

Energy Generating Building Materials: eFacade PRO+ Product Datasheet



∳ eFacade PRO+

eFacade PRO+ by Mitrex is a highly customizable building-integrated photovoltaic (BIPV) system that enables architects and developers to realize any facade concept—without compromising on solar performance. PRO+ is designed to support unique project requirements, whether you're building with complex geometries, specific color palettes, or non-standard system types.

Each panel is engineered to deliver up to 18W/ft² of solar generation while allowing complete freedom in dimensions, shapes, and finishes. With compatibility across ventilated rainscreens, unitized curtain walls, and prefabricated facade assemblies, eFacade PRO+ adapts to the most advanced and demanding architectural applications.

🔆 Installation System

Compatible with rainscreen, unitized, stick-built, and curtain wall systems—also available as prefabricated panels, slab-to-slab connections, or insulated wall assemblies.

Fire Safety

Features a non-combustible glass and a tested backing system to meet strict global fire safety standards, including EN 13501 A2-s1,d0 and NFPA 285.

Custom Aesthetics

Allows complete design freedom with limitless color options, shapes, graphic overlays, and finishes like satin, matte, glossy, and wood grain—enabling full customization to suit any architectural vision or branding need.

Perfomance

Built for long-term durability outdoors, tested for UV resistance, temperature extremes, and mechanical impact, and performs reliably between -40°C and +85°C.

Sizes & Shapes

Fabricated in nearly any size or shape, accommodating everything from compact units to oversized formats—including tilted panels, rectangles, triangles, curves, and integrated corners.

T Maintenance

With self-cleaning glass and corrosion-resistant materials, this system requires minimal maintenance. Its sealed photovoltaic design ensures long-term reliability and is backed by a 25-year power performance warranty.

Sustainability

Supports long-term carbon reduction by generating clean energy and incorporating recyclable, low-carbon materials. It's designed to help projects meet LEED, Passive House, and other sustainability standards.

Incentives

Projects using this system may qualify for sustainability incentives such as government rebates, green energy grants, and low-cost financing across North America.





Meets safety standards including UL 61730, UL 61215, ASTM E1996 for impact resistance, and ASTM E330 for wind load performance.



eFacade PRO+ Module Details

- 1. Glass / Customizable Facing * See page 6
- 2. and 4. Encapsulant
- 3. **#** Solar Cells
- 5. Back Sheet *See page 8, Section Solar Backsheet Capabilities
- 6. Junction Box
- 7. Aluminum Honeycomb or Extruded Aluminum Profile * See page 9 10

General Electrical And Mechanical Data - Aluminum Honeycomb

Standard Module 2030 × 990 mm (79.9 × 39.0 in)

•	Test	Specification	Engineering Drawing
	Test Conditions	STC	990 990
	Module Power (Pmax)		
	Maximum Power Voltage (Vpmax)	Varies depending on colour	
	Maximum Power Current (Ipmax)	contact us for more information	
	Open Circuit Voltage (Voc)	Toll Free: +1 (855) 254-0214	
	Short Circuit Current (Isc)		50 50 50 50 50 50 50 50 50 50 50 50 50 5
	Module Efficiency		
	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/m ² - AM 1.5 - Temperature	e 25°C	

•	Mechanical Properties	٠	Metric	•	Imperial
	Module Weight		31kg / 45kg		68lbs / 99lbs
	Dimensions (H x L x D)		2030 × 990 × 55mm / 2030 × 990 × 58mm		79.9 × 39.0 × 2.16in / 79.9 × 39.0 × 2.28in
	Maximum Surface Load (Wind / Snow)		8000Pa rear load / 8000Pa front load		167.1psf rear load / 167.1psf front load
	Design Load		5400Pa rear load / 5400Pa front load		112.7psf rear load / 112.7psf front load
	Hail Impact Resistance		ø 25mm at 83 km/h		ø 1in at 51.6 mph
	Cells		72 [12×6] Mono-crystalline (158.75 × 158.75mm)		72 [12×6] Mono-crystalline (6.25 × 6.25in)
	Glass		3.2mm / 6mm tempered glass, high transmittance, anti-reflective coating		0.125in / 0.23in tempered glass, high transmittance, anti-reflective coating
	Cables & Connectors		1200mm - 4mm², 12 AWG (UL), MC4 from Staubli		47.2in - 0.16in², 12 AWG (UL) MC4 from Staubli
	Backsheet		High durability, UV resistant, PV backsheet		
	Back Support		Aluminum Honeycomb		
	Bypass Diodes		3 diodes- 30SQ045T (45V max DC blocking volt	age, 3	30A max forward rectified current)
	Junction Box		IP68 rated, TUV and UL certified		
	Fire Rating		Spread of Flame A, Burning Brand C		

• Temperature Ratings

Temperature Coefficient Isc	0.036% /°C
Temperature Coefficient Voc	-0.27% /°C
Temperature Coefficient Pmax	-0.36% /°C
Nominal Module Operating Temperature	45 ± 3°C
Operating Temperature	-40°C ~ +85°C





*Varies, These graphics are based on a 345W panel

General Electrical And Mechanical Data - Extruded Aluminum Profile

Standard Module 2034 × 994 mm (80 × 39.1 in)

•	Test	•	Specification	
	Test Conditions		STC	
	Module Power (Pmax)			
	Maximum Power Voltage (Vpmax)		Varies depending or contact us for more i	
	Maximum Power Current (Ipmax)			
	Open Circuit Voltage (Voc)		Toll Free: +1 (855) 254 Email: info@mitrex.co	
	Short Circuit Current (Isc)			
	Module Efficiency			
	Cell Efficiency		22.5% - Monocrystall	
	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/m ² - AM 1.5 - Temperature	e 25°C		

Mechanical Properties	Metric	Imperial
Module Weight	36kg	79lbs
Dimensions (H x L x D)	2034 × 994 × 34mm	80 × 39.1 × 1.3in
Maximum Surface Load (Wind / Snow)	8000Pa rear load / 8000Pa front load	167.1psf rear load / 167.1psf front load
Design Load	5400Pa rear load / 5400Pa front load	112.5psf rear load / 112.7psf front load
Hail Impact Resistance	ø 25mm at 83 km/h	ø 1in at 51.6 mph
Cells	72 [12×6] Mono-crystalline (158.75 × 15	8.75mm) 72 [12×6] Mono-crystalline (6.25 × 6.25in)
Glass	6mm tempered glass, high transmitta anti-reflective coating	nce, 0.23in tempered glass, high transmittance, anti-reflective coating
Cables & Connectors	1200mm - 4mm², 12 AWG (UL), MC4 fr	om Staubli 47.2in - 0.16in², 12 AWG (UL) MC4 from Staubli
Backsheet	High durability, UV resistant, PV backs	heet
Frame	Extruded aluminum profile	
Bypass Diodes	3 diodes- 30SQ045T (45V max DC blo	ocking voltage, 30A max forward rectified current)
Junction Box	IP68 rated, TUV and UL certified	
Fire Rating	Type II	

• Temperature Ratings

Temperature Coefficient Isc	0.036% /°C
Temperature Coefficient Voc	-0.27% /°C
Temperature Coefficient Pmax	-0.36% /°C
Nominal Module Operating Temperature	45 ± 3°C
Operating Temperature	-40°C ~ +85°C





*Varies, These graphics are based on a 345W panel

There are no limitations when it comes to architectural creativity with Mitrex eFacade PRO+. This cutting-edge solar facade system empowers designers with unmatched freedom to bring any vision to life.

Whether you have a specific color in mind, are targeting an exact RAL or Pantone® shade, or want to replicate the look of natural stone, concrete, wood, or metal—or even incorporate bold graphic visuals—eFacade PRO+ can seamlessly match virtually any material, color, or texture using advanced surface treatment technology. Each panel turns the building envelope into a solar-powered canvas, blending high-performance energy generation with complete aesthetic freedom. With eFacade PRO+, beauty and sustainability are seamlessly integrated, allowing architects to design truly distinctive facades without compromise.



Unlimited Colour

More custom colours are available. Ask one of our representatives how to get a sample colour for your project.

\infty Design Flexibility

Full design flexibility with customizable panel sizes (up to 125in x 80in), curved modules, and integrated corner solutions



Glass Textures

Earge Grain Wood Glass Fine Grain Wood Glass Aqualine Glass

Granite C

Facings Variety

Available in reflective, semi-reflective, satin, matte, glossy, and specialty glass finishes





Matching Regular Materials

B Module Finish

Unlimited customization in pattern, texture, and color to meet any architectural vision



Performance Optimization

Note: Power outcome is for a 2030×990mm module. Other module sizes will affect the output.





For more details about eFacade PRO+ colors, patterns, or textures, scan the QR code



Unlimited Pattern Options



With Mitrex eFacade PRO+, the possibilities are limitless

Size & Shapes Details

Size Capabilities

eFacade PRO+ can be fabricated in virtually any size, from compact modules to oversized formats. Available in fully customizable sizes up to 125 \times 80 inches, PRO+ supports a wide range of shapes including tilted panels, rectangles, triangles, curves, and integrated corner panels.



Shapes Capabilities

Your building is a mosaic of eFacade PRO+ panels, each a distinct masterpiece, with options ranging from the elegance of perfect circles to the sharp sophistication of triangles, to hexagons mirroring the precision of nature's honeycombs, and even more shapes that dare to defy convention.



Solar Glass Facing Specification

Certification

ASTM C729

ASTM C373

ASTM C158

ASTM C158

ASTM C730

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

Facing Details

Solar Glass Mechanical Data

	Imperial	Metric	
Thickness (0.13in / 3.2mm) Thickness (0.23in / 6mm)	0.13 ± 0.008in 0.23 ± 0.012in	3.2 ± 0.2mm 6 ± 0.3mm	
Dimensional Tolerance	± 0.04in	± 1.0mm	
Density	0.09lbs/in3	2.5gm/cm ³	
Corner	Radius, Chamfer or cut (0.04-0.16in)	Radius, Chamfer or cut (1.0-4.0mm)	
Overall Bow / Warp (EN 12150-1:2015)	0.16in / 39.37in	4.0mm/M / 990mm/M	
Local Warp (EN 12150-1:2015)	0.002in / 11.81in	0.5mm / 300mm/M	
Bending Strength (EN 12150-1:2015) (0.13in / 3.2mm) Bending Strength (EN 12150-1:2015) (0.23in / 6mm)	516.06lbs/in 685.21lbs/in	90N/mm 120N/mm	
Iron Content (ASS)	<120ppm		
Edge	At least seamed		
Scratch Hardness (Mohs)	5		

Min 40 pcs

Solar Backsheet Capabilities Backsheet

Colour

Density

Absorption By Wt.

Flexural Strength (Dry)

Modulus Rupture

Compressive

Strength

Hardness



High durability, UV resistant, PV backsheet

Imperial

158lb/ft³

150,000psi

8,700psi

5,950psi

570KHN

0%

Metric

0%

2,530kg/m³

1,000MPa

60MPa 41MPa

White Backsheet



General Panel Mechanical Data

	• Size 1 in		• Size 2 in	
0.13in / 3.2mm Glass Facing	Imperial	Metric	Imperial	Metric
Total Thickness With Facing	1.15in	29mm	2.15in	55mm
Total Weight With Facing	2.84lbs/ft ²	13.89kg/m²	2.97lbs/ft ²	14.5kg/m²
	• Size 1 in		• Size 2 in	
0.23in / 6mm Glass Facing	• Size 1 in Imperial	Metric	• Size 2 in Imperial	Metric
0.23in / 6mm Glass Facing Total Thickness With Facing	 Size 1 in Imperial 1.25in 	Metric 32mm	 Size 2 in Imperial 2.25in 	Metric 57mm

Aluminum Honeycomb General Mechanical Data

	• Size 1 in		•	Size 2 in	
	Imperial	Metric		Imperial	Metric
Total Thickness	1in	25.4mm		2in	50.8mm
Skin Thickness	0.03in	1mm		0.03in	1mm
Weight	0.96lb/ft ²	4.67kg/m ²		1.08lb/ft ²	5.28kg/m ²
Flexural Rigidity	182 (10ºN psi)	1.26 (10ºN mm²)		1,450 (10ºN psi)	10.08 (10ºN mm²)
Shear Rigidity	332 (10ºN psi)	2.29 (10ºN mm²)		332 (10ºN psi)	2.29 (10ºN mm²)
Tensile Strength	196 psi	1.35 MPa		392 psi	2.70 MPa
Compressive Strength	15,664 psi	108 MPa		31,328 psi	216 MPa
Compressive Elastic Modulus	101 psi	0.7 MPa		203 psi	1.4 MPa
Shear Strength	1,232 psi	8.5 MPa		2,465 psi	17 MPa
Thickness Options	1in 1in 25.4mm			2in	

Aluminum Honeycomb Mechanical Data - Skin

	Imperial	Metric		Imperial	Metric
Thickness	0.02 - 0.04in 0.5 - 1mm		Thickness	1/4in	6.35mm
Yield Strength (Rp,0.2)	>11,603 psi	>80 N/mm ²	Yield Strength (Rp,0.2)	0.002in	0.05mm
Ultimate Tensite Strength (R_m)	18,129 <r<sub>m<26,831psi</r<sub>	125 <r<sub>m<185 N/mm²</r<sub>	Ultimate Tensite Strength (R_m)	3.49lb/ft ³	56 kg/m³
Elongation (A)	>3%		Elongation (A)	319 psi	2.2 MPa
Alloy Type	5005		Alloy Type	3005	

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

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Aluminum Honeycomb Mechanical Data - Core

Backing Details - Extruded Aluminum Profile

	Imperial	Metric	
Dimensions	1.42 × 1.22in	36.1 × 31.1mm	
Weight	0.29lb/ft	0.43kg/m	
Tensile Modulus	10 × 10 ⁶ psi	69 GPa	
Tensile Strength	0.21 × 10⁵ psi	145 MPa	
Shear Strength	0.17 × 105 psi	117 MPa	
Material	Aluminum Alloy		



Installation System Details

• Cladishield System (Rainscreen System)



Smoke And Flame Spread (ASTM E84)

	Rating
Mitrex Cladishield System (Rainscreen System)	Class A
Mitrex Claditized System (Unitized Wall System)	Class A
Mitrex Cladifab System (Pre-fab Wall System)	Class A

Sound Transmission Coefficient (ASTM E90)

Mitrex Cladishield System	STC Rating
(Rainscreen System)	34
Mitrex Claditized System (Unitized Wall System)	35
Mitrex Cladifab System (Pre-fab Wall System)	55



• Claditized System (Unitized Wall System)



• Cladifab System (Pre-fab Wall System)

Lifetime Warranty

- Mitrex solar facade products physically last the lifetime of the building and beyond as a building envelope product.
- The warranty guarantees that the energy generation will have a minimum energy output of 80% by year 25. However, energy generation will continue after the warranty period ends for as long as the panels are on the wall.
- Our lifetime warranty ensures reliable, durable facades as the panels require minimal maintenance and there is zero panel replacement needed for the building lifetime.

Category	Test Name	Test Specification	Result	
Acoustic	Sound Transmission Loss	ASTM E90	Sound Transmission Rating: CladiShield Rainscreen: 34; Claditized Unitized: 35; CladiFab Prefab: 55	
	Salt Spray Resistance	ASTM B117-16	No deleterious effects.	
Environmental	Laboratory Aging of Sandwich Construction	ASTM C481-99 (Reapproved 2016)	ASTM C273; C297; C364; C393 tests were reconducted after aging: the variation was +1.36 %, -5.90%; +2.55%; -7.95%. Note: Positive variation indicates no decrease in eteroptic after aging	
	Resistance to Rapid Freezing and Thawing	ASTM C666/C666M-15	No visible change to panel	
	Air Leakage Resistance	ASTM E283-04 (2012)	Qinf = 0.031 cfm/ft² or 0.155 L/s-m² at 300 Pa; Qexf = 0.024 cfm/ft² or 0.122 L/s-m² at 300 Pa	
	Fluorescent UV Exposure	ASTM G154 -16	No visible change	
	Water Penetration Resistance	ASTM E331	No water infiltration at 15 psf or 720 Pa	
	Fire Endurance Test	ASTM E119 / CAN/ULC S101	Passed	
Fire Safety	Exterior Wall Assembly Fire Test	CAN/ULC S134	Passed	
	Fire Classification	EN13501	Rating: A2-s1,d0	
	Tunnel Test	ASTM E84	FSI = 10; SDI = 200; Class A	
	Non-Combustibility (ASTM E136)	ASTM E136	Passed	
	Multi-Story Fire Test	NFPA 285	Passed	
	Surface Burning Characteristics	CAN/ULC S102	FSR = 0; Class A	
	Non-Combustibility (CAN/ULC S114)	CAN/ULC S114	Passed	
	Combustibility Parameters (Cone Calorimeter)	CAN/ULC S135	Passed NBCC 2015 requirements	
	Large Missile Impact Test	ASTM E1996 / TAS 201	Passed	
Impact / Safety	Cyclic Pressure Loading	ASTM E1886 / TAS 203	Passed. Over 3,500 positive and negative pressure cycles were applied at ± 2880 Pa (60 pst), equivalent wind load of 165 mph.	
Mechanical	Shear Strength and Shear Modulus	ASTM C273/C273M-18	Ultimate core shear strength = 1.01 MPa (147 psi); Core shear modulus = 10.9 MPa (1583 psi)	
	Shear Strength by Beam Flexure	ASTM C393/C393M-16	Max core shear strength = 0.94 MPa (137 psi); Facing bending stress = 8.14 MPa (1180 psi)	
	Flexure Creep Evaluation	ASTM C480/C480M-16	Net creep (in/day) facing - 0.029	
	Density of Sandwich Core	ASTM C271/C271M-16	327 kg/m ³ (20.42 lbm/ft ³)	
	Flatwise Tensile Bond Strength	ASTM C297/C297M-16	1.52 MPa (220 psi)	
	Edgewise Compressive Strength	ASTM C364/C364M-16	37.85 MPa (5490 psi)	
	Flatwise Compressive Strength	ASTM C365	1.92 MPa (278 psi)	
	Flexural Strength	ASTM C880/C880M-15	22.83 MPa (3311.21 psi); No failure	
	Tensile Properties of Adhesive Bond	ASTM C897-08 (2016)	Adhesive bond did not fail	
	Damage Resistance	ASTM D7766/D7766M-16	No panel deformation	
Structural	Structural Performance	ASTM E330	+/-80 psf or +/- 3840 Pa; no failure	
	Thermal Resistance	ASTM 1363-11	0.20 m ^{2.} °C/W (1.12 hr·ft ^{2.} °F/BTU)	
Thermal	Linear Thermal Expansion	ISO 10545-8	11.28 × 10 ⁻⁶ /°C	
PV Quality	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval	IEC/UL 61215	Passed	
PV Safety	Standard for Photovoltaic (PV) Module Safety	IEC/UL 61730	Passed	

















🖊 MITREX

Module Corners & Edges Details

Aluminum Honeycomb Backing

At Mitrex, every detail matters—right down to the corners and edges. eFacade PRO+ corner and edge solutions are engineered to maintain the aesthetic continuity of the building envelope while ensuring performance, safety, and durability.

Panel Edge Flushed

Panel Edge With L-Angle

Section View



Panel Edge

Panel to Panel

Panel Return Site Assembled

Panel Return Pre-Assembled







Extruded Aluminum Profile

mitrex.com

Panel Return



Module Tolerances Details

Aluminum Honeycomb Backing

	Imperial	Metric
Dimensional Variation Length	± 0.11in	± 3mm
Dimensional Variation Width	± 0.11in	± 3mm
Thickness Tolerance	± 0.03in	± 1mm
Diagonal Difference	± 0.27in	±7mm

Extruded Aluminum Profile

	Imperial	Metric
Dimensional Variation Length	± 0.07in	± 2mm
Dimensional Variation Width	± 0.07in	± 2mm
Thickness Tolerance	± 0.03in	± 1mm
Diagonal Difference	± 0.19in	± 5mm

Mitrex Design Assist Service

Mitrex and Cladify partner with architects and engineering teams from the earliest stages of design to co-develop integrated building envelope systems that satisfy both performance objectives and aesthetic goals. Through a structured Design Assist process, we offer façade system modeling, engineering validation, energy simulations, mock-up testing, and prefabrication strategies to streamline construction and reduce life cycle costs.



Implementation Support

- Technical Deliverables:
- Site installation guide
- QA checklist
- Commissioning certificate



ARCHITECT: Handel Architects GENERAL CONTRACTOR: Coastal Construction

ENGAGEMENT STEP: Design Development

ENGAGEMENT STEP:

Design Development



ARCHITECT: Silverstone DEVELOPER: Binghatti Developers In Partnership With Mercedes-Benz



Mitrex offers three distinct solar cladding solutions—eFacade LITE, eFacade PRO, and eFacade PRO+—each engineered to meet varying project needs in terms of design flexibility, performance, and scale.

The table below provides a detailed comparison across key features such as colors and finishes, sizing options, weight, system compatibility, and testing standards. Whether you're prioritizing affordability, customization, or advanced performance, this side-by-side overview will help you identify the best fit for your project.

	• eFacade LITE	• eFacade PRO	• eFacade PRO+
Colors & Patterns	5 color options	48 color options	Unlimited customizable colors & patterns
	Finish: Satin glass Thickness: 0.24in (6mm)	Finish: Satin glass Thickness: 0.24in (6mm)	Finish: Super satin, satin, matte, glossy, wood grain, aqualite, and more. Thickness: 0.24-0.47in (6-12mm)
Sizes & Weight	2 size options: 73 × 36 in (1854 × 922 mm) 73 × 18 in (1854 × 456 mm)	Custom sizes up to 80 × 39 in (2034 x 994mm). Minimum size of 49 × 27 in (1245 x 686 mm).	Customizable single piece sizes up to 125 x 80 in (3175 × 2032mm). Preassembled pieces up to 420 inches (10.7) long.
	Weight: 3.16 lb/SQFT (15.4 kg/sqm)	Weight: 3.16 lb/SQFT (15.4 kg/sqm)	Weight: 3.19 - 4.00 lb/SQFT (15.6-19.5 kg/ sqm)
	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm)	Backing: Extruded aluminum profile with panel thickness of 1.3in (34mm). Aluminum honeycomb with 1 or 2 in (25 or 50mm) thickness excluding facing.
	Shapes: rectangle	Shapes: rectangle	Customizable Shapes: rectangle, triangle, circle, and more
Systems	Ventilated rainscreen system, eFacade LITE system	Ventilated rainscreen system (interlocking channel or anchor plate)	Customizable rainscreen, unitized or prefabricated system options
	MOQ of 150 SQFT (13.9 sqm)	MOQ of 500 SQFT (46.4 sqm)	MOQ of 5,000 SQFT (464.5 sqm)
Testing	3rd party tested	3rd party tested	3rd party tested
	Code-compliant & safety tested	Code-compliant & safety tested	Code-compliant & safety tested
	Fire tested	Fire tested	Fire tested

For more information about Mitrex eFacade products, visit mitrex.com or email us at info@mitrex.com

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