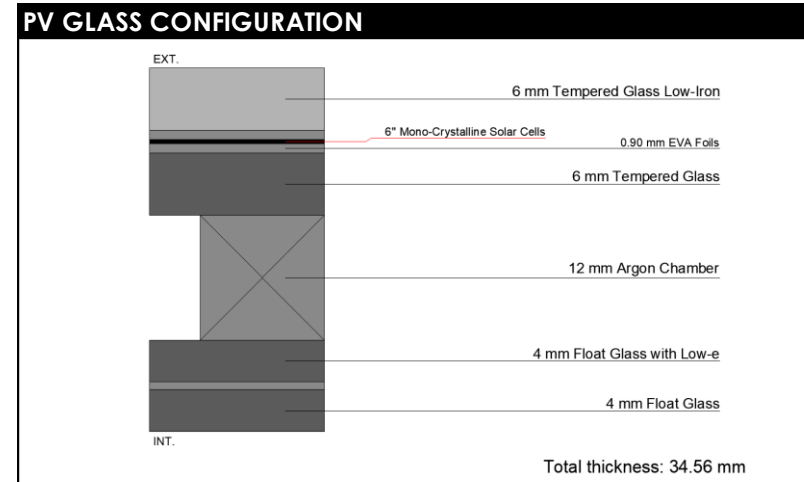
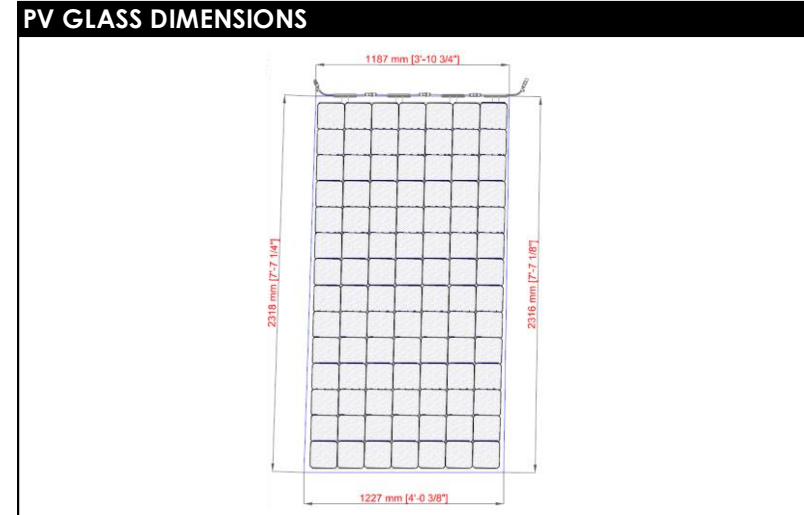
TYPE 7 – G4

M64



PHOTOVOLTAIC GLASS		1.317 x 1261	
M64 / TYPE 7 - G4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	1317	mm	
Width	1261	mm	
Thickness	34,56	mm	
Surface area	1,66	sqm	
Weight	83	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	-36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	-36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	271,4

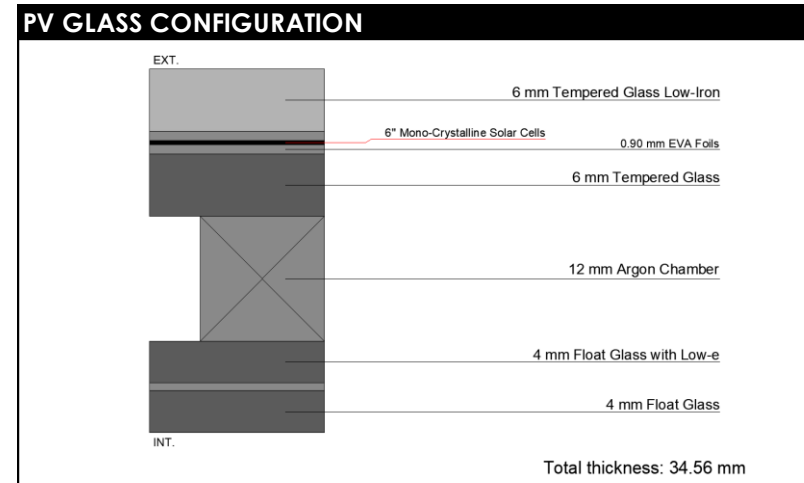
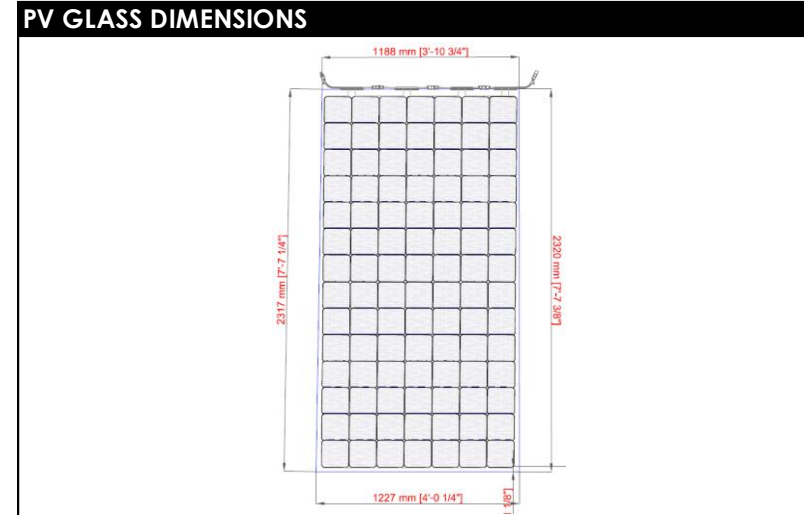


TYPE 7 – G5

M65



PHOTOVOLTAIC GLASS		2.320 x 1227	
M65 / TYPE 7 - G5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2320	mm	
Width	1227	mm	
Thickness	34,56	mm	
Surface area	2,85	sqm	
Weight	142	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	158,3

* All technical specifications are subject to change without notice by Onyx Solar

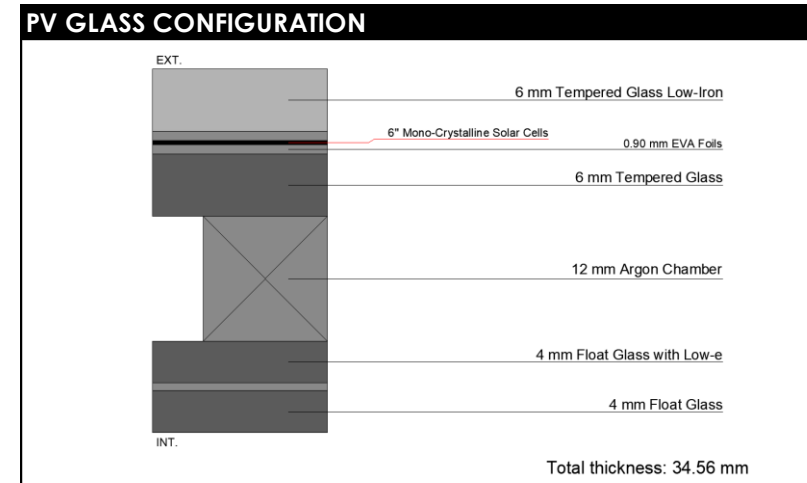
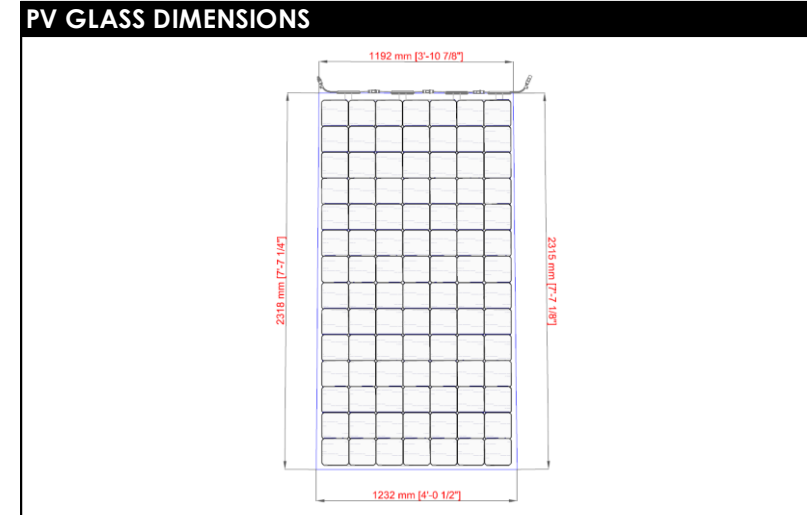


TYPE 7 – G6

M66



PHOTOVOLTAIC GLASS		2.318 x 1232	
M66 / TYPE 7 - G6		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp}	(Wp)
Open-circuit voltage	65	V_{oc}	(V)
Short-circuit current	8,71	I_{sc}	(A)
Voltage at nominal power	55	V_{mpp}	(V)
Current at nominal power	8,20	I_{mpp}	(A)
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2318	mm	
Width	1232	mm	
Thickness	34,56	mm	
Surface area	2,86	sqm	
Weight	143	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys}	(V)
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,8

* All technical specifications are subject to change without notice by Onyx Solar

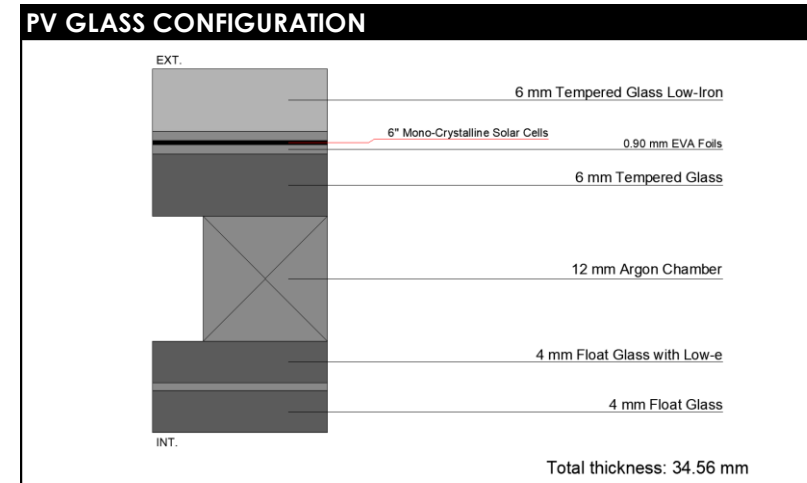
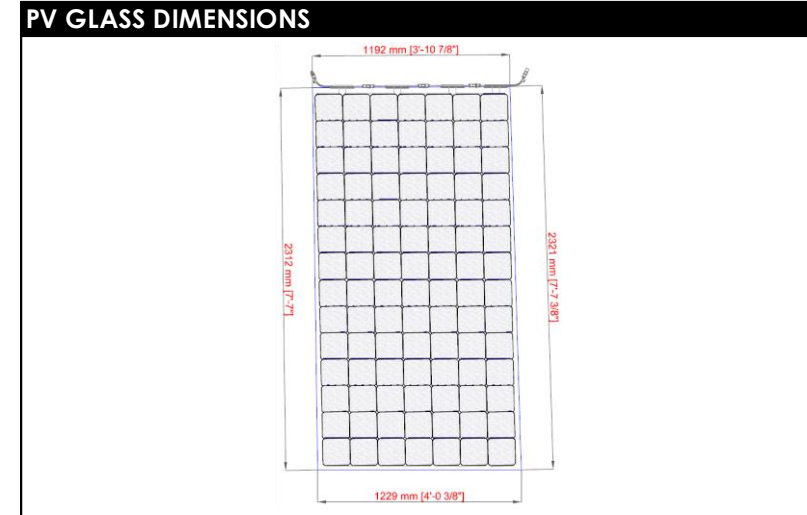


TYPE 7 – G7

M67



PHOTOVOLTAIC GLASS		2.320 x 1260
M67 / TYPE 7 - G7		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P _{mpp} (Wp)
Open-circuit voltage	65	V _{oc} (V)
Short-circuit current	8,71	I _{sc} (A)
Voltage at nominal power	55	V _{mpp} (V)
Current at nominal power	8,20	I _{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2320	mm
Width	1260	mm
Thickness	34,56	mm
Surface area	2,92	sqm
Weight	146	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	23%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V _{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P _{mpp}	-0,38	%/°C
Temperature Coefficient of V _{oc}	-0,29	%/°C
Temperature Coefficient of I _{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	154,2



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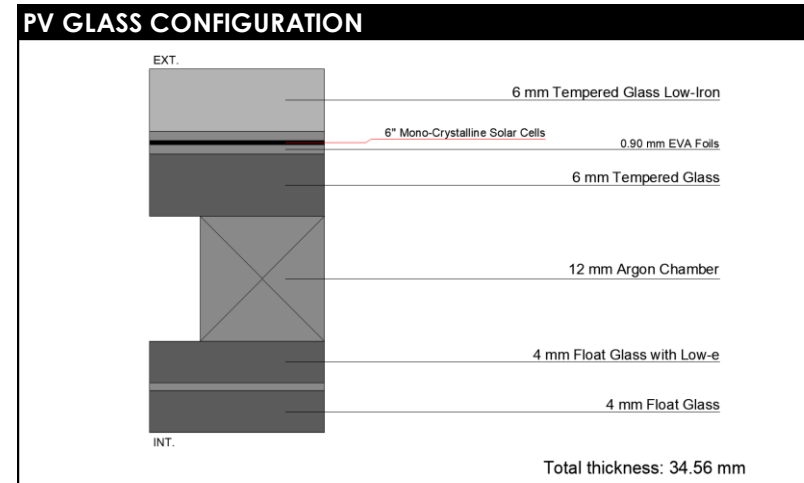
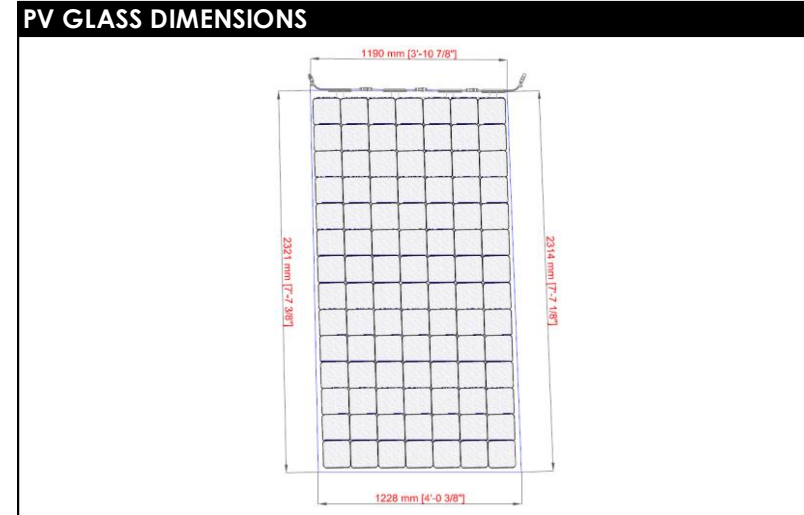
TYPE 7 – G8

M68



PHOTOVOLTAIC GLASS		2.321 x 1276	
M68 / TYPE 7 - G8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2321	mm	
Width	1276	mm	
Thickness	34,56	mm	
Surface area	2,96	sqm	
Weight	148	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	152,2



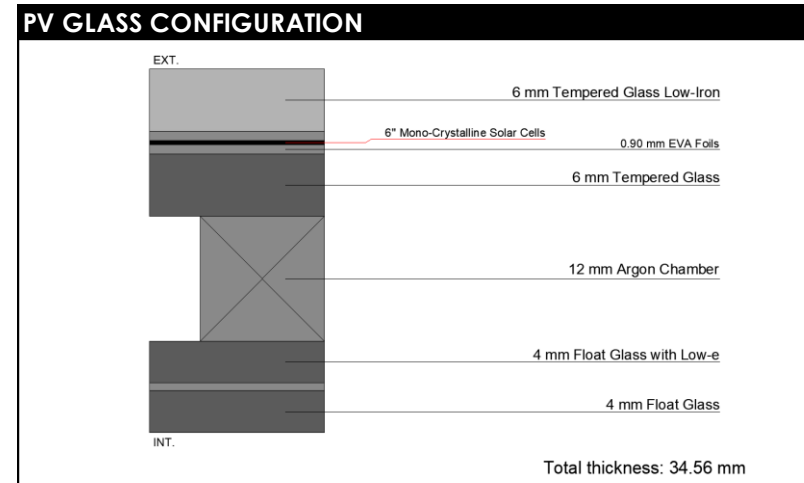
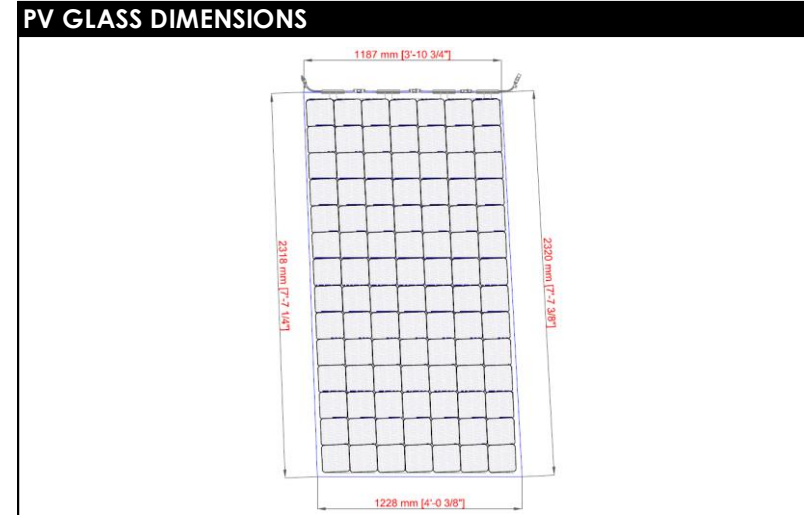
TYPE 7 – G9

M69



PHOTOVOLTAIC GLASS		2.316 x 1311	
M69 / TYPE 7 - G9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2316	mm	
Width	1311	mm	
Thickness	34,56	mm	
Surface area	3,04	sqm	
Weight	152	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	26%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	148,5



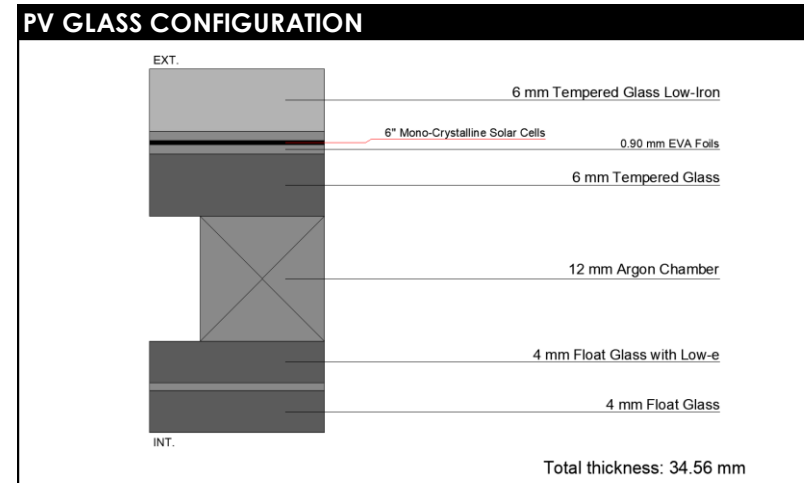
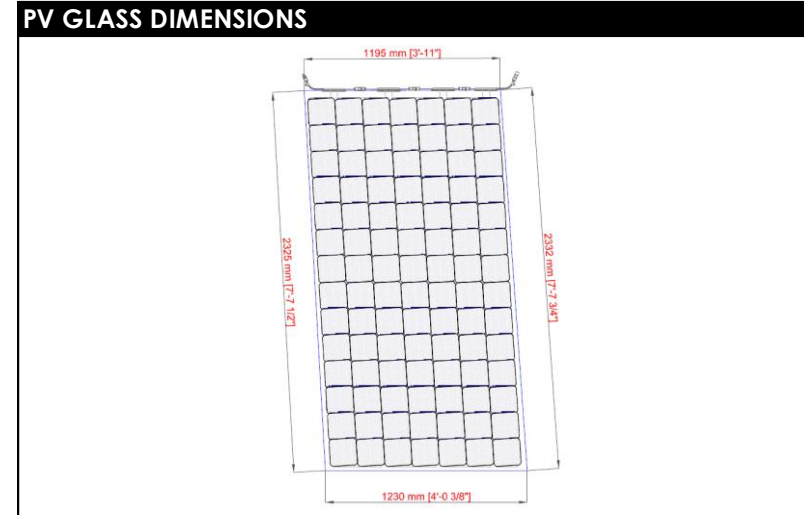
TYPE 7 – G10

M70



PHOTOVOLTAIC GLASS		2.326 x 1359	
M70 / TYPE 7 - G10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2326	mm	
Width	1359	mm	
Thickness	34,56	mm	
Surface area	3,16	sqm	
Weight	158	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,6





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 8

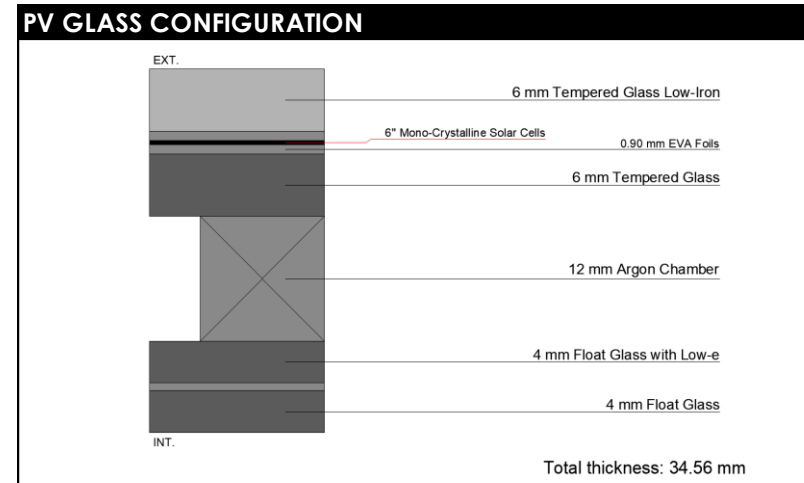
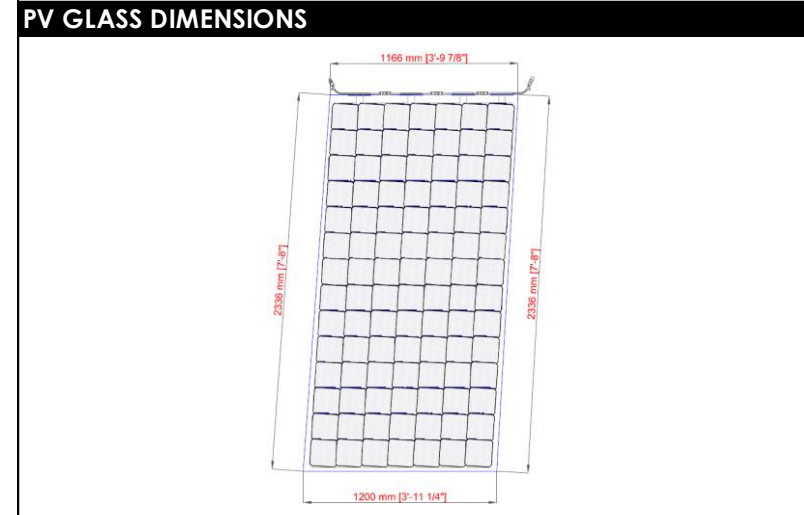


TYPE 8 – H1

M71



PHOTOVOLTAIC GLASS		
M71 / TYPE 8 - H1	2.332 x 1333	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P_{mpp} (Wp)
Open-circuit voltage	65	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	55	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2332	mm
Width	1333	mm
Thickness	34,56	mm
Surface area	3,11	sqm
Weight	155	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	27%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,0



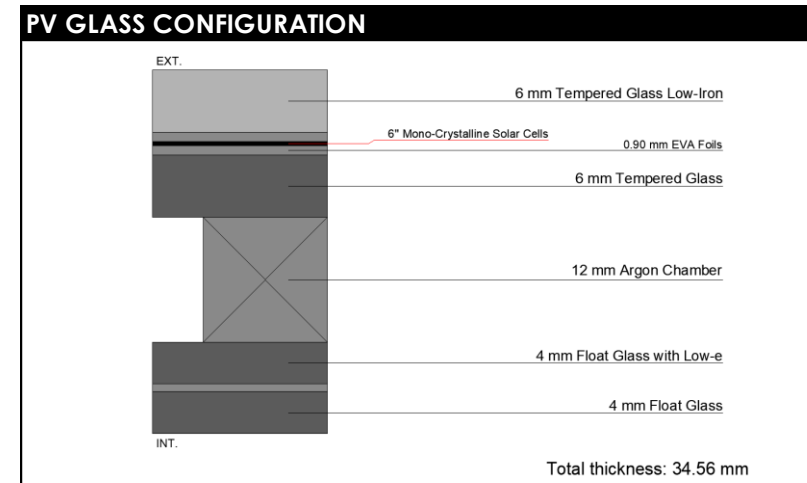
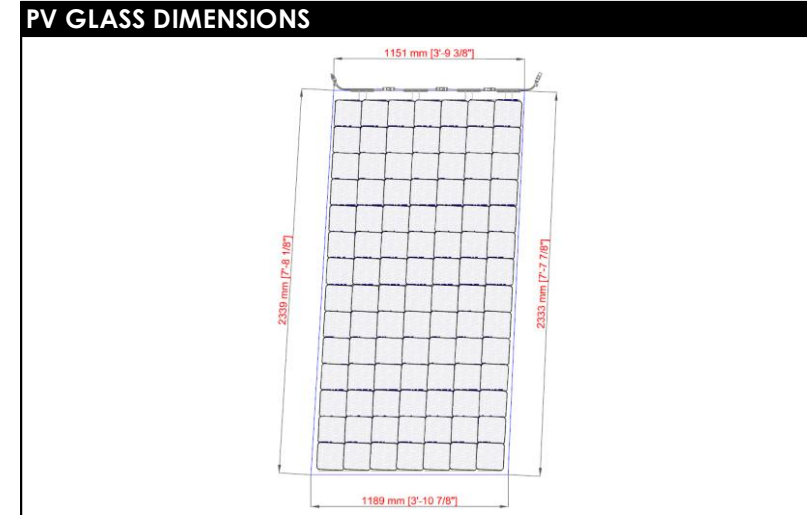
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TYPE 8 – H2

M72



PHOTOVOLTAIC GLASS		2.335 x 1289	
M72 / TYPE 8 - H2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	1289	mm	
Thickness	34,56	mm	
Surface area	3,01	sqm	
Weight	150	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,8



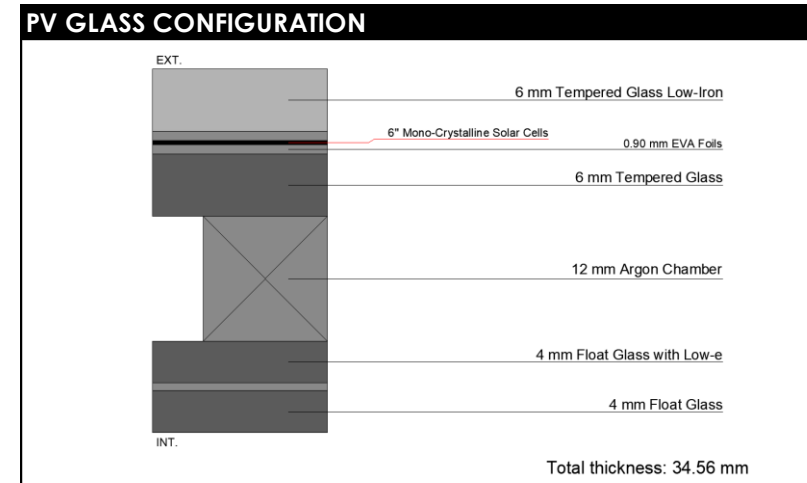
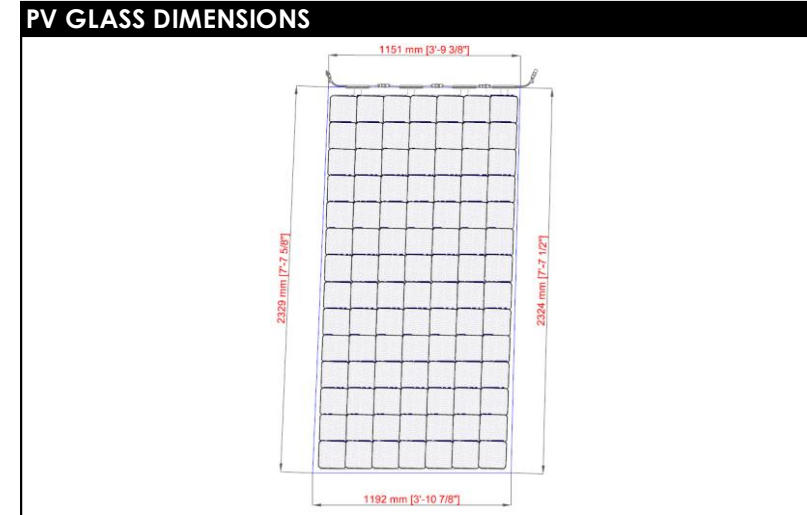
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 8 – H3

M73



PHOTOVOLTAIC GLASS		2.324 x 1246	
M73 / TYPE 8 - H3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2324	mm	
Width	1246	mm	
Thickness	34,56	mm	
Surface area	2,90	sqm	
Weight	145	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	22%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	22%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	155,7



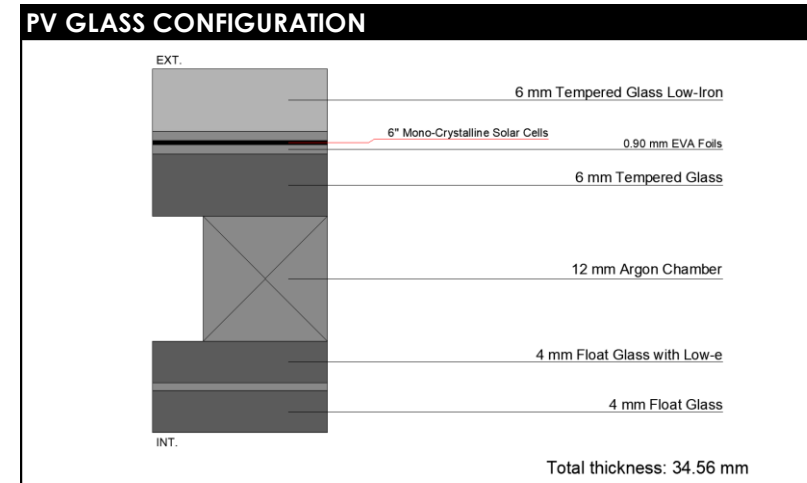
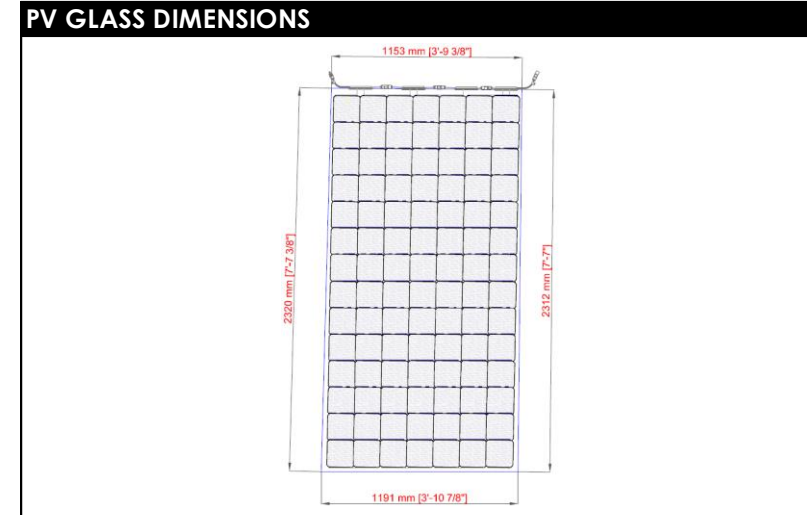
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TYPE 8 – H4

M74



PHOTOVOLTAIC GLASS		2.320 x 1215	
M74 / TYPE 8 - H4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2320	mm	
Width	1215	mm	
Thickness	34,56	mm	
Surface area	2,82	sqm	
Weight	141	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,9



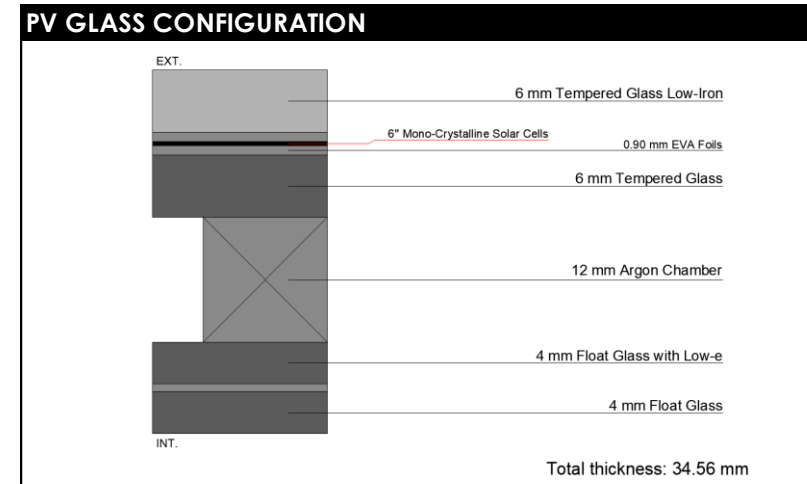
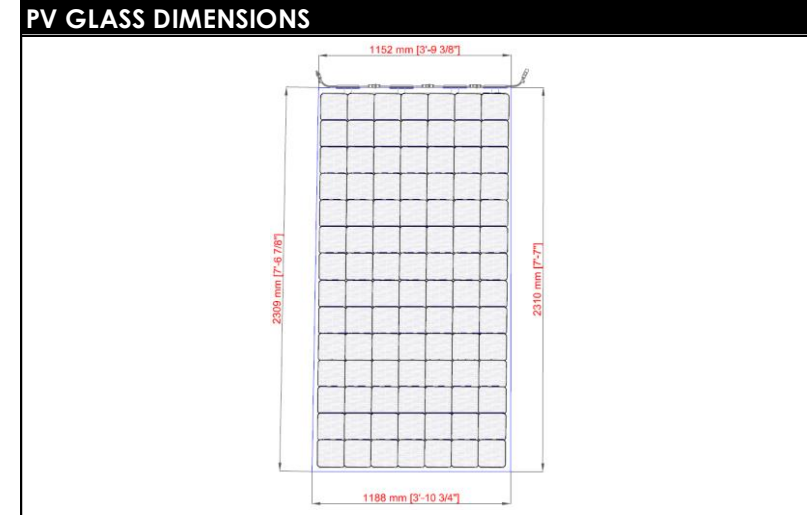
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TYPE 8 – H5

M75



PHOTOVOLTAIC GLASS		2.333 x 1195	
M75 / TYPE 8 - H5		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp}	(Wp)
Open-circuit voltage	65	V_{oc}	(V)
Short-circuit current	8,71	I_{sc}	(A)
Voltage at nominal power	55	V_{mpp}	(V)
Current at nominal power	8,20	I_{mpp}	(A)
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2333	mm	
Width	1195	mm	
Thickness	34,56	mm	
Surface area	2,79	sqm	
Weight	139	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	19%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys}	(V)
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	19%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	161,7



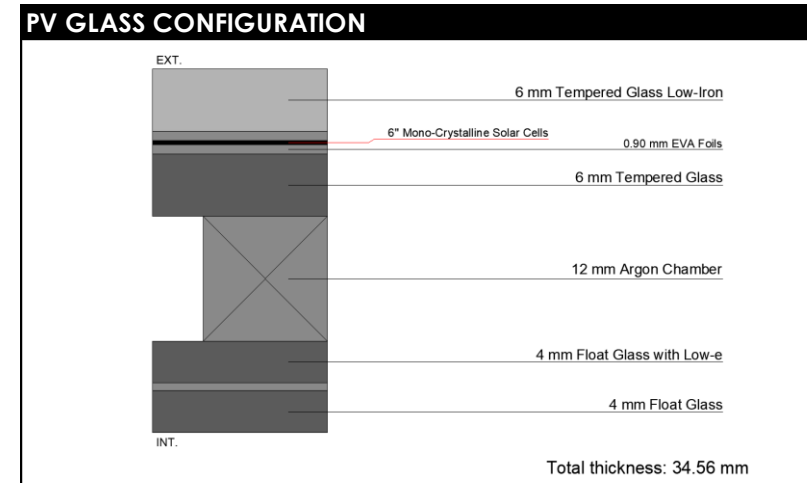
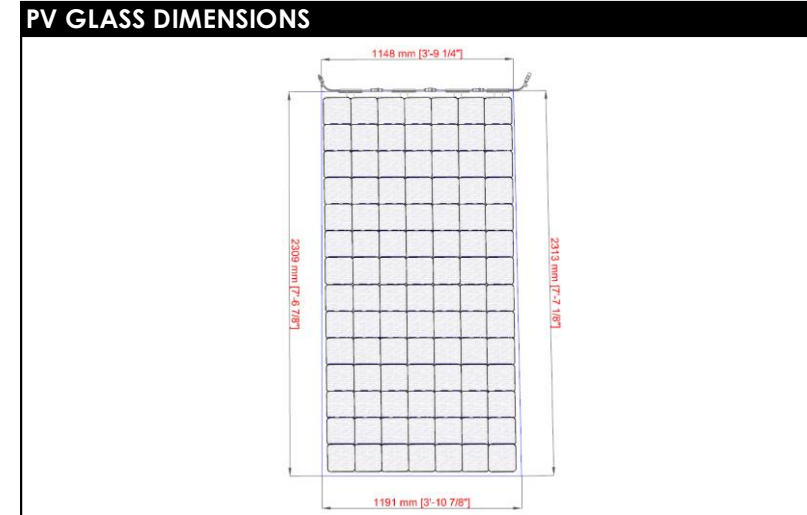
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 8 – H6

M76



PHOTOVOLTAIC GLASS		2.313 x 1197	
M76 / TYPE 8 - H6		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp}	(Wp)
Open-circuit voltage	65	V_{oc}	(V)
Short-circuit current	8,71	I_{sc}	(A)
Voltage at nominal power	55	V_{mpp}	(V)
Current at nominal power	8,20	I_{mpp}	(A)
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2313	mm	
Width	1197	mm	
Thickness	34,56	mm	
Surface area	2,77	sqm	
Weight	138	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	19%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys}	(V)
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	19%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	162,8

* All technical specifications are subject to change without notice by Onyx Solar



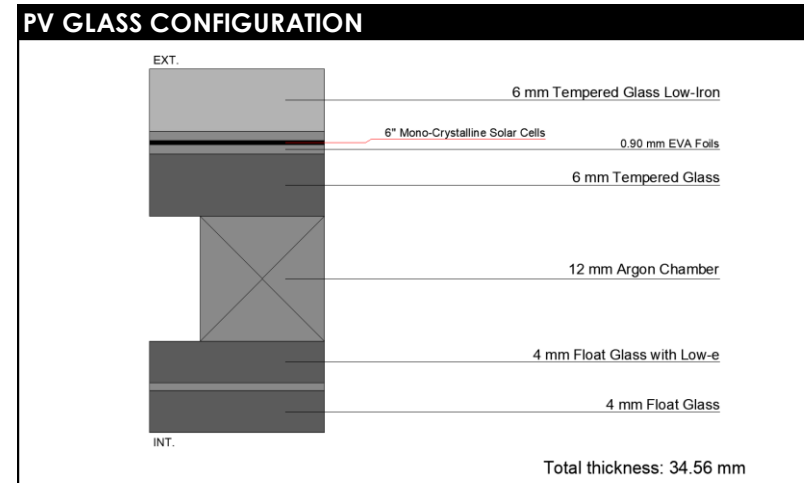
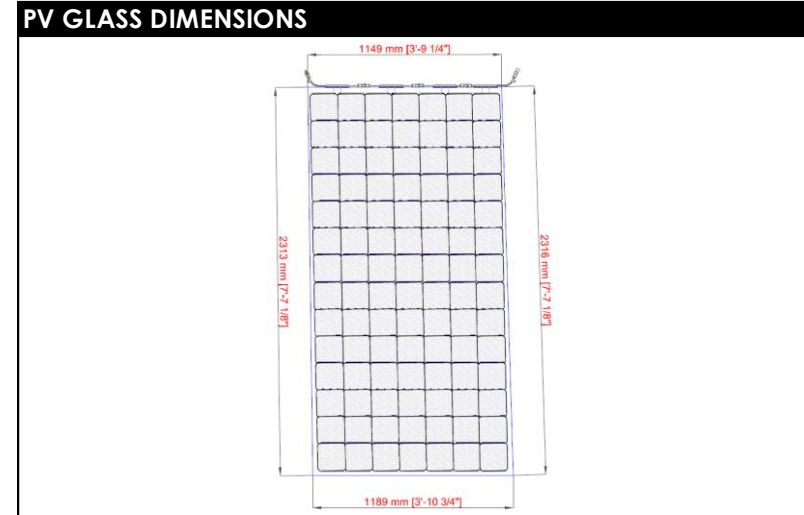
TYPE 8 – H7

M77



PHOTOVOLTAIC GLASS		2.315 x 1218	
M77 / TYPE 8 - H7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2315	mm	
Width	1218	mm	
Thickness	34,56	mm	
Surface area	2,82	sqm	
Weight	141	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,9



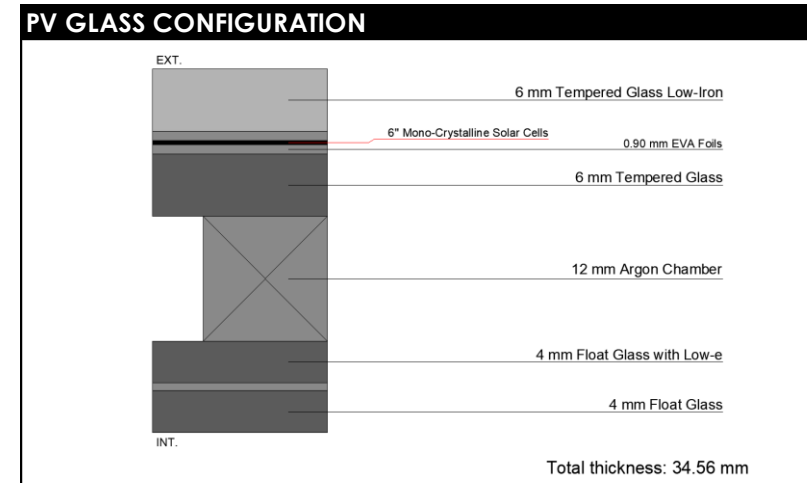
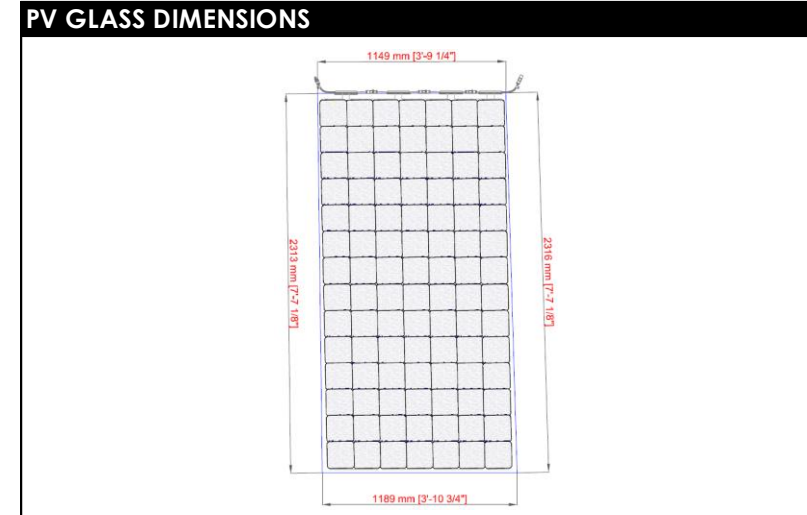
TYPE 8 – H8

M78



PHOTOVOLTAIC GLASS		2.315 x 1218	
M78 / TYPE 8 - H8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2315	mm	
Width	1218	mm	
Thickness	34,56	mm	
Surface area	2,82	sqm	
Weight	141	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,9

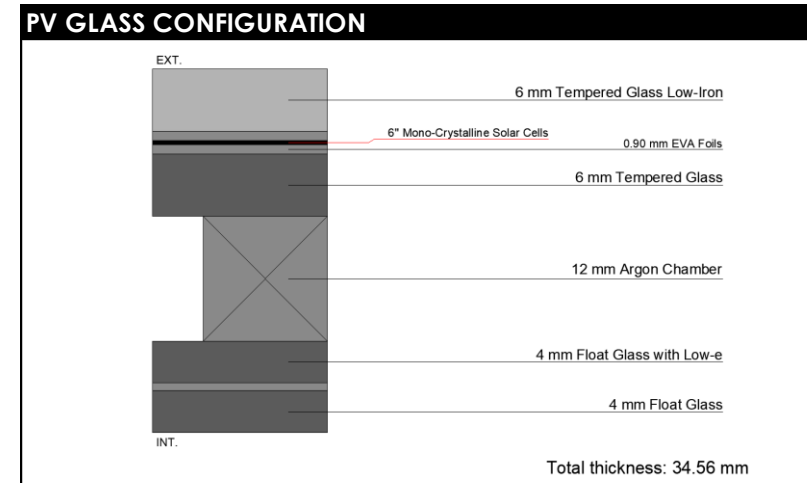
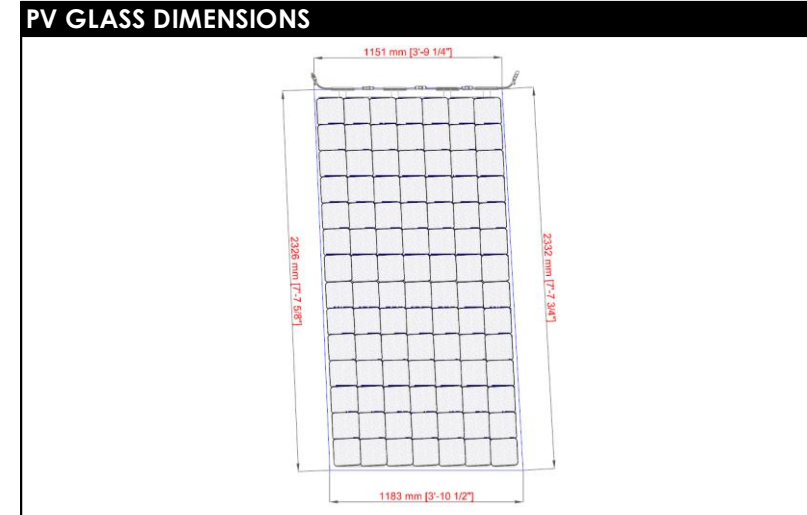


TYPE 8 – H9

M79



PHOTOVOLTAIC GLASS		
M79 / TYPE 8 - H9	2.328 x 1279	
	Mono 3BB	Crystalline
Electrical data test conditions (STC)		
Nominal peak power	451	P_{mpp} (Wp)
Open-circuit voltage	65	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	55	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2328	mm
Width	1279	mm
Thickness	34,56	mm
Surface area	2,98	sqm
Weight	149	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	98	24%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,4



* All technical specifications are subject to change without notice by Onyx Solar

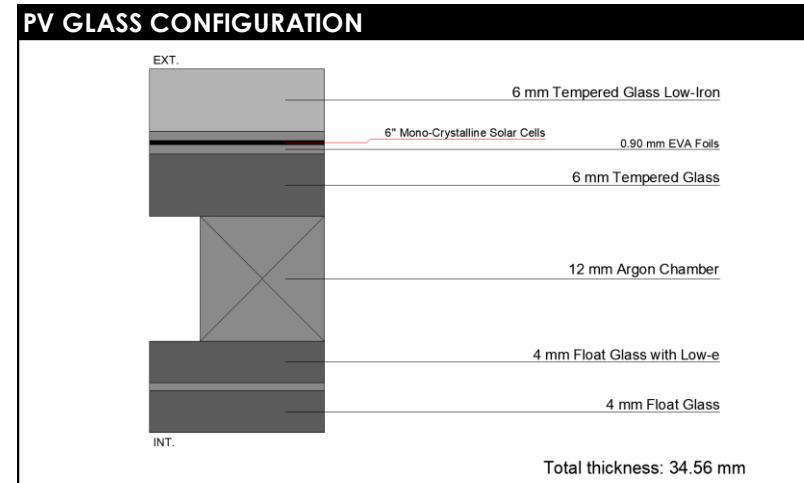
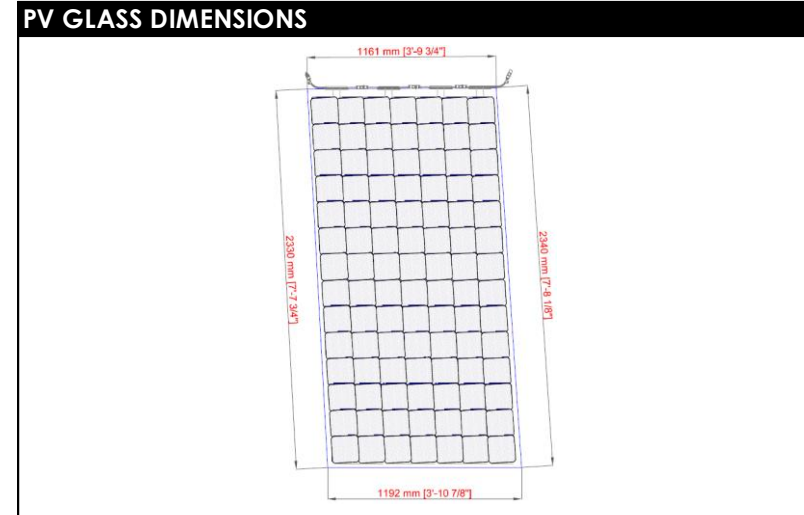
TYPE 8 – H10

M80



PHOTOVOLTAIC GLASS		2.334 x 1317	
M80 / TYPE 8 - H10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	451	P_{mpp} (Wp)	
Open-circuit voltage	65	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	55	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2334	mm	
Width	1317	mm	
Thickness	34,56	mm	
Surface area	3,07	sqm	
Weight	154	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	98	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,6





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 9



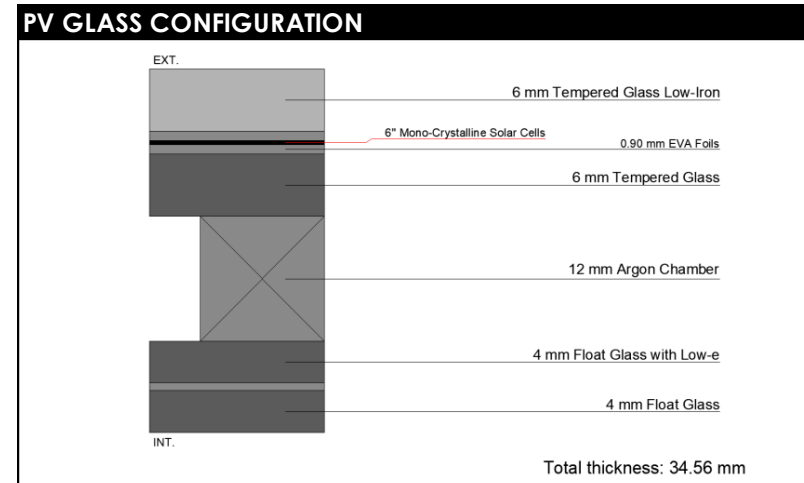
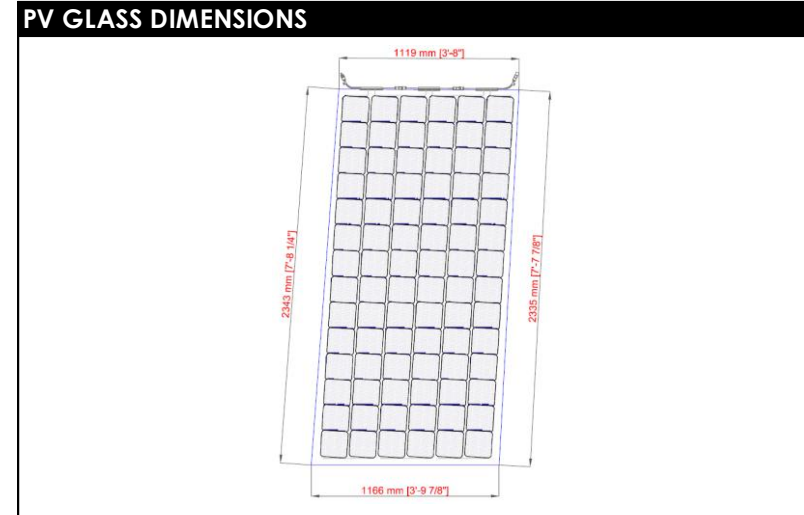
TYPE 9 – I1

M81



PHOTOVOLTAIC GLASS		2.337 x 1290	
M81 / TYPE 9 - I1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2337	mm	
Width	1290	mm	
Thickness	34,56	mm	
Surface area	3,01	sqm	
Weight	151	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	128,2

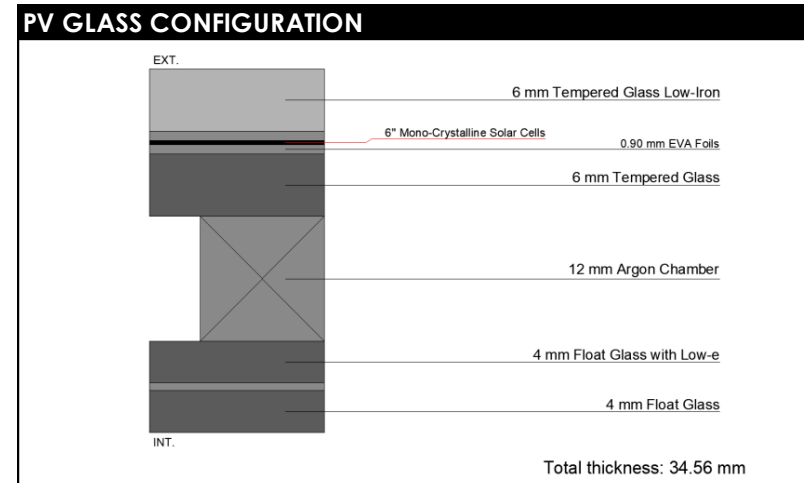
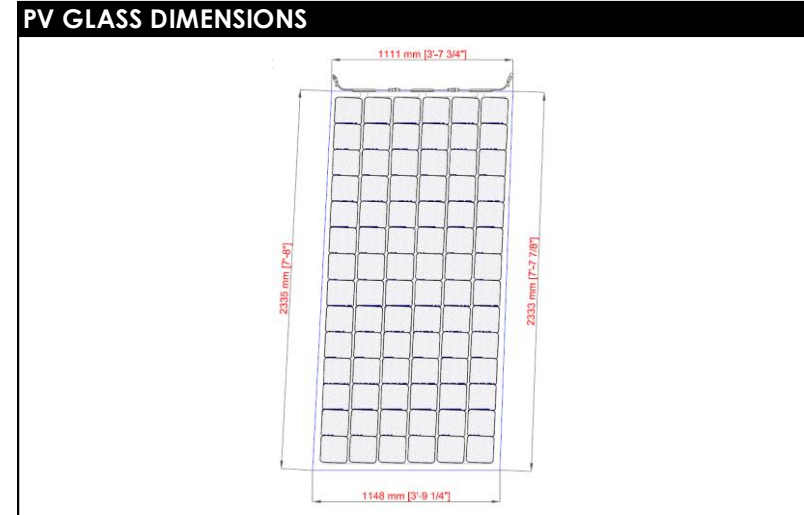


TYPE 9 – I2

M82



PHOTOVOLTAIC GLASS		2.332 x 1228	
M82 / TYPE 9 - I2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2332	mm	
Width	1228	mm	
Thickness	34,56	mm	
Surface area	2,86	sqm	
Weight	143	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	134,9

* All technical specifications are subject to change without notice by Onyx Solar



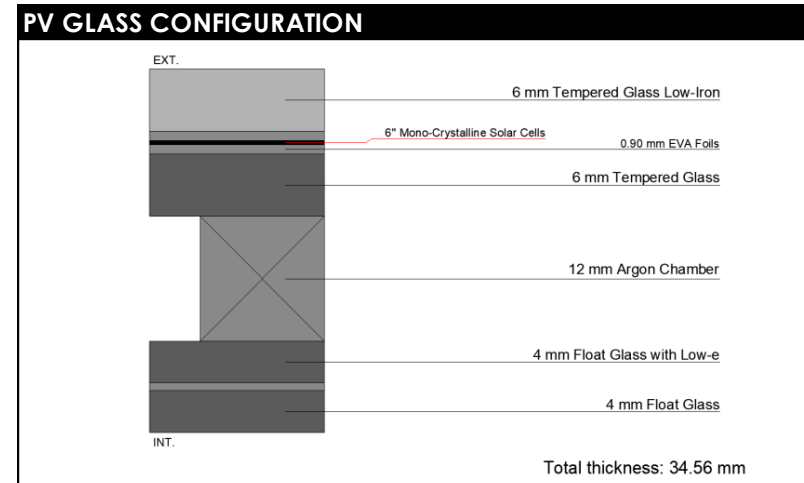
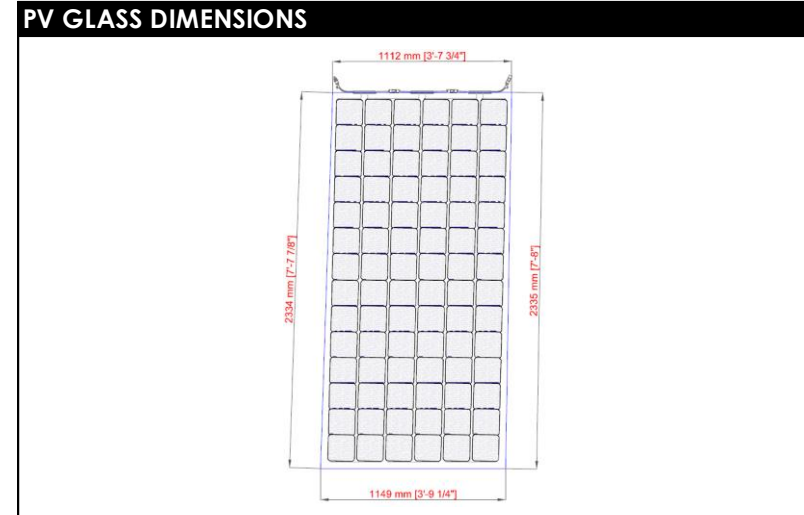
TYPE 9 – I3

M83



PHOTOVOLTAIC GLASS		2.335 x 1187	
M83 / TYPE 9 - I3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	1187	mm	
Thickness	34,56	mm	
Surface area	2,77	sqm	
Weight	139	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,4

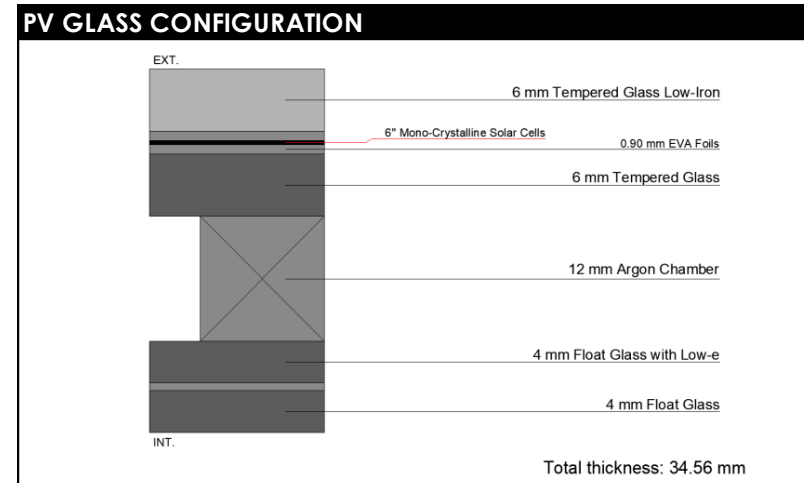
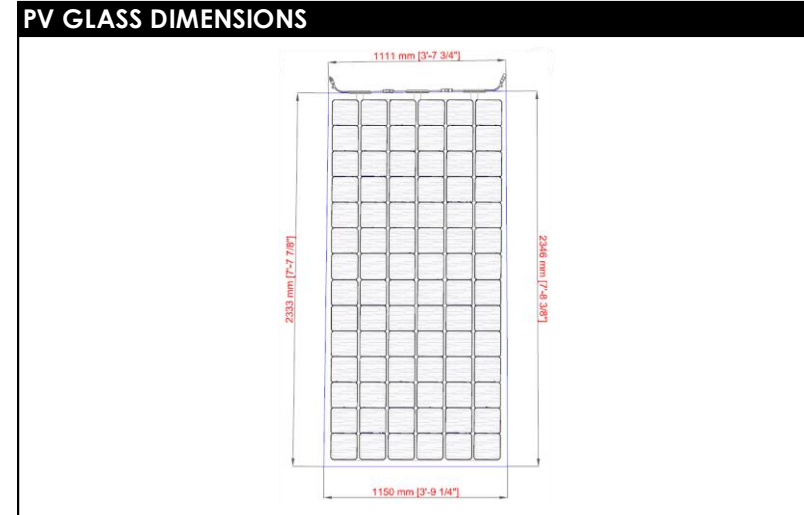


TYPE 9 – I4

M84



PHOTOVOLTAIC GLASS		2.346 x 1150	
M84 / TYPE 9 - I4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2346	mm	
Width	1150	mm	
Thickness	34,56	mm	
Surface area	2,70	sqm	
Weight	135	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	143,2



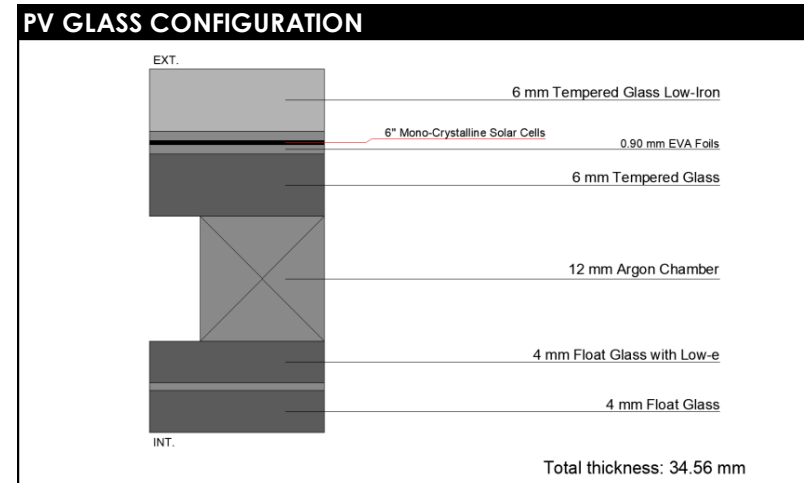
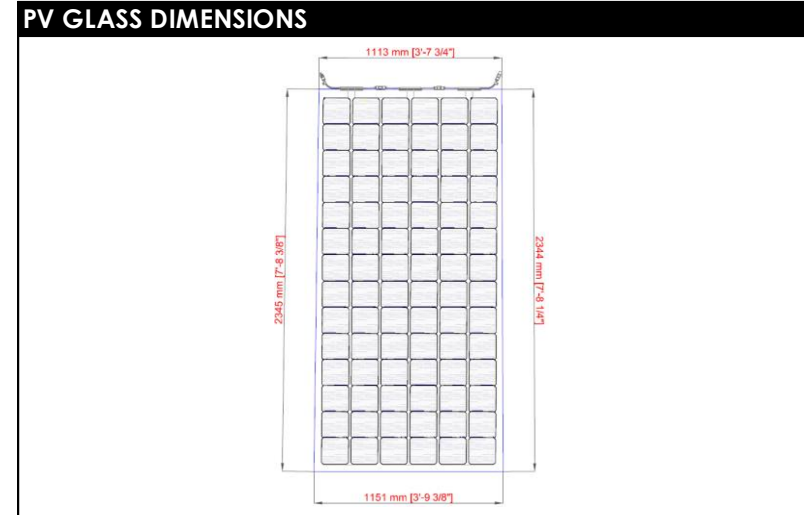
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 9 – I5

M85



PHOTOVOLTAIC GLASS		2.345 x 1151	
M85 / TYPE 9 - I5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1151	mm	
Thickness	34,56	mm	
Surface area	2,70	sqm	
Weight	135	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	143,1

* All technical specifications are subject to change without notice by Onyx Solar



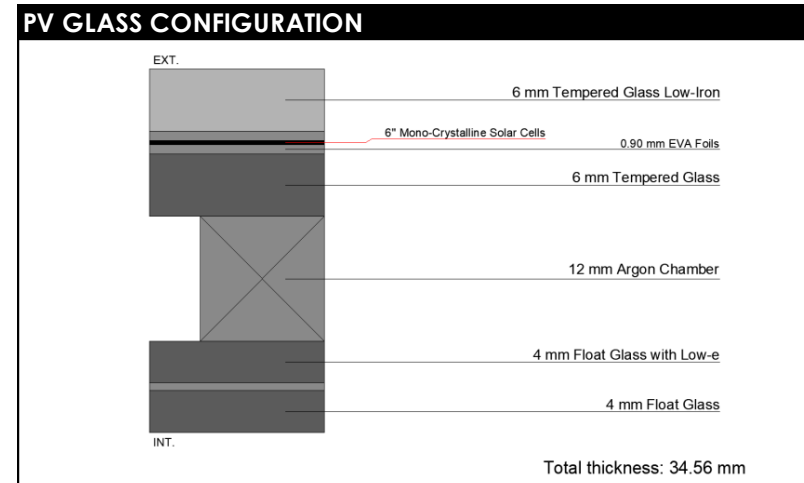
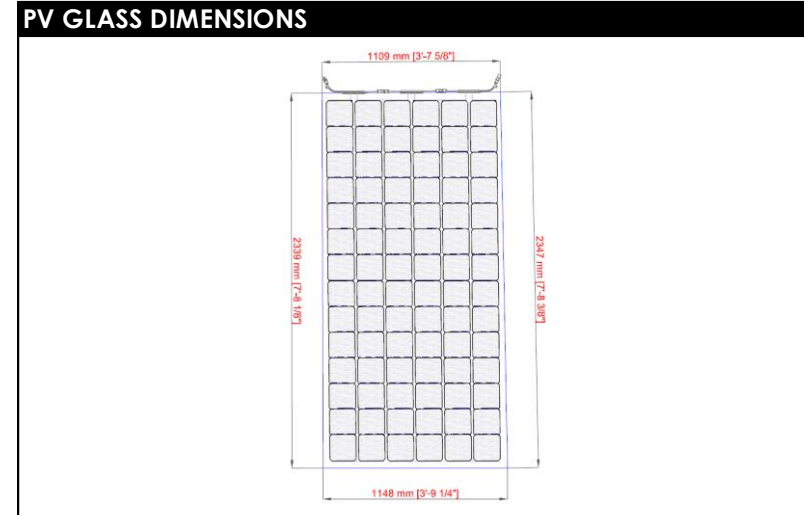
TYPE 9 – I6

M86



PHOTOVOLTAIC GLASS		2.347 x 1153	
M86 / TYPE 9 - I6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2347	mm	
Width	1153	mm	
Thickness	34,56	mm	
Surface area	2,71	sqm	
Weight	135	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,8



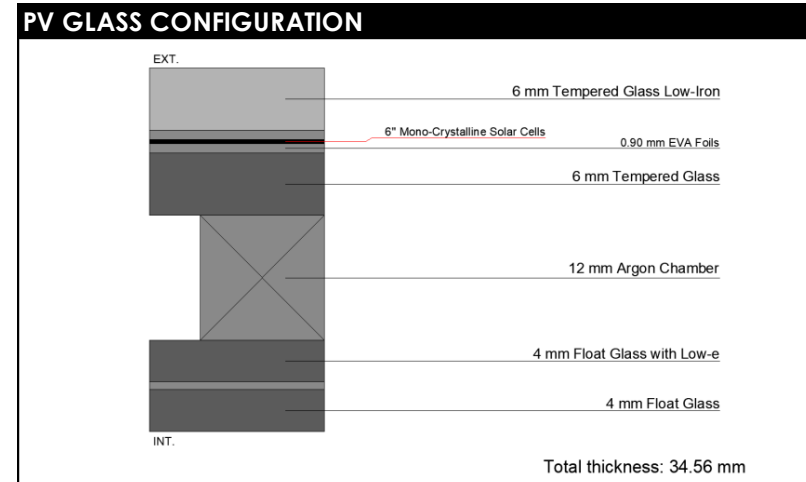
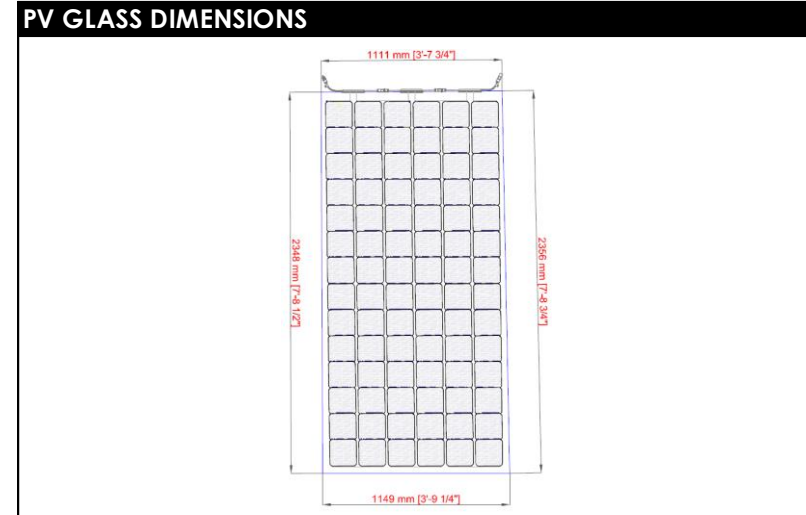
TYPE 9 – I8

M87



PHOTOVOLTAIC GLASS		2.355 x 1158	
M87 / TYPE 9 - I7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2355	mm	
Width	1158	mm	
Thickness	34,56	mm	
Surface area	2,73	sqm	
Weight	136	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,7



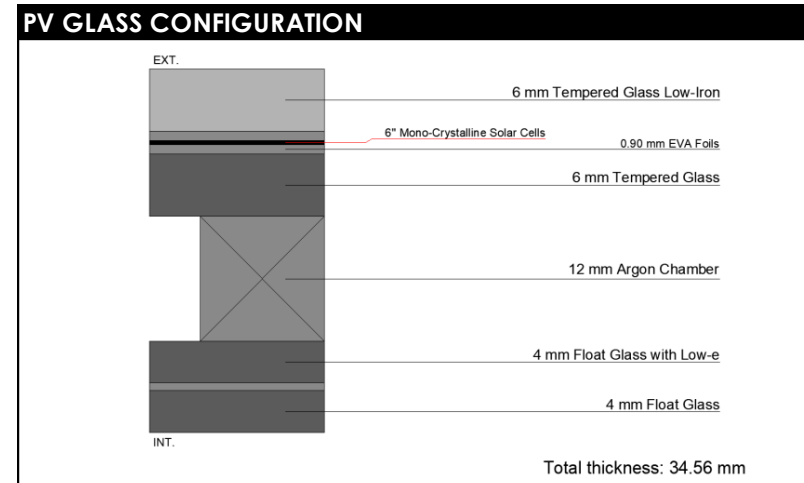
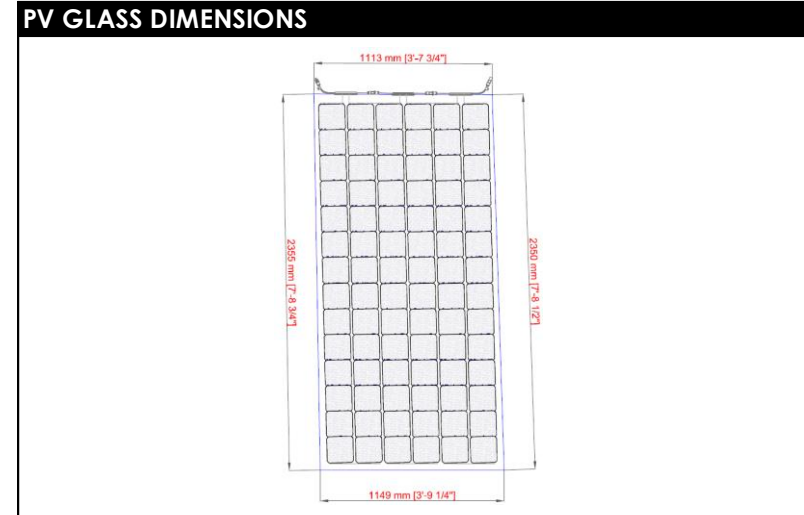
TYPE 9 – I8

M88



PHOTOVOLTAIC GLASS		2.354 x 1188	
M88 / TYPE 9 - I8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2354	mm	
Width	1188	mm	
Thickness	34,56	mm	
Surface area	2,80	sqm	
Weight	140	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	138,2

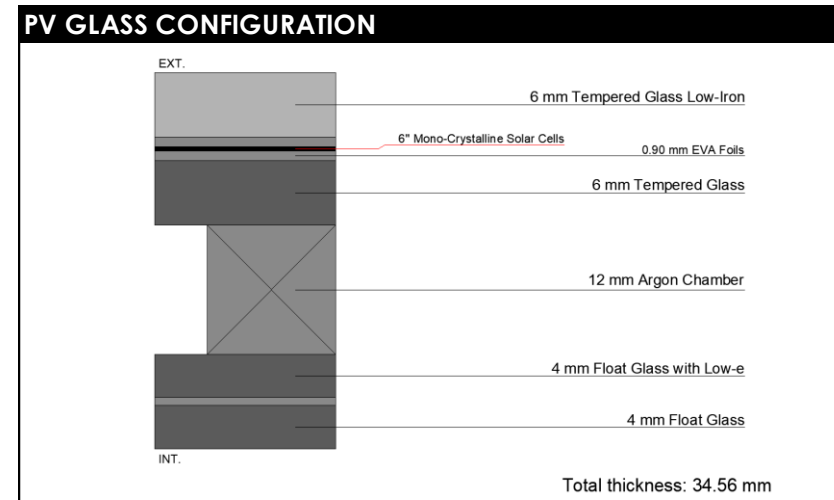
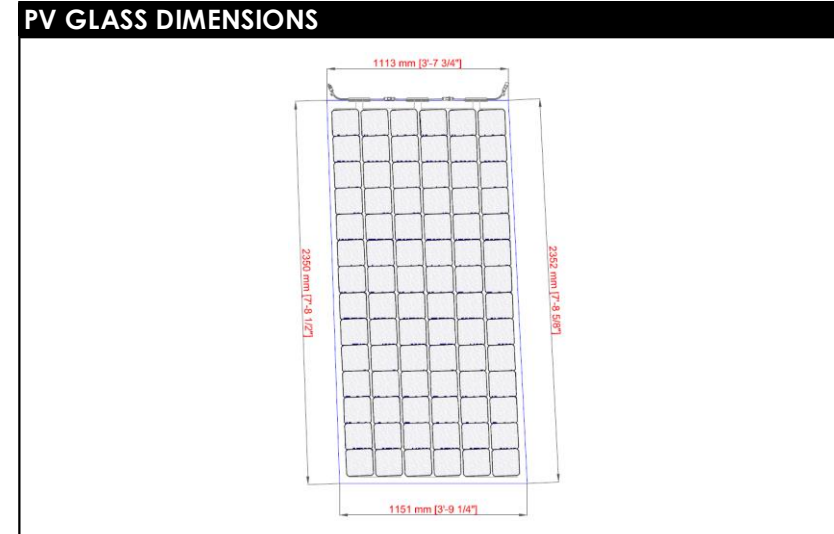


TYPE 9 – I9

M89



PHOTOVOLTAIC GLASS		
M89 / TYPE 9 - I9	2.349 x 1227	Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	386	P _{mpp} (Wp)
Open-circuit voltage	56	V _{oc} (V)
Short-circuit current	8,71	I _{sc} (A)
Voltage at nominal power	47	V _{mpp} (V)
Current at nominal power	8,20	I _{mpp} (A)
Power tolerance not to exceed	±10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2349	mm
Width	1227	mm
Thickness	34,56	mm
Surface area	2,88	sqm
Weight	144	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	84	33%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V _{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P _{mpp}	-0,38	%/°C
Temperature Coefficient of V _{oc}	-0,29	%/°C
Temperature Coefficient of I _{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	134,0



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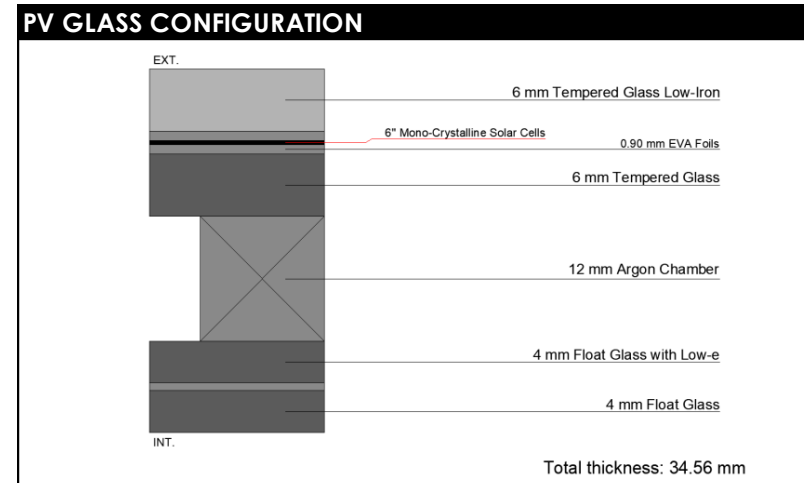
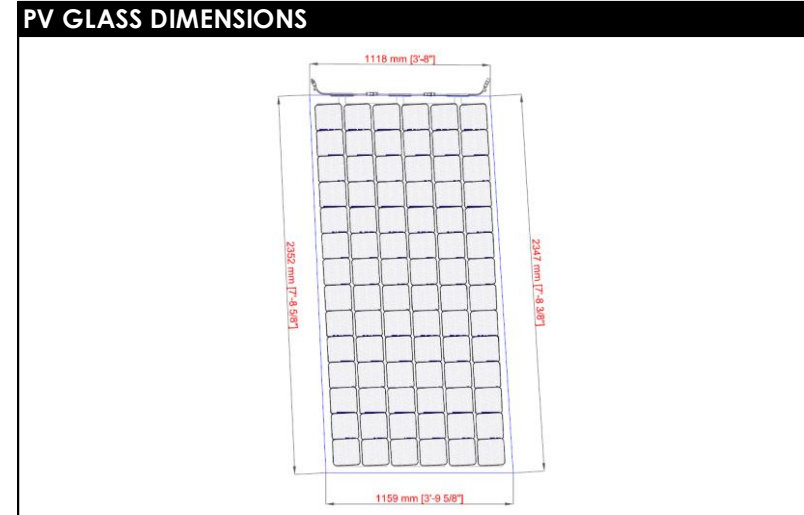
TYPE 9 – I10

M90



PHOTOVOLTAIC GLASS		2.350 x 1261	
M90 / TYPE 9 - I10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2350	mm	
Width	1261	mm	
Thickness	34,56	mm	
Surface area	2,96	sqm	
Weight	148	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	130,4





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 10



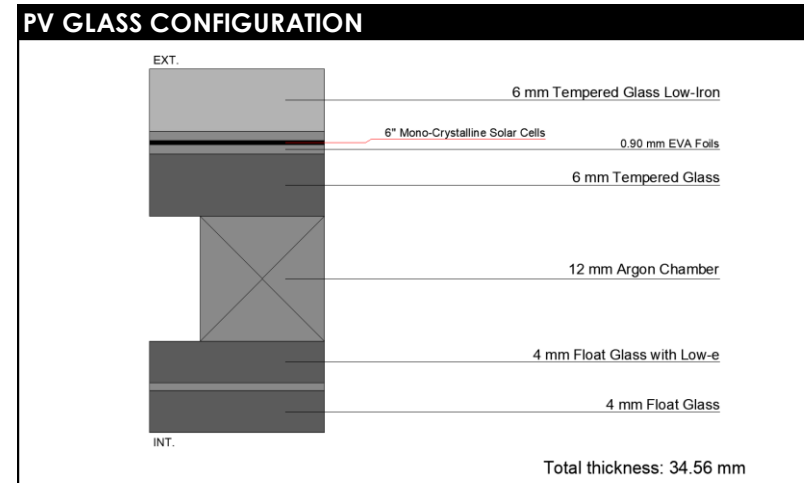
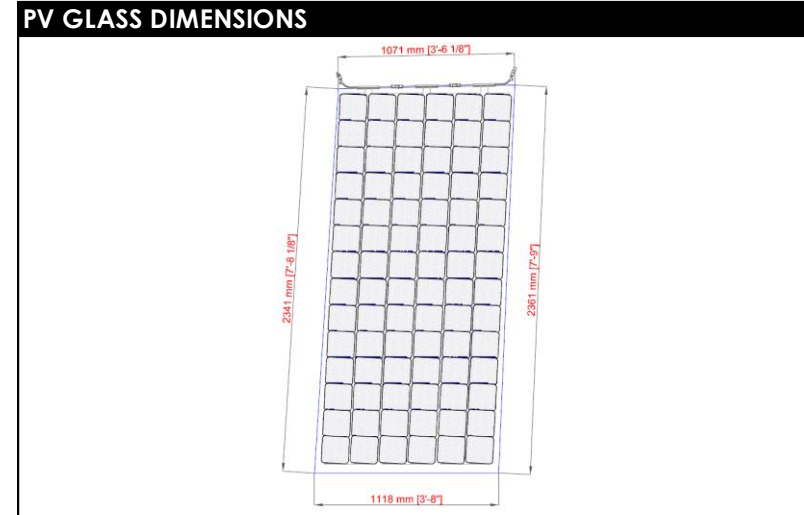
TYPE 10 – J1

M91



PHOTOVOLTAIC GLASS		2.359 x 1216	
M91 / TYPE 10 - J1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2359	mm	
Width	1216	mm	
Thickness	34,56	mm	
Surface area	2,87	sqm	
Weight	143	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	134,7

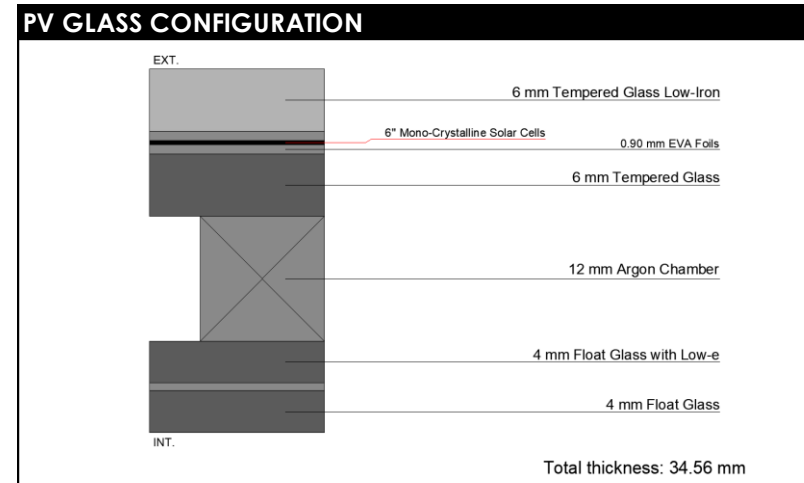
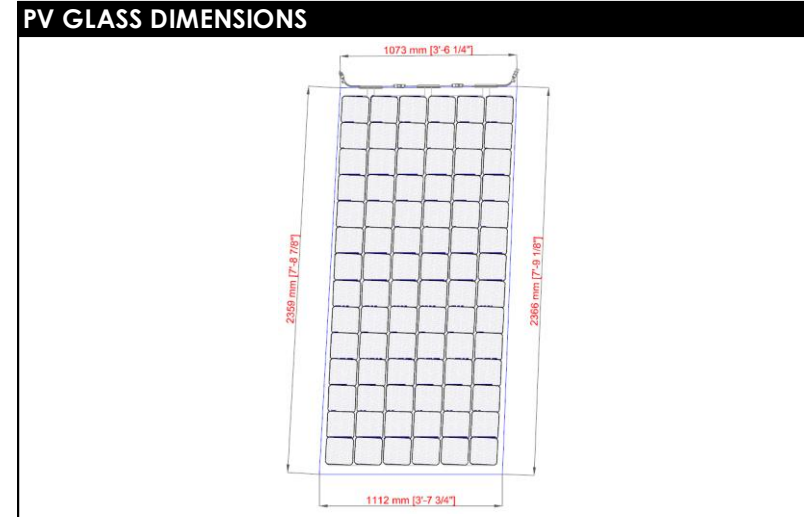


TYPE 10 – J2

M92



PHOTOVOLTAIC GLASS		2.365 x 1200	
M92 / TYPE 10 - J2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2365	mm	
Width	1200	mm	
Thickness	34,56	mm	
Surface area	2,84	sqm	
Weight	142	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	136,1

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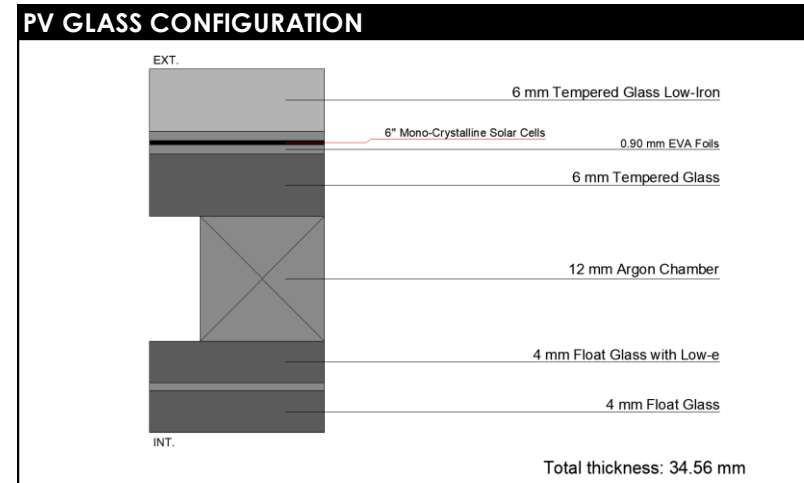
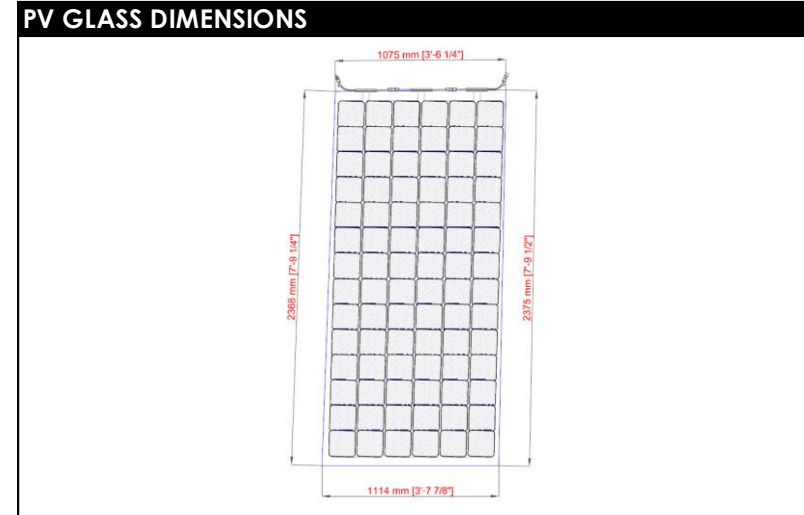


TYPE 10 – J3

M93



PHOTOVOLTAIC GLASS		2.375 x 1159	
M93 / TYPE 10 - J3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2375	mm	
Width	1159	mm	
Thickness	34,56	mm	
Surface area	2,75	sqm	
Weight	138	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	140,4



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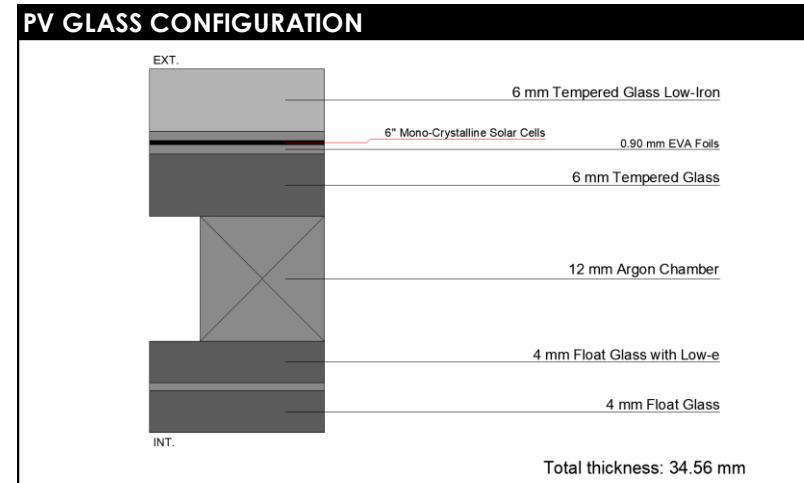
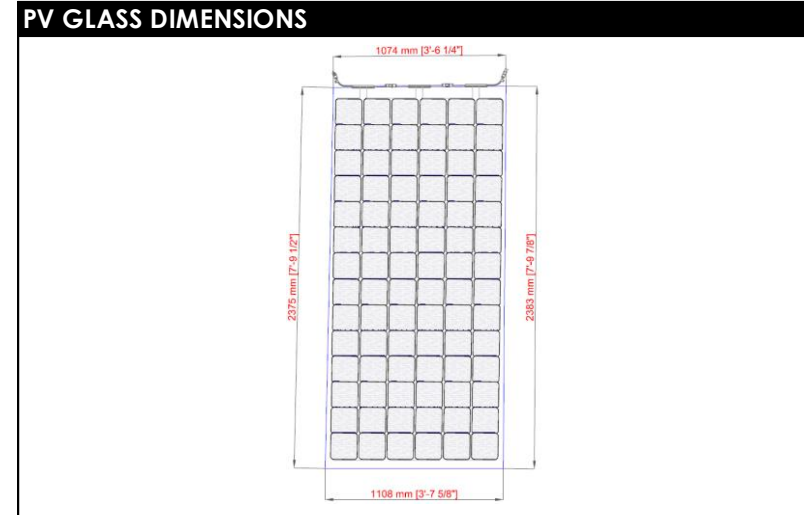
TYPE 10 – J4

M94



PHOTOVOLTAIC GLASS		2.374 x 1125	
M94 / TYPE 10 - J4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2374	mm	
Width	1125	mm	
Thickness	34,56	mm	
Surface area	2,67	sqm	
Weight	134	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,7

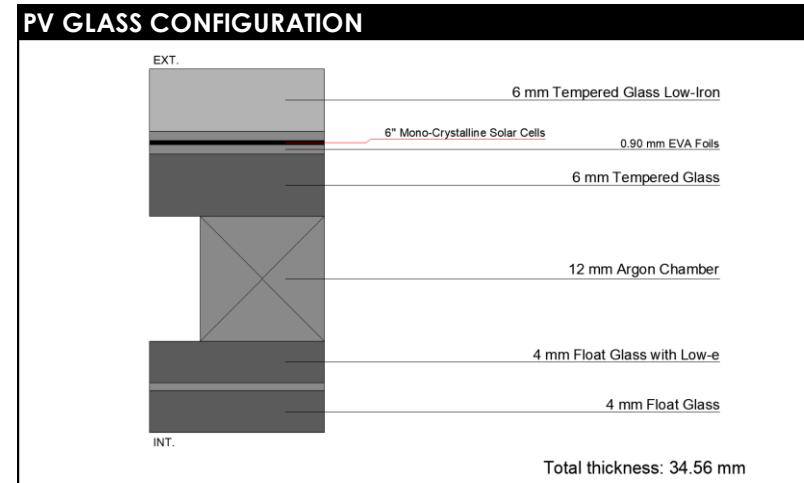
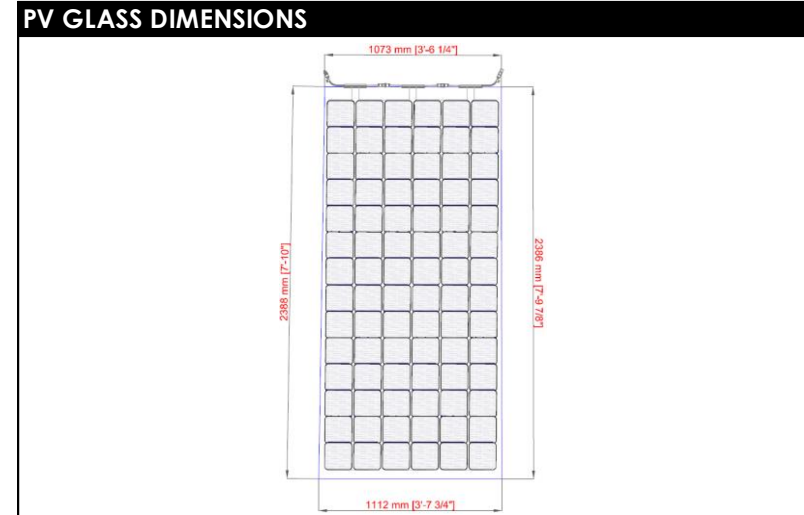


TYPE 10 – J5

M95



PHOTOVOLTAIC GLASS		2.388 x 1112	
M95 / TYPE 10 - J5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2388	mm	
Width	1112	mm	
Thickness	34,56	mm	
Surface area	2,66	sqm	
Weight	133	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,5

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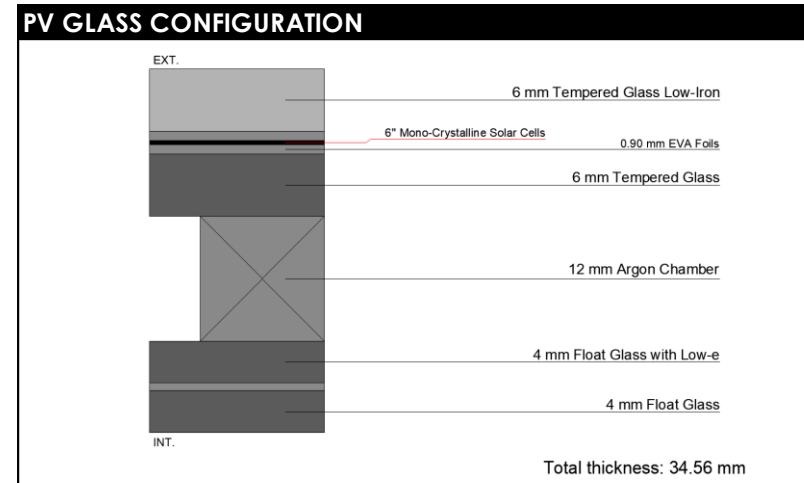
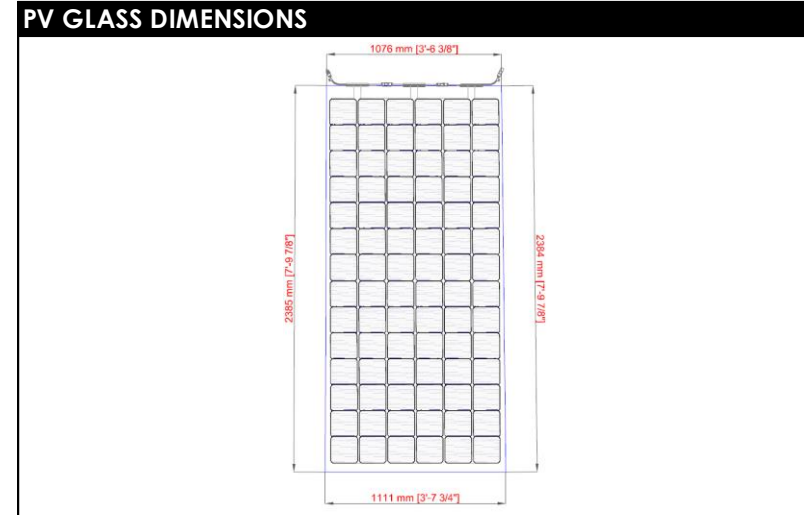
TYPE 10 – J6

M96



PHOTOVOLTAIC GLASS		2.385 x 1111	
M96 / TYPE 10 - J6		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp}	(Wp)
Open-circuit voltage	56	V_{oc}	(V)
Short-circuit current	8,71	I_{sc}	(A)
Voltage at nominal power	47	V_{mpp}	(V)
Current at nominal power	8,20	I_{mpp}	(A)
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2385	mm	
Width	1111	mm	
Thickness	34,56	mm	
Surface area	2,65	sqm	
Weight	132	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys}	(V)
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,8



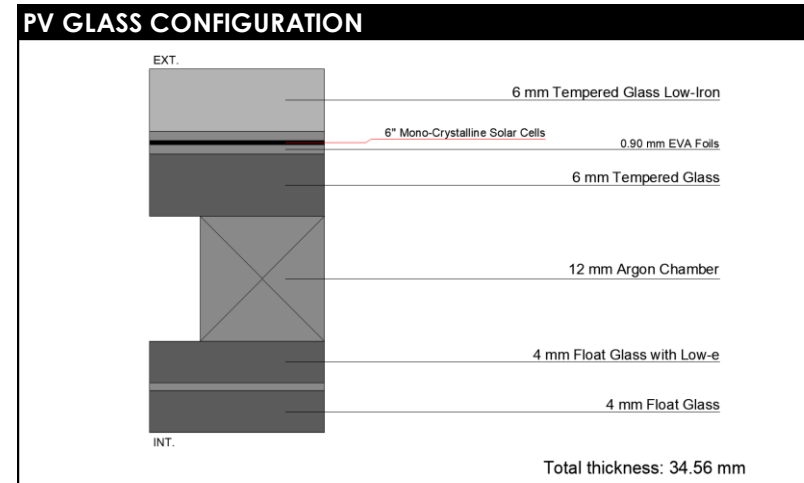
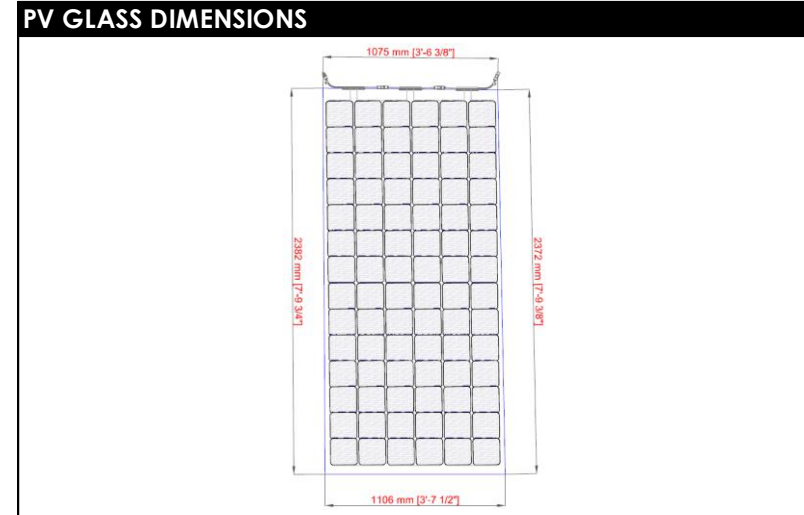
TYPE 10 – J9

M97



PHOTOVOLTAIC GLASS		2.382 x 1121	
M97 / TYPE 10 - J7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2382	mm	
Width	1121	mm	
Thickness	34,56	mm	
Surface area	2,67	sqm	
Weight	134	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,7

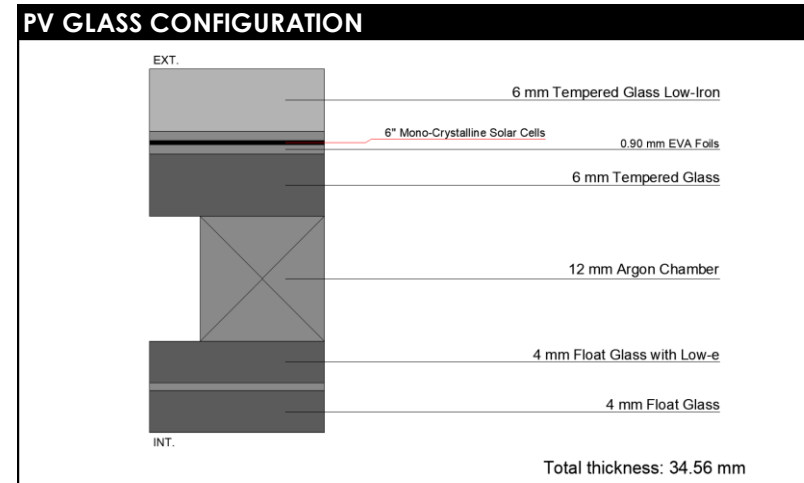
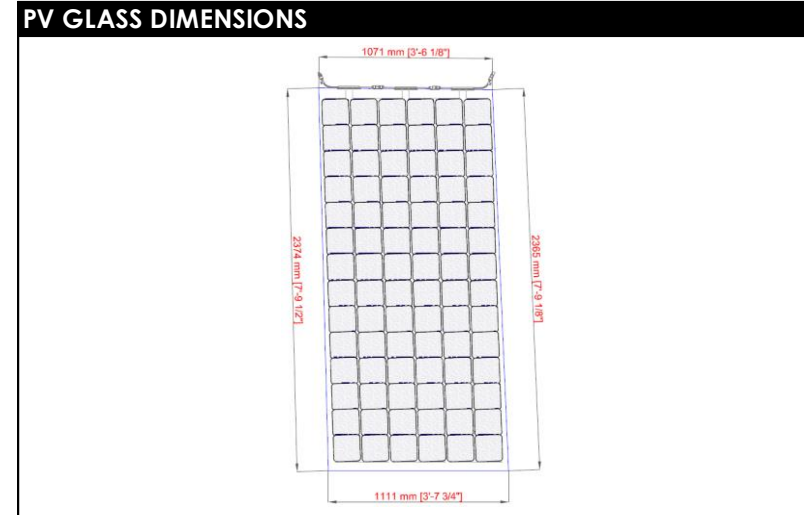


TYPE 10 – J9

M98



PHOTOVOLTAIC GLASS		2.373 x 1171	
M98 / TYPE 10 - J8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2373	mm	
Width	1171	mm	
Thickness	34,56	mm	
Surface area	2,78	sqm	
Weight	139	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,0

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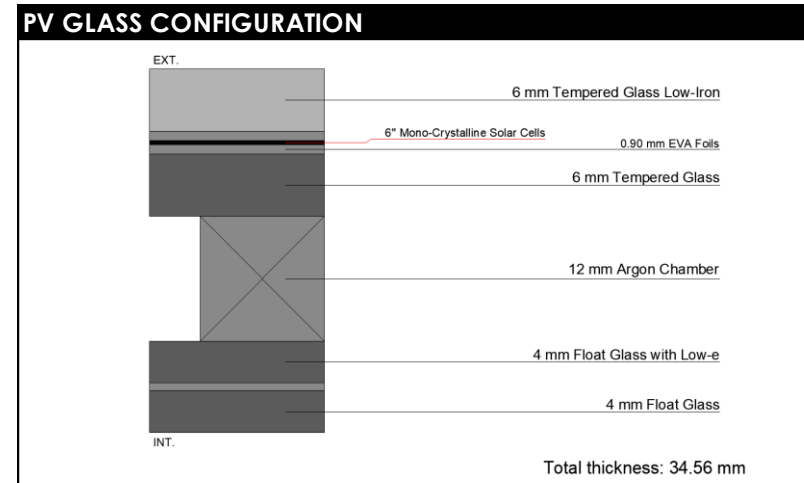
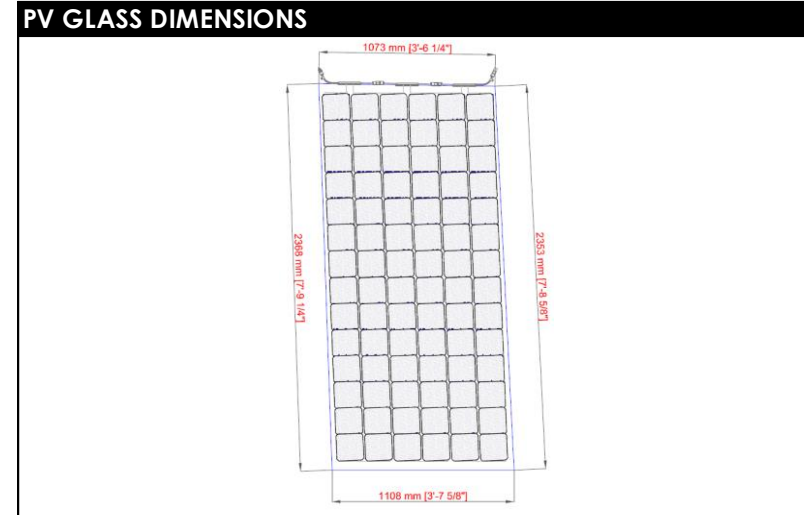


TYPE 10 – J9

M99



PHOTOVOLTAIC GLASS		2.367 x 1189	
M99 / TYPE 10 - J9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2367	mm	
Width	1189	mm	
Thickness	34,56	mm	
Surface area	2,81	sqm	
Weight	141	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	137,3



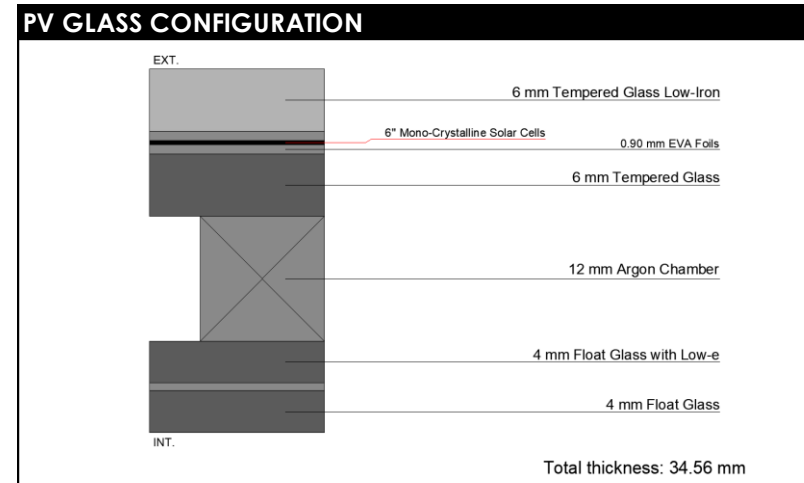
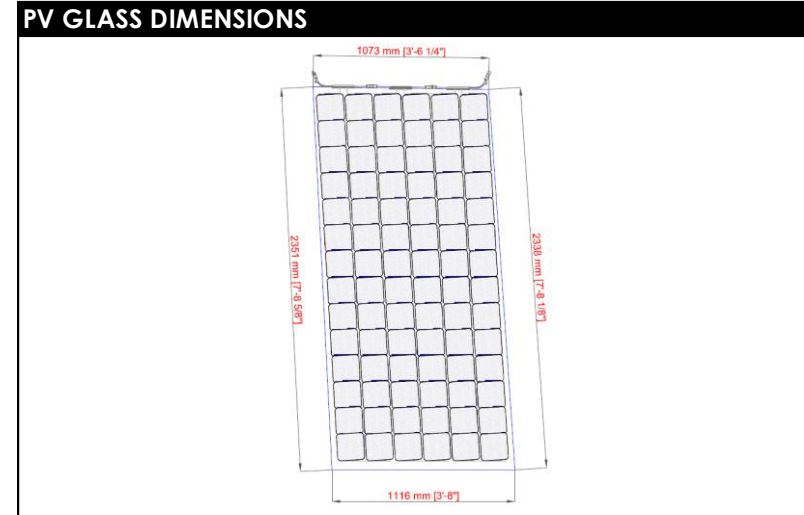
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 10 – J10

M100



PHOTOVOLTAIC GLASS		2.349 x 1233
M100 / TYPE 10 - J10		Mono 3BB Crystalline
Electrical data test conditions (STC)		
Nominal peak power	386	P_{mpp} (Wp)
Open-circuit voltage	56	V_{oc} (V)
Short-circuit current	8,71	I_{sc} (A)
Voltage at nominal power	47	V_{mpp} (V)
Current at nominal power	8,20	I_{mpp} (A)
Power tolerance not to exceed	± 10	%
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.		
Mechanical description		
Length	2349	mm
Width	1233	mm
Thickness	34,56	mm
Surface area	2,90	sqm
Weight	145	Kgs
Cell type	6" Mono 3BB	Crystalline
No PV cells / Transparency degree	84	33%
Front Glass	6 mm	Tempered Glass Low-Iron
Rear Glass	6 mm	Tempered Glass
Gas Spacer	12 mm	Argon Chamber
Inner Glass	4 mm	Float Glass Low-e
Inner Glass	4 mm	Float Glass
Thickness encapsulation	1,80 mm	EVA Foils
Category / Color code	-	-
Junction Box		
Protection	IP65	
Wiring Section	2,5 mm ² or 4,0 mm ²	
Limits		
Maximum system voltage	1000	V_{sys} (V)
Operating module temperature	-40...+85	°C
Temperature Coefficients		
Temperature Coefficient of P_{mpp}	-0,38	%/°C
Temperature Coefficient of V_{oc}	-0,29	%/°C
Temperature Coefficient of I_{sc}	0,04	%/°C



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	133,4



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DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 11



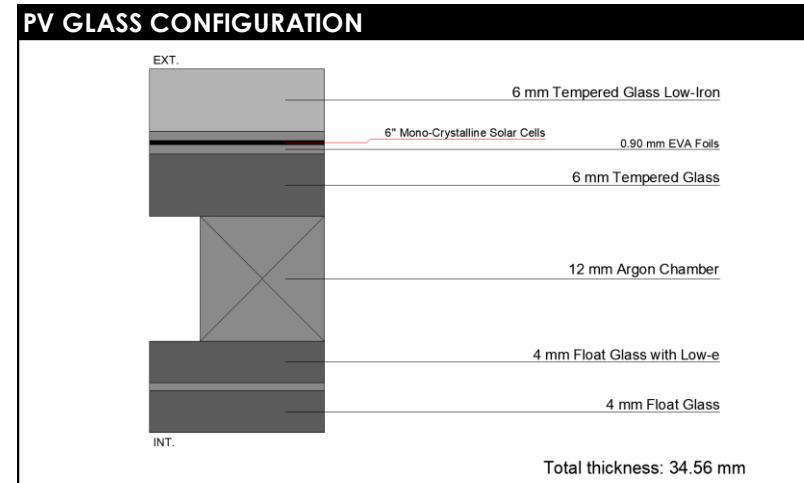
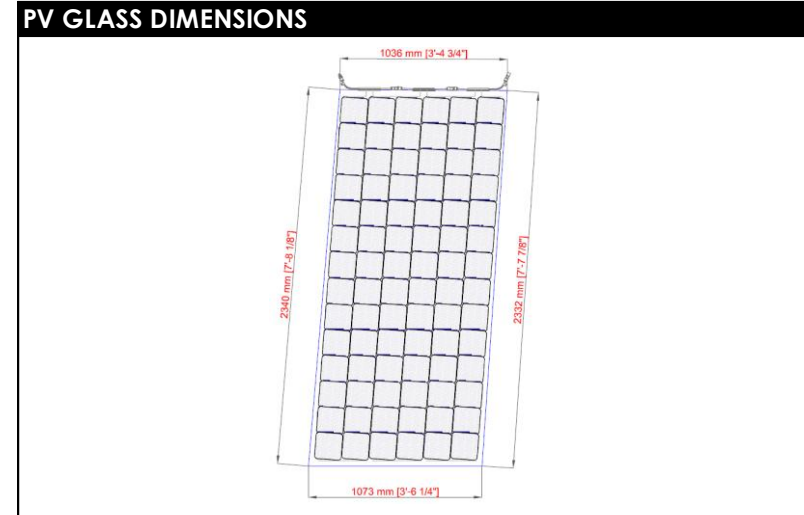
TYPE 11 – K1

M101



PHOTOVOLTAIC GLASS		2.332 x 1230	
M101 / TYPE 11 - K1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2332	mm	
Width	1230	mm	
Thickness	34,56	mm	
Surface area	2,87	sqm	
Weight	143	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	134,7

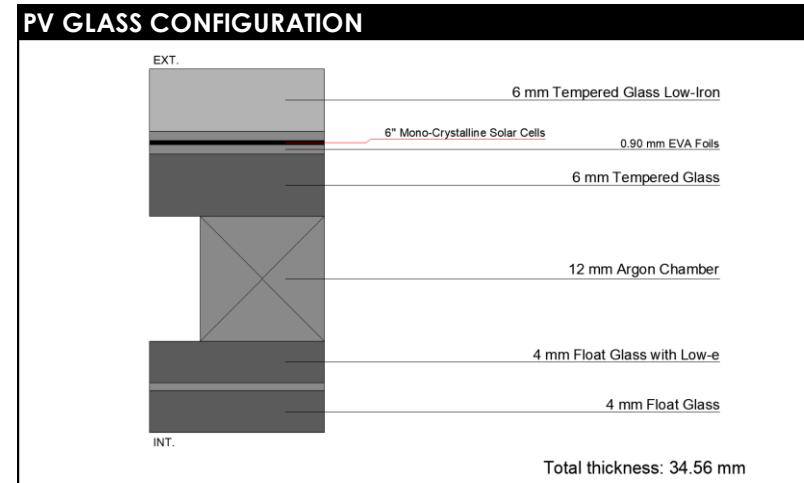
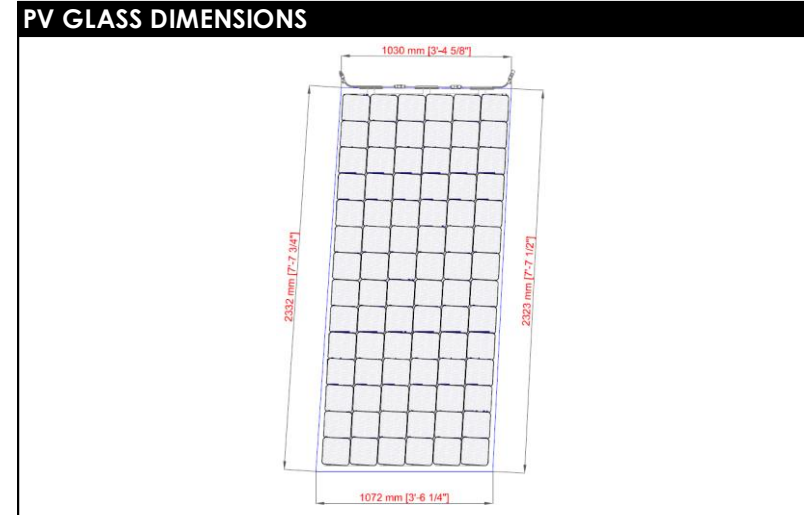


TYPE 11 – K2

M102



PHOTOVOLTAIC GLASS		2.327 x 1184	
M102 / TYPE 11 - K2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2327	mm	
Width	1184	mm	
Thickness	34,56	mm	
Surface area	2,76	sqm	
Weight	138	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	140,2



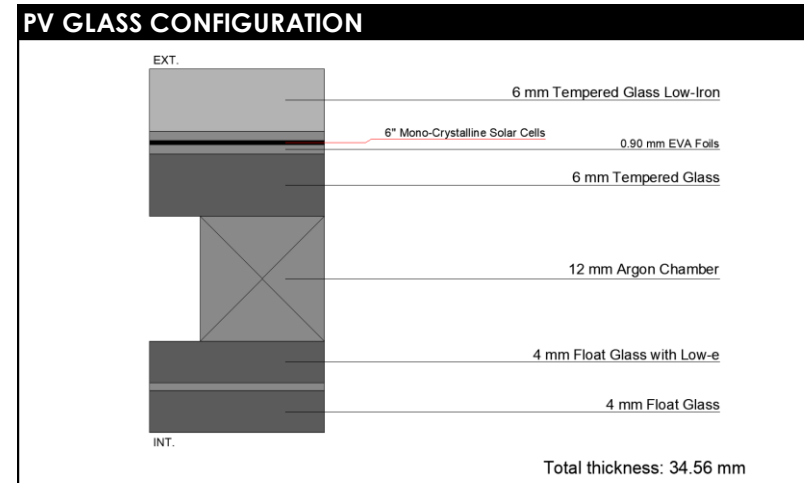
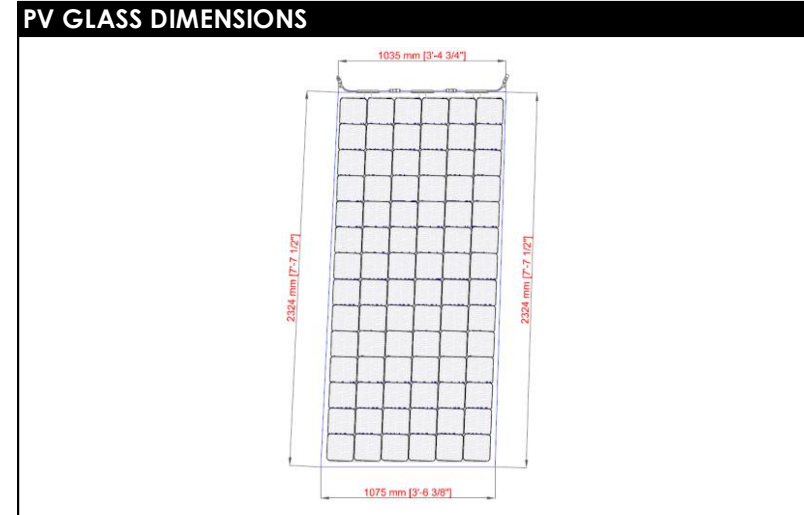
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TYPE 11 – K3

M103



PHOTOVOLTAIC GLASS		2.323 x 1143	
M103 / TYPE 11 - K3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2323	mm	
Width	1143	mm	
Thickness	34,56	mm	
Surface area	2,66	sqm	
Weight	133	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,5



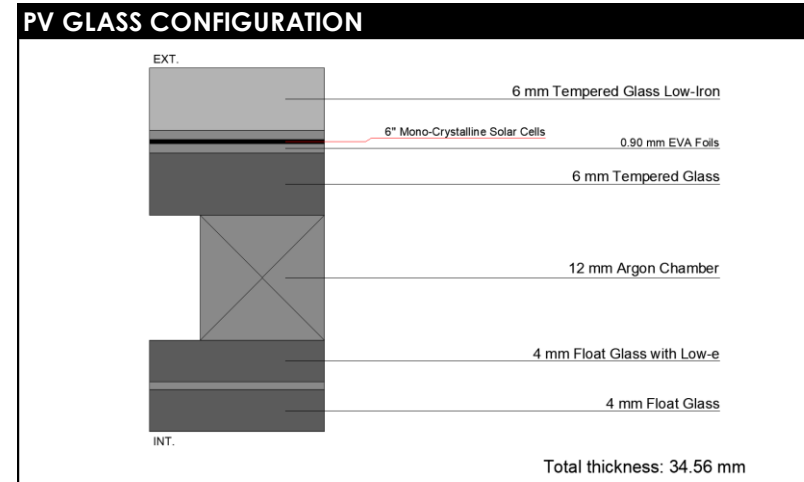
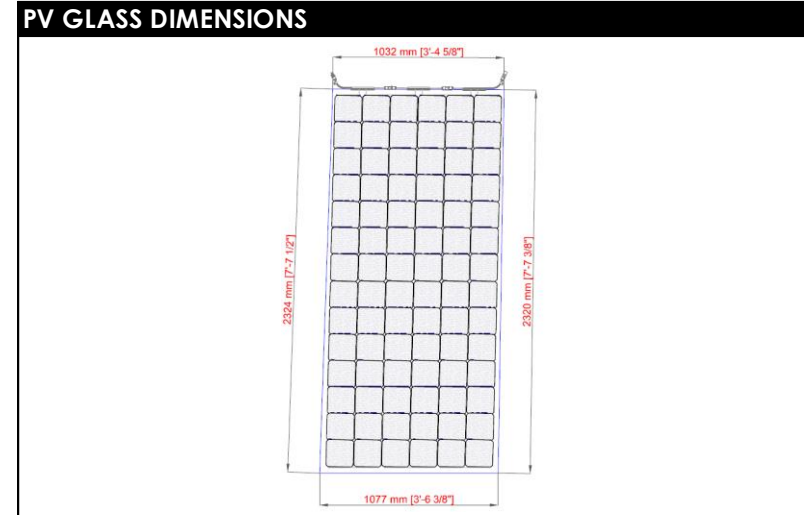
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 11 – K4

M104



PHOTOVOLTAIC GLASS		2.323 x 1112	
M104 / TYPE 11 - K4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2323	mm	
Width	1112	mm	
Thickness	34,56	mm	
Surface area	2,58	sqm	
Weight	129	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,6



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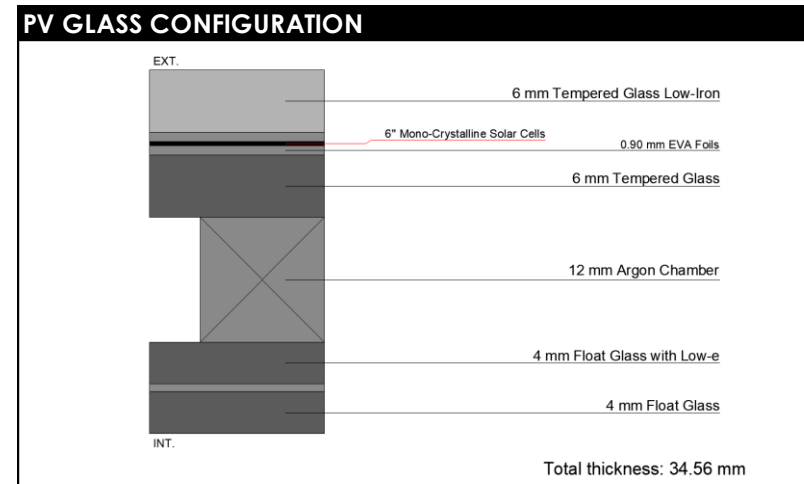
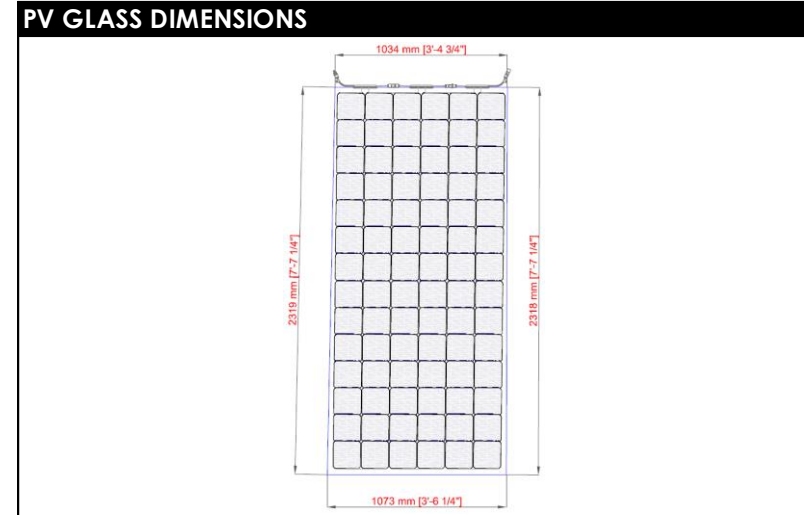
TYPE 11 – K5

M105



PHOTOVOLTAIC GLASS		2.319 x 1080	
M105 / TYPE 11 - K5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2319	mm	
Width	1080	mm	
Thickness	34,56	mm	
Surface area	2,50	sqm	
Weight	125	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	154,3



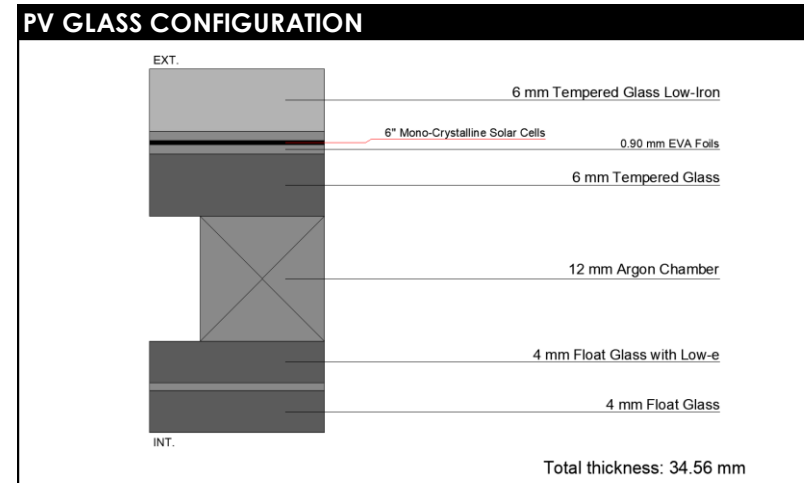
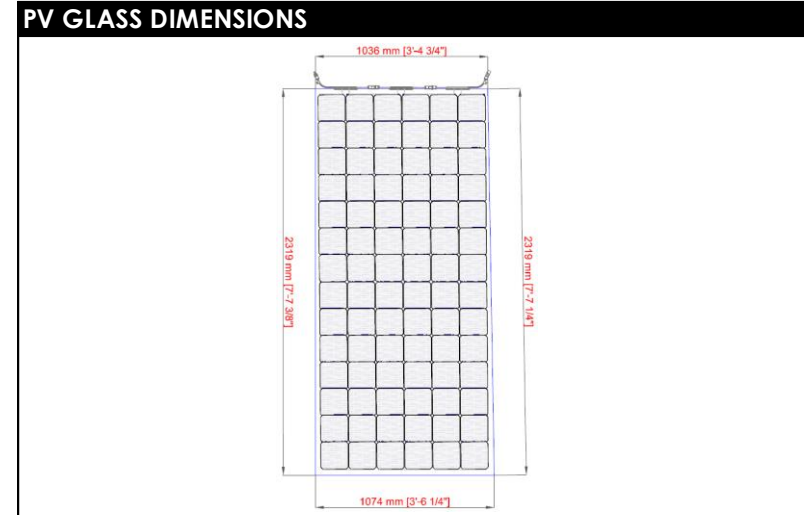
TYPE 11 – K6

M106



PHOTOVOLTAIC GLASS		2.320 x 1075	
M106 / TYPE 11 - K6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2320	mm	
Width	1075	mm	
Thickness	34,56	mm	
Surface area	2,49	sqm	
Weight	125	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	154,9



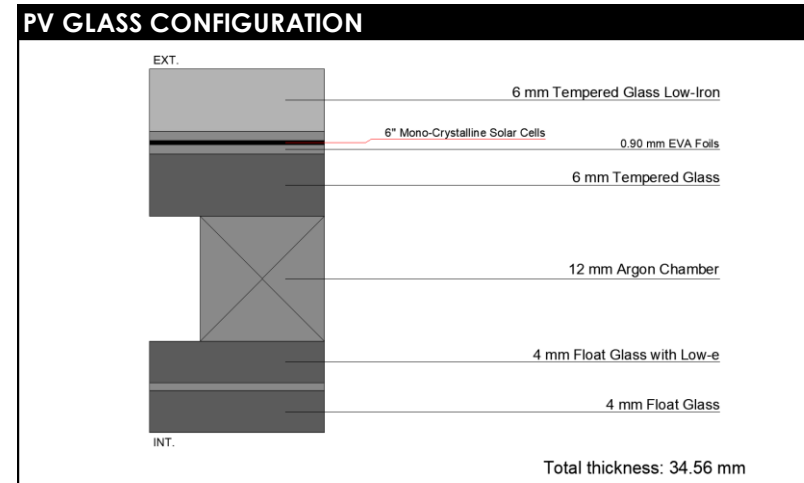
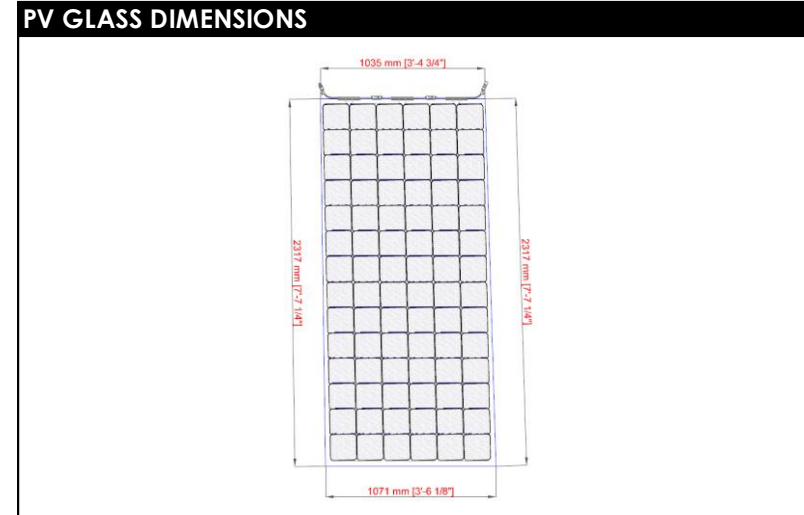
TYPE 11 – K10

M107



PHOTOVOLTAIC GLASS		2.317 x 1103	
M107 / TYPE 11 - K7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2317	mm	
Width	1103	mm	
Thickness	34,56	mm	
Surface area	2,56	sqm	
Weight	128	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,2



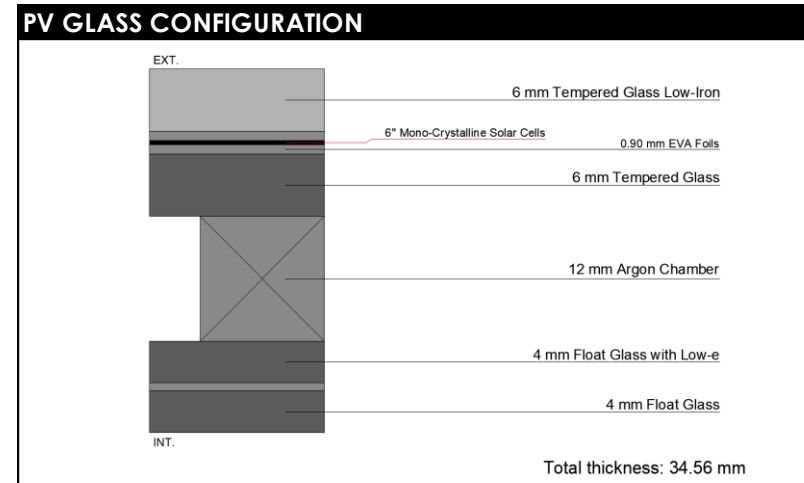
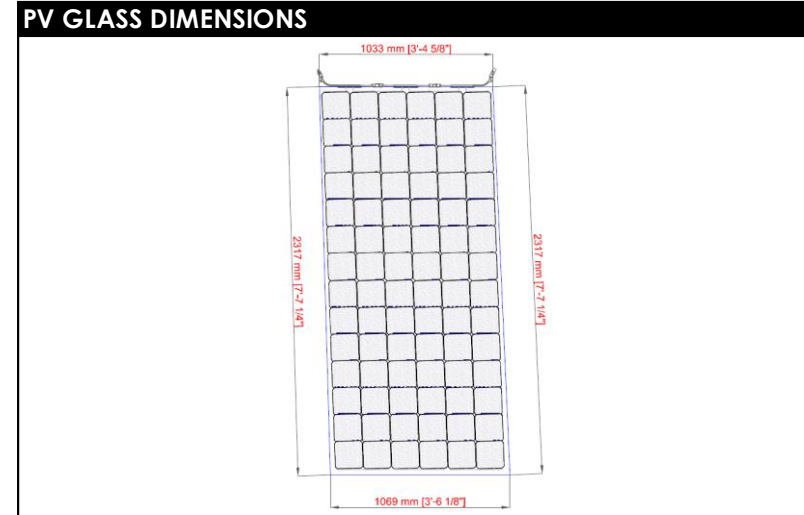
TYPE 11 – K10

M108



PHOTOVOLTAIC GLASS		2.316 x 1135	
M108 / TYPE 11 - K8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2316	mm	
Width	1135	mm	
Thickness	34,56	mm	
Surface area	2,63	sqm	
Weight	131	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	147,0



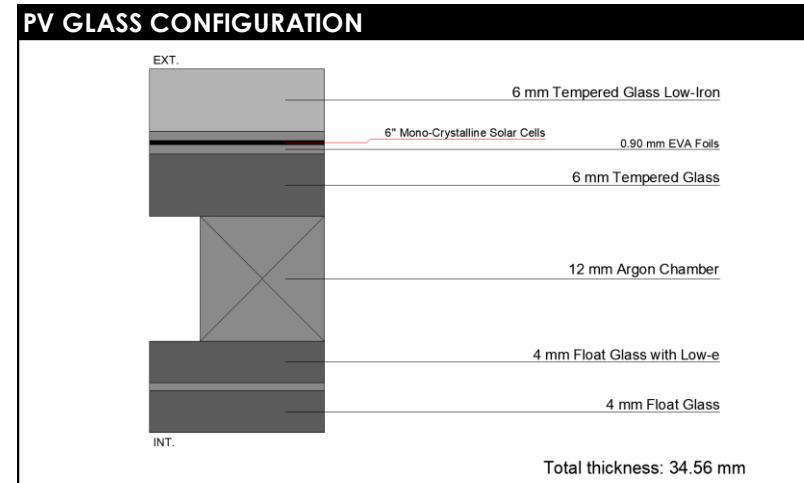
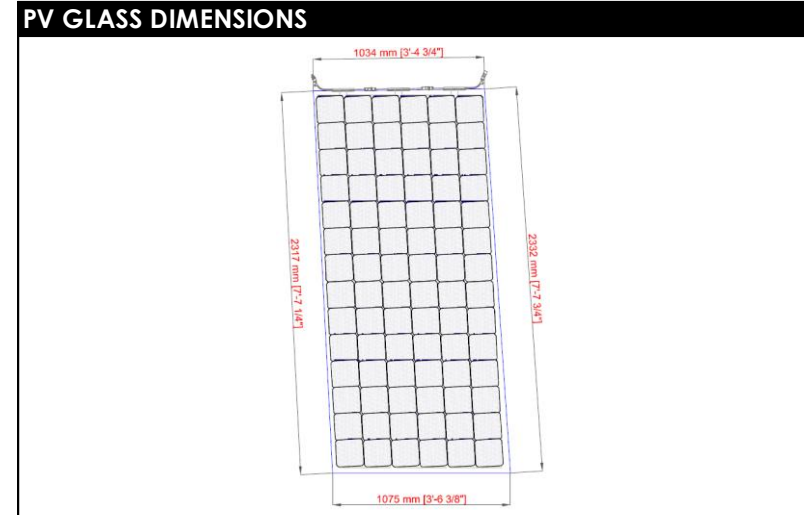
TYPE 11 – K10

M109



PHOTOVOLTAIC GLASS		2.327 x 1191	
M109 / TYPE 11 - K9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2327	mm	
Width	1191	mm	
Thickness	34,56	mm	
Surface area	2,77	sqm	
Weight	139	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	139,4

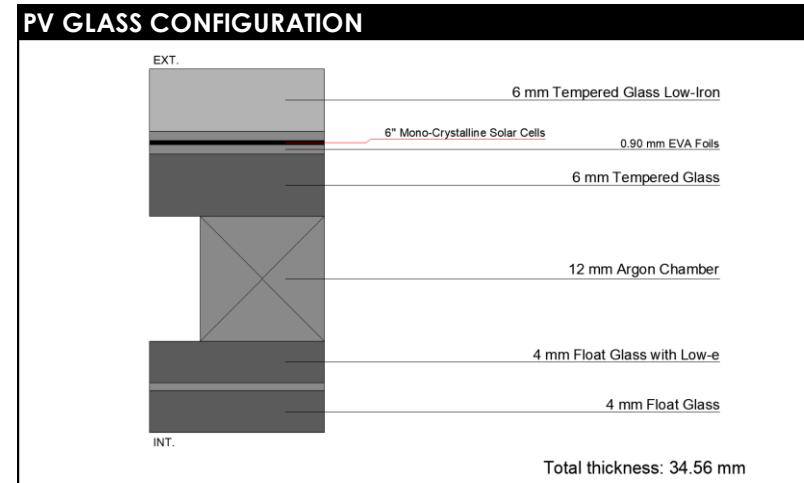
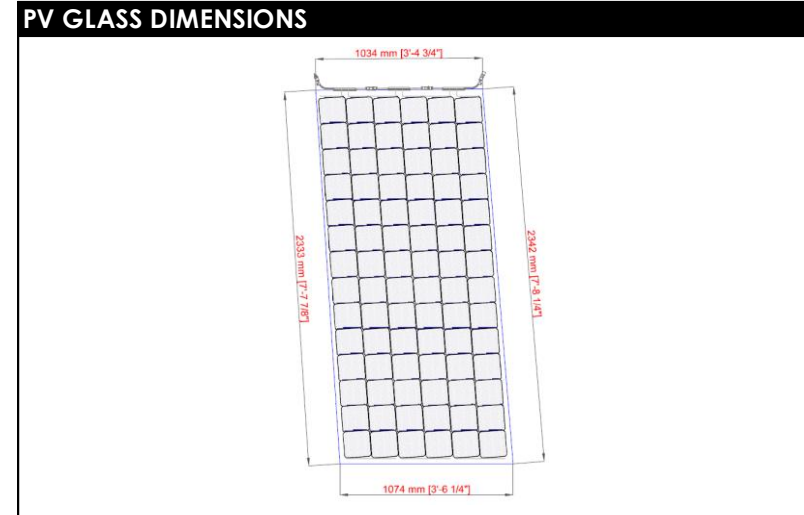


TYPE 11 – K10

M110



PHOTOVOLTAIC GLASS		2.334 x 1224	
M110 / TYPE 11 - K10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2334	mm	
Width	1224	mm	
Thickness	34,56	mm	
Surface area	2,86	sqm	
Weight	143	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	135,2



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DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 12

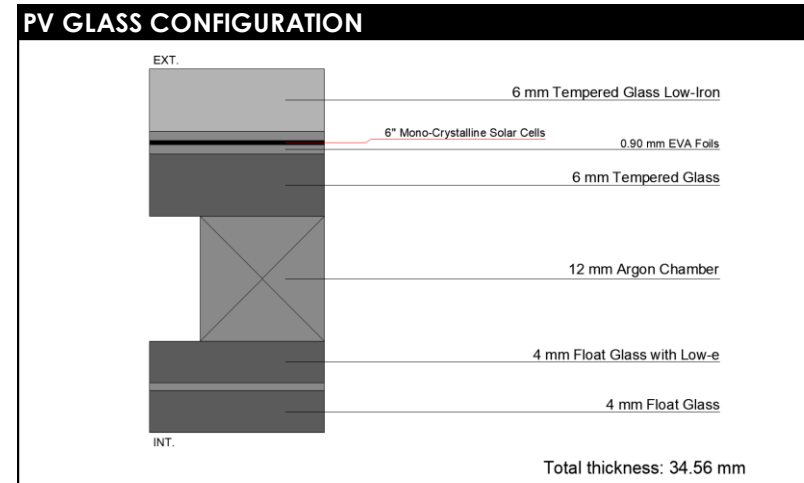
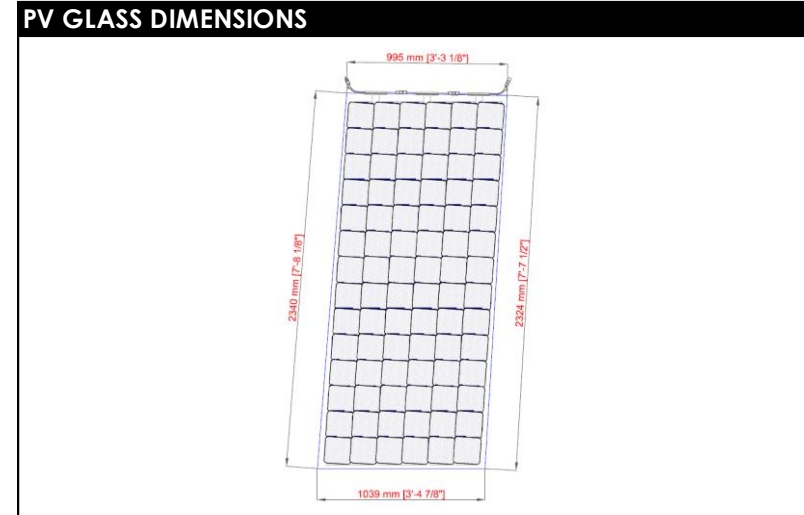


TYPE 12 – L1

M111



PHOTOVOLTAIC GLASS		2.333 x 1177	
M111 / TYPE 12 - L1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2333	mm	
Width	1177	mm	
Thickness	34,56	mm	
Surface area	2,75	sqm	
Weight	137	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	140,7



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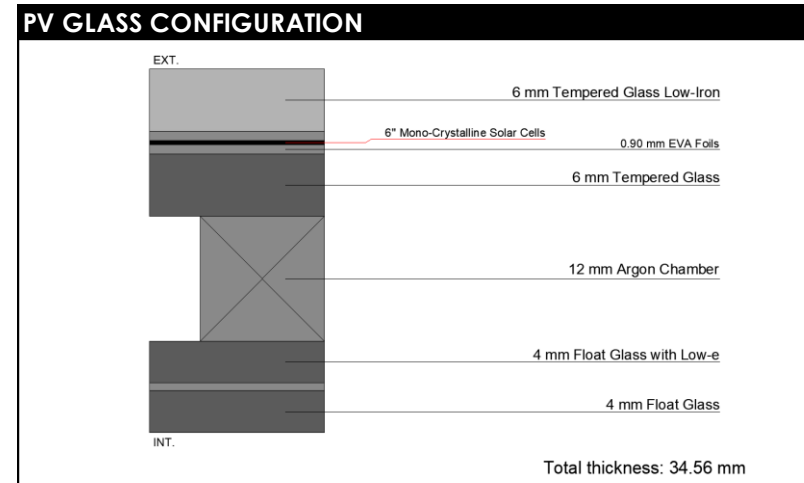
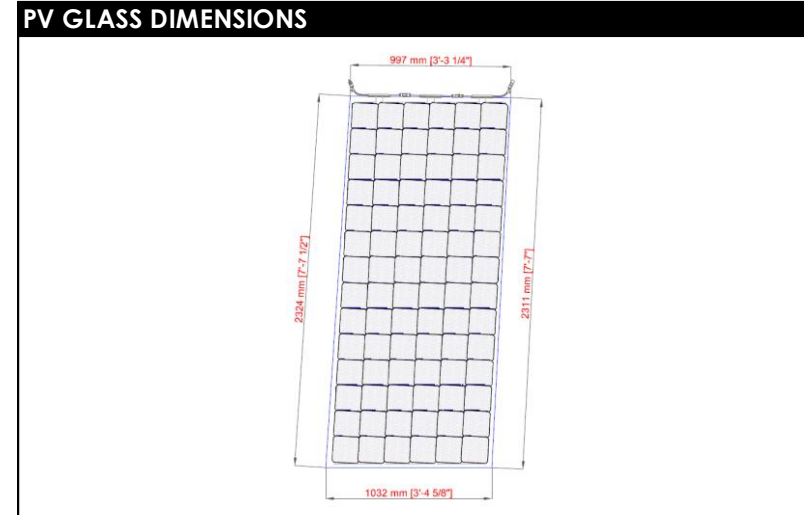
TYPE 12 – L2

M112



PHOTOVOLTAIC GLASS		2.319 x 1149	
M112 / TYPE 12 - L2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2319	mm	
Width	1149	mm	
Thickness	34,56	mm	
Surface area	2,66	sqm	
Weight	133	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,0

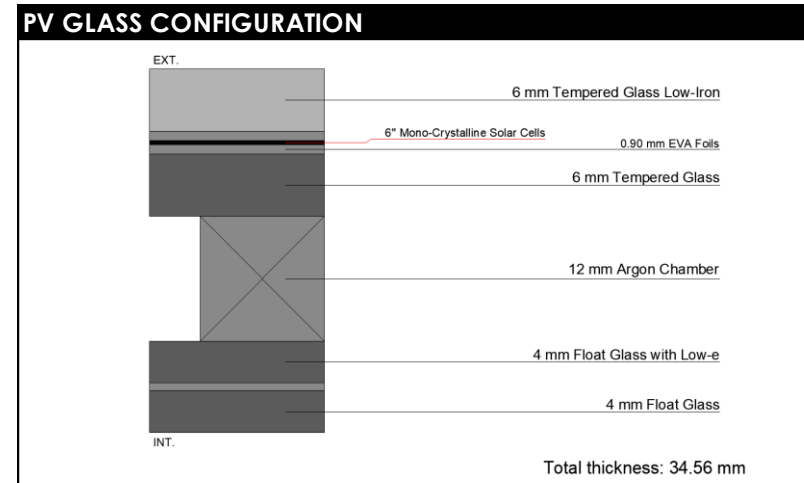
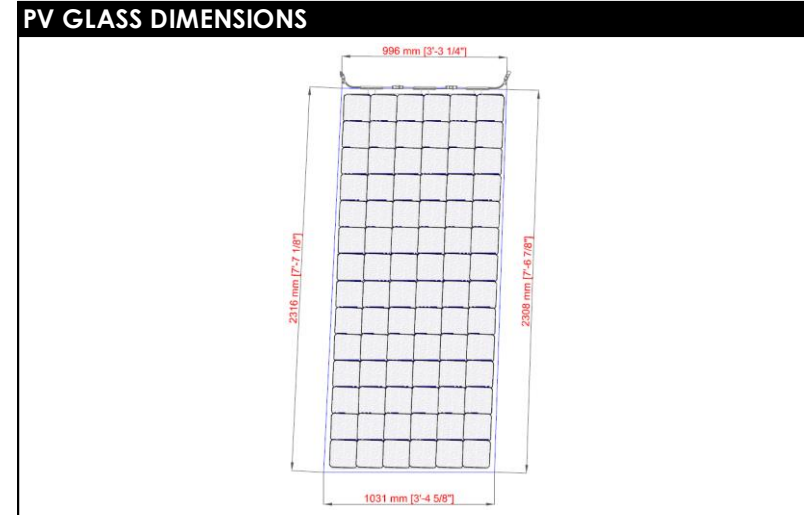


TYPE 12 – L3

M113



PHOTOVOLTAIC GLASS		2.313 x 1106	
M113 / TYPE 12 - L3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2313	mm	
Width	1106	mm	
Thickness	34,56	mm	
Surface area	2,56	sqm	
Weight	128	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,0



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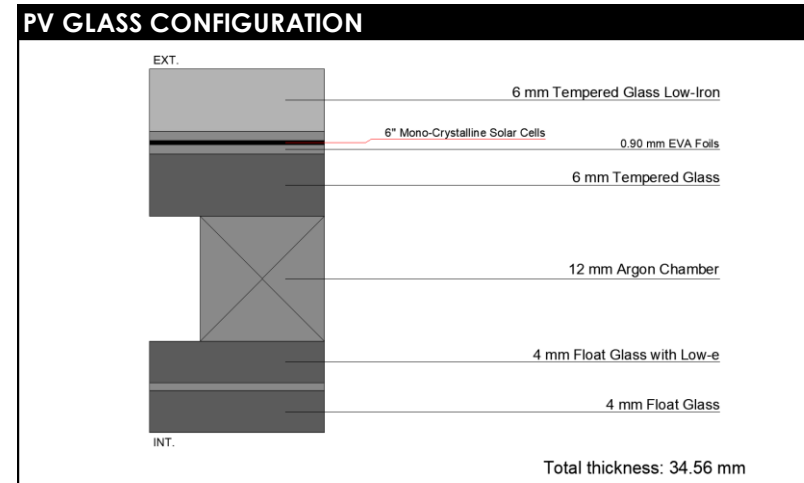
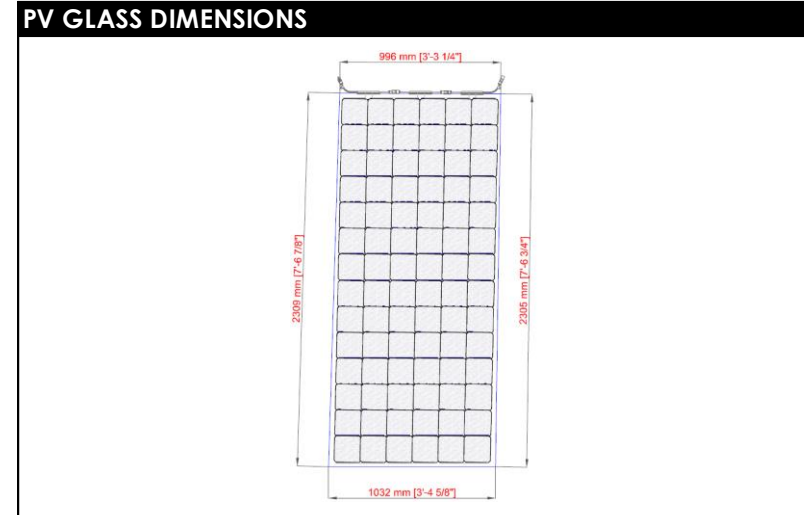
TYPE 12 – L4

M114



PHOTOVOLTAIC GLASS		2.308 x 1066	
M114 / TYPE 12 - L4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2308	mm	
Width	1066	mm	
Thickness	34,56	mm	
Surface area	2,46	sqm	
Weight	123	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	157,0

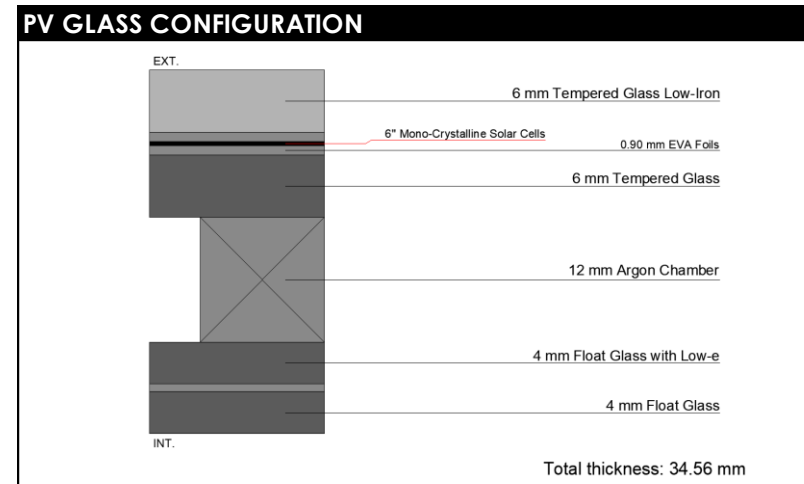
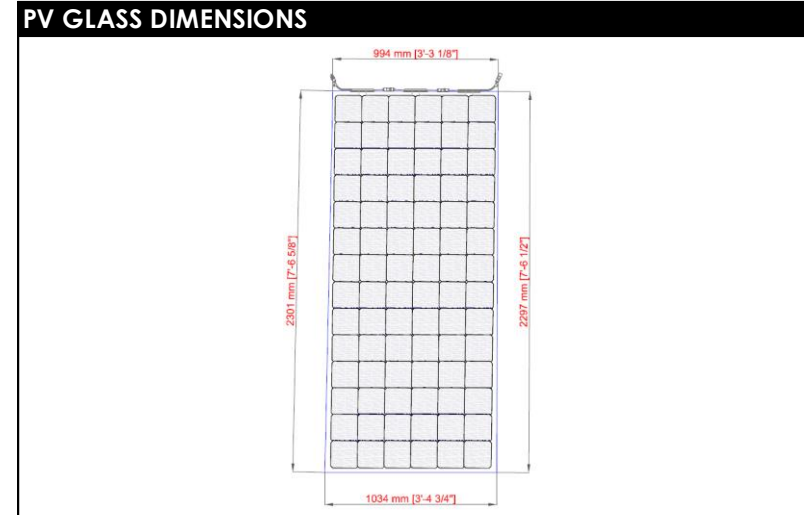


TYPE 12 – L5

M115



PHOTOVOLTAIC GLASS		2.301 x 1034	
M115 / TYPE 12 - L5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2301	mm	
Width	1034	mm	
Thickness	34,56	mm	
Surface area	2,38	sqm	
Weight	119	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	19%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	19%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	162,4



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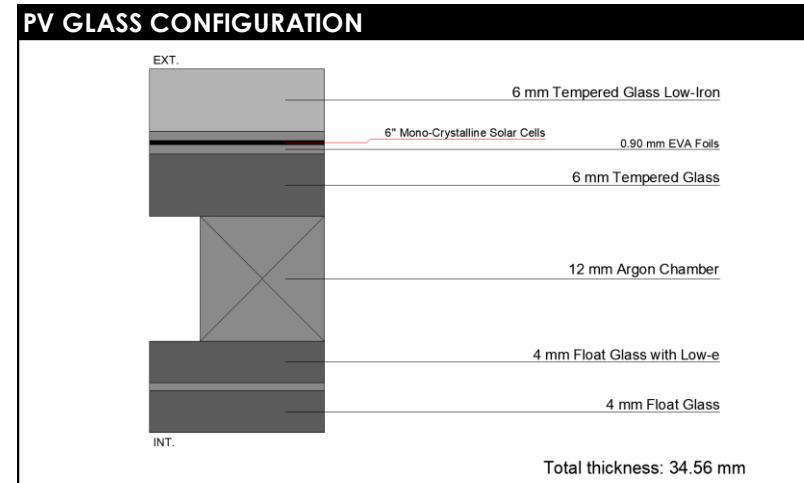
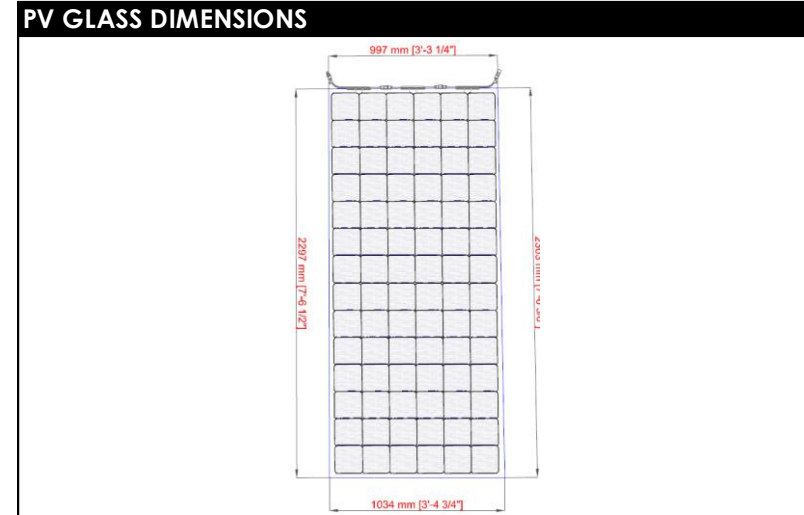
TYPE 12 – L6

M116



PHOTOVOLTAIC GLASS		2.302 x 1039	
M116 / TYPE 12 - L6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2302	mm	
Width	1039	mm	
Thickness	34,56	mm	
Surface area	2,39	sqm	
Weight	120	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	19%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	19%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	161,5



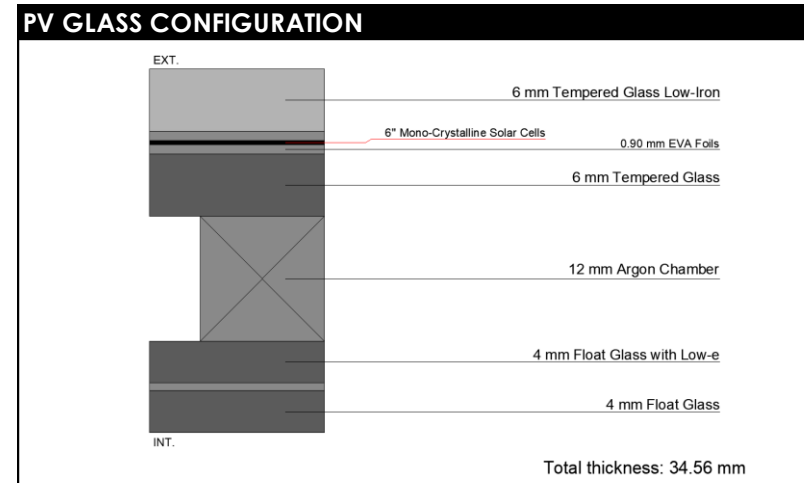
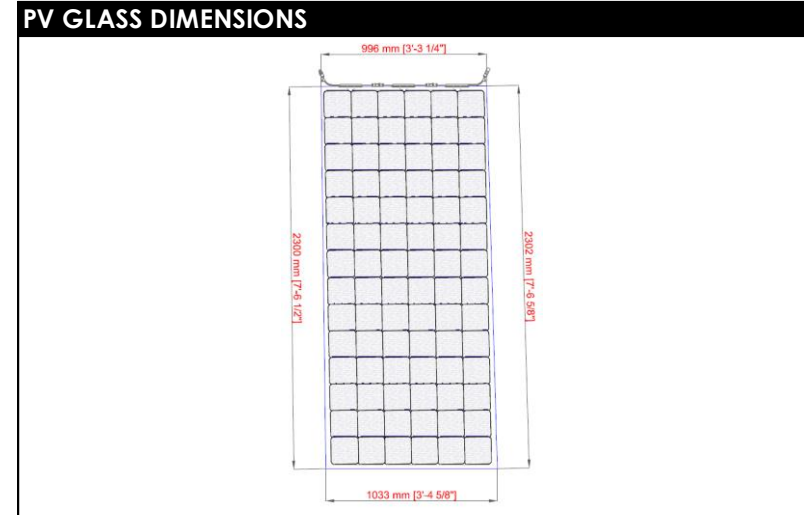
TYPE 12 – L7

M117



PHOTOVOLTAIC GLASS		2.301 x 1060	
M117 / TYPE 12 - L7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2301	mm	
Width	1060	mm	
Thickness	34,56	mm	
Surface area	2,44	sqm	
Weight	122	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	21%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	21%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	158,4

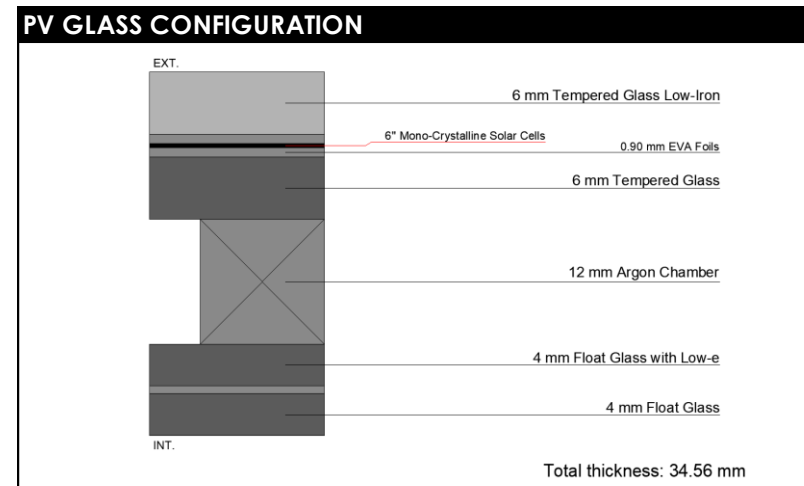
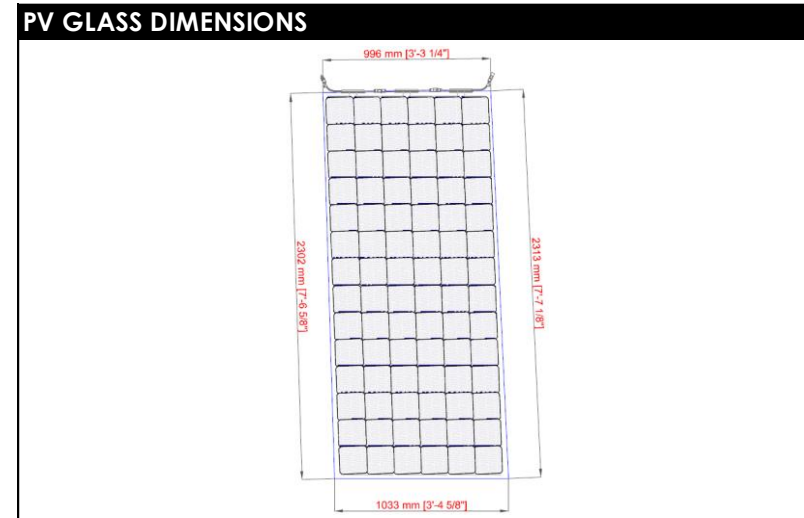


TYPE 12 – L8

M118



PHOTOVOLTAIC GLASS		2311 x 1101	
M118 / TYPE 12 - L8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2311	mm	
Width	1101	mm	
Thickness	34,56	mm	
Surface area	2,54	sqm	
Weight	127	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	24%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	24%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	151,8



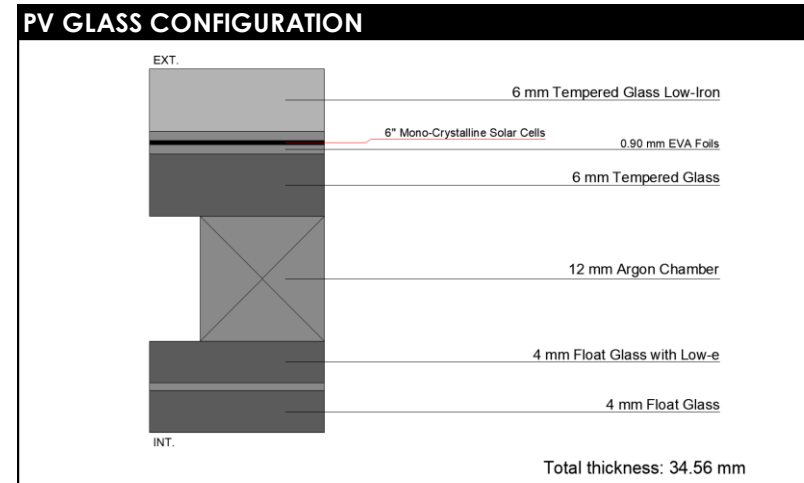
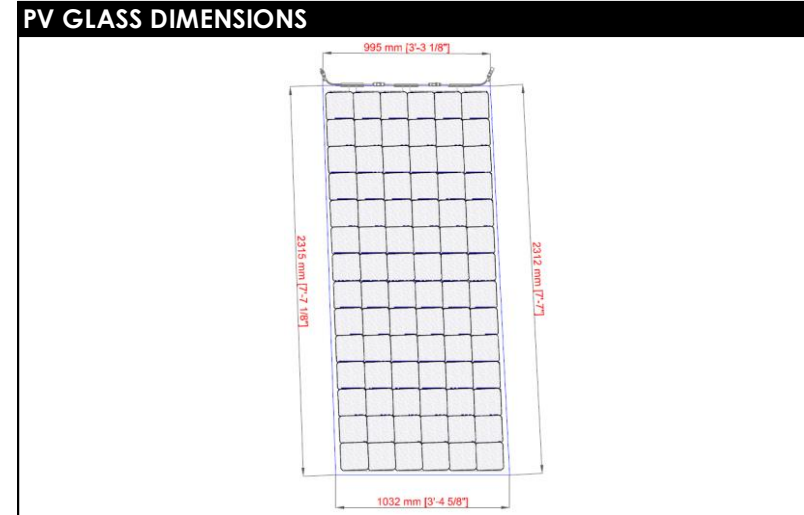
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 12 – L9

M119



PHOTOVOLTAIC GLASS		2.313 x 1110	
M119 / TYPE 12 - L9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2313	mm	
Width	1110	mm	
Thickness	34,56	mm	
Surface area	2,57	sqm	
Weight	128	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	150,5

* All technical specifications are subject to change without notice by Onyx Solar



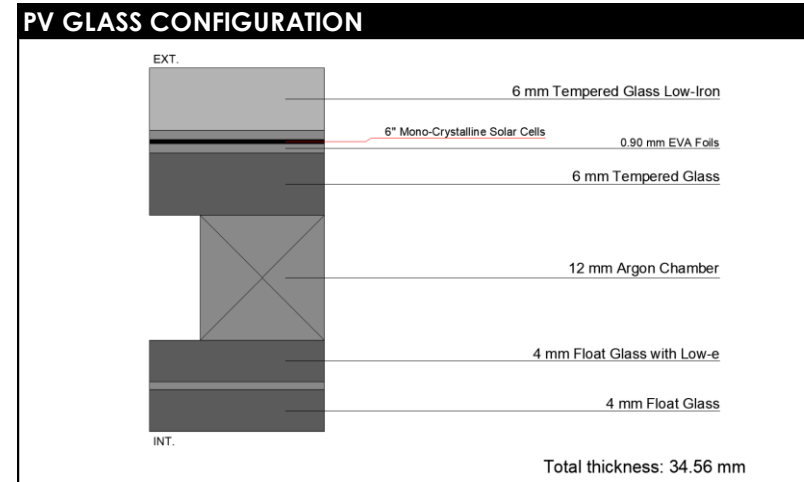
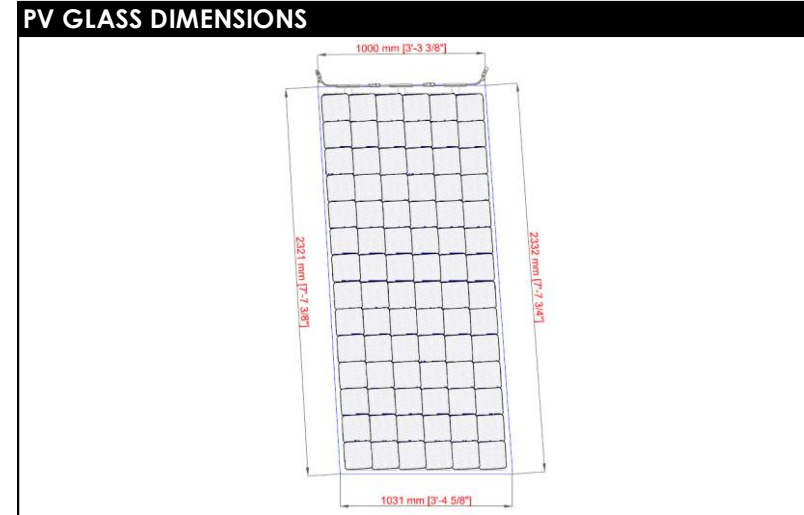
TYPE 12 – L10

M120



PHOTOVOLTAIC GLASS		2.326 x 1164	
M120 / TYPE 12 - L10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	386	P_{mpp} (Wp)	
Open-circuit voltage	56	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	47	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2326	mm	
Width	1164	mm	
Thickness	34,56	mm	
Surface area	2,71	sqm	
Weight	135	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	84	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	142,7





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 13

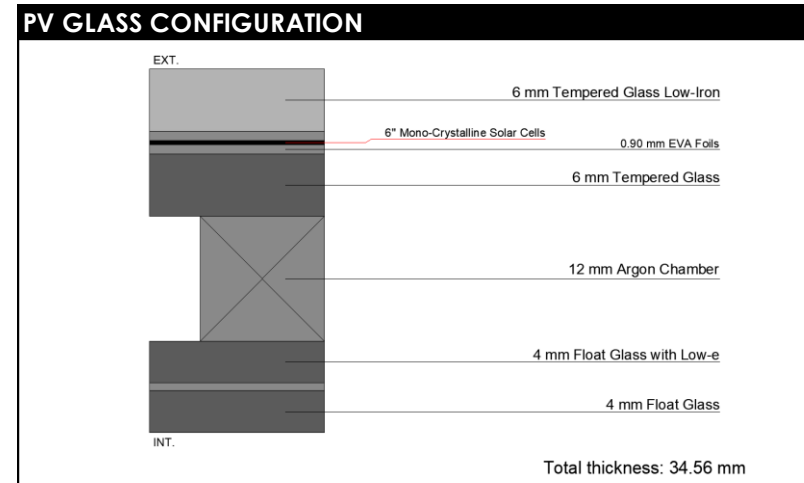
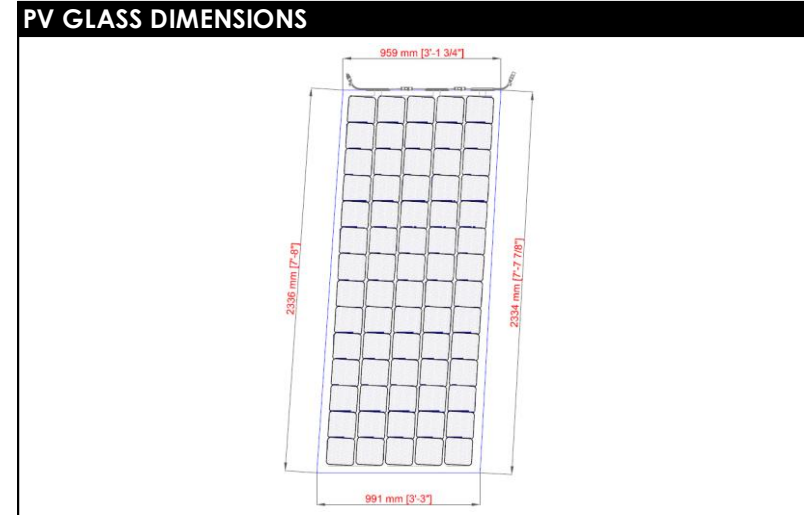


TYPE 13 – M1

M121



PHOTOVOLTAIC GLASS		2.331 x 1118	
M121 / TYPE 13 - M1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2331	mm	
Width	1118	mm	
Thickness	34,56	mm	
Surface area	2,61	sqm	
Weight	130	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	38%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	38%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	123,5



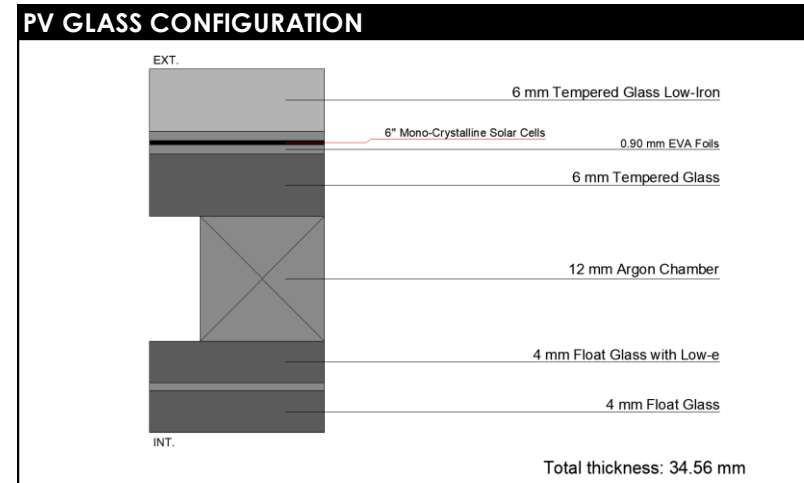
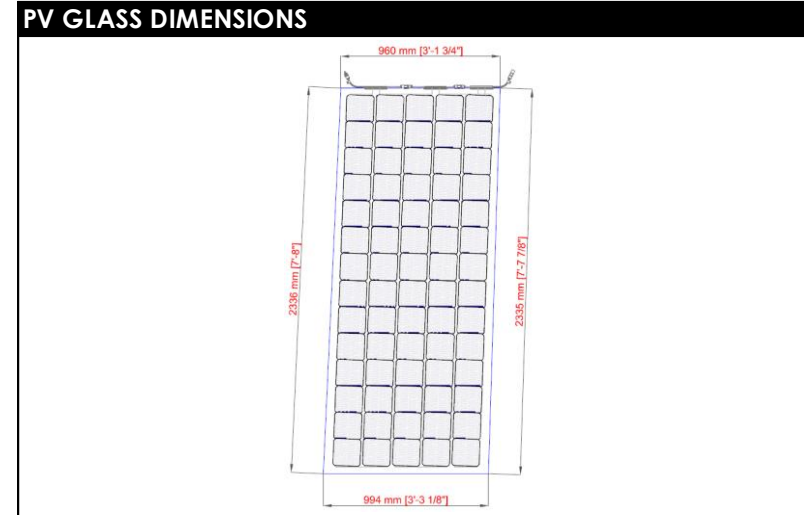
* All technical specifications are subject to change without notice by Onyx Solar

TYPE 13 – M2

M122



PHOTOVOLTAIC GLASS		2.334 x 1067	
M122 / TYPE 13 - M2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2334	mm	
Width	1067	mm	
Thickness	34,56	mm	
Surface area	2,49	sqm	
Weight	125	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	129,3

* All technical specifications are subject to change without notice by Onyx Solar



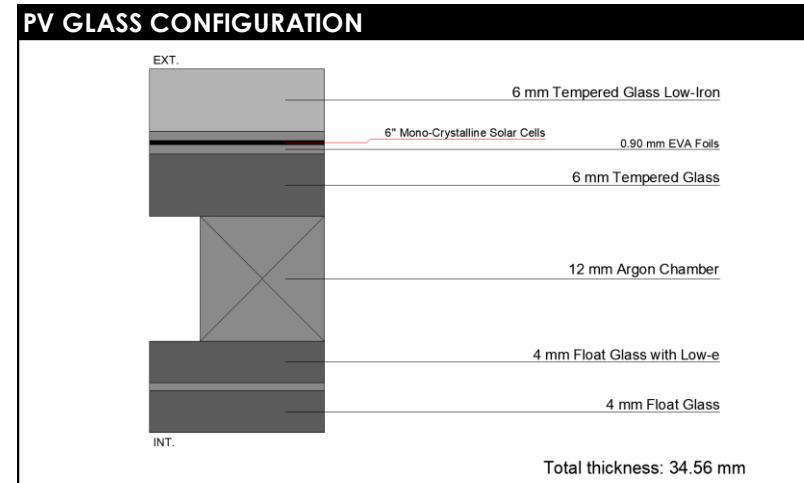
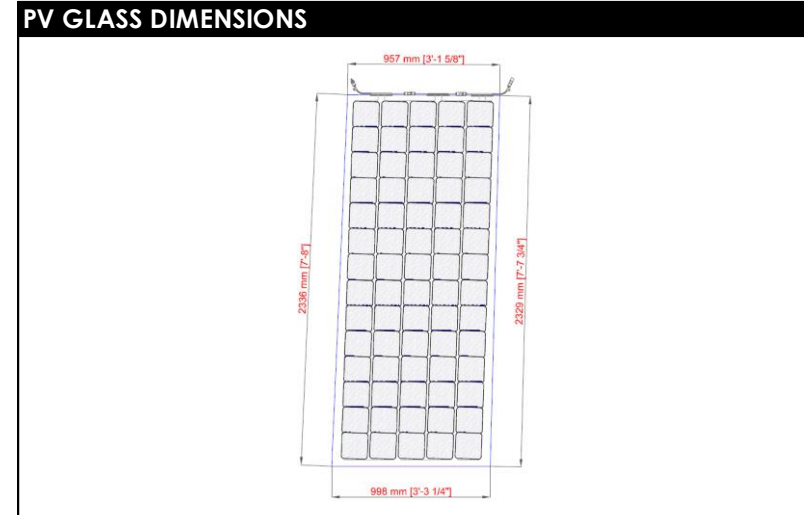
TYPE 13 – M3

M123



PHOTOVOLTAIC GLASS		2.334 x 1058	
M123 / TYPE 13 - M3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2334	mm	
Width	1058	mm	
Thickness	34,56	mm	
Surface area	2,47	sqm	
Weight	123	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	130,4

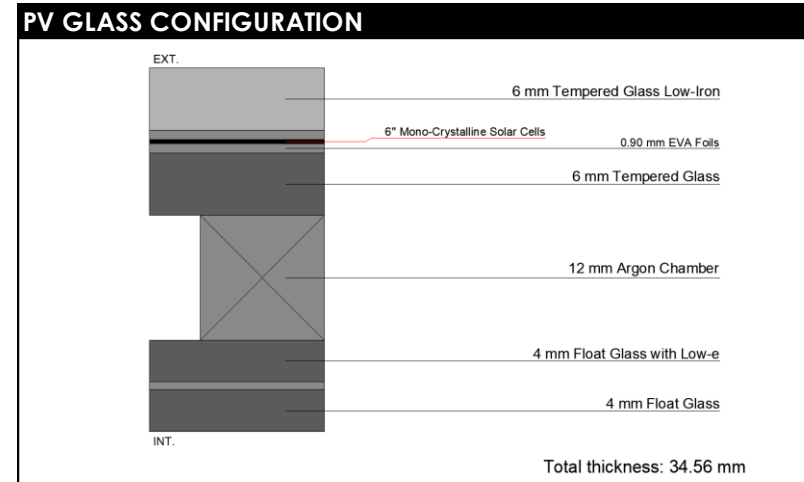
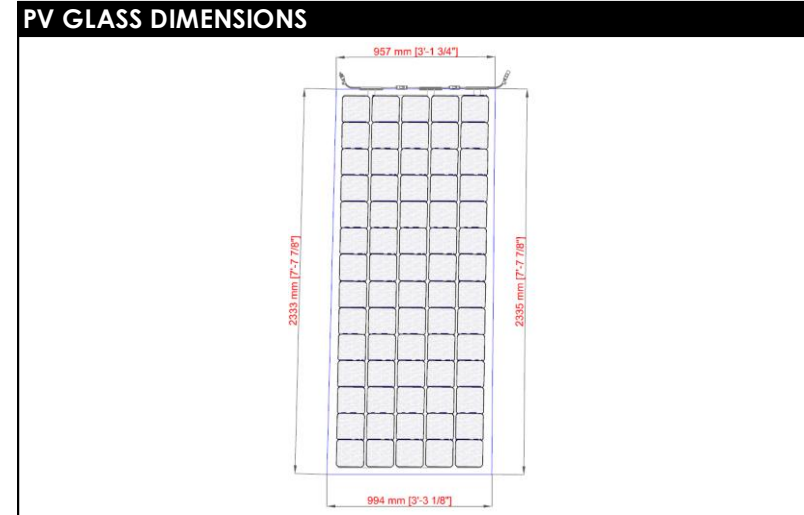


TYPE 13 – M4

M124



PHOTOVOLTAIC GLASS		2.332 x 1014	
M124 / TYPE 13 - M4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2332	mm	
Width	1014	mm	
Thickness	34,56	mm	
Surface area	2,36	sqm	
Weight	118	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	136,2



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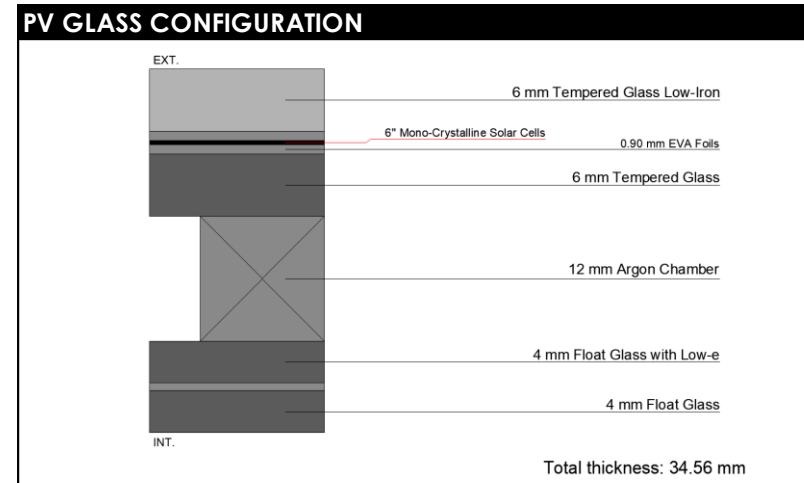
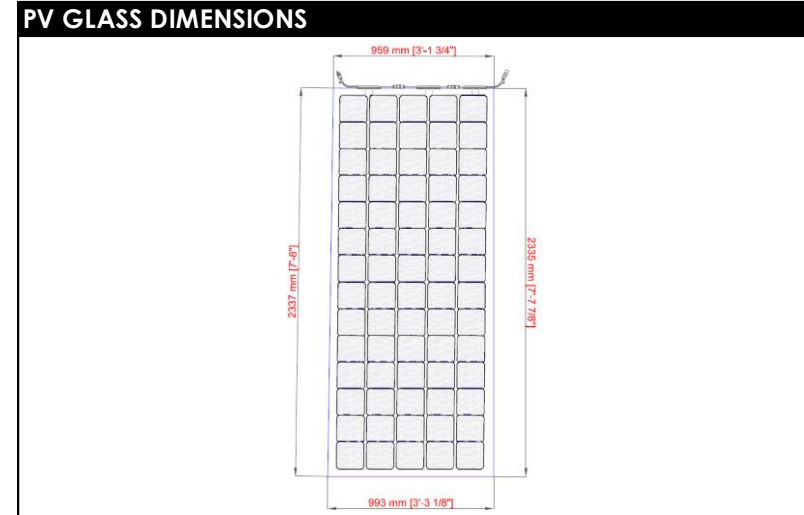
TYPE 13 – M5

M125



PHOTOVOLTAIC GLASS		2.336 x 993	
M125 / TYPE 13 - M5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2336	mm	
Width	993	mm	
Thickness	34,56	mm	
Surface area	2,32	sqm	
Weight	116	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	138,8

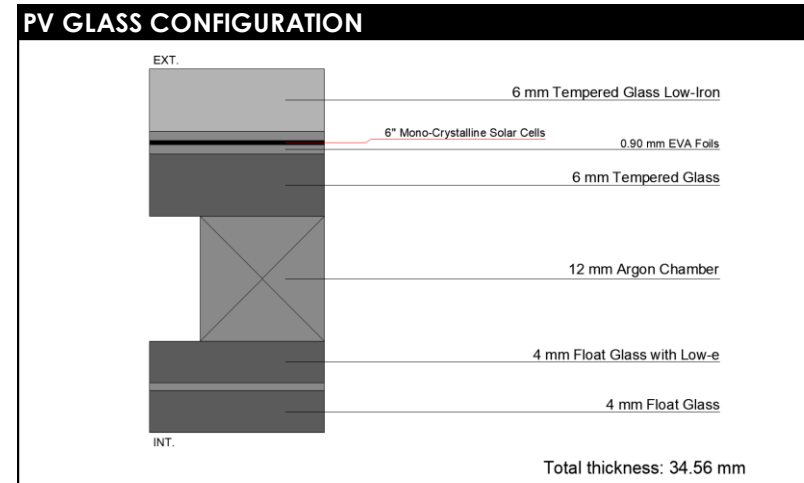
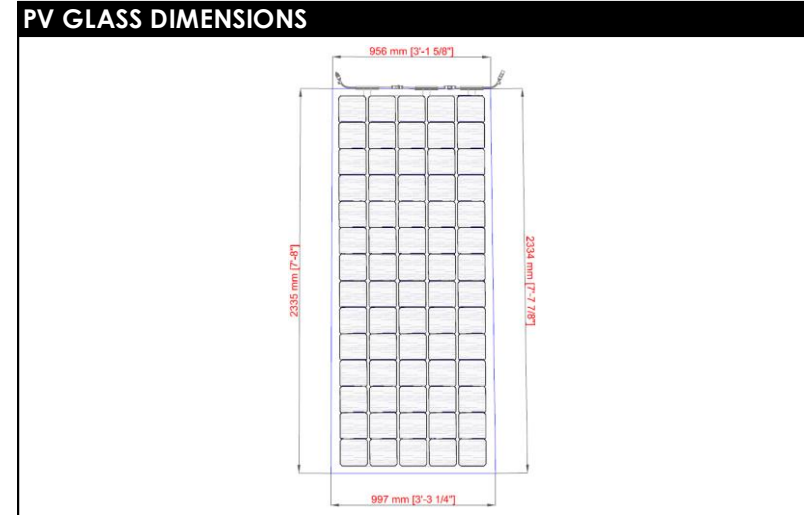


TYPE 13 – M6

M126



PHOTOVOLTAIC GLASS		2.335 x 997	
M126 / TYPE 13 - M6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	997	mm	
Thickness	34,56	mm	
Surface area	2,33	sqm	
Weight	116	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	138,3



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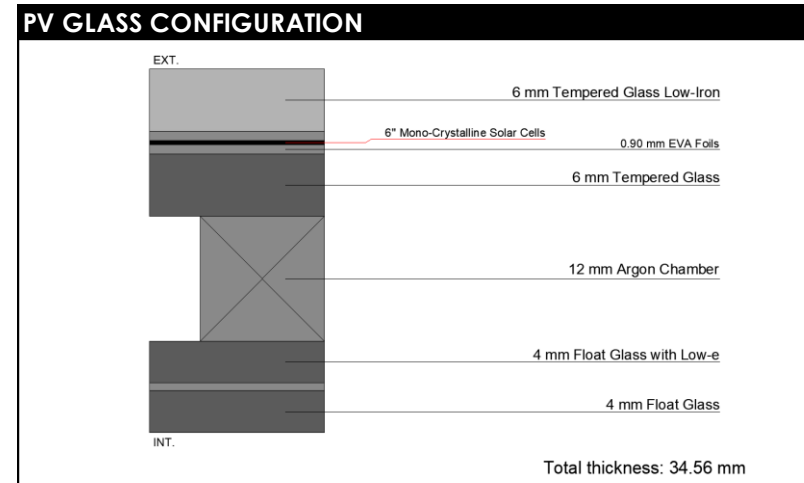
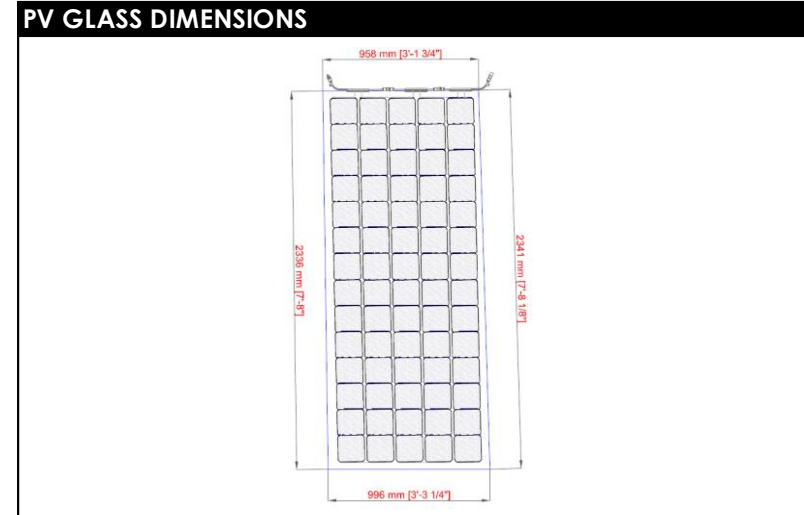
TYPE 13 – M7

M127



PHOTOVOLTAIC GLASS		2.339 x 1028	
M127 / TYPE 13 - M7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2339	mm	
Width	1028	mm	
Thickness	34,56	mm	
Surface area	2,40	sqm	
Weight	120	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	133,9



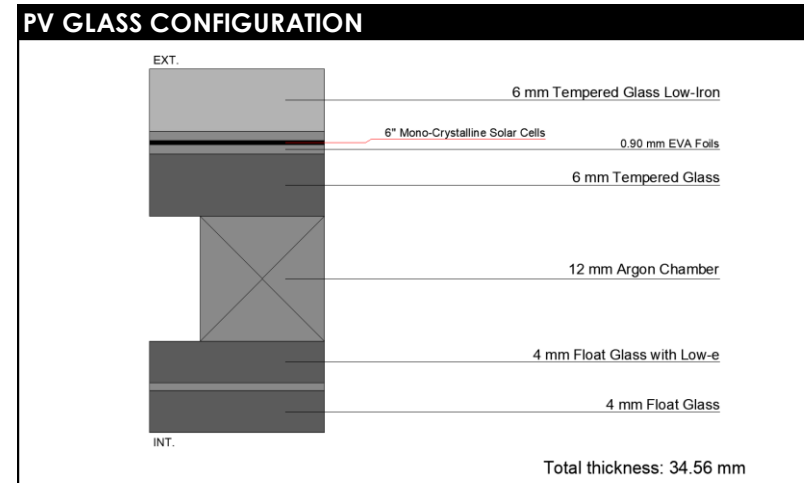
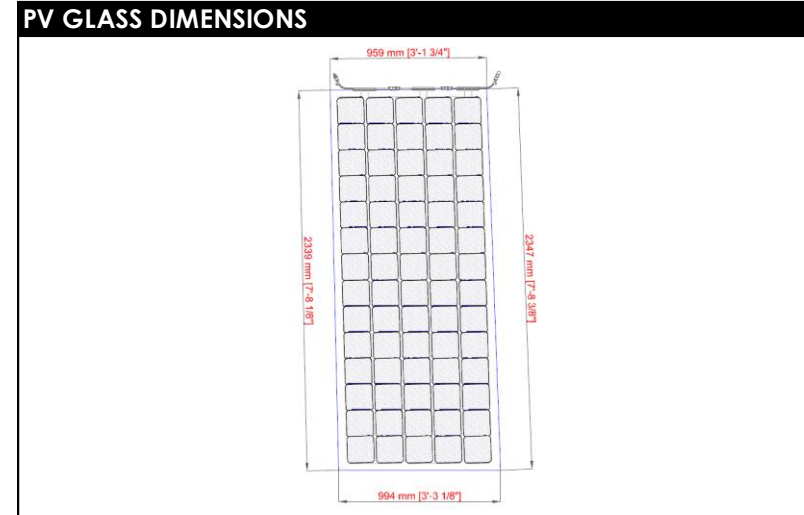
TYPE 13 – M8

M128



PHOTOVOLTAIC GLASS		2.345 x 1045	
M128 / TYPE 13 - M8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1045	mm	
Thickness	34,56	mm	
Surface area	2,45	sqm	
Weight	123	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	131,4



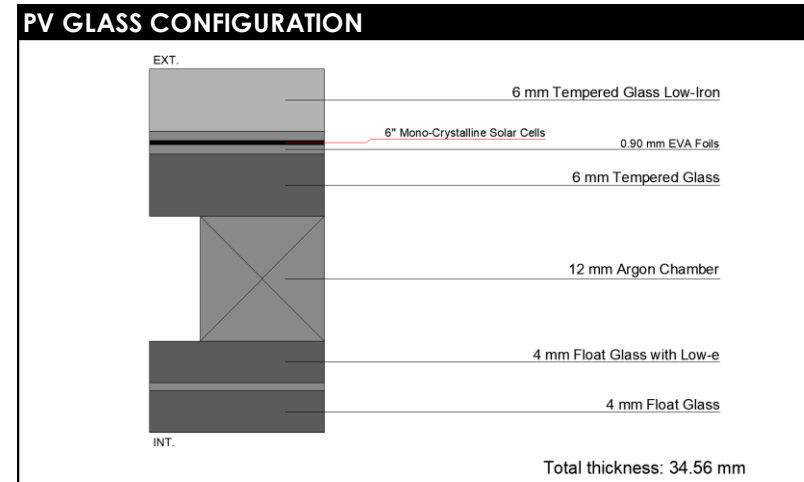
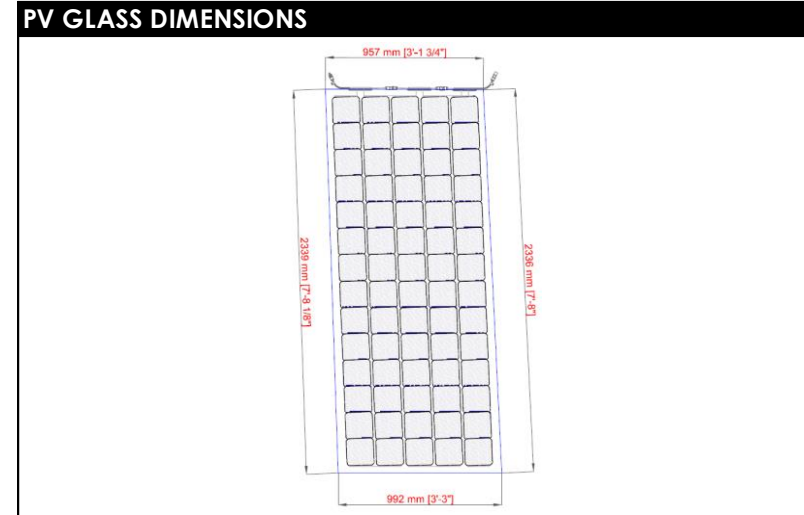
TYPE 13 – M9

M129



PHOTOVOLTAIC GLASS		2.337 x 1070	
M129 / TYPE 13 - M9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2337	mm	
Width	1070	mm	
Thickness	34,56	mm	
Surface area	2,50	sqm	
Weight	125	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	128,8



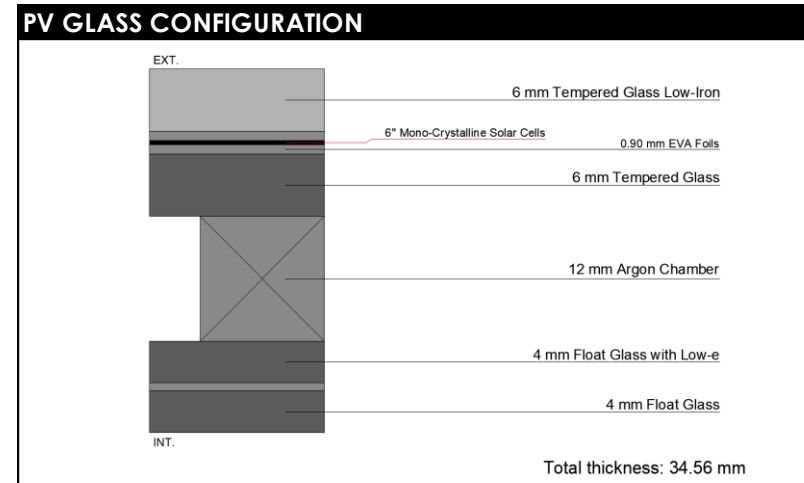
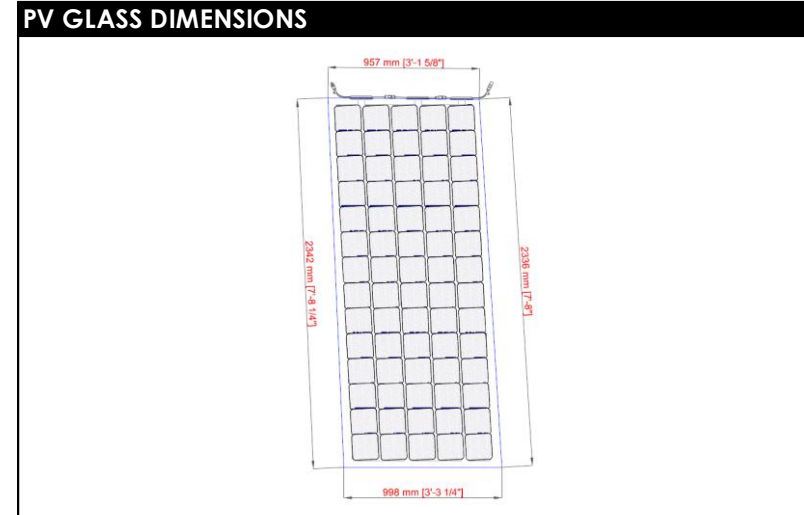
TYPE 13 – M10

M130



PHOTOVOLTAIC GLASS		2.340 x 1100	
M130 / TYPE 13 - M10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2340	mm	
Width	1100	mm	
Thickness	34,56	mm	
Surface area	2,57	sqm	
Weight	129	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	37%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	37%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	125,1





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 14



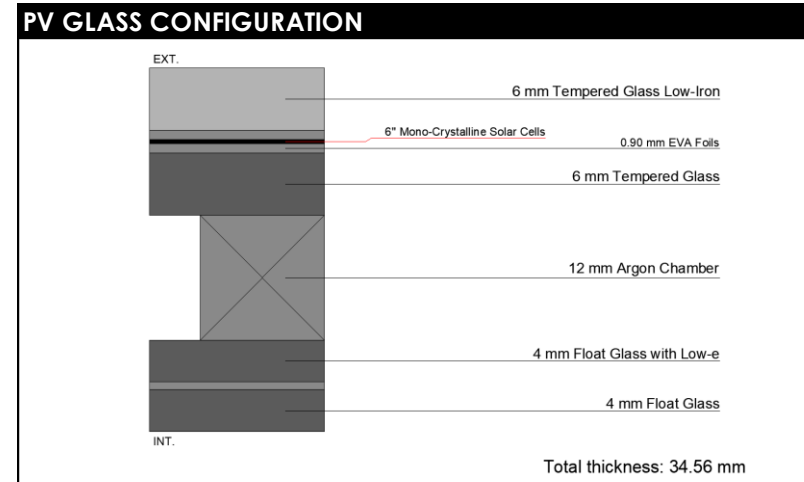
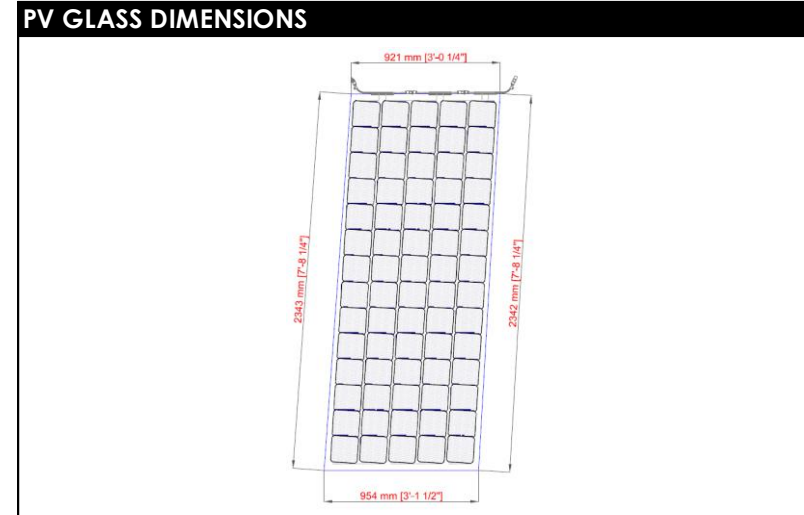
TYPE 14 – N1

N131



PHOTOVOLTAIC GLASS		2.339 x 1088	
M131 / TYPE 14 - N1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2339	mm	
Width	1088	mm	
Thickness	34,56	mm	
Surface area	2,54	sqm	
Weight	127	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	37%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	37%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	126,5



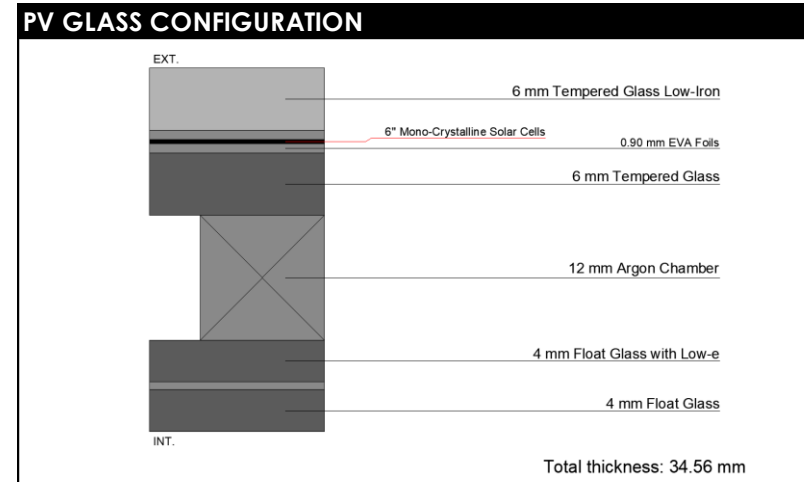
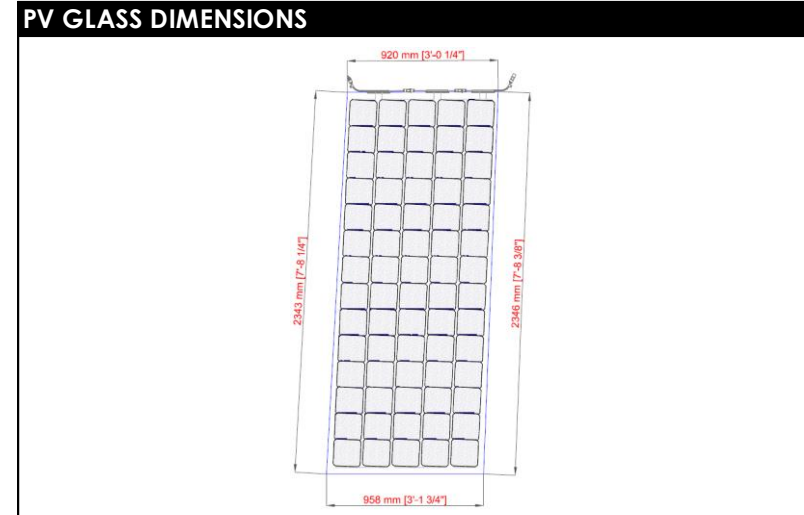
TYPE 14 – N2

N132



PHOTOVOLTAIC GLASS		2.344 x 1048	
M132 / TYPE 14 - N2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2344	mm	
Width	1048	mm	
Thickness	34,56	mm	
Surface area	2,46	sqm	
Weight	123	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	131,1



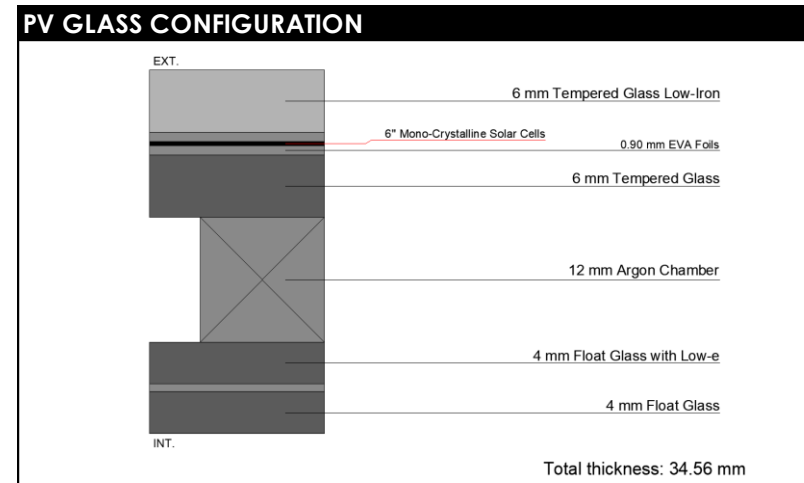
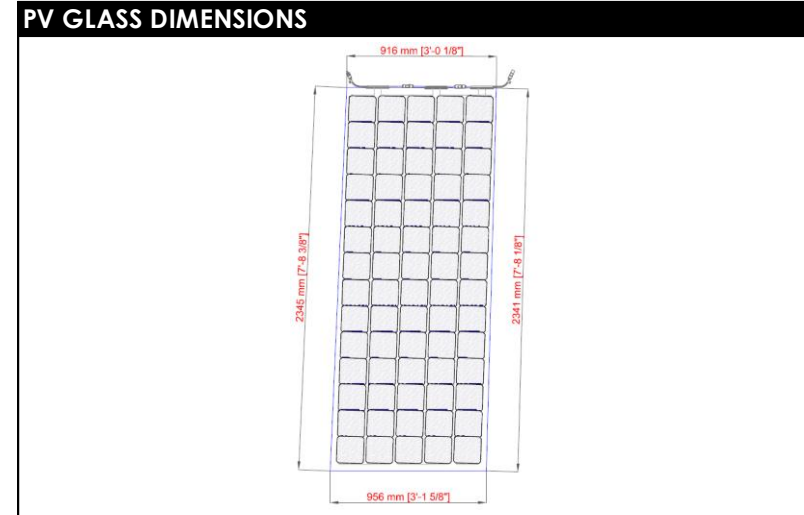
TYPE 14 – N3

N133



PHOTOVOLTAIC GLASS		2.343 x 1018	
M133 / TYPE 14 - N3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2343	mm	
Width	1018	mm	
Thickness	34,56	mm	
Surface area	2,39	sqm	
Weight	119	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	135,0



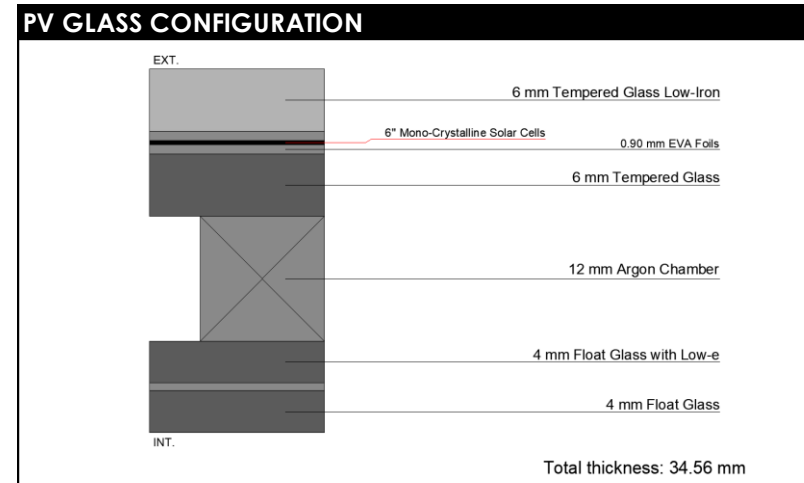
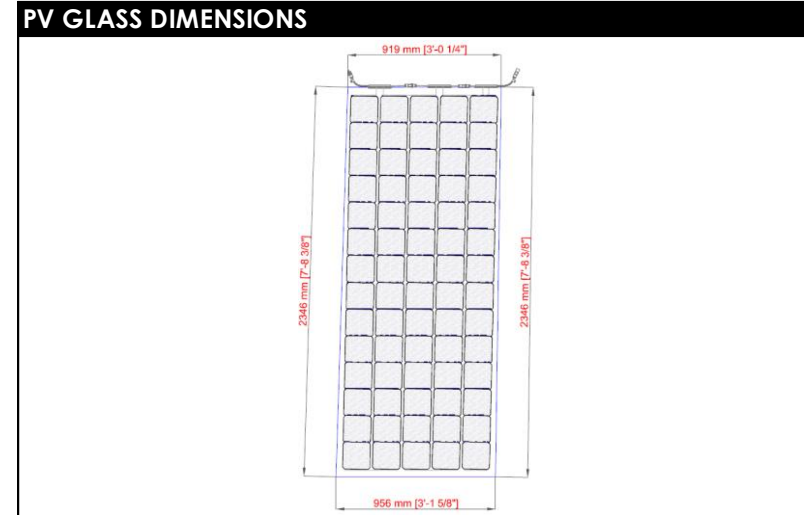
TYPE 14 – N4

N134



PHOTOVOLTAIC GLASS		2.346 x 991	
M134 / TYPE 14 - N4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2346	mm	
Width	991	mm	
Thickness	34,56	mm	
Surface area	2,32	sqm	
Weight	116	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	31%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	31%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	138,5



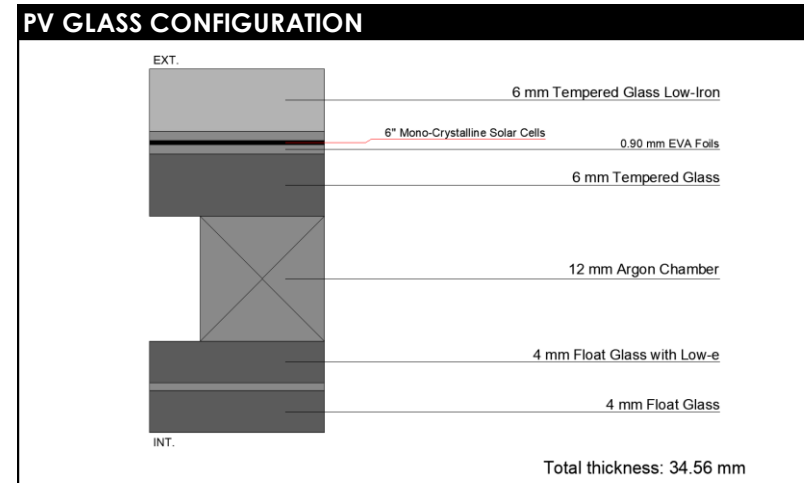
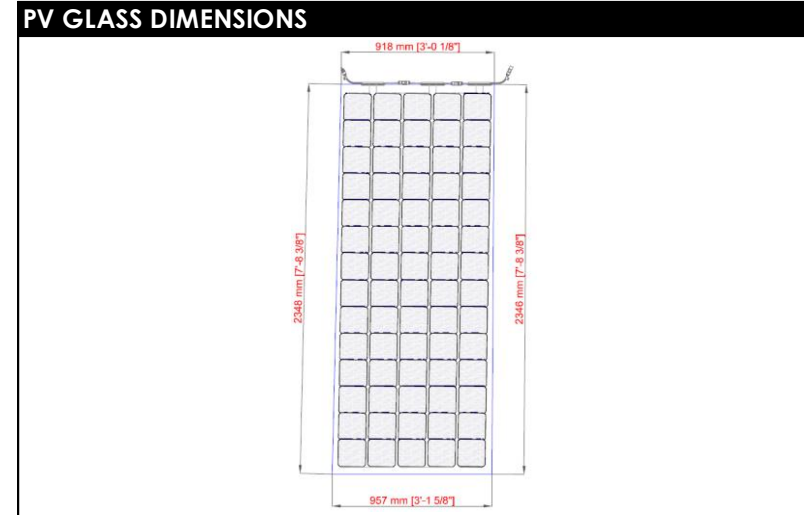
TYPE 14 – N5

N135



PHOTOVOLTAIC GLASS		2.347 x 971	
M135 / TYPE 14 - N5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2347	mm	
Width	971	mm	
Thickness	34,56	mm	
Surface area	2,28	sqm	
Weight	114	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,3



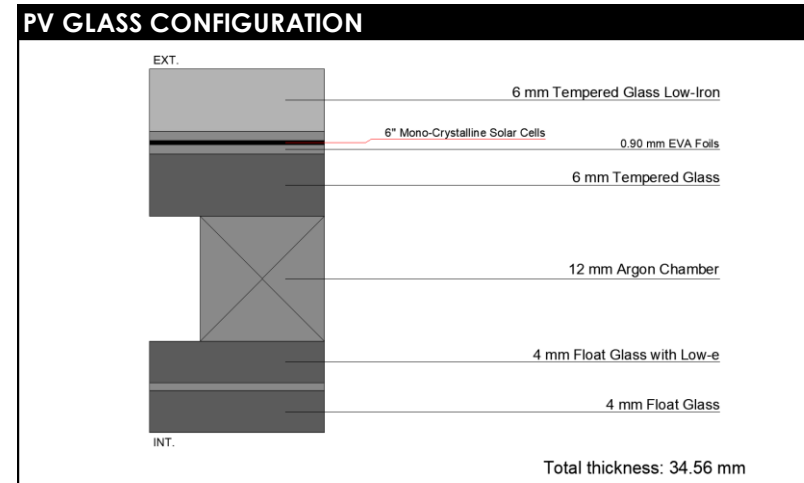
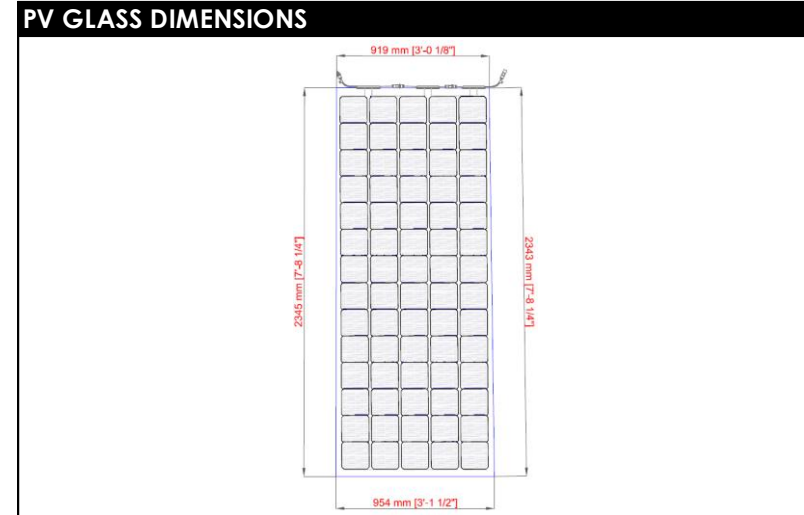
TYPE 14 – N6

N136



PHOTOVOLTAIC GLASS		2.344 x 954	
M136 / TYPE 14 - N6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2344	mm	
Width	954	mm	
Thickness	34,56	mm	
Surface area	2,24	sqm	
Weight	112	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,0



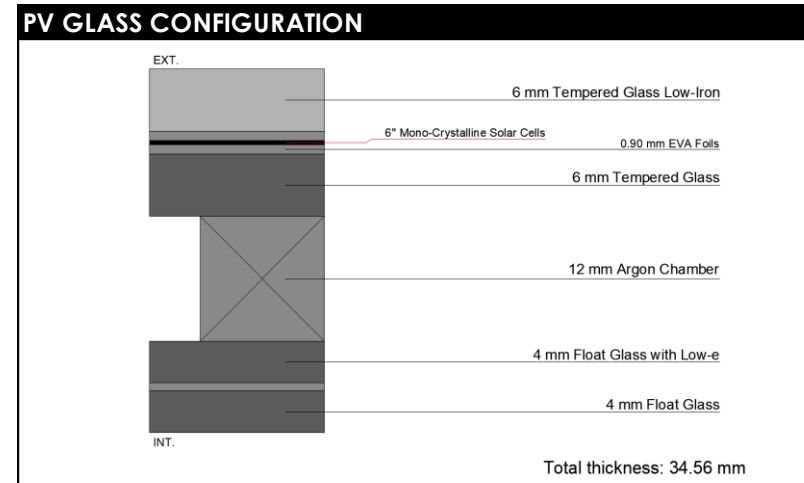
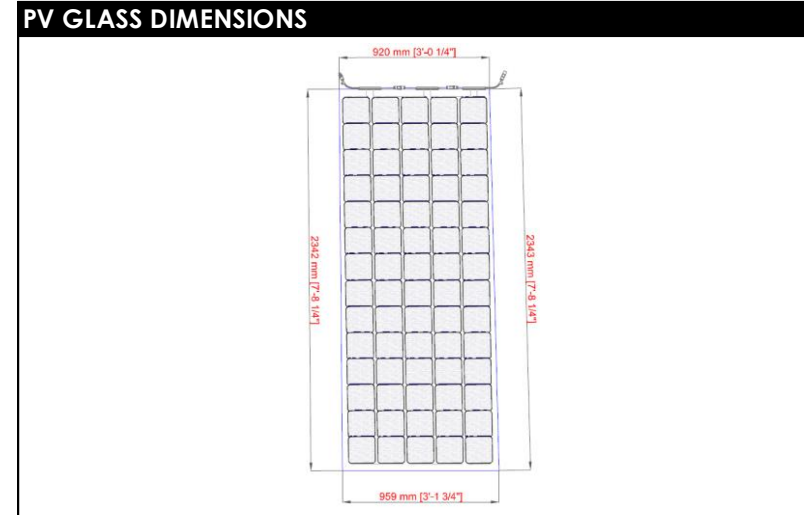
TYPE 14 – N7

N137



PHOTOVOLTAIC GLASS		2.342 x 978	
M137 / TYPE 14 - N7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2342	mm	
Width	978	mm	
Thickness	34,56	mm	
Surface area	2,29	sqm	
Weight	115	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	140,6



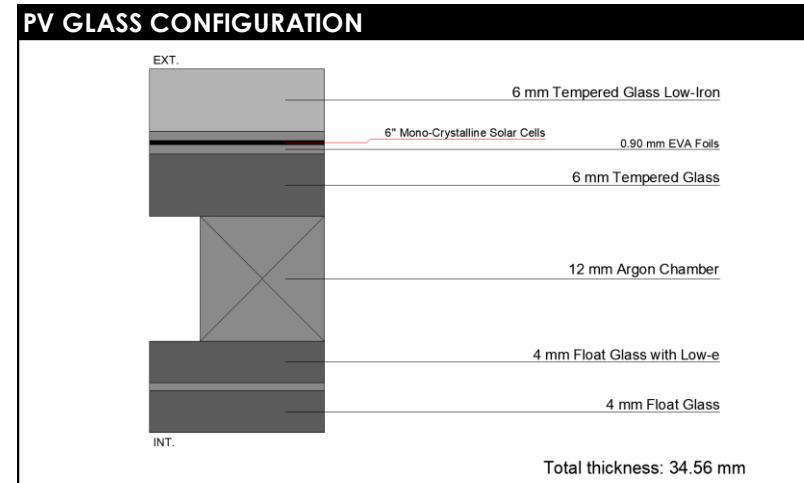
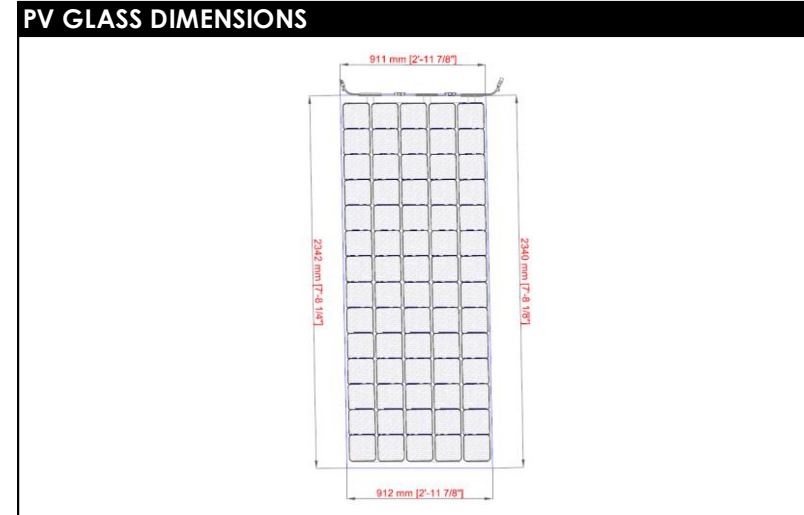
TYPE 14 – N8

N138



PHOTOVOLTAIC GLASS		2.341 x 954	
M138 / TYPE 14 - N8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2341	mm	
Width	954	mm	
Thickness	34,56	mm	
Surface area	2,23	sqm	
Weight	112	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	28%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	28%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	144,2



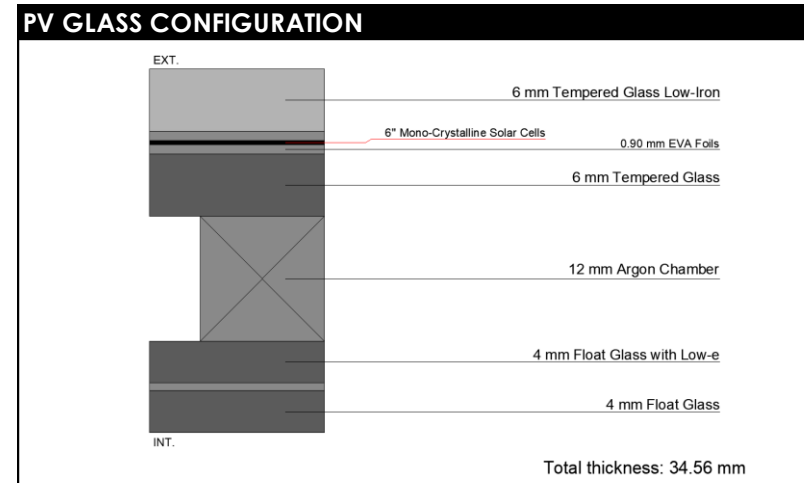
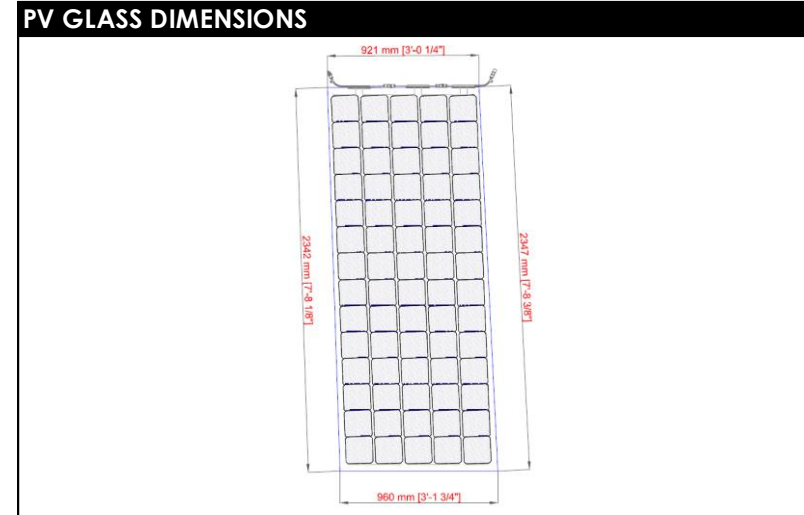
TYPE 14 – N9

N139



PHOTOVOLTAIC GLASS		2.345 x 1036	
M139 / TYPE 14 - N9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1036	mm	
Thickness	34,56	mm	
Surface area	2,43	sqm	
Weight	121	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	132,5



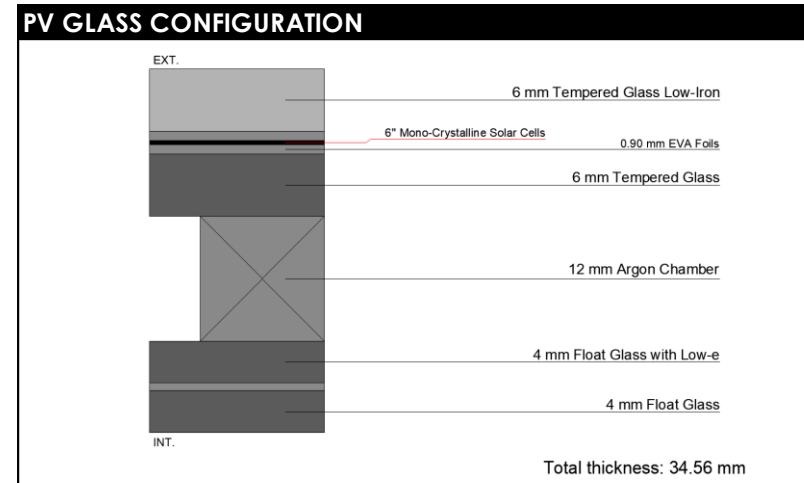
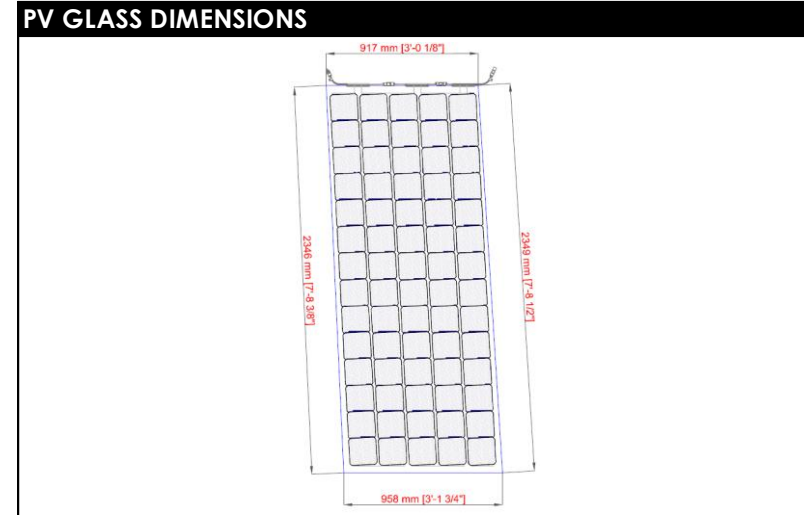
TYPE 14 – N10

N140



PHOTOVOLTAIC GLASS		2.345 x 1064	
M140 / TYPE 14 - N10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2345	mm	
Width	1064	mm	
Thickness	34,56	mm	
Surface area	2,50	sqm	
Weight	125	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	129,0





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 15



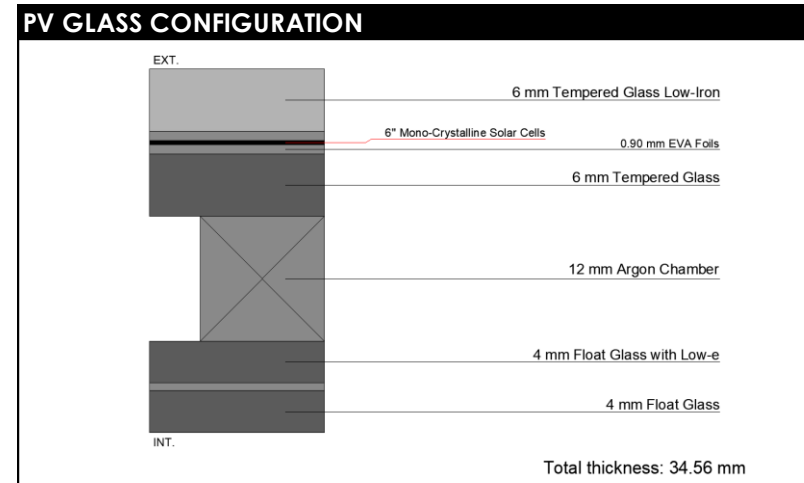
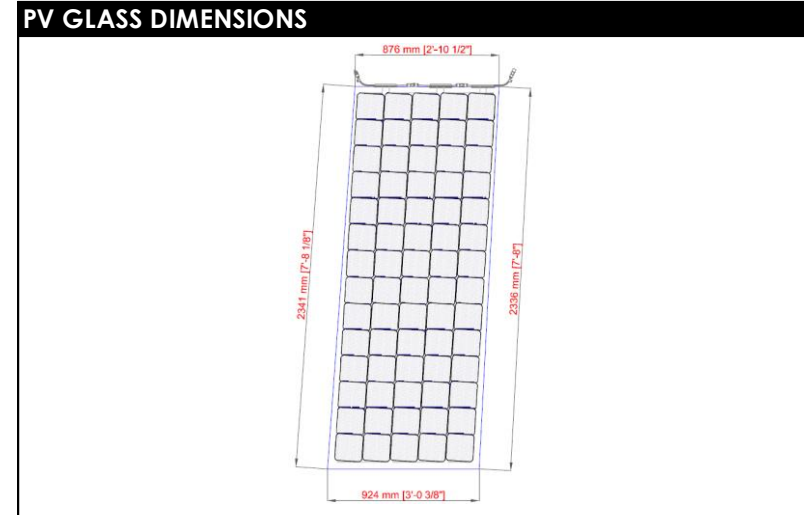
TYPE 15 – O1

M141



PHOTOVOLTAIC GLASS		2.335 x 1045	
M141 / TYPE 15 - O1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2335	mm	
Width	1045	mm	
Thickness	34,56	mm	
Surface area	2,44	sqm	
Weight	122	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	131,9



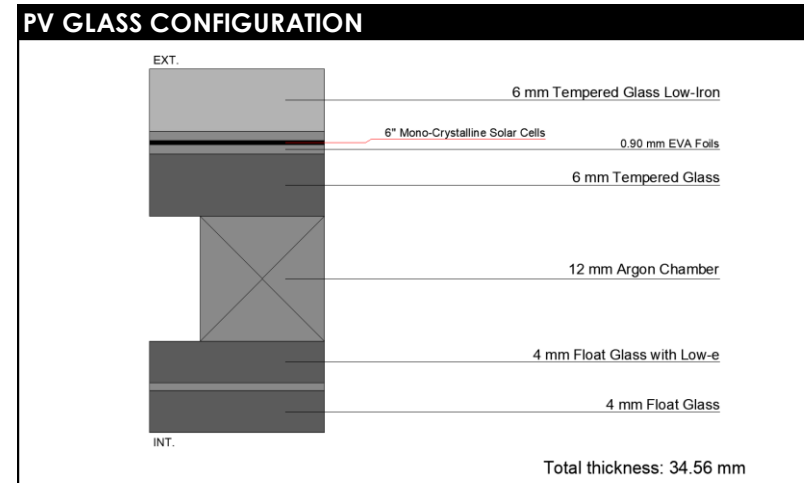
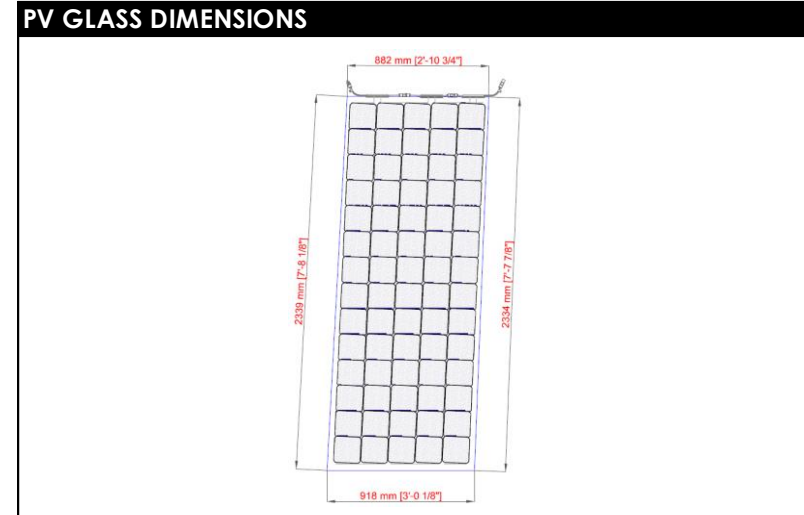
TYPE 15 – O2

M142



PHOTOVOLTAIC GLASS		2.336 x 1008	
M142 / TYPE 15 - O2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2336	mm	
Width	1008	mm	
Thickness	34,56	mm	
Surface area	2,35	sqm	
Weight	118	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	32%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	32%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	136,7



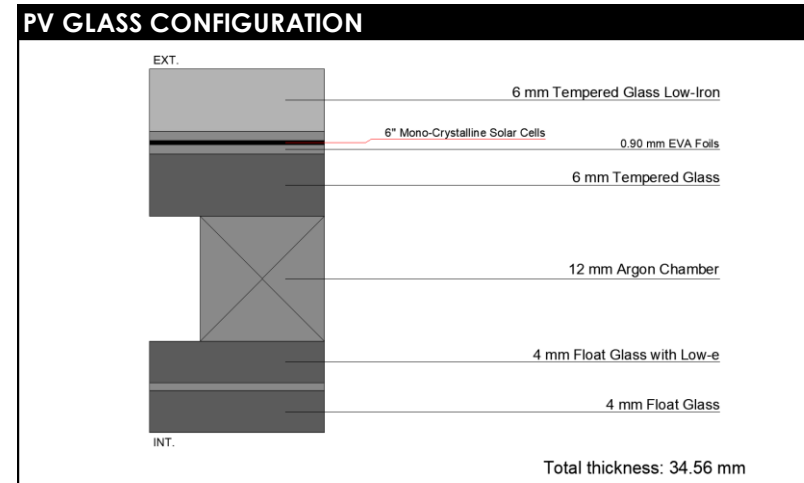
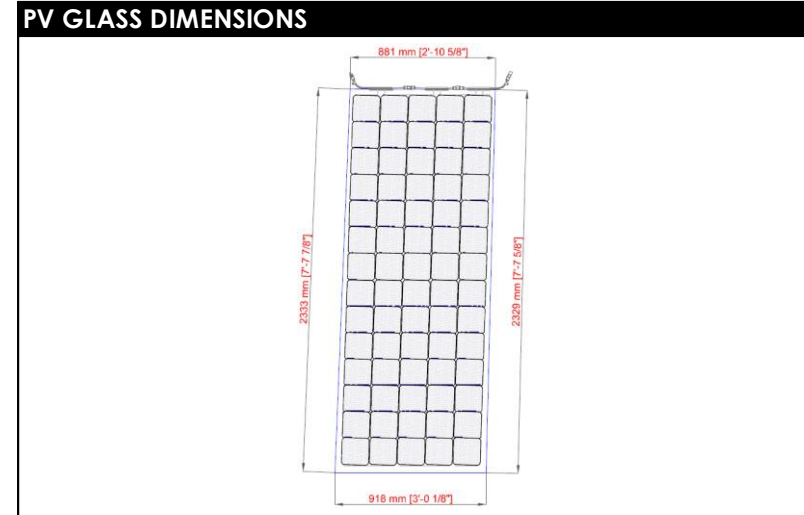
TYPE 15 – O3

M143



PHOTOVOLTAIC GLASS		2.331 x 974	
M143 / TYPE 15 - O3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2331	mm	
Width	974	mm	
Thickness	34,56	mm	
Surface area	2,27	sqm	
Weight	114	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,8



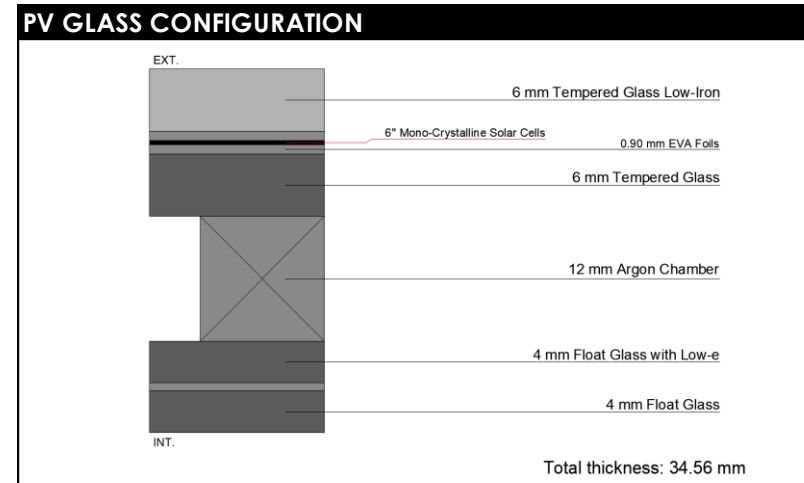
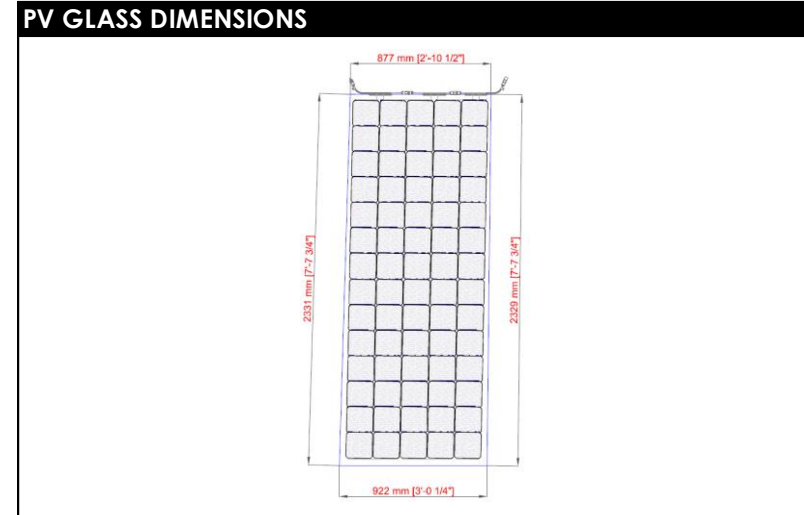
TYPE 15 – O4

M144



PHOTOVOLTAIC GLASS		2.330 x 946	
M144 / TYPE 15 - O4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2330	mm	
Width	946	mm	
Thickness	34,56	mm	
Surface area	2,20	sqm	
Weight	110	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,1



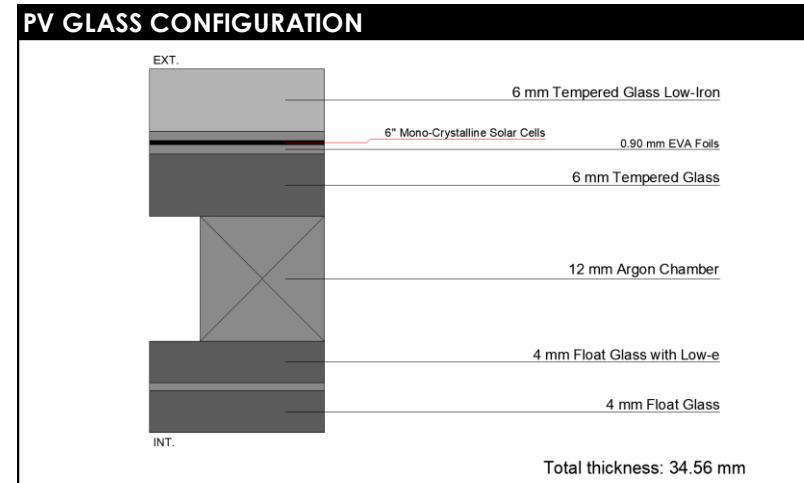
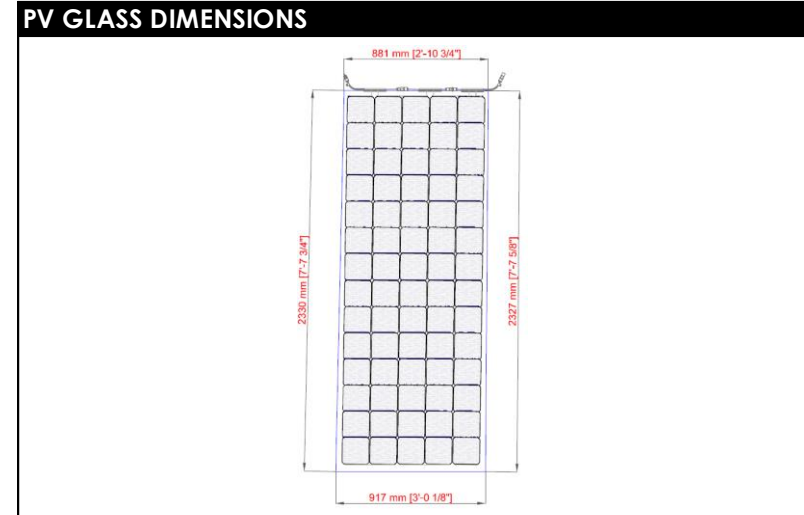
TYPE 15 – O5

M145



PHOTOVOLTAIC GLASS		2.329 x 933	
M145 / TYPE 15 - O5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2329	mm	
Width	933	mm	
Thickness	34,56	mm	
Surface area	2,17	sqm	
Weight	109	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	26%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	148,2



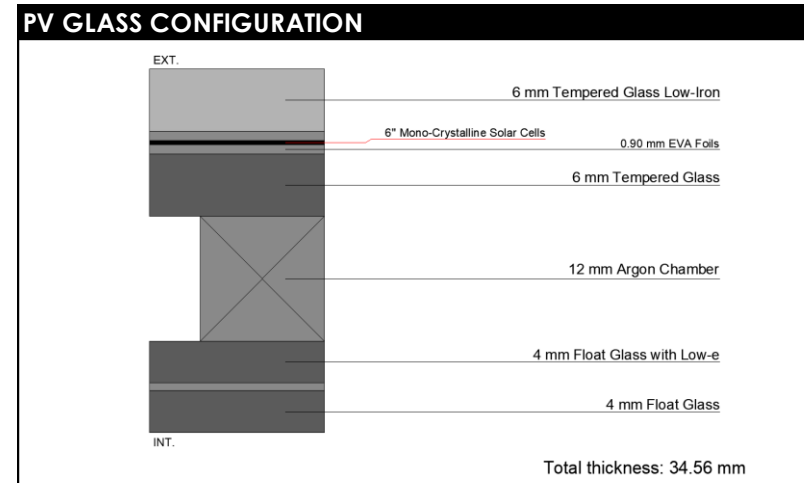
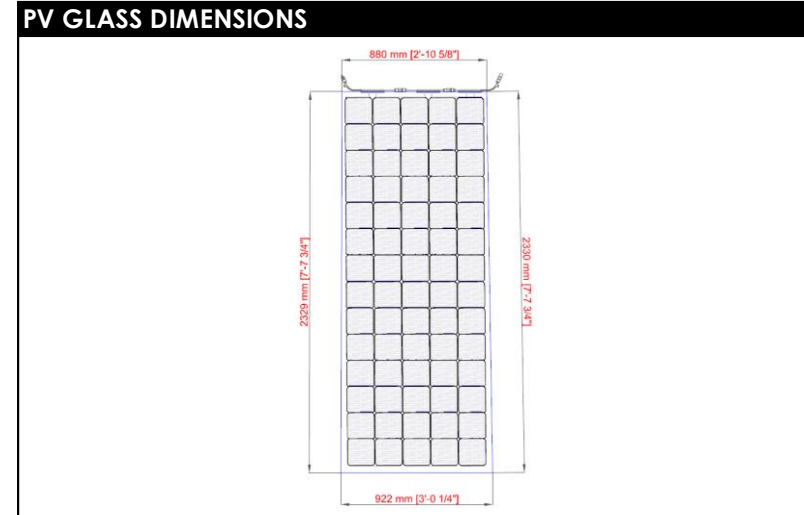
TYPE 15 – O6

M146



PHOTOVOLTAIC GLASS		2.329 x 922	
M146 / TYPE 15 - O6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2329	mm	
Width	922	mm	
Thickness	34,56	mm	
Surface area	2,15	sqm	
Weight	107	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	149,9



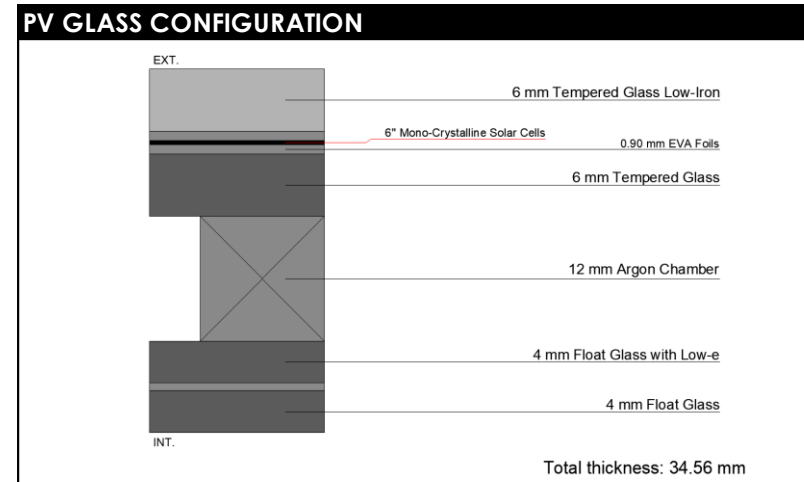
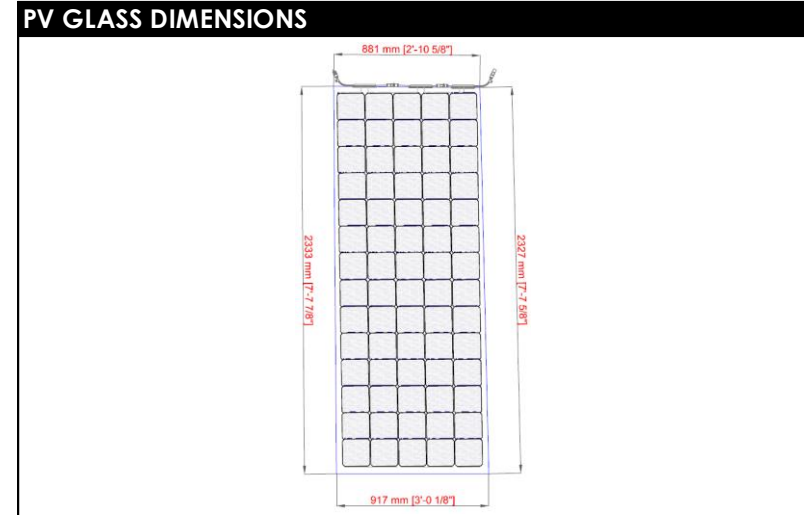
TYPE 15 – O7

M147



PHOTOVOLTAIC GLASS		2.333 x 935	
M147 / TYPE 15 - O7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2333	mm	
Width	935	mm	
Thickness	34,56	mm	
Surface area	2,18	sqm	
Weight	109	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	26%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	26%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	147,6



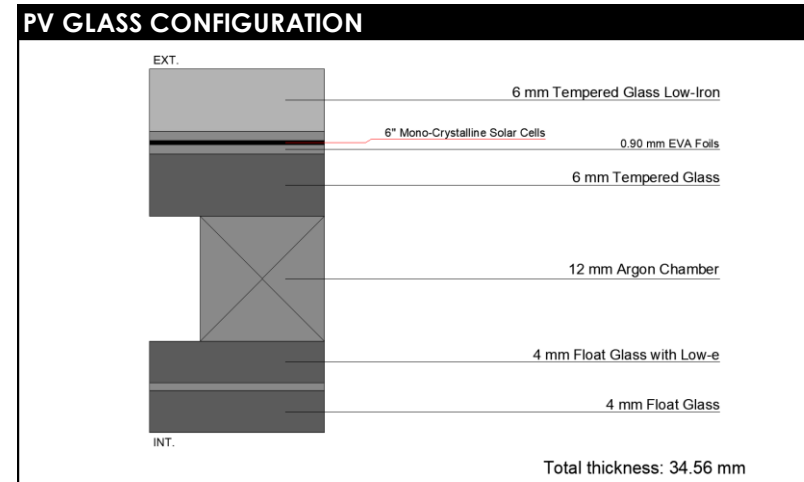
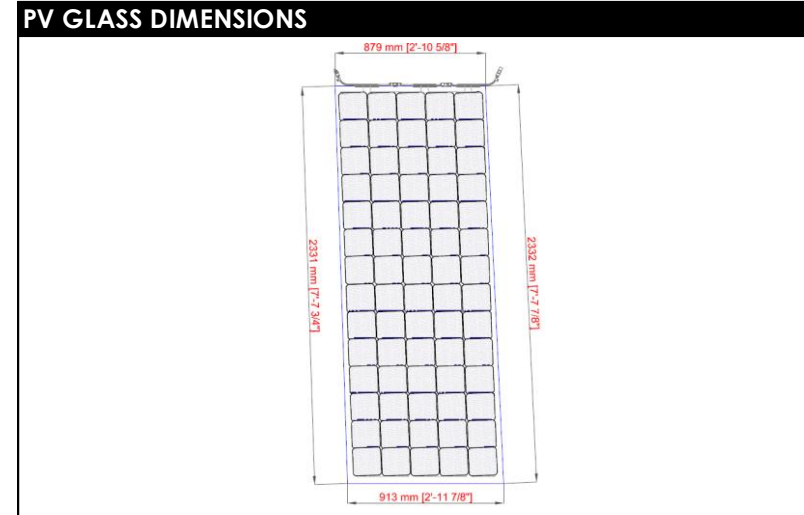
TYPE 15 – O8

M148



PHOTOVOLTAIC GLASS		2.330 x 986	
M148 / TYPE 15 - O8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2330	mm	
Width	986	mm	
Thickness	34,56	mm	
Surface area	2,30	sqm	
Weight	115	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	30%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	30%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	140,1



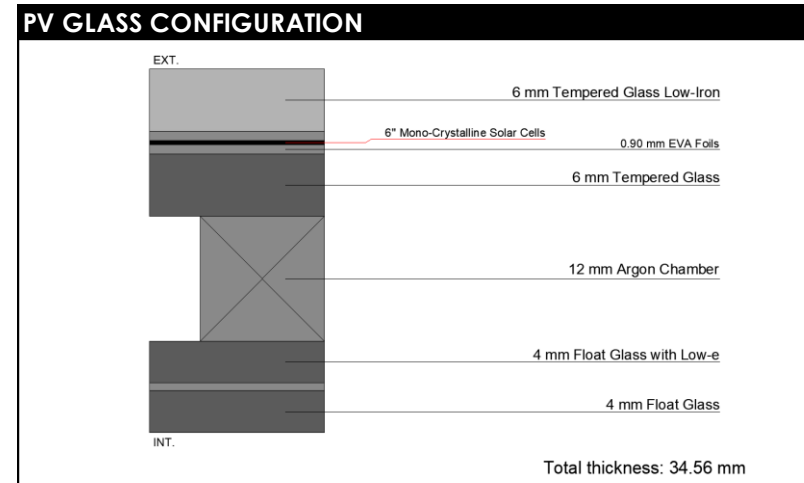
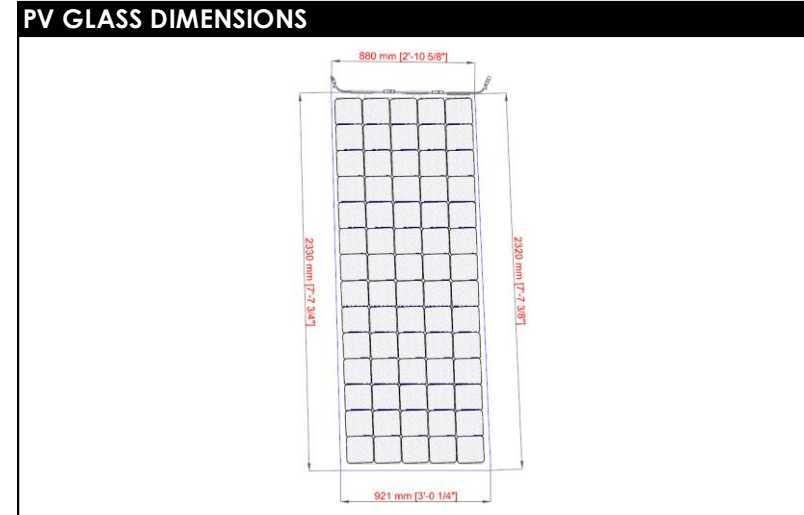
TYPE 15 – O9

M149



PHOTOVOLTAIC GLASS		2.330 x 979	
M149 / TYPE 15 - O9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2330	mm	
Width	979	mm	
Thickness	34,56	mm	
Surface area	2,28	sqm	
Weight	114	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	29%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	29%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	141,1



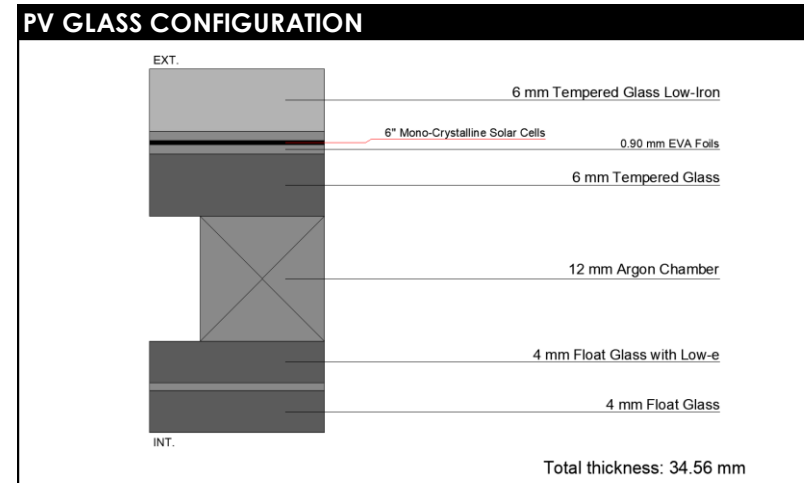
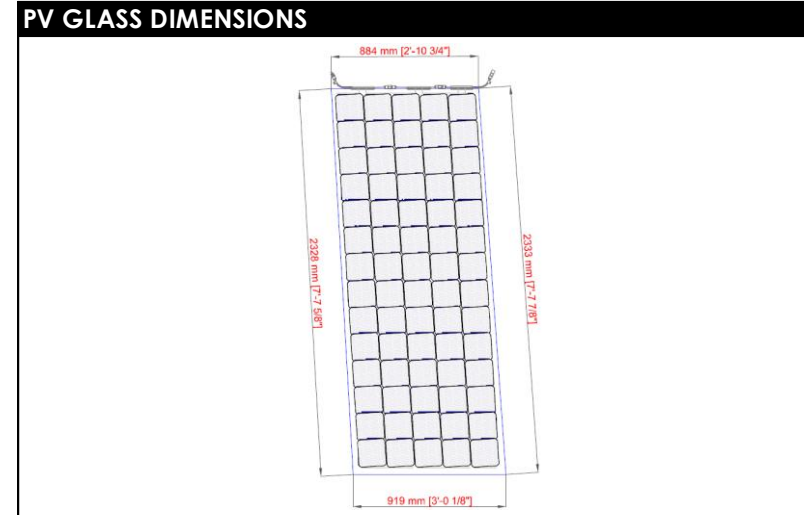
TYPE 15 – O10

M150



PHOTOVOLTAIC GLASS		2.327 x 1050	
M150 / TYPE 15 - O10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2327	mm	
Width	1050	mm	
Thickness	34,56	mm	
Surface area	2,44	sqm	
Weight	122	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	34%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	34%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	131,8





DATA SHEETS

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TYPE 16



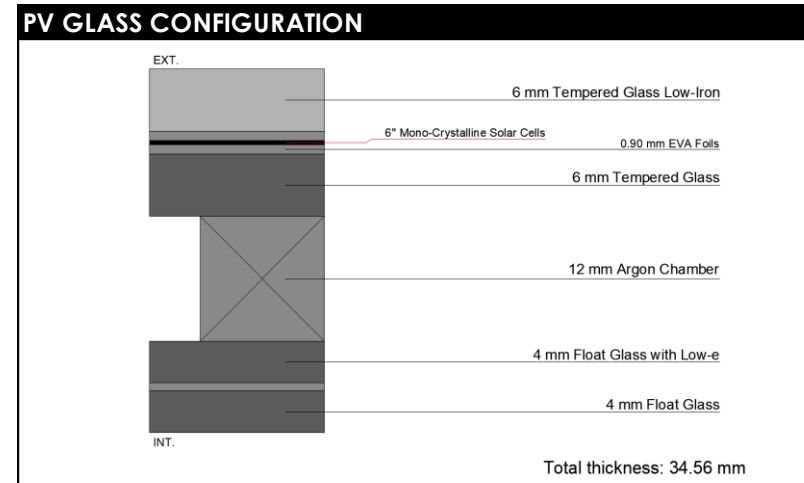
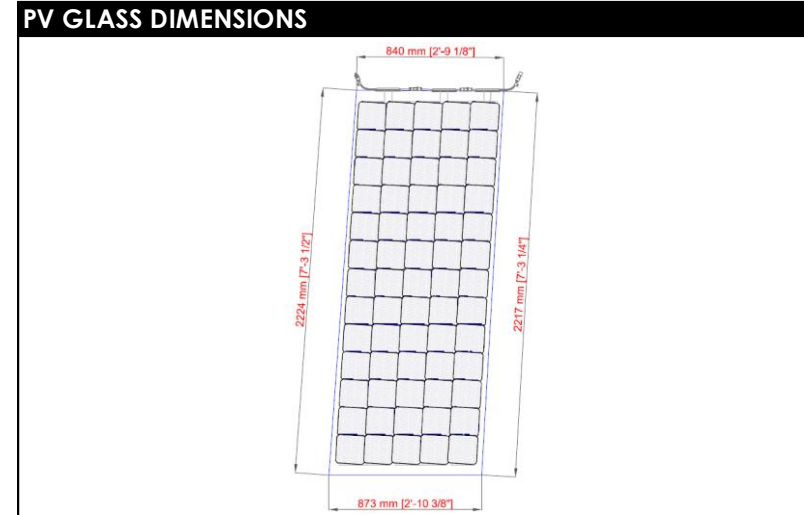
TYPE 16 – P1

M151



PHOTOVOLTAIC GLASS		2.218 x 999	
M151 / TYPE 16 - P1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2218	mm	
Width	999	mm	
Thickness	34,56	mm	
Surface area	2,22	sqm	
Weight	111	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	145,3

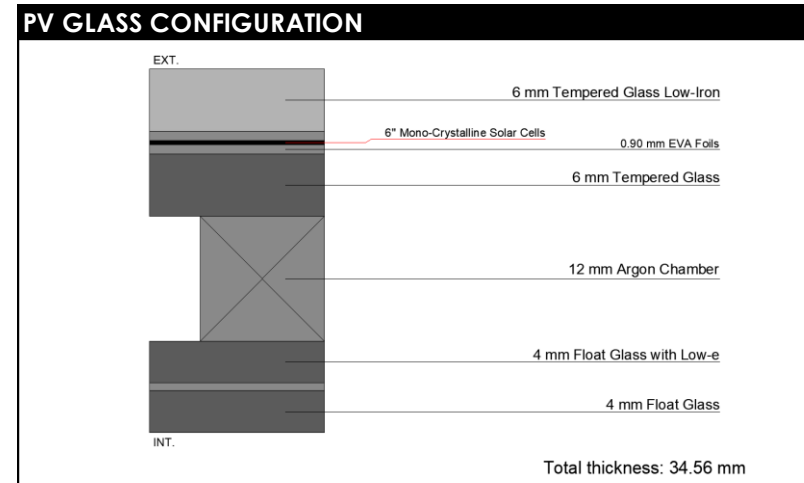
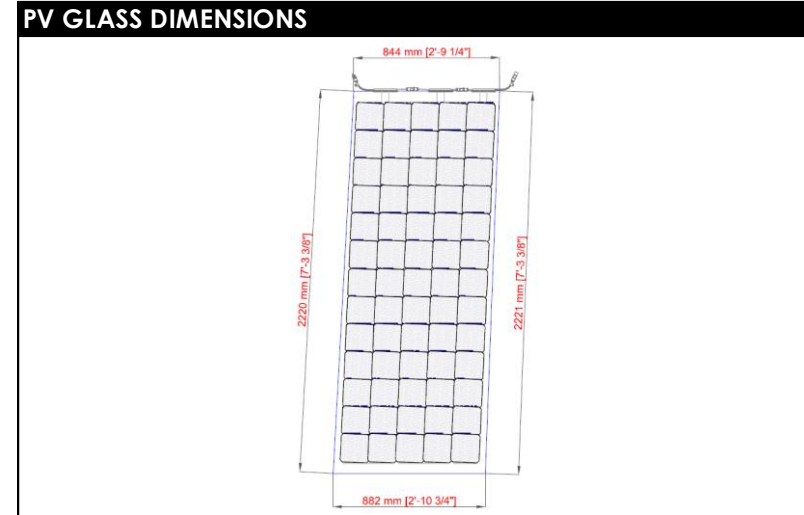


TYPE 16 – P2

M152



PHOTOVOLTAIC GLASS		2.219 x 965	
M152 / TYPE 16 - P2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2219	mm	
Width	965	mm	
Thickness	34,56	mm	
Surface area	2,14	sqm	
Weight	107	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	150,4



* All technical specifications are subject to change without notice by Onyx Solar

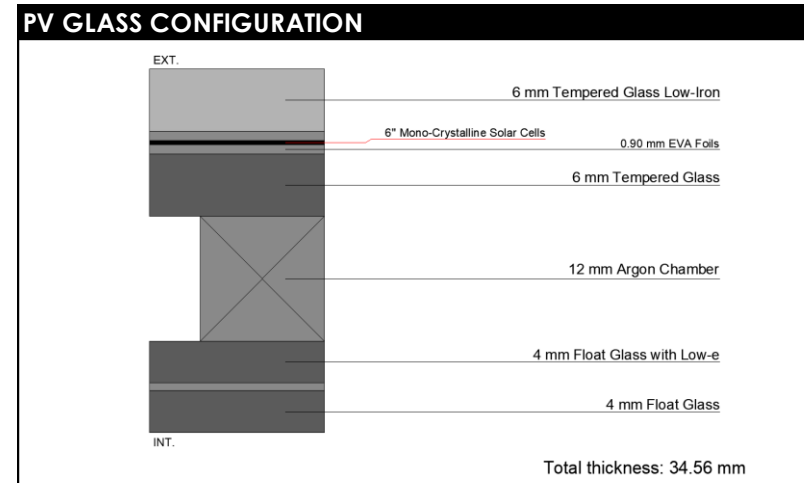
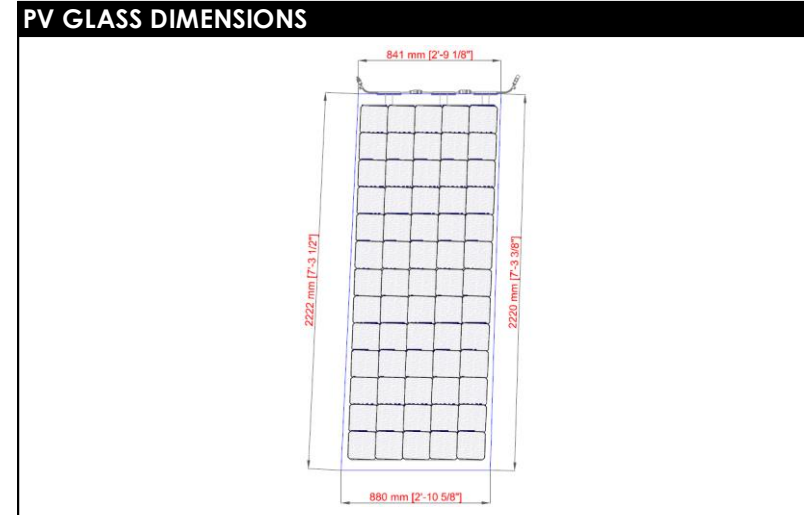
TYPE 16 – P3

M153



PHOTOVOLTAIC GLASS		2.220 x 943	
M153 / TYPE 16 - P3		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2220	mm	
Width	943	mm	
Thickness	34,56	mm	
Surface area	2,09	sqm	
Weight	105	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	153,8



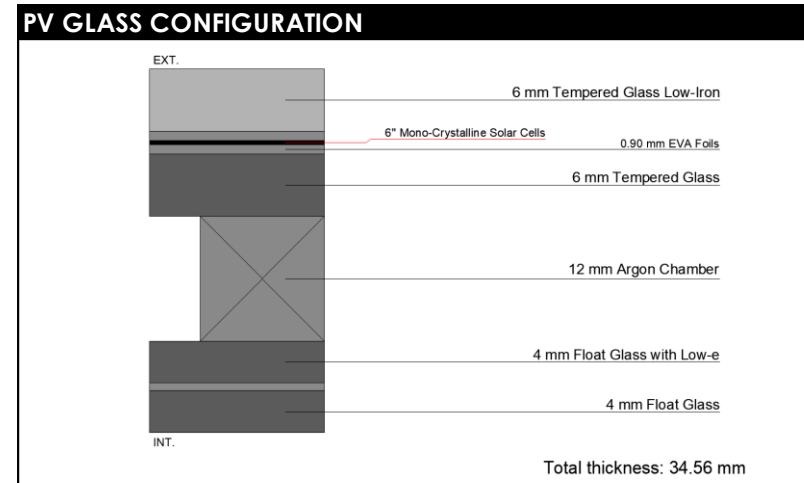
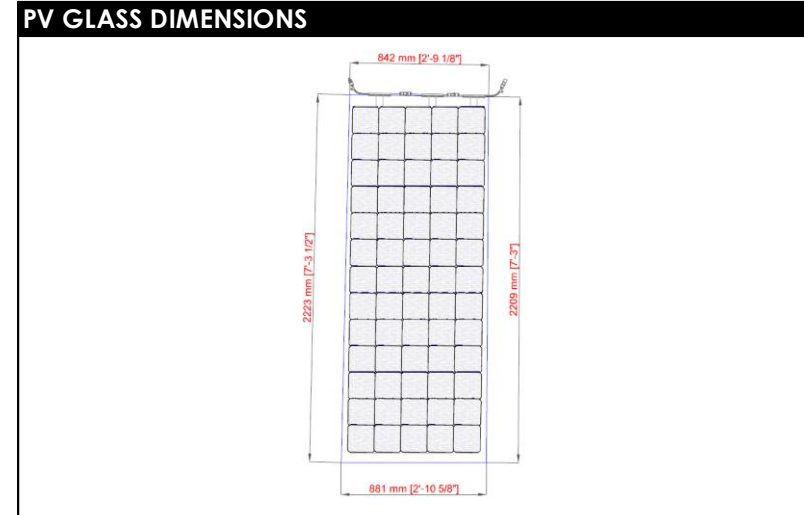
TYPE 16 – P4

M154



PHOTOVOLTAIC GLASS		2.223 x 893	
M154 / TYPE 16 - P4		Mono 3BB Crystalline	
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2223	mm	
Width	893	mm	
Thickness	34,56	mm	
Surface area	1,99	sqm	
Weight	99	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	19%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	19%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	162,2



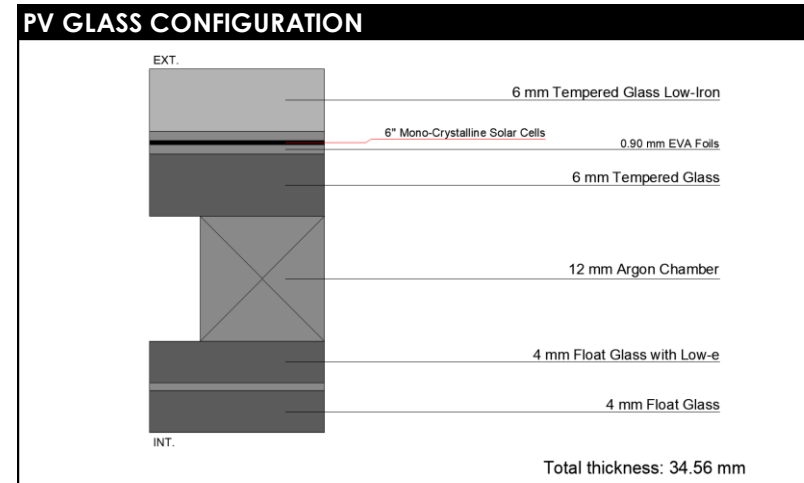
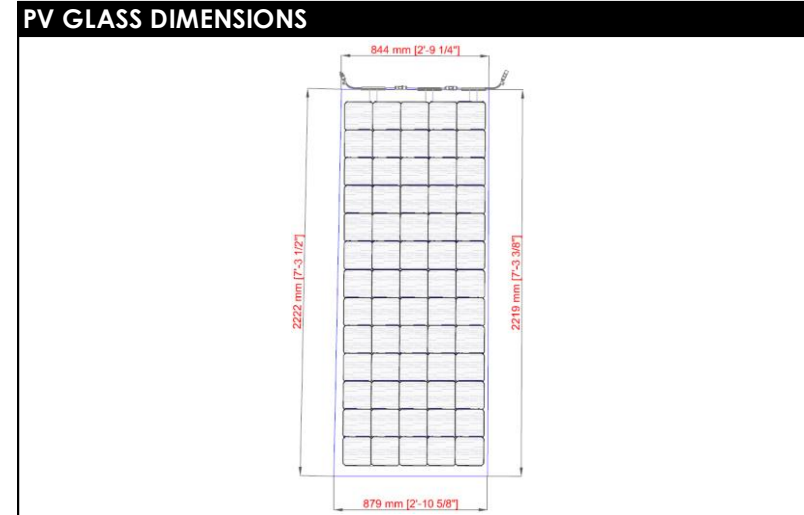
TYPE 16 – P5

M155



PHOTOVOLTAIC GLASS		2.221 x 887	
M155 / TYPE 16 - P5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2221	mm	
Width	887	mm	
Thickness	34,56	mm	
Surface area	1,97	sqm	
Weight	99	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	18%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	18%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	163,4



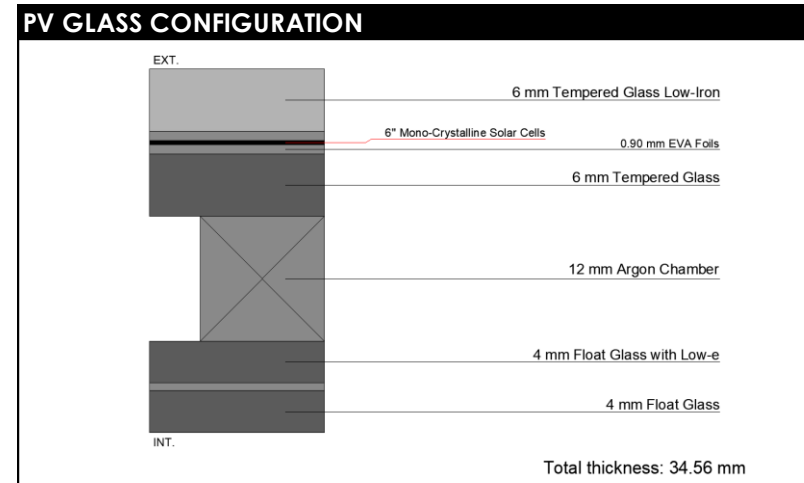
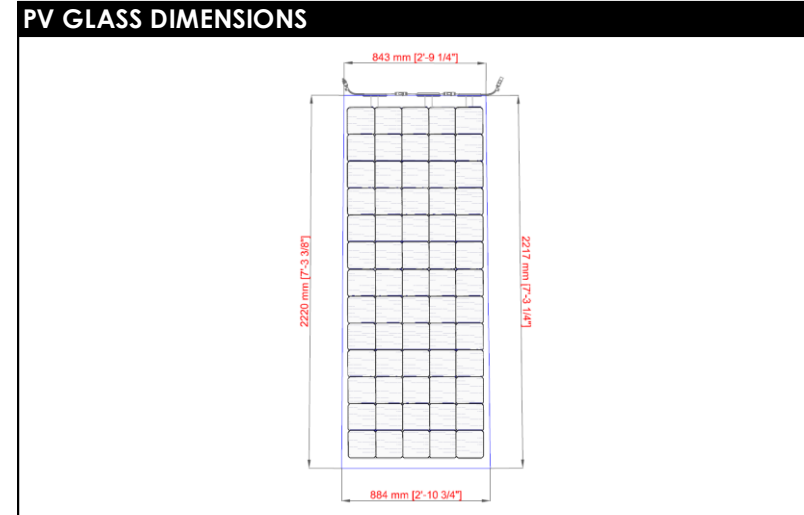
TYPE 16 – P6

M156



PHOTOVOLTAIC GLASS		2.220 x 883	
M156 / TYPE 16 - P6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2220	mm	
Width	883	mm	
Thickness	34,56	mm	
Surface area	1,96	sqm	
Weight	98	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	18%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	18%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	164,2



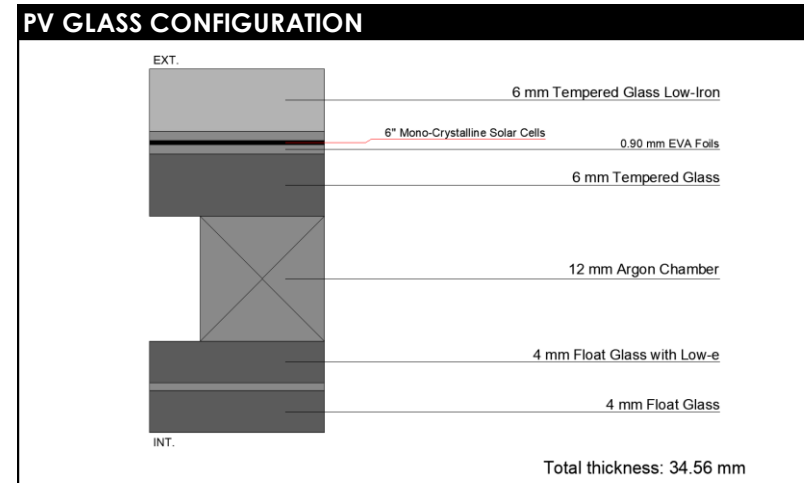
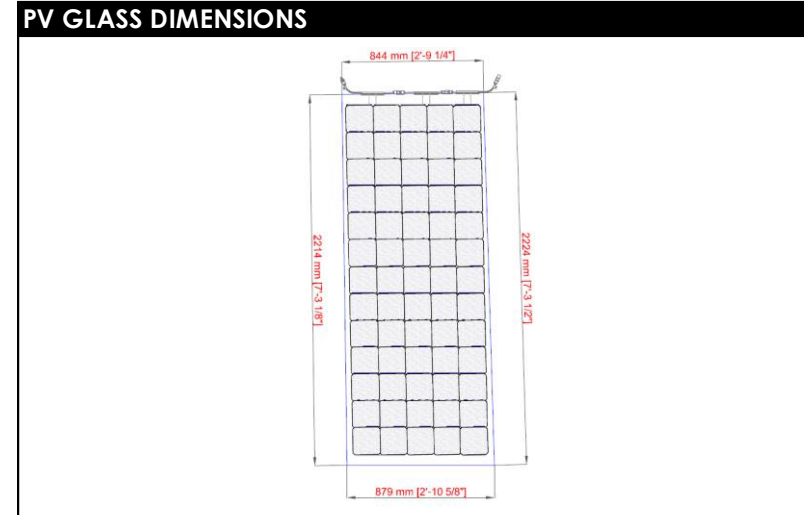
TYPE 16 – P7

M157



PHOTOVOLTAIC GLASS		2.223 x 910	
M157 / TYPE 16 - P7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2223	mm	
Width	910	mm	
Thickness	34,56	mm	
Surface area	2,02	sqm	
Weight	101	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	20%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	20%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	159,2



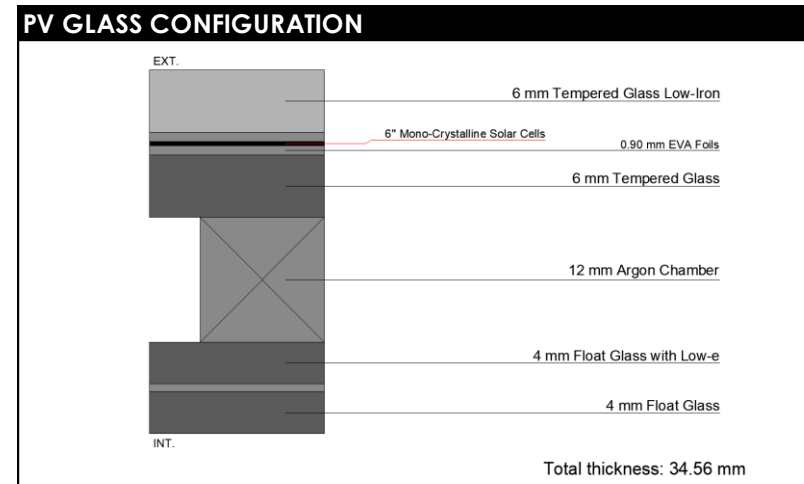
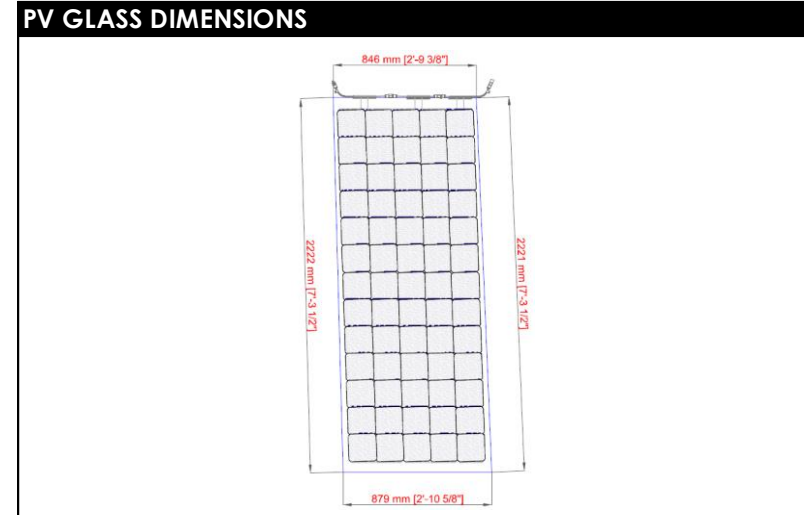
TYPE 16 – P8

M158



PHOTOVOLTAIC GLASS		2.222 x 938	
M158 / TYPE 16 - P8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2222	mm	
Width	938	mm	
Thickness	34,56	mm	
Surface area	2,08	sqm	
Weight	104	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	23%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	23%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	154,5



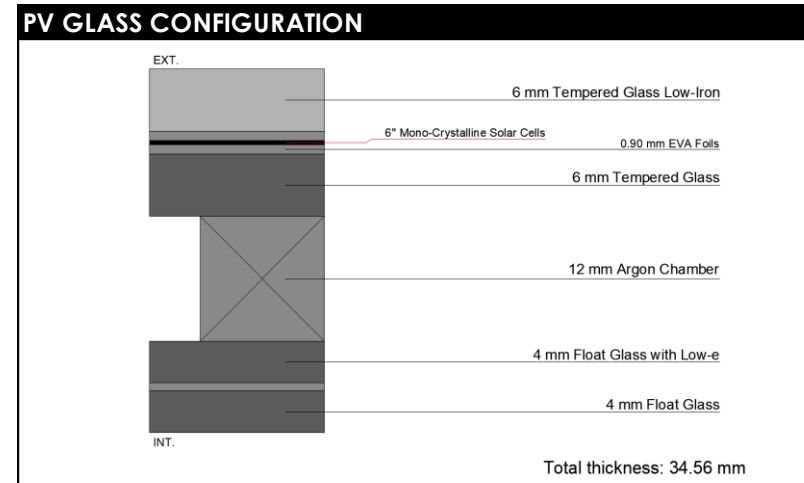
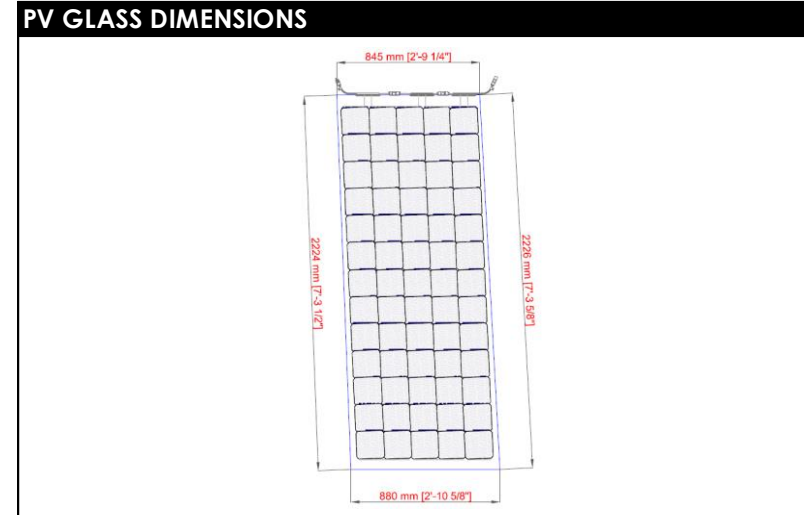
TYPE 16 – P9

M159



PHOTOVOLTAIC GLASS		2.223 x 964	
M159 / TYPE 16 - P9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2223	mm	
Width	964	mm	
Thickness	34,56	mm	
Surface area	2,14	sqm	
Weight	107	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	25%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	25%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	150,2



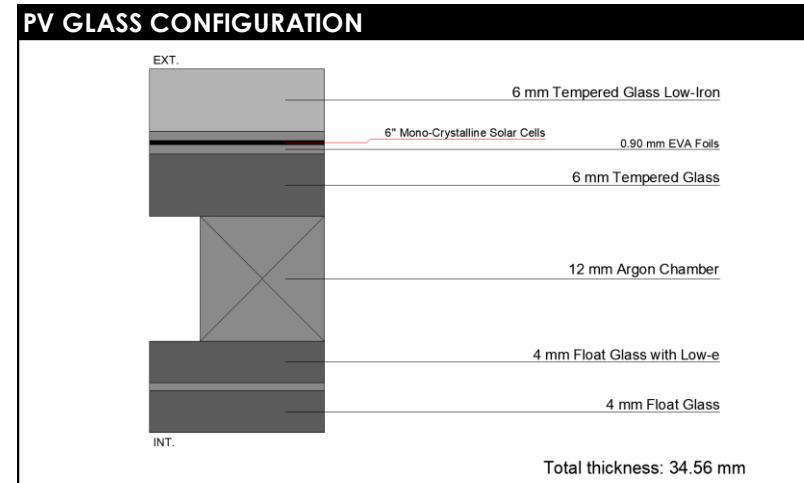
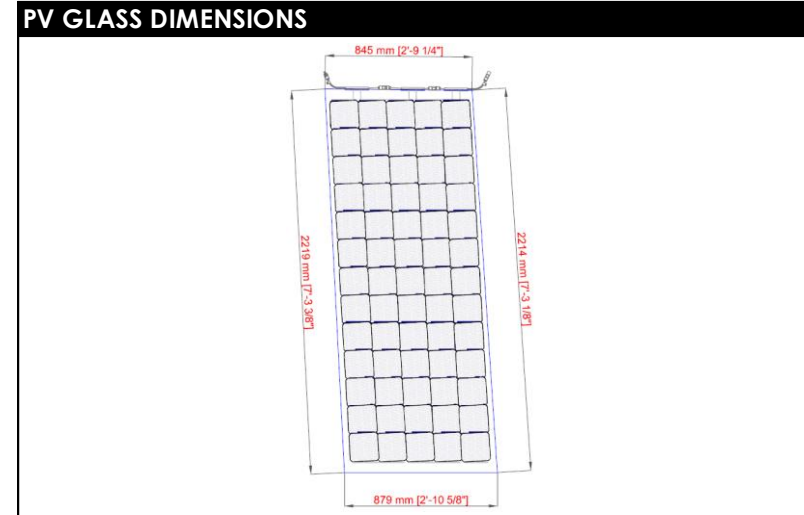
TYPE 16 – P10

M160



PHOTOVOLTAIC GLASS		2.216 x 991	
M160 / TYPE 16 - P10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	322	P_{mpp} (Wp)	
Open-circuit voltage	47	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	39	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2216	mm	
Width	991	mm	
Thickness	34,56	mm	
Surface area	2,20	sqm	
Weight	110	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	70	27%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	27%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	146,6





DATA SHEETS

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TYPE 17



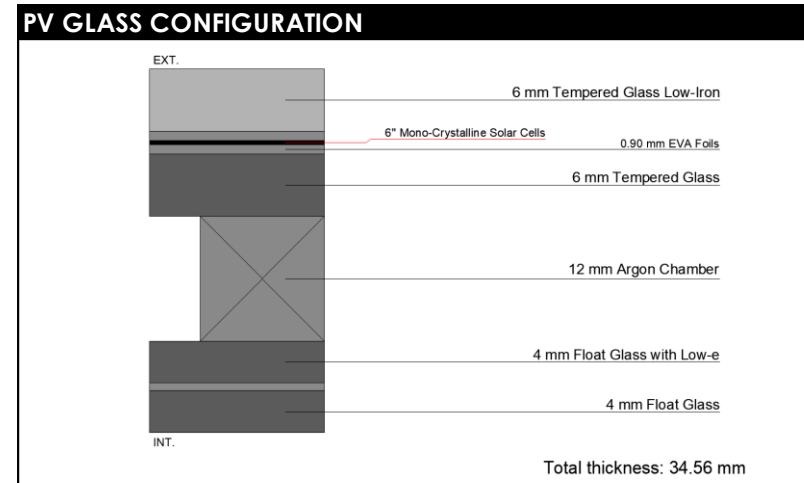
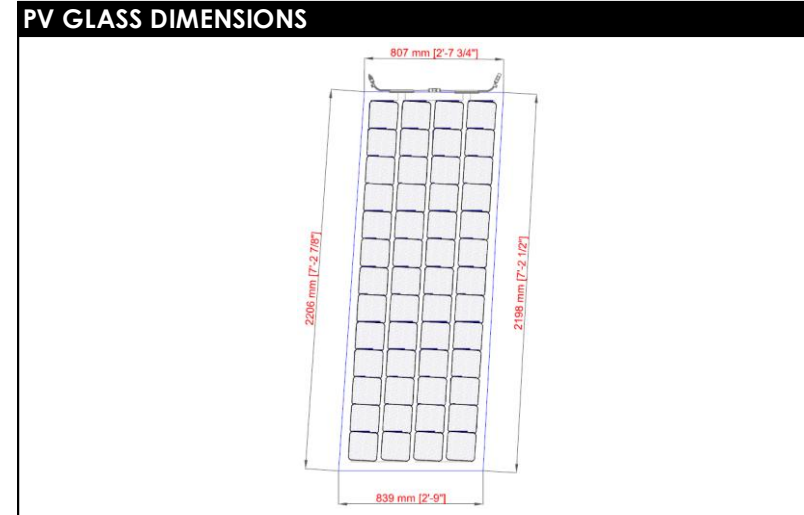
TYPE 17 – Q1

M161



PHOTOVOLTAIC GLASS		2.201 x 956	
M161 / TYPE 17 - Q1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2201	mm	
Width	956	mm	
Thickness	34,56	mm	
Surface area	2,10	sqm	
Weight	105	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	43%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	43%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	113,7



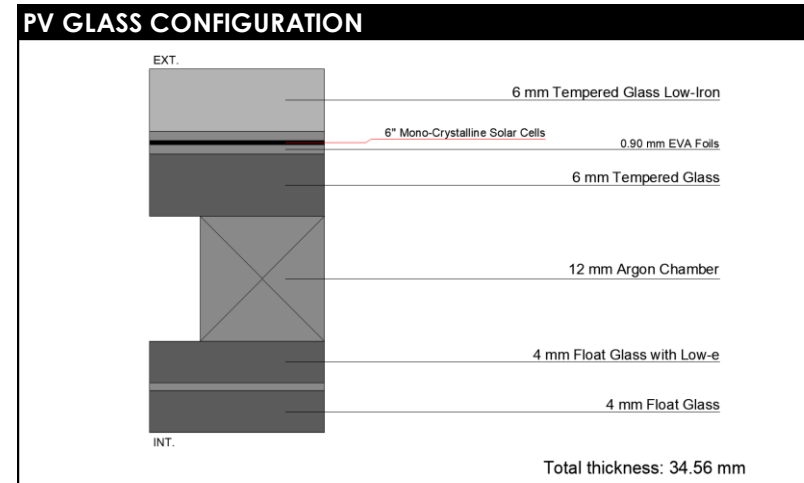
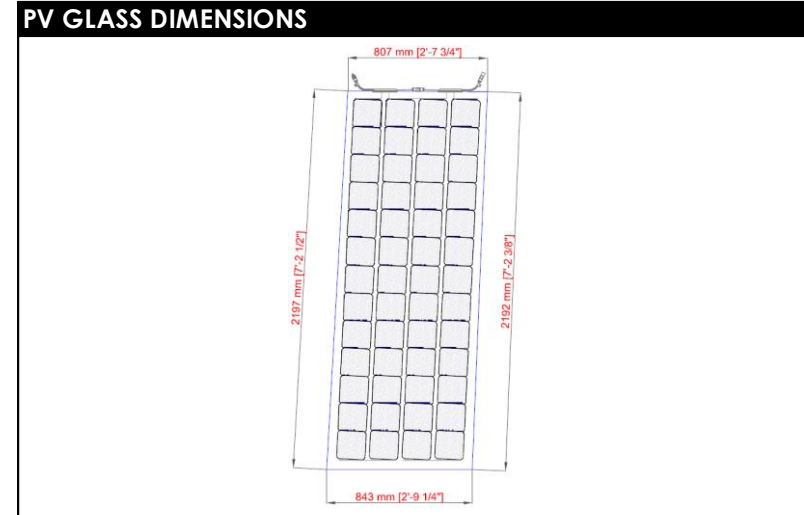
TYPE 17 – Q2

M162



PHOTOVOLTAIC GLASS		2.193 x 929	
M162 / TYPE 17 - Q2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2193	mm	
Width	929	mm	
Thickness	34,56	mm	
Surface area	2,04	sqm	
Weight	102	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	41%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	41%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	117,4

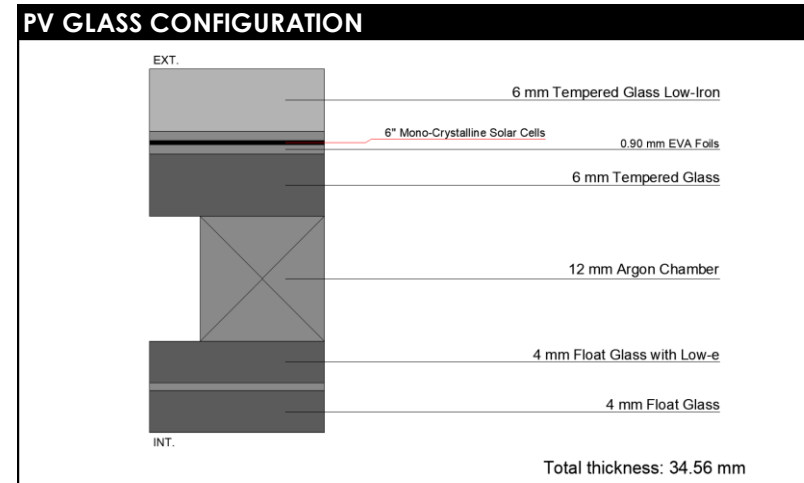
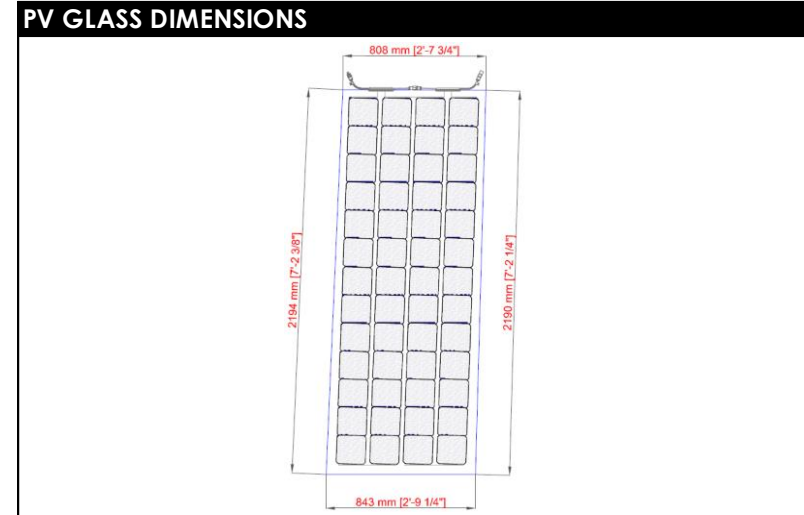


TYPE 17 – Q3

M163



PHOTOVOLTAIC GLASS		2.192 x 902	
M163 / TYPE 17 - Q3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2192	mm	
Width	902	mm	
Thickness	34,56	mm	
Surface area	1,98	sqm	
Weight	99	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	40%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	40%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	121,0



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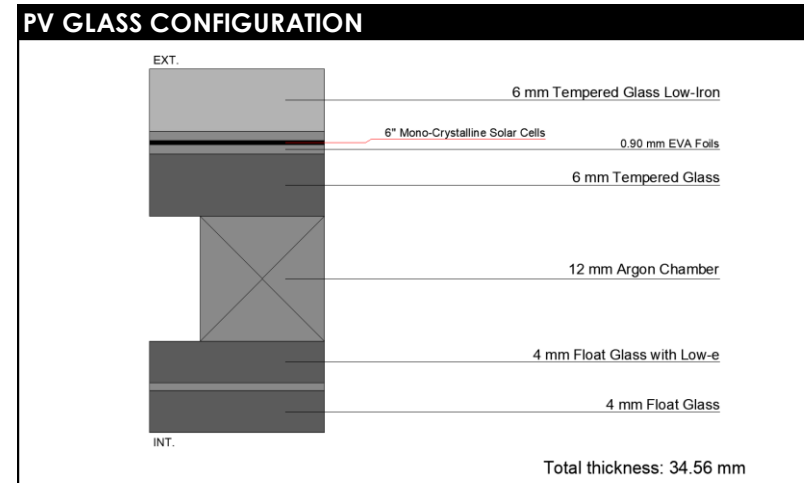
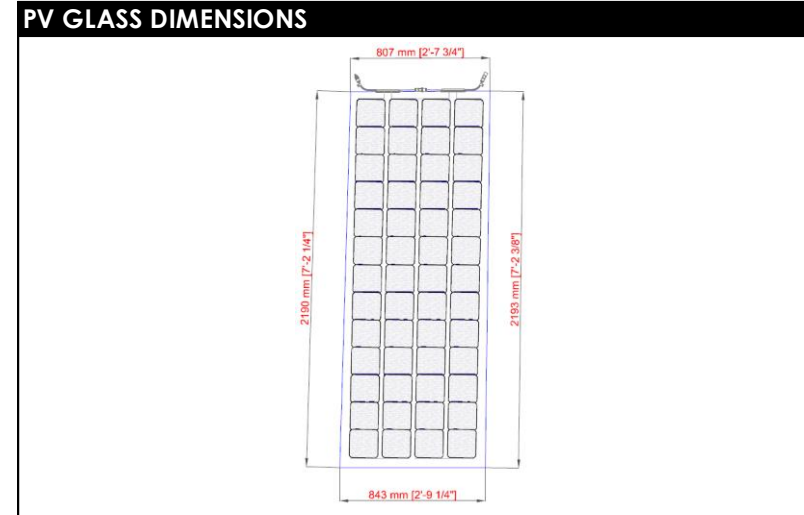
TYPE 17 – Q4

M164



PHOTOVOLTAIC GLASS		2.193 x 869	
M164 / TYPE 17 - Q4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2193	mm	
Width	869	mm	
Thickness	34,56	mm	
Surface area	1,91	sqm	
Weight	95	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	37%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	37%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	125,5



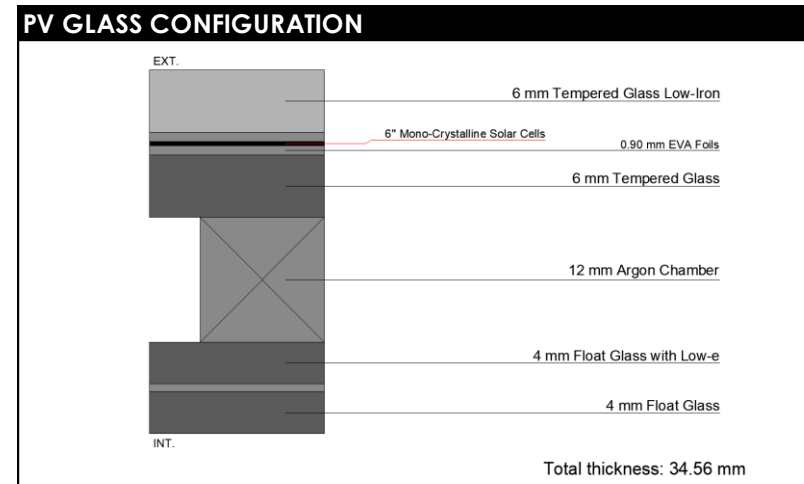
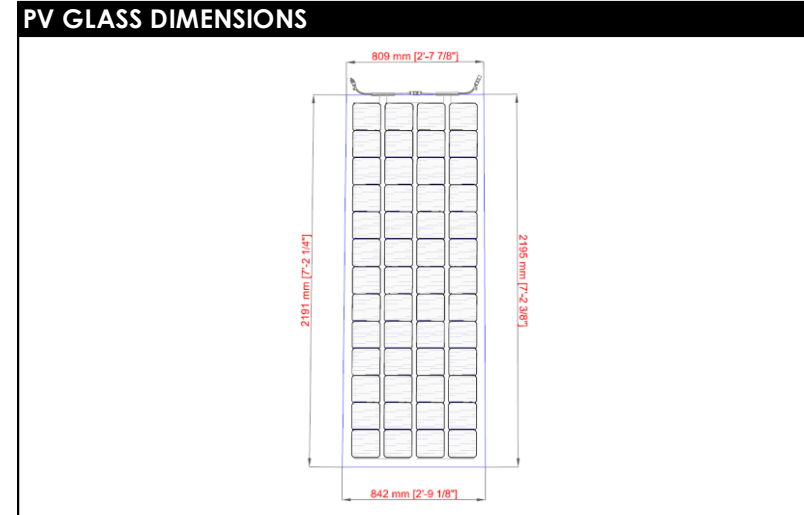
TYPE 17 – Q5

M165



PHOTOVOLTAIC GLASS		2.195 x 842	
M165 / TYPE 17 - Q5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2195	mm	
Width	842	mm	
Thickness	34,56	mm	
Surface area	1,85	sqm	
Weight	92	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	129,4



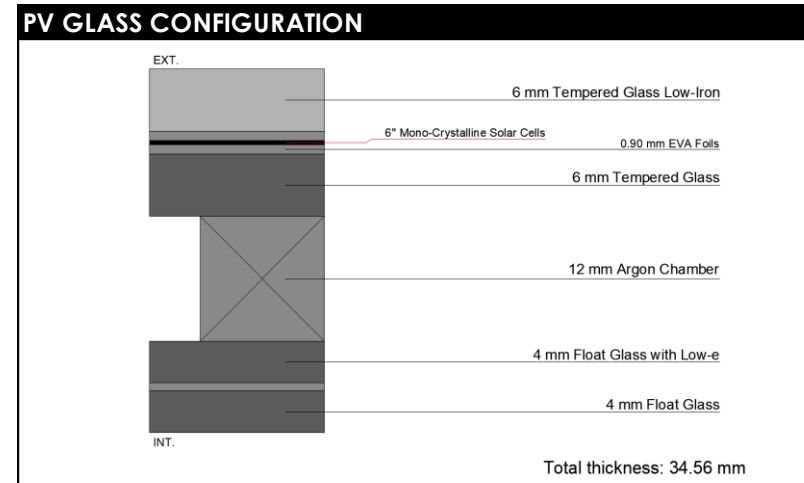
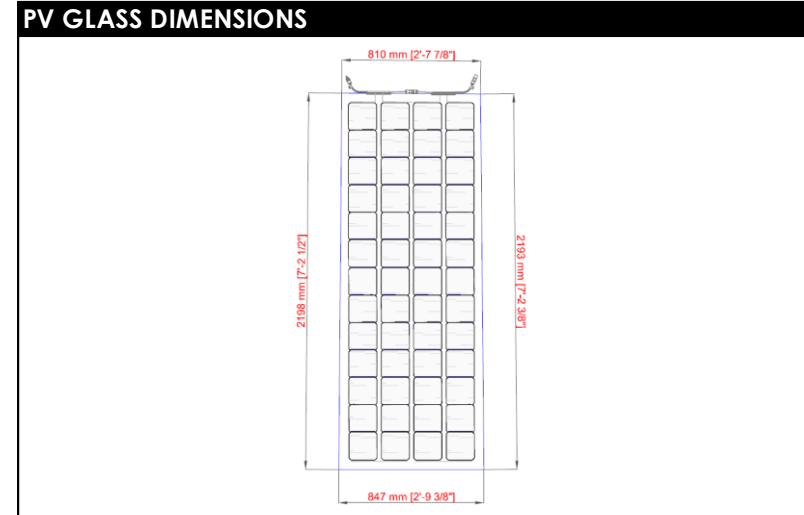
TYPE 17 – Q6

M166



PHOTOVOLTAIC GLASS		2.198 x 847	
M166 / TYPE 17 - Q6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2198	mm	
Width	847	mm	
Thickness	34,56	mm	
Surface area	1,86	sqm	
Weight	93	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	128,5

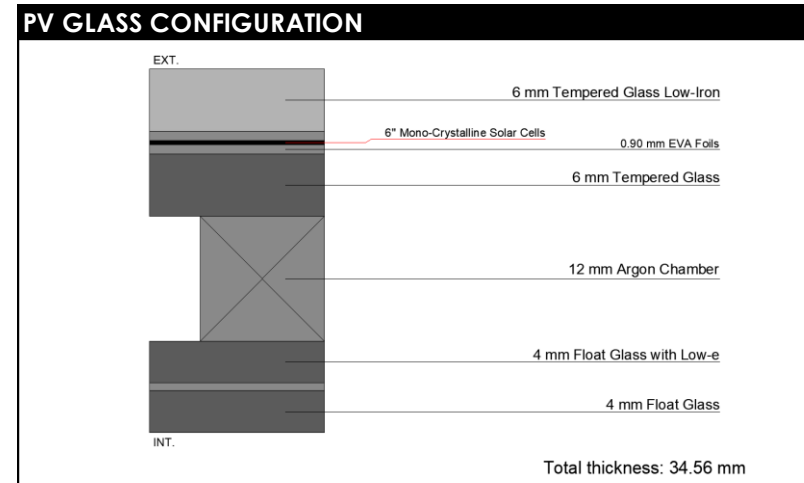
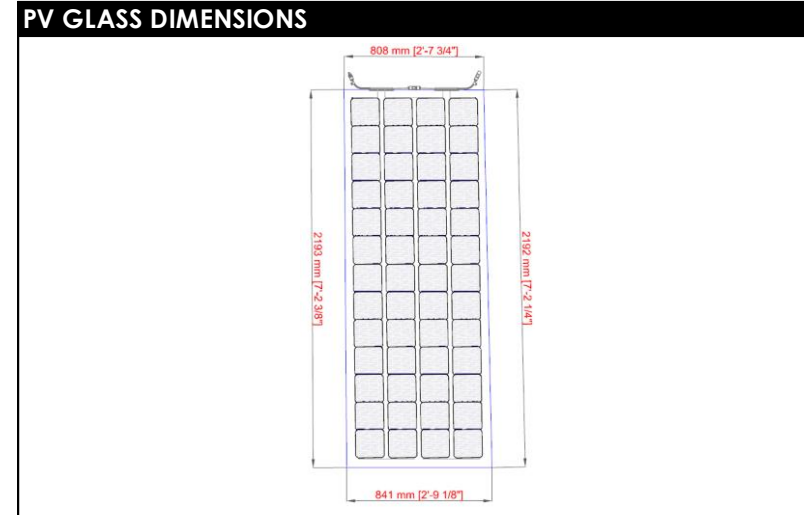


TYPE 17 – Q7

M167



PHOTOVOLTAIC GLASS		2.193 x 855	
M167 / TYPE 17 - Q7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2193	mm	
Width	855	mm	
Thickness	34,56	mm	
Surface area	1,88	sqm	
Weight	94	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	127,6

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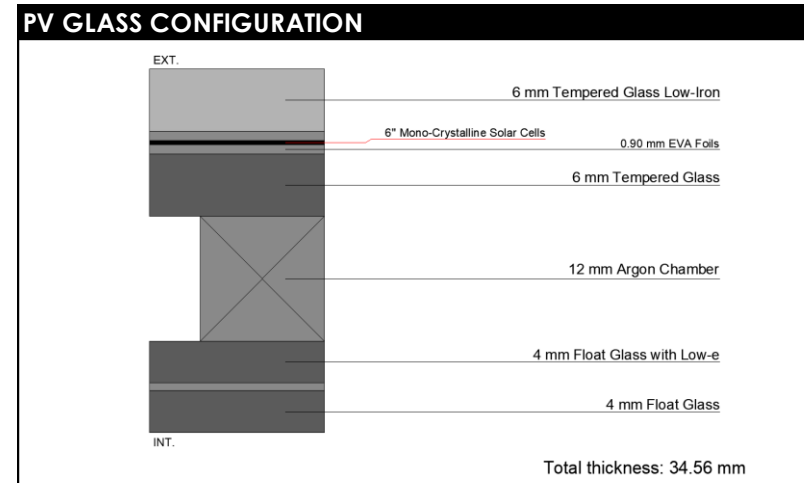
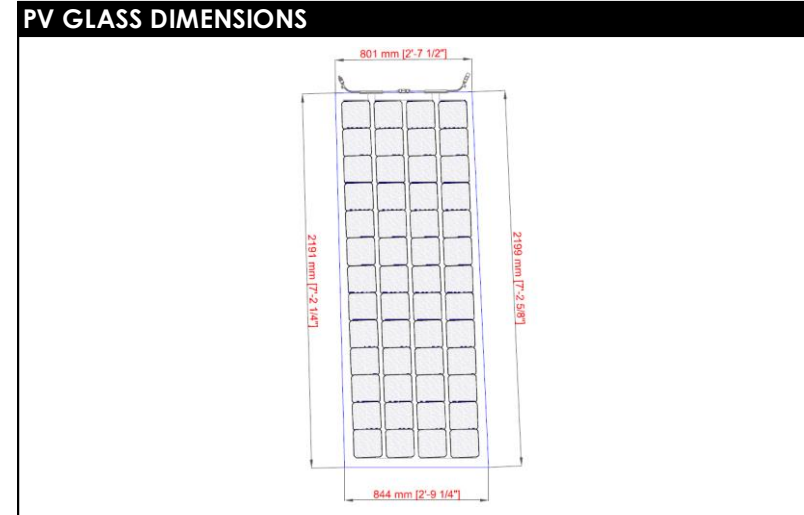
TYPE 17 – Q8

M168



PHOTOVOLTAIC GLASS		2.197 x 898	
M168 / TYPE 17 - Q8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2197	mm	
Width	898	mm	
Thickness	34,56	mm	
Surface area	1,97	sqm	
Weight	99	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	39%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	39%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	121,2



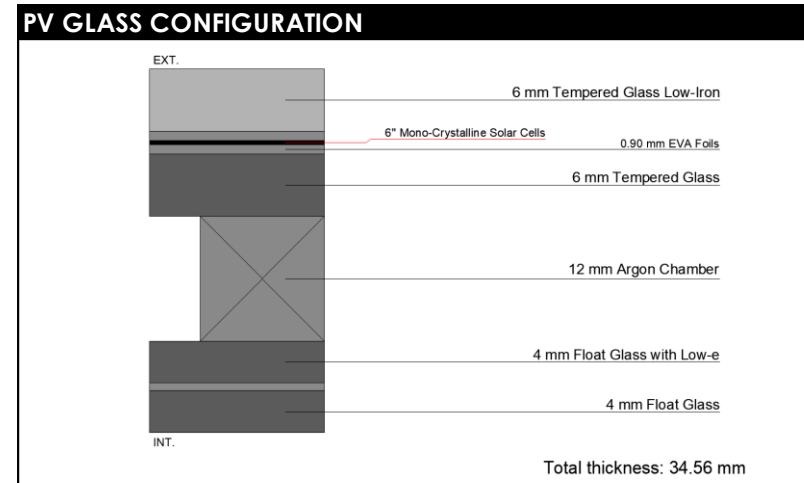
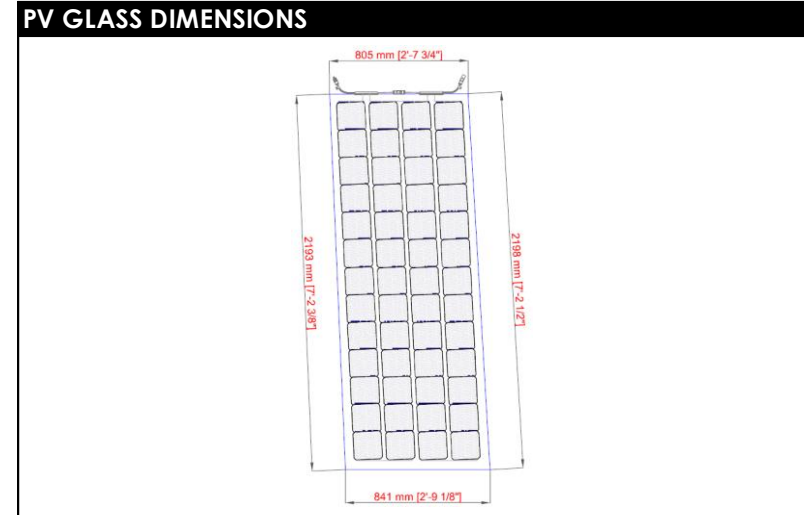
TYPE 17 – Q9

M169



PHOTOVOLTAIC GLASS		2.194 x 932	
M169 / TYPE 17 - Q9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2194	mm	
Width	932	mm	
Thickness	34,56	mm	
Surface area	2,04	sqm	
Weight	102	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	42%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	42%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	117,0



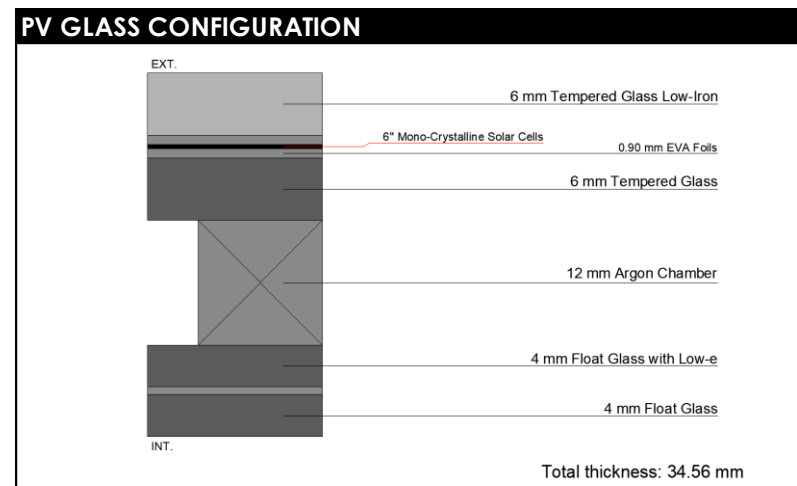
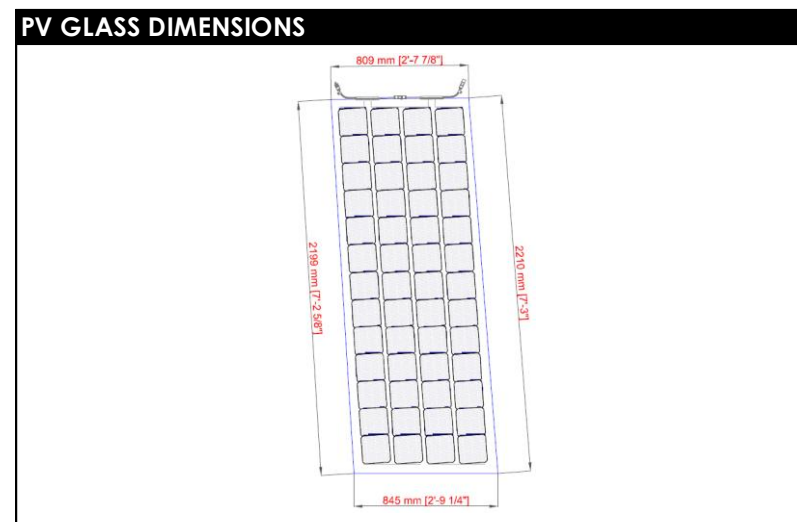
TYPE 17 – Q10

M170



PHOTOVOLTAIC GLASS		2.203 x 981	
M170 / TYPE 17 - Q10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2203	mm	
Width	981	mm	
Thickness	34,56	mm	
Surface area	2,16	sqm	
Weight	108	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	45%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	45%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	110,7





DATA SHEETS

NATIONAL PETROLEUM TECHNOLOGY CENTER

DHAHRAN_KSA

TYPE 18



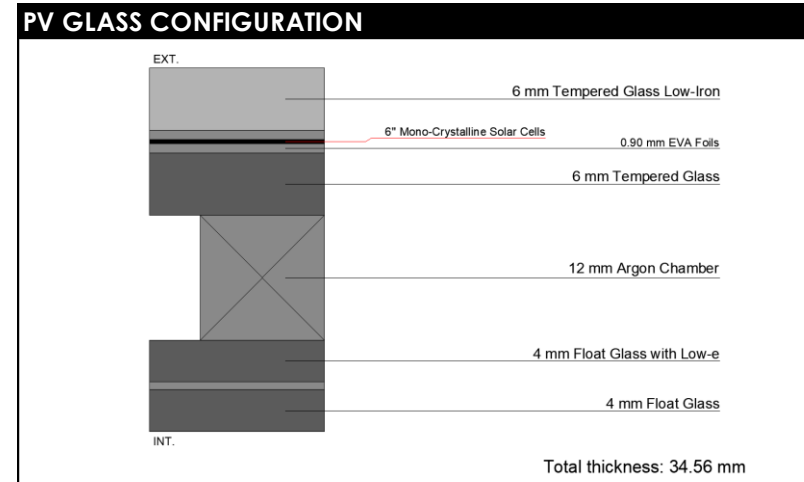
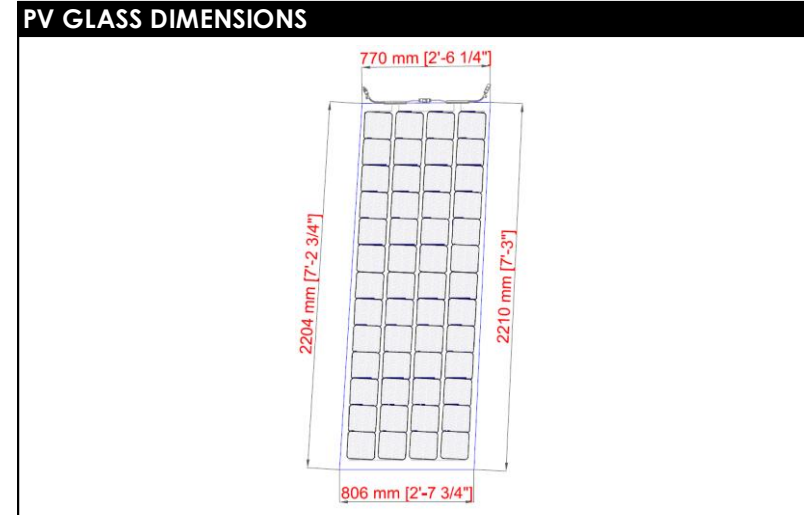
TYPE 18 – R1

M171



PHOTOVOLTAIC GLASS		2.208 x 904	
M171 / TYPE 18 - R1		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2208	mm	
Width	904	mm	
Thickness	34,56	mm	
Surface area	2,00	sqm	
Weight	100	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	40%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

* All technical specifications are subject to change without notice by Onyx Solar



GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	40%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	119,8



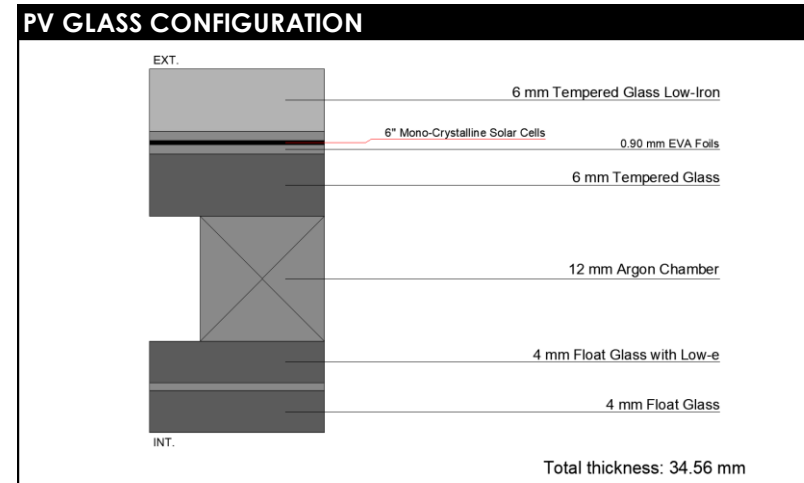
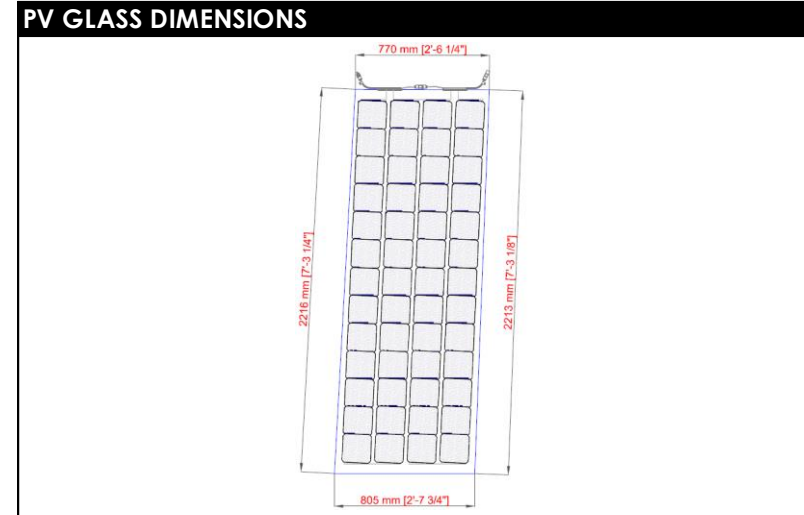
TYPE 18 – R2

M172



PHOTOVOLTAIC GLASS		2.213 x 889	
M172 / TYPE 18 - R2		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2213	mm	
Width	889	mm	
Thickness	34,56	mm	
Surface area	1,97	sqm	
Weight	98	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	39%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	39%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	121,6



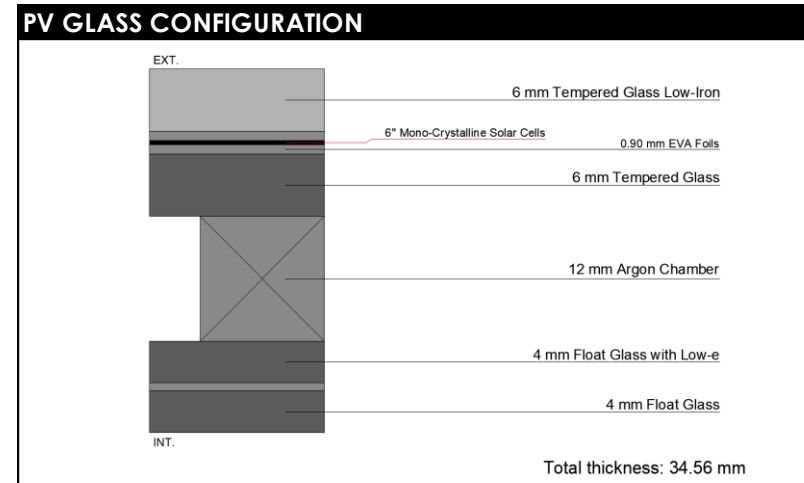
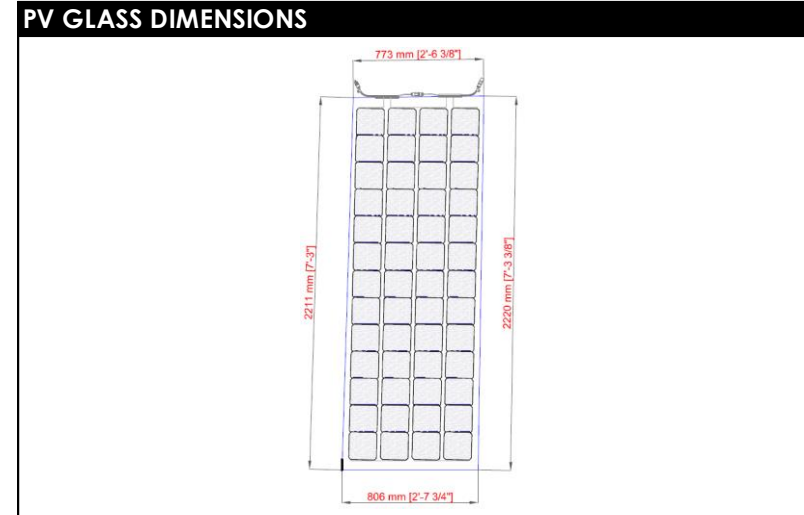
TYPE 18 – R3

M173



PHOTOVOLTAIC GLASS		2.216 x 840	
M173 / TYPE 18 - R3		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2216	mm	
Width	840	mm	
Thickness	34,56	mm	
Surface area	1,86	sqm	
Weight	93	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	36%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	36%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	128,5



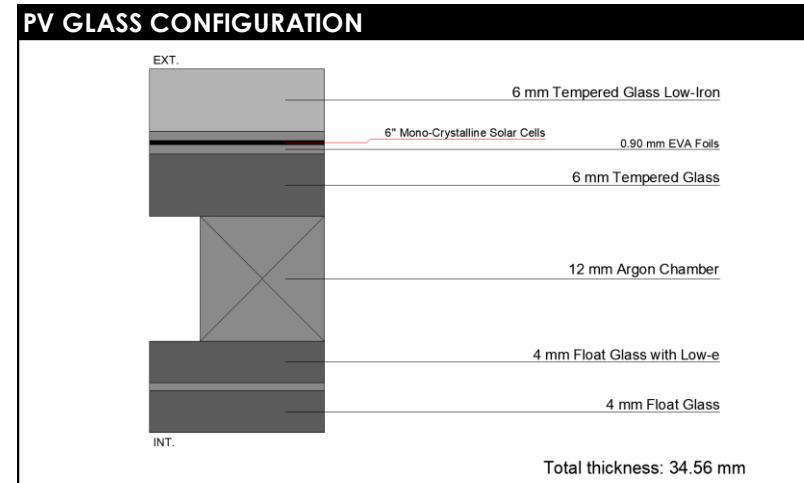
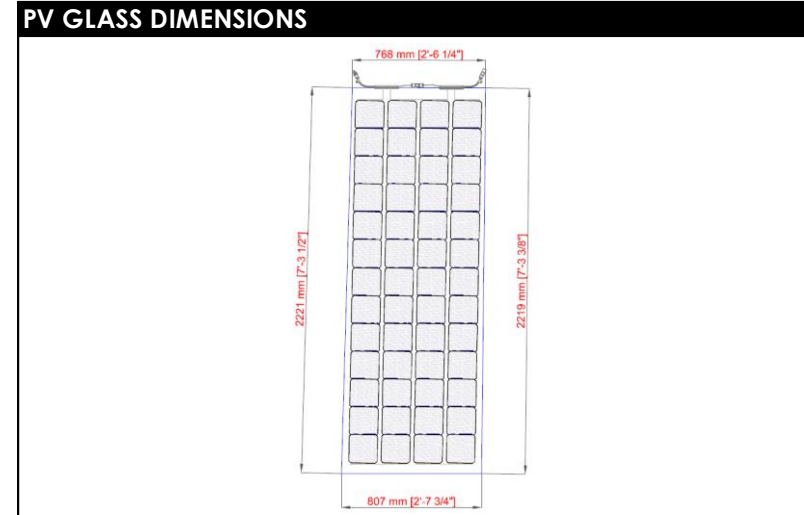
TYPE 18 – R4

M174



PHOTOVOLTAIC GLASS		2.220 x 831	
M174 / TYPE 18 - R4		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2220	mm	
Width	831	mm	
Thickness	34,56	mm	
Surface area	1,84	sqm	
Weight	92	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	129,6



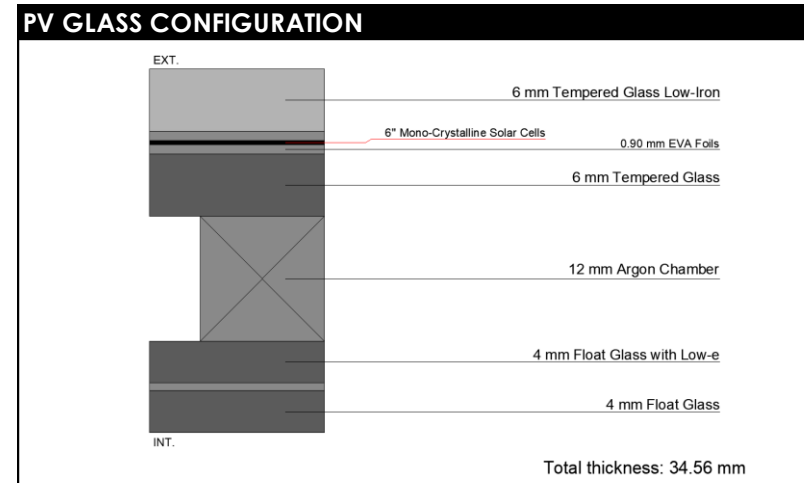
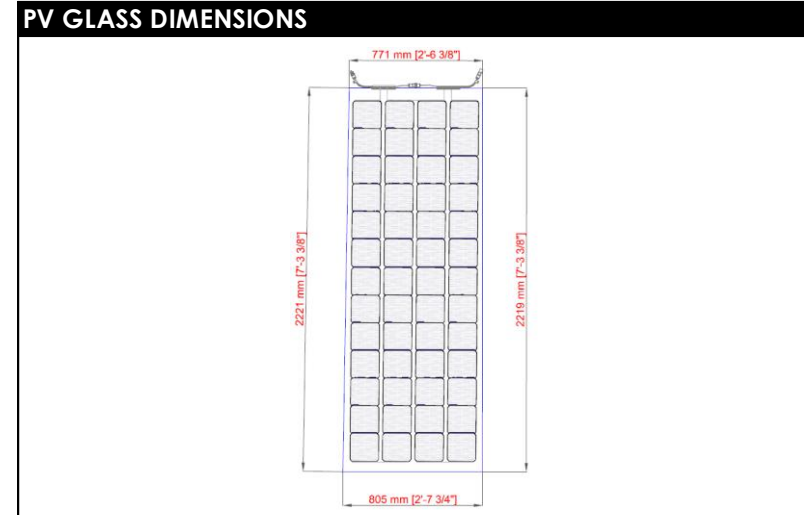
TYPE 18 – R5

M175



PHOTOVOLTAIC GLASS		2.221 x 807	
M175 / TYPE 18 - R5		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2221	mm	
Width	807	mm	
Thickness	34,56	mm	
Surface area	1,79	sqm	
Weight	90	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	133,4



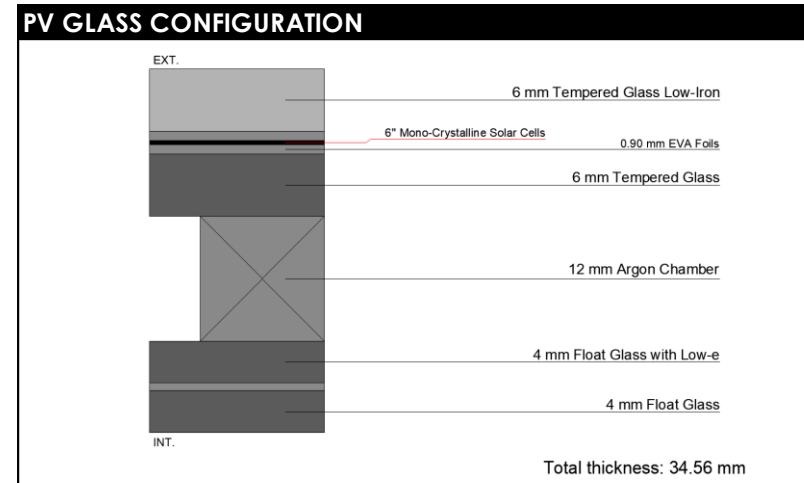
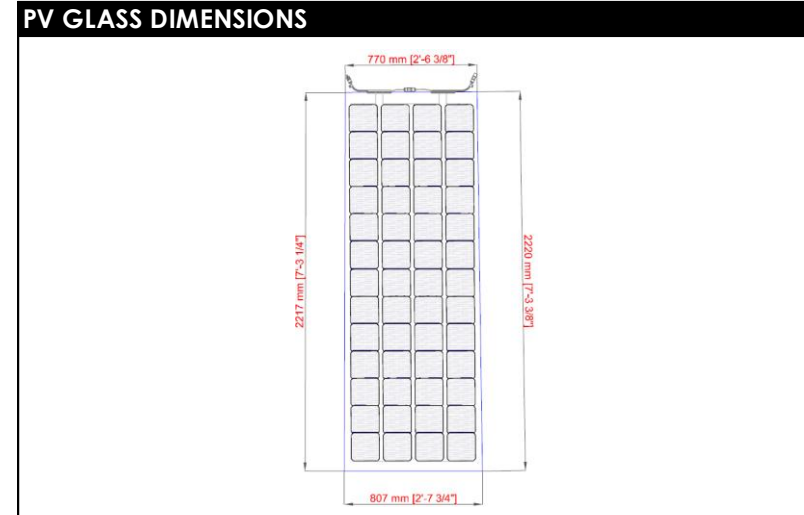
TYPE 18 – R6

M176



PHOTOVOLTAIC GLASS		2.220 x 807	
M176 / TYPE 18 - R6		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2220	mm	
Width	807	mm	
Thickness	34,56	mm	
Surface area	1,79	sqm	
Weight	90	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	33%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	33%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	133,5



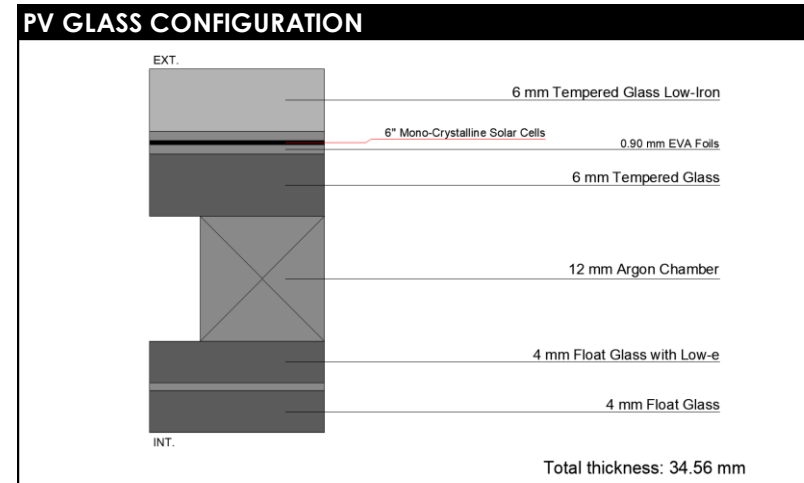
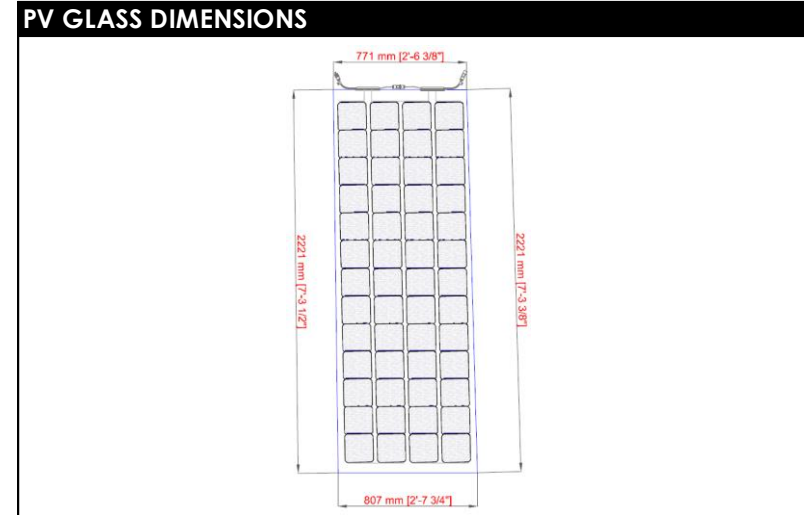
TYPE 18 – R7

M177



PHOTOVOLTAIC GLASS		2.221 x 834	
M177 / TYPE 18 - R7		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2221	mm	
Width	834	mm	
Thickness	34,56	mm	
Surface area	1,85	sqm	
Weight	93	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	35%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	35%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	129,1



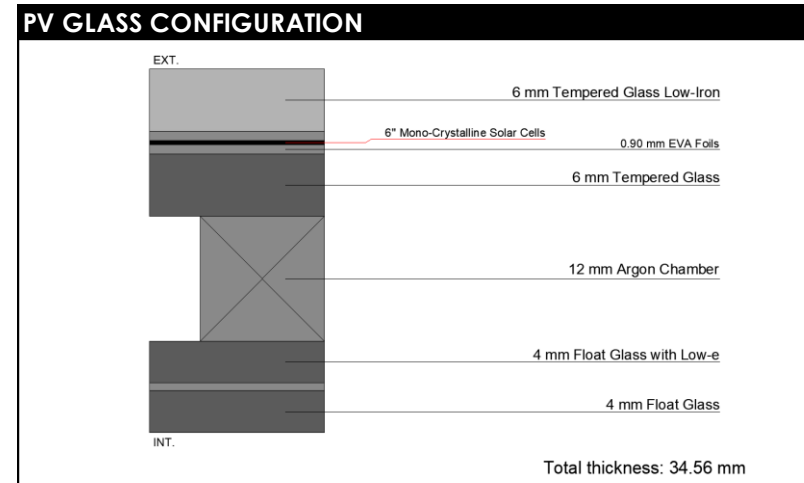
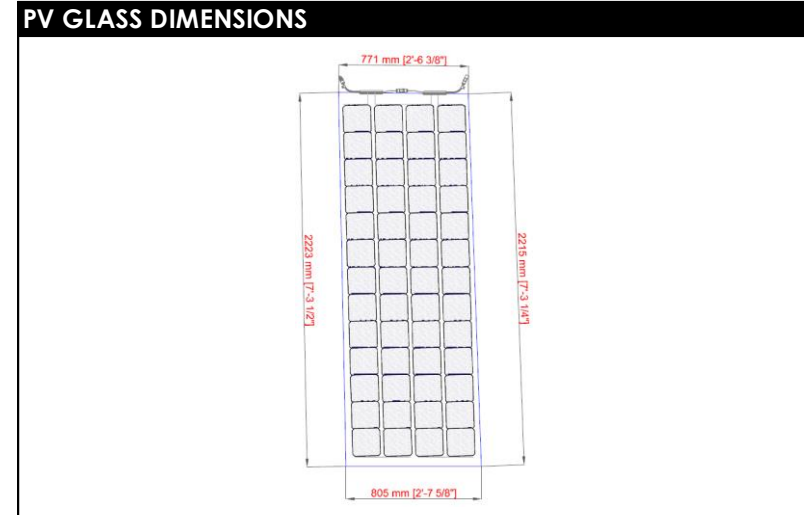
TYPE 18 – R8

M178



PHOTOVOLTAIC GLASS		2.223 x 849	
M178 / TYPE 18 - R8		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2223	mm	
Width	849	mm	
Thickness	34,56	mm	
Surface area	1,89	sqm	
Weight	94	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	37%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	37%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	126,7



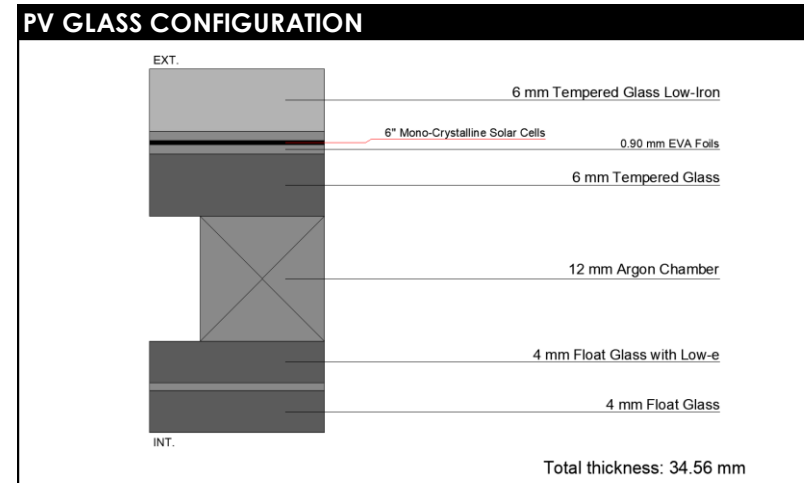
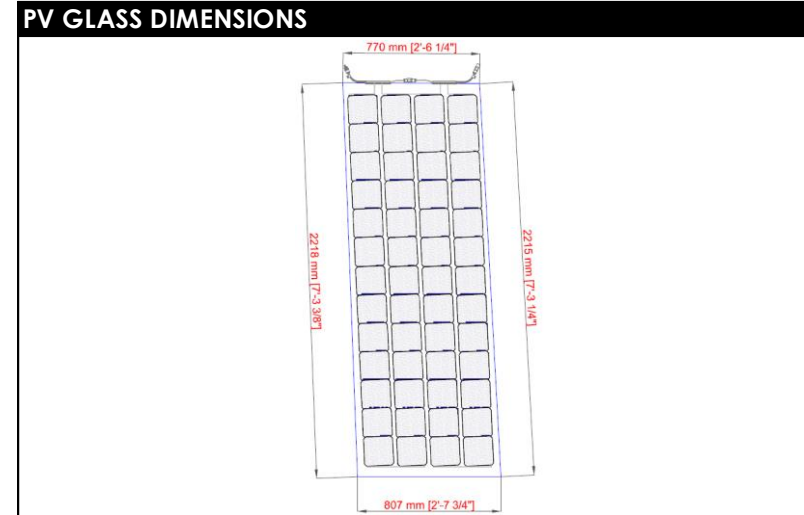
TYPE 18 – R9

M179



PHOTOVOLTAIC GLASS		2.217 x 890	
M179 / TYPE 18 - R9		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 1.5 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2217	mm	
Width	890	mm	
Thickness	34,56	mm	
Surface area	1,97	sqm	
Weight	99	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	39%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	39%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	121,2



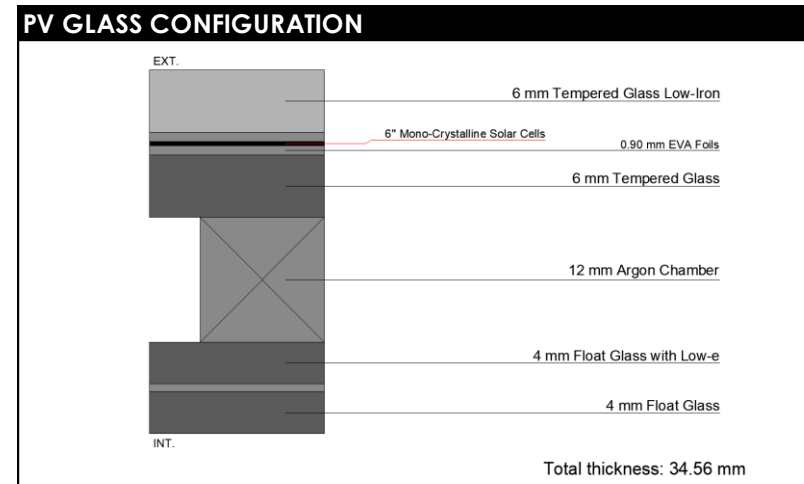
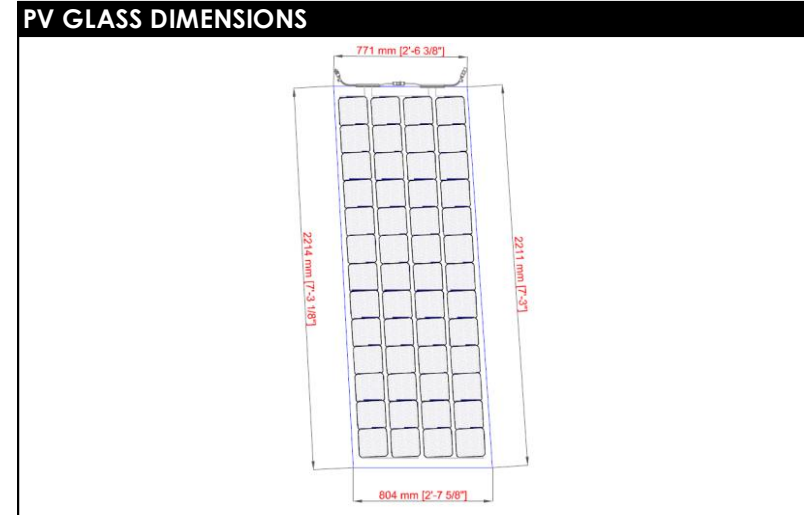
TYPE 18 – R10

M180



PHOTOVOLTAIC GLASS		2.203 x 918	
M180 / TYPE 18 - R10		Mono 3BB	Crystalline
Electrical data test conditions (STC)			
Nominal peak power	239	P_{mpp} (Wp)	
Open-circuit voltage	35	V_{oc} (V)	
Short-circuit current	8,71	I_{sc} (A)	
Voltage at nominal power	29	V_{mpp} (V)	
Current at nominal power	8,20	I_{mpp} (A)	
Power tolerance not to exceed	± 10	%	
STC: 1000 w/m ² , AM 15 and a cell temperature of 25°C, stabilized module state.			
Mechanical description			
Length	2203	mm	
Width	918	mm	
Thickness	34,56	mm	
Surface area	2,02	sqm	
Weight	101	Kgs	
Cell type	6" Mono 3BB	Crystalline	
No PV cells / Transparency degree	52	41%	
Front Glass	6 mm	Tempered Glass Low-Iron	
Rear Glass	6 mm	Tempered Glass	
Gas Spacer	12 mm	Argon Chamber	
Inner Glass	4 mm	Float Glass Low-e	
Inner Glass	4 mm	Float Glass	
Thickness encapsulation	1,80 mm	EVA Foils	
Category / Color code	-	-	
Junction Box			
Protection	IP65		
Wiring Section	2,5 mm ² or 4,0 mm ²		
Limits			
Maximum system voltage	1000	V_{sys} (V)	
Operating module temperature	-40...+85	°C	
Temperature Coefficients			
Temperature Coefficient of P_{mpp}	-0,38	%/°C	
Temperature Coefficient of V_{oc}	-0,29	%/°C	
Temperature Coefficient of I_{sc}	0,04	%/°C	

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GLASS PROPERTIES	Onyx Equivalent Glass
Light Transmission	41%
U-value [W/sqm.K]	1,6
Peak Power [Wp/sqm]	118,3

