



למידע ופרטים נוספים:
073-7969732
יוניקיט אנרגיה

SOLAR FACADE —
PRODUCT DATASHEET

THE WORLD'S LARGEST BIPV MANUFACTURER

MITREX.COM

⚡ SOLAR FACADE

Mitrex Solar Facades use the power of the sun to produce clean electricity. In addition, these products feature various backing systems, allowing for lightweight, high-strength panels.

Mounted on top is a layer of solar cells fixed with a customizable facing, recreating any pattern or color while allowing for energy generation. These panels also provide thermal resistance in addition to exterior noise control while ensuring durability and safety.

Mitrex cladding panels are an energy-efficient solution for both existing and also new facades. Particularly from design and building perspectives, Mitrex BIPV systems have limitless applications. Furthermore, these panels transform typical, single-purpose building materials into multi-purpose cladding that acts as an energy generating building envelope.

An energy-efficient solution to new and existing facades.

Transform single-purpose building materials into multi-purpose facades.

Provide thermal resistance and exterior noise control.

Lightweight, strong, durable and highly resistant to moisture, staining and weathering.

Code compliant, fire resistant and safety-tested.

Economical through our revenue-sharing business model.

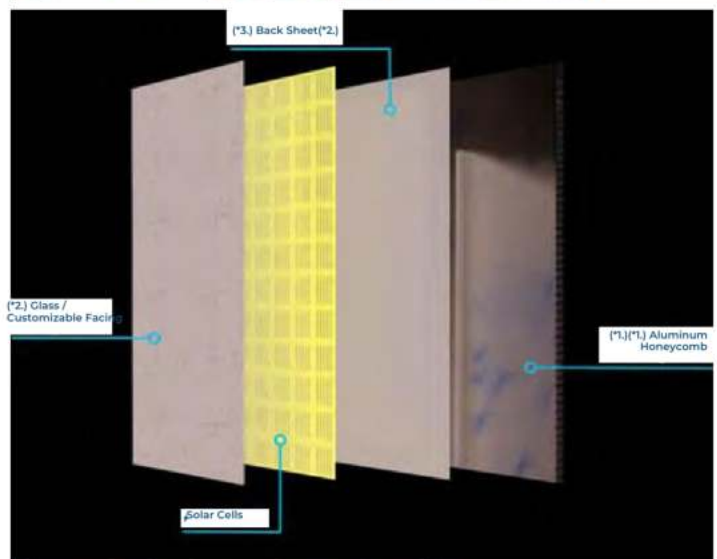
Produced in a North American automated state-of-the-art manufacturing facility of standard solar and BIPV products based in Canada.

Mitrex panels are high-quality, compatible, durable, and high-performing.

Mitrex modules include a 25-year warranty for both product quality and performance, guaranteeing excellence in hardware, energy generation, and aesthetics.

APPLICATIONS

-  Solar Facade
-  Solar Noise Barrier
-  Solar Siding
-  Solar Spandrel Panel



*1. See page 4, section aluminum honeycomb capabilities

*2. See page 4, section solar glass capabilities

*3. See page 4, section solar backsheet capabilities



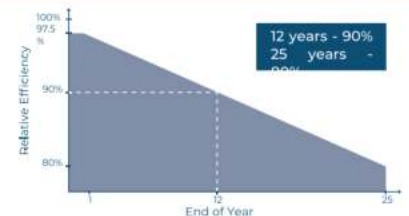
GENERAL ELECTRICAL & MECHANICAL DATA (For Standard Module 2030x990x55mm)

ELECTRICAL SPECIFICATIONS	SOLAR CLADDING	I-V CURVES
Test Conditions	STC	
Module Power (Pmax)	Varies, See Page 9-10	
Maximum Power Voltage (Vpmax)	Varies, See Page 9-10	
Maximum Power Current (Ipmax)	Varies, See Page 9-10	
Open Circuit Voltage (Voc)	Varies, See Page 9-10	
Short Circuit Current (Isc)	Varies, See Page 9-10	
Module Efficiency	Varies, See Page 9-10	
Cell Efficiency	22.5% - Monocrystalline Solar Cell	
Maximum System Voltage (VDC)	1000V (IEC/UL)	
Series Fuse Rating	20A	
Power & Other Electrical Specification Tolerance	5%	
Application Classification	Class A	
Measurement Conditions: STC 1000 W/m² - AM 1.5 - Temperature 25°C		*Varies, These graphics are based on a 345W panel

MECHANICAL PROPERTIES	METRIC IMPERIAL
Module Weight	29 kg 63.9 lbs
Dimensions (H x L x D)	2030 x 990 x 54mm 79.9 x 39.0 x 2.12in
Maximum Surface Load (Wind / Snow)	2400Pa rear load / 2400Pa front load 50.1psf rear load / 50.1psf front load
Hail Impact Resistance	ø 25mm at 83 km/hø 1in at 51.6 mph
Cells	72 [12x6] Mono-crystalline (158.75 x 158.75mm) 72 [12x6] Mono-crystalline (6.25 x 6.25in)
Glass	3.2mm tempered glass, high transmittance, 0.126in tempered glass, high transmittance, anti-reflective coating anti-reflective coating
Cables & Connectors (Refer to Installation Manual) Backsheet	300mm, 500mm, 1000mm, 1200mm - 4mm², 11.8in, 19.7in, 39.4in, 47.2in - 0.16in², 12 AWG (UL) 12 AWG (UL), MC4 from Staubli MC4 from Staubli
Back Support	High durability, UV resistant, PV backsheet
Bypass Diodes	Aluminum Honeycomb
Junction Box	3 diodes- 30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)
Fire Rating	IP68 rated, TUV and UL certified
	Type II

TEMPERATURE RATINGS	
Temperature Coefficient Voc	0.036% /°C
Temperature Coefficient Pmax	-0.27% /°C
Nominal Module Operating Temperature	-0.36% /°C
Operating Temperature	42 ± 3°C
	-40°C ~ +85°C

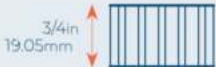
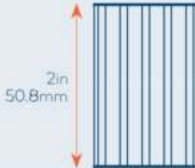
Product Warranty: 25 years
Performance Warranty:
≥ 97% end of 1st year
≥ 90% end of 12th year ≥
80% end of 25th year



ENGINEERING DRAWING	CERTIFICATIONS
	•UL 61730-1/-2, CSA 61730-1/-2, IEC 61730-1/-2 •UL 61215-1/-2, CSA 61215-1/-2, IEC 61215-1/-2 •EN 13501-1 (A2-s1, d0) •NFPA 285 •CAN/ULC-S134 •CAN/ULC-S135 •ASTM B117-16, ASTM C271/C271M-16, ASTM C297/C297M-16, ASTM C364/C364M-16, ASTM C365, ASTM C393/C393M-16, ASTM C480/C480M-16, ASTM C273/C273M-18, ASTM C481-99 (Reapproved 2016), ASTM C666/C666M-15, ASTM C880/C880M-15, ASTM C897-08 (2016), ASTM D1761, ASTM D7766/D7766M-16, ASTM E283-04 (2012), ASTM E330 / TAS 203, ASTM E330-02, ASTM G154 -16, ASTM E1996 / TAS 201, ASTM 1363-11, ASTM E1886 / TAS 203, ASTM E331-00(2016) •ISO 10545-8 •ASTM E84, ASTM E136, ASTM E119

MECHANICAL DATA & CUSTOMIZATION

ALUMINUM HONEYCOMB GENERAL MECHANICAL DATA

	SIZE: 3/4in		SIZE: 1in		SIZE: 2in	
	Imperial	Metric	Imperial	Metric	Imperial	Metric
Total Thickness	3/4in	19.0mm	1in	25.4mm	2in	50.8mm
Skin Thickness	0.03in	1mm	0.03in	1mm	0.03in	1mm
Weight	0.93lb/ft ²	4.52kg/m ²	0.96 lb/ft ²	4.67kg/m ²	1.08 lb/ft ²	5.28kg/m ²
Flexural Rigidity	50 10 ³ psi	0.35 10 ³ N mm ²	182(10 ³ psi)	1.26(10 ³ N mm ²)	1,450(10 ³ psi)	10.08(10 ³ N mm ²)
Shear Rigidity	332 10 ³ psi	2.29 10 ³ N mm ²	332(10 ³ psi)	2.29(10 ³ N mm ²)	332(10 ³ psi)	2.29(10 ³ N mm ²)
Tensile Strength	117 psi	0.80 MPa	196 psi	1.35 MPa	392 psi	2.70 MPa
Compressive Strength	9,398 psi	64.8 MPa	15,664 psi	108 MPa	31,328 psi	216 MPa
Compressive Elastic Modulus	61 psi	0.42 MPa	101 psi	0.7 MPa	203 psi	1.4 MPa
Shear Strength	744 psi	5.13 MPa	1,232 psi	8.5 MPa	2,465 psi	17 MPa
Thickness Options						

For further mechanical information about aluminum honeycomb, please check Mitrex aluminum honeycomb datasheet.

ALUMINUM HONEYCOMB MECHANICAL DATA - SKIN

	Imperial	Metric
Thickness	0.02 - 0.04in	0.5 - 1mm
Yield Strength ($R_{e,0.2}$)	>11,603 psi	>80 N/mm ²
Ultimate Tensile Strength (R_m)	18,129< R_m <26,831psi	125< R_m <185N/mm ²
Elongation (A)	>3%	
Alloy Type	5005	

ALUMINUM HONEYCOMB MECHANICAL DATA - CORE

	Imperial	Metric
Cell Size	1/4in	6.35mm
Foil Thickness	0.002in	0.05mm
Density	3.49lb/ft³	56kg/m³
Compressive Strength	319 psi	2.2 MPa
Alloy Type	3005	

SOLAR GLASS FACING SPECIFICATION

	CERTIFICATION IMPERIAL	METRIC
DensityASTM C729158lb/ft3		2,530kg/m3
Absorption By Wt.ASTM C3730%		0%
Compressive Strength - 150,000 Flexural Strength (Dry)ASTM C1588,700psi	psi	1,000MPa
Modulus RuptureASTM C1585,950psi		60MP
HardnessASTM C730570KHN		a
		41MP

SOLAR GLASS MECHANICAL DATA

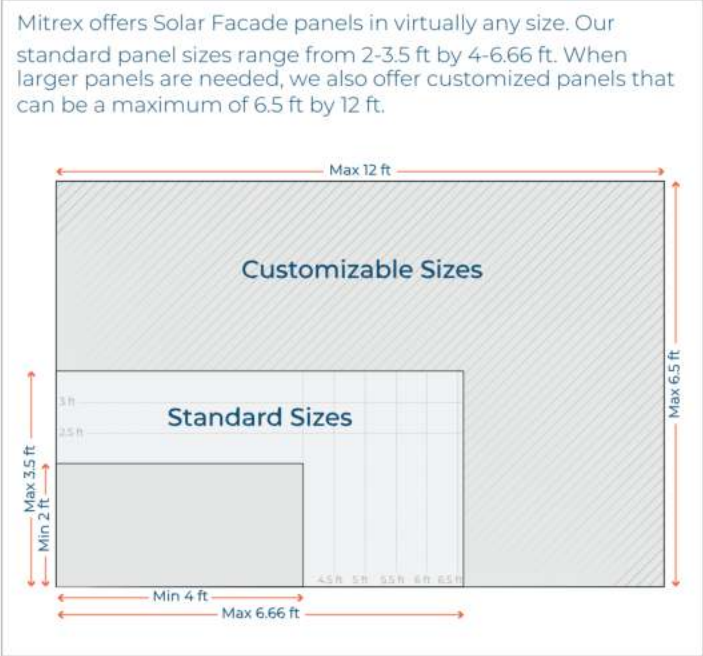
IMPERIAL		METRIC
Thickness 0.13 ± 0.008in		3.2 ± 0.2mm
Dimensional Tolerance 0.09lbs/in ³		± 1.0mm
Density		2.5gm/cm ³
CornerRadius (0.04-0.16in)	Radius, Chamfer or	Radius, Chamfer or cut (1.0-4.0mm)
Overall Size (1.175-1.2015)		4.0mm/M /
Local Warp (0.002in/11.81in (EN 12150-1:2015))		990mm/M 0.5mm /
Bending Strength (EN 12150-1:2015)	516.06lbs/in	300mm/M 90N/mm
Iron Content ^(ASS)	<120ppm	
Edge	At least seamed	
Scratch	5	
Hardness (Mohs)		
Fragmented		
Particles in 50x50mm (tempered)(EN 12150-1:2015)	Min 40 pcs	

For further mechanical information about solar glass, please check Mitrex solar glass datasheet.

		SIZE: 1in		SIZE: 2in	
		METRIC	IMPERIAL	METRIC	IMPERIAL
Total Thickness With Facing	0.87in				
Total Weight With Facing	2.81lbs/ft2	22.2mm	1.13in	28.6mm	2.13in
		13.74kg/m2	2.84lbs/ft2	13.89kg/m2	2.97lbs/ft2
					.0mm
					14
					.5kg/m2

MECHANICAL DATA & CUSTOMIZATION

MODULE SIZE CAPABILITIES



DESIGN AND COLOURS

Mitrex offers architects the control and flexibility to design structures sustainably without compromising aesthetics.

Customizable pattern, texture and colour options to satisfy any architectural needs.

Reflective, semi-reflective or matte module depending on aesthetic requirements.

Design flexibility, including size of panels, curves and corners.

For more information, see page pages 5-10, section color/pattern options.

SOLAR BACKSHEET CAPABILITIES

BacksheetHigh durability, UV resistant, PV backsheet Colour

White Backsheet Black Backsheet

SMOKE AND FLAME SPREAD (ASTM E84)

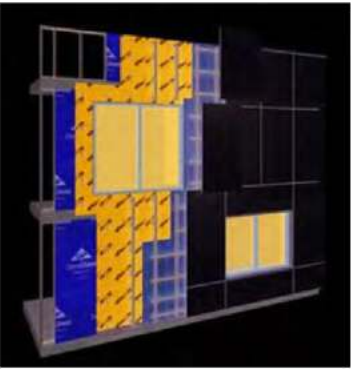
Rating
Mitrex BIPV Rainscreen SystemClass B Mitrex
BIPV Prefab Wall SystemClass B Mitrex BIPV
Precast Wall SystemClass B

SOUND TRANSMISSION COEFFICIENT (ASTM E90)

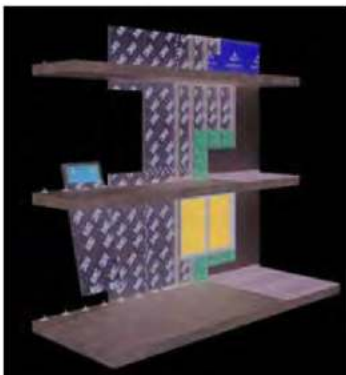
STC Rating
Mitrex BIPV Rainscreen System34
Mitrex BIPV Prefab Wall System34
Mitrex BIPV Precast Wall System55

Note: The STC values exclude insulation.

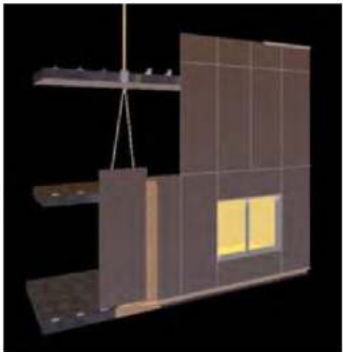
INSTALLATION SYSTEMS OPTIONS



RAINSCREEN SYSTEM
Stick-Build & Pre-Assembled



PRE-FAB WALL SYSTEM



PRE-CAST WALL SYSTEM

SOLAR SOLID COLOURS



Obsidian
⚡16W/SQFT



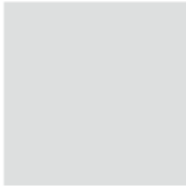
Dark Grey
⚡15W/SQFT



Dove Grey
⚡14W/SQFT



Concorde Grey
⚡14W/SQFT



Polaris
⚡8W/SQFT



White
⚡7W/SQFT



Ash Beige
⚡10W/SQFT



Khaki
⚡8W/SQFT



Apache
⚡9W/SQFT



Limunada
⚡8W/SQFT



Mustard
⚡6W/SQFT



Dark Mustard
⚡9W/SQFT



Dull Orange
⚡6W/SQFT



Fiery Orange
⚡8W/SQFT



Red-Orange
⚡9W/SQFT



Cinnabar
⚡10W/SQFT



Red
⚡12W/SQFT



Rosy Finch
⚡9W/SQFT



Mora
⚡9W/SQFT



Dark Blue
⚡14W/SQFT



Blue
⚡11W/SQFT



Flat Blue
⚡11W/SQFT



Morpho
⚡12W/SQFT



Cool Blue
⚡12W/SQFT



Light Blue
⚡12W/SQFT



Middle Grey
⚡14W/SQFT



Green Boulder
⚡11W/SQFT



Green
⚡10W/SQFT



Greeny Grey
⚡5W/SQFT



Peridot
⚡6W/SQFT



Turquoise
⚡10W/SQFT



Dark Beige
⚡12W/SQFT

Custom Colours are available. Ask one of our representatives how to get a sample colour for your project.
Click on the wheel to see additional Mitrex solar colours.



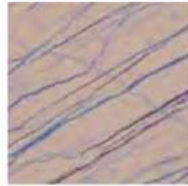
SOLAR MARBLE



Aranea
⚡15W/SQFT



Orbit
⚡15W/SQFT



Electric
⚡15W/SQFT



Emperor
⚡14W/SQFT



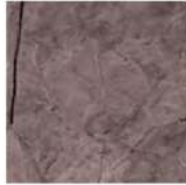
Magnetic
⚡14W/SQFT



Scurro
⚡14W/SQFT



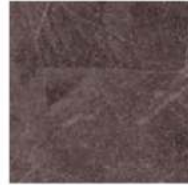
Fumo
⚡14W/SQFT



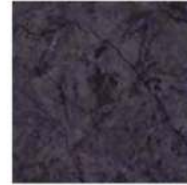
Hekate
⚡11W/SQFT



Quicksilver
⚡13W/SQFT



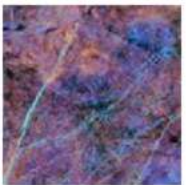
Snowfall
⚡12W/SQFT



Rocksalt
⚡11W/SQFT



Oracolo
⚡9W/SQFT



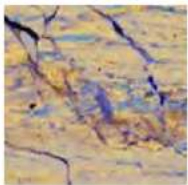
Nebula
⚡10W/SQFT



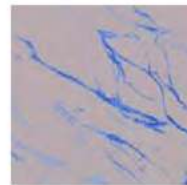
Ionian
⚡14W/SQFT



Aurora
⚡11W/SQFT



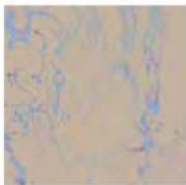
Tramonto
⚡13W/SQFT



Venula
⚡13W/SQFT



Erda
⚡13W/SQFT



Racine
⚡15W/SQFT

SOLAR LIMESTONE



Ancona
⚡15W/SQFT



Elara
⚡15W/SQFT



Astra
⚡14W/SQFT



Vega
⚡14W/SQFT



Lupine
⚡14W/SQFT



Selene
⚡13W/SQFT



Arcturus
⚡12W/SQFT



Fennec
⚡9W/SQFT



Ursina
⚡13W/SQFT



Cygnet
⚡15W/SQFT



Saturnian
⚡12W/SQFT

SOLAR SLATE



Striata
⚡15W/SQFT



Cerberus
⚡16W/SQFT



Corvus
⚡14W/SQFT



Orion
⚡13W/SQFT



Montanea
⚡14W/SQFT



Caldera
⚡14W/SQFT

SOLAR WOOD



Charbon
⚡15W/SQFT



Cinis
⚡14W/SQFT



Terra
⚡14W/SQFT



Castanea
⚡12W/SQFT



Nocciola
⚡12W/SQFT



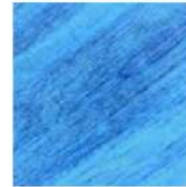
Sorrel
⚡11W/SQFT



Filigrana
⚡13W/SQFT



Bruna
⚡9W/SQFT



Mandorla
⚡10W/SQFT



Chantilly
⚡13W/SQFT

SOLAR BRICK



Oscuro
⚡15W/SQFT



Mercurio
⚡10W/SQFT



Columba
⚡8W/SQFT



Ardea
⚡9W/SQFT



Calcaria
⚡10W/SQFT



Harena
⚡9W/SQFT



Melograno
⚡11W/SQFT



Maris
⚡14W/SQFT



Rubrica
⚡12W/SQFT



Ferra
⚡14W/SQFT

SOLAR GRANITE



Angola
⚡12W/SQFT



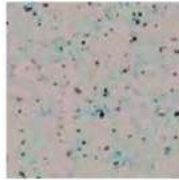
Sagittarius
⚡12W/SQFT



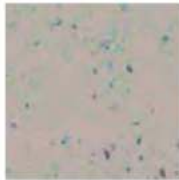
Carbo
⚡13W/SQFT



Castan
⚡11W/SQFT



Galaxias
⚡12W/SQFT



Nero
⚡12W/SQFT



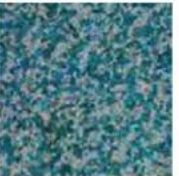
Moonstone
⚡10W/SQFT



Lunula
⚡12W/SQFT



Purpura
⚡8W/SQFT



Andromeda
⚡7W/SQFT

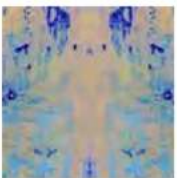


Rosea
⚡7W/SQFT

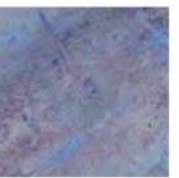


Phoenix
⚡8W/SQFT

SOLAR METAL



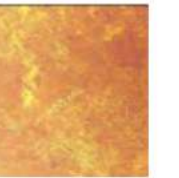
Eocene
⚡12W/SQFT



Falco
⚡12W/SQFT



Cassia
⚡14W/SQFT



Cobaltic
⚡12W/SQFT

Note: The power outage for Mitrex Solar Modules exhibits a tolerance of +/-5%, indicating that variations in power output within this range are considered acceptable.

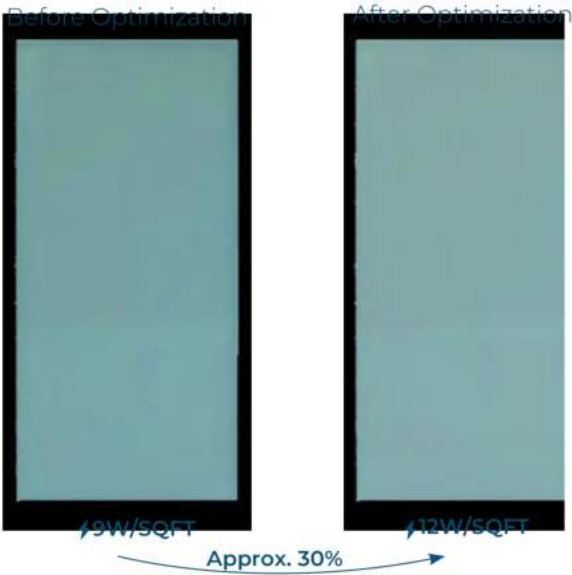
COLOUR/POWER OPTIMIZATION

In custom projects, Mitrex solar colours and patterns can also implement different strategies that will allow the improvement of the module power outcome depending on the projects needs.

Sample Colour Selected



Rosy Finch
⚡9W/SQFT



Note: Power outcome is for a 2030x990mm module. Other module sizes will affect the output.

Note: Due to inconsistencies such as monitors, digital photography and production variations, we cannot guarantee that the color you see on your screen accurately portrays the true color of the product. The finished product may be slightly different than it appears in this chart. We recommend purchasing a sample first.

ELECTRICAL DATA

Model Name	Module Power - W/SF	Max. Power Current - Imax (A)	Max. Power Voltage - Vmax (V)	Short Circuit Current - Isc (A)	Open Circuit Current - Voc (V)	Module Efficiency (%)
Ancona	15	7.46	42.90	8.89	49.00	16%
Andromeda	7	3.73	40.20	3.89	47.30	7%
Angola	12	6.51	41.50	6.74	48.00	13%
Apache	9	4.50	41.10	4.83	47.70	9%
Aranea	15	7.95	40.90	8.34	48.60	16%
Arcturus	12	6.26	42.30	7.36	48.40	13%
Ardea	9	4.78	39.80	5.16	47.70	9%
Ash Beige	10	5.20	40.40	5.45	47.90	10%
Astra	14	6.92	42.60	8.20	48.70	15%
Aurora	11	5.52	41.70	5.91	48.20	11%
Blue	11	6.08	40.30	6.32	48.20	12%
Bruna	9	4.59	40.30	4.80	47.80	9%
Calcaria	10	5.25	40.00	5.71	47.90	10%
Caldera	14	7.36	40.10	7.75	48.40	15%
Carbo	13	6.85	41.60	7.12	48.10	14%
Cassia	14	7.32	41.00	7.74	48.60	15%
Castan	11	5.77	42.50	6.72	48.40	12%
Castanea	12	6.17	40.50	6.52	48.30	12%
Cerberus	16	8.49	40.60	9.06	48.90	17%
Chantilly	13	6.81	40.40	7.11	48.20	14%
Charbon	15	7.95	40.90	8.41	48.70	16%
Cinis	14	7.25	40.60	7.63	48.40	15%
Cinnabar	10	5.32	40.50	5.58	48.00	11%
Cobaltic	12	6.14	40.70	6.49	48.30	12%
Columba	8	4.30	39.60	4.62	47.50	8%
Concorde Grey	14	7.59	40.20	7.90	48.50	15%
Cool Blue	12	6.31	40.40	6.58	48.30	13%
Corvus	14	7.36	40.10	7.75	48.40	15%
Cygnat	15	7.46	42.90	8.89	49.00	16%
Dark Beige	12	6.55	40.50	6.84	48.40	13%
Dark Blue	14	7.36	40.10	7.64	48.40	15%
Dark Grey	15	8.04	40.40	8.42	48.70	16%
Dark Mustard	9	4.96	40.30	5.19	47.80	10%
Dove Grey	14	7.48	40.10	7.77	48.40	15%
Dull Orange	6	3.45	40.60	3.66	47.20	7%
Elara	15	7.46	42.90	8.89	49.00	16%
Electric	15	7.95	40.90	8.34	48.60	16%
Emperor	14	6.99	42.90	7.76	48.70	15%
Eocene	12	6.14	40.70	6.49	48.30	12%
Erda	13	6.56	42.70	7.24	48.50	14%
Falco	12	6.14	40.70	6.49	48.30	12%
Fennec	9	4.81	41.60	5.29	47.80	10%
Ferra	14	7.53	40.50	7.95	48.60	15%
Fiery Orange	8	4.16	40.90	4.44	47.50	8%
Filigrana	13	6.81	40.40	7.11	48.20	14%
Flat Blue	11	6.08	40.30	6.32	48.20	12%
Fumo	14	6.89	42.80	7.63	48.60	15%
Galaxias	12	6.10	42.60	7.13	48.50	13%
Green	10	5.32	40.50	5.58	48.00	11%
Green Boulder	11	5.77	40.70	6.10	48.20	12%
Greeny Grey	5	2.73	40.30	2.87	46.90	5%
Harena	9	4.78	39.80	5.16	47.70	9%
Hekate	11	5.86	41.80	6.30	48.30	12%
Ionian	14	6.99	42.90	7.76	48.70	15%
Khaki	8	4.03	40.90	4.31	47.50	8%
Light Blue	12	6.67	40.50	6.97	48.40	13%
Limunada	8	4.16	40.90	4.44	47.50	8%
Lunula	12	6.10	42.60	7.13	48.50	13%

ELECTRICAL DATA

Model Name	Module Power - W/SF	Max. Power Current - Imax (A)	Max. Power Voltage - Vmax (V)	Short Circuit Current - Isc (A)	Open Circuit Current - Voc (V)	Module Efficiency (%)
Lupine	14	6.92	42.60	8.20	48.70	15%
Magnetic	14	6.89	42.80	7.63	48.60	15%
Mandorla	10	5.19	40.50	5.45	48.00	10%
Maris	14	7.53	40.50	7.95	48.60	15%
Melograno	11	5.72	40.20	6.25	48.10	11%
Mercurio	10	5.25	40.00	5.71	47.90	10%
Middle Grey	14	7.71	40.20	8.03	48.50	15%
Montanea	14	7.36	40.10	7.75	48.40	15%
Moonstone	10	5.38	40.90	5.71	48.00	11%
Mora	9	5.07	40.40	5.32	47.90	10%
Morpho	12	6.44	40.40	6.71	48.30	13%
Mustard	6	3.45	40.60	3.66	47.20	7%
Nebula	10	5.41	41.60	5.78	48.10	11%
Nero	12	6.51	41.50	6.74	48.00	13%
Nocciola	12	6.17	40.50	6.52	48.30	12%
Obsidian	16	8.50	40.60	8.94	48.90	17%
Oracolo	9	4.55	41.80	4.98	47.90	9%
Orbit	15	7.95	40.90	8.34	48.60	16%
Orion	13	7.00	40.00	7.35	48.30	14%
Oscuro	15	7.86	40.70	8.34	48.80	16%
Peridot	6	3.21	40.50	3.39	47.10	6%
Phoenix	8	4.21	40.40	4.41	47.50	8%
Polaris	8	4.16	40.90	4.44	47.50	8%
Purpura	8	4.21	40.40	4.41	47.50	8%
Quicksilver	13	6.46	42.60	7.11	48.40	14%
Racine	15	8.05	41.00	8.47	48.70	16%
Red	12	6.55	40.50	6.84	48.40	13%
Red Orange	9	4.62	41.10	4.96	47.70	9%
Rocksalt	11	4.62	41.80	4.96	48.30	9%
Rosea	7	5.74	40.20	6.17	47.30	12%
Rosy Finch	9	3.73	40.30	3.89	47.80	7%
Rubrica	12	4.96	40.70	5.19	48.30	10%
Rubrica	12	6.51	42.60	6.93	48.50	13%
Sagittarius	12	6.10	42.30	7.13	48.40	13%
Saturnian	14	6.15	42.80	7.22	48.60	13%
Scurro	13	6.89	42.60	7.63	48.70	15%
Selene	12	6.81	42.50	8.06	48.30	14%
Snowfall	11	6.12	40.30	6.72	48.10	13%
Sorrel	15	5.71	40.40	6.00	48.70	11%
Striata	14	8.04	40.60	8.54	48.40	16%
Terra	15	7.39	40.40	7.76	48.70	15%
Titania	13	8.04	42.70	8.54	48.50	16%
Tramonto	10	6.56	40.50	7.24	48.00	14%
Turquoise	13	5.32	42.50	5.58	48.60	11%
Ursina	14	6.58	42.60	7.78	48.70	14%
Vega	13	6.92	42.70	8.20	48.50	15%
Venula	7	6.56	40.70	7.24	47.30	14%
White		3.69		3.92		7%



SOLAR FACADE — PRODUCT DATASHEET

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