



MITREX SOLAR RAILING

Product Variety



MITREXTM

BUILDING-INTEGRATED SOLAR TECHNOLOGY

MITREX.COM

Mitrex Solar Railing

Mitrex SolaRail™ technology extends solar energy generation to balconies, maximizing energy production on otherwise unused surfaces. Mitrex solar railings consist of high-efficiency solar cells sandwiched between layers of heat-tempered, laminated glass with various framing options.



Code compliant, easy to install, safe, and durable.



Energy-generating while maintaining the functionality of the railing.



Design flexibility, including colour, pattern, handrail, and base options.



Produced in a North American automated state-of-the-art manufacturing facility.



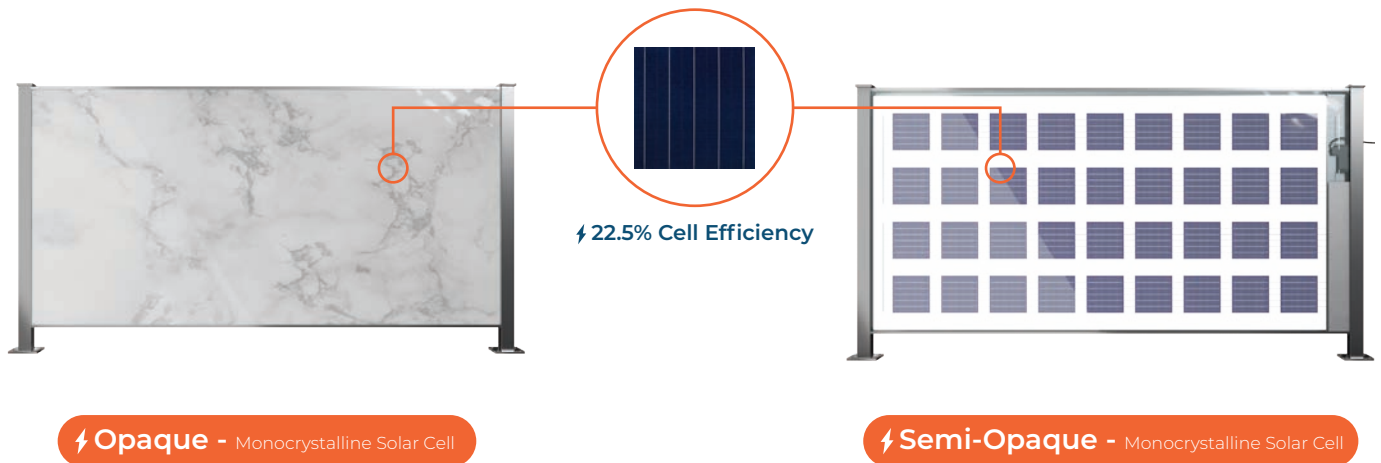
Various installation methods can be used while seamlessly integrating circuitry.



Relies on advanced solar technology.

Mitrex Solar Railing Design Options

Mitrex solar railings can utilize opaque or semi-opaque glass with seamlessly integrated circuitry and connection points of all the electrical components.



The opaque option can be customized to any pattern or colour in the world.



Granite



Marble



Limestone



Solid Colours

+ AND MANY MORE

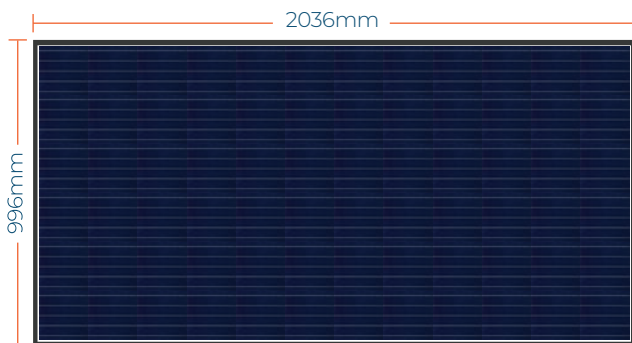
The semi-opaque option offers the best of both worlds- see-through glass combined with seamless energy generation.

Mitrex Solar Railing Types

SolaRail

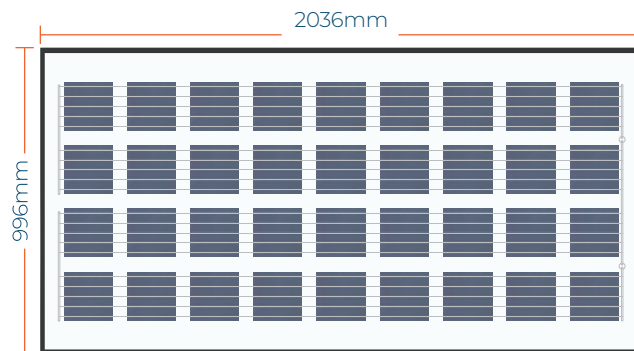


⚡ **Opaque** - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 72 Cells
Gap between cell: 2mm (0.07").
Transparency: ~0%.
Power: ⚡ 390W

⚡ **Semi-Opaque** - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 36 cells
Gap between cell: 50mm (2").
Transparency: ~45%.
Power: ⚡ 195W

CERTIFIED
IEC
61730

CERTIFIED
IEC
61215

UL
61730

UL
61215

SA
61730

SA
61215

ANSI
Z97.1

ASTM
C1048

ASTM
E2353

ASTM
E935

SolaRail Datasheet

⚡ **Opaque** - Monocrystalline Solar Cell



SOLARAIL

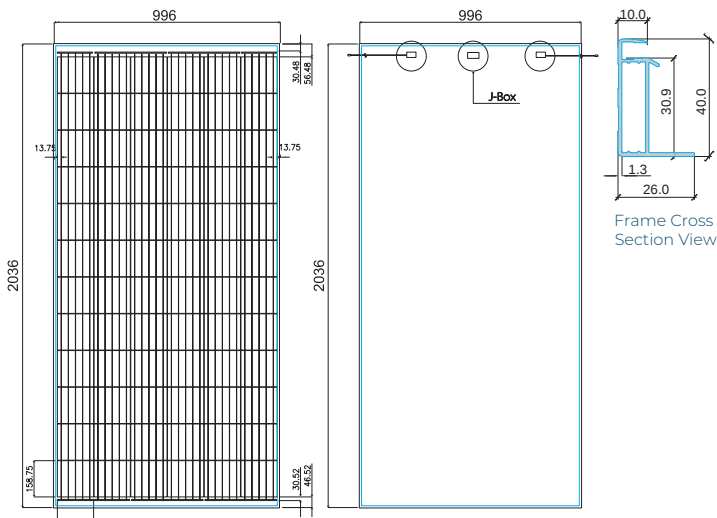
Opaque

High Efficiency Mono Module

390 W

1000V

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

SPECIFICATIONS

Nominal Max. Power (Pmax)

MPP Operating Voltage (Vmp)

MPP Operating Current (Imp)

Open Circuit Voltage (Voc)

Short Circuit Current (Isc)

Cell Efficiency

Operating Temperature

Max. System Voltage

Max. Series Fuse Rating

Application Classification

SOLARAIL OPAQUE

390W

41.9V

9.31A

48.2V

9.77A

22% - 22.5%

-40°C ~ +85°C

1000V (IEC/UL)

20A

Class A

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

MECHANICAL DATA

SPECIFICATIONS

Cell Type

Cell Arrangement

Overall Dimensions

Front Cover

Frame

Weight

J-Box

Cable

Cable Length (Including Connector)

Connector

SOLARAIL OPAQUE

Mono-crystalline

72 [12x6]

2036x996x40mm

3.2 mm tempered glass

Anodized Aluminum Alloy

22kg

IP68, 3 bypass diodes

4mm², 12 AWG (UL)

1000mm, 1200mm

MC4

SPECIFICATIONS

Temperature Coefficient Pmax

Temperature Coefficient Voc

Temperature Coefficient Isc

Nominal Module Operating Temperature

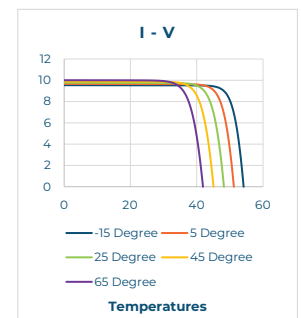
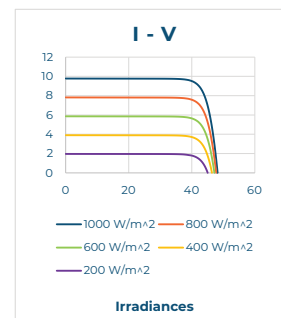
SOLARAIL OPAQUE

-0.36% / °C

-0.30% / °C

0.046% / °C

42 ± 3°C



SolaRail Datasheet

⚡ **Opaque** - Monocrystalline Solar Cell



SOLARAIL

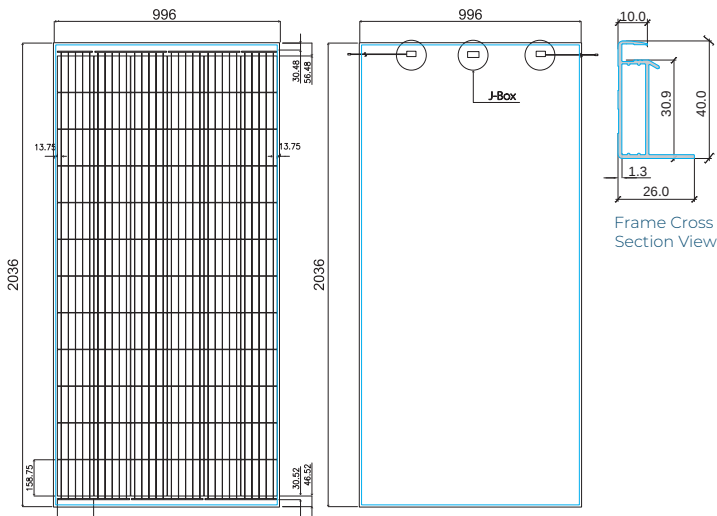
Bifacial Opaque

High Efficiency Mono Module

390 W

1000V

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

SOLARAIL - BIFACIAL - OPAQUE				
SPECIFICATIONS	FRONT ONLY	BIFACIAL GAIN		
		10%	20%	30%
Nominal Max. Power (Pmax)	390W	429W	468W	507W
MPP Operating Voltage (Vmp)	41.9V	41.9V	41.9V	41.9V
MPP Operating Current (Imp)	9.31A	10.24A	11.17A	12.10A
Open Circuit Voltage (Voc)	48.2V	48.2V	48.2V	48.2V
Short Circuit Current (Isc)	9.77A	10.75A	11.72A	12.70A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

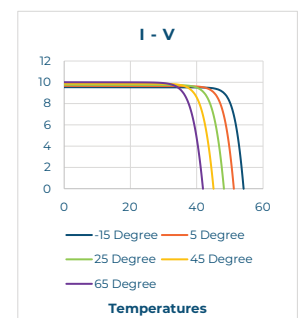
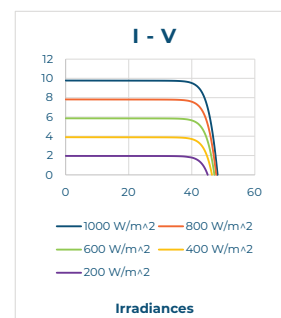
* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

MECHANICAL DATA

SPECIFICATIONS	SOLARAIL - BIFACIAL - OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	72 (12x6)
Overall Dimensions	2036x996x40mm
Front Cover	3.2 mm tempered glass
Frame	Anodized Aluminum Alloy
Weight	22kg
J-Box	IP68, 3 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length (Including Connector)	1000mm, 1200mm
Connector	MC4

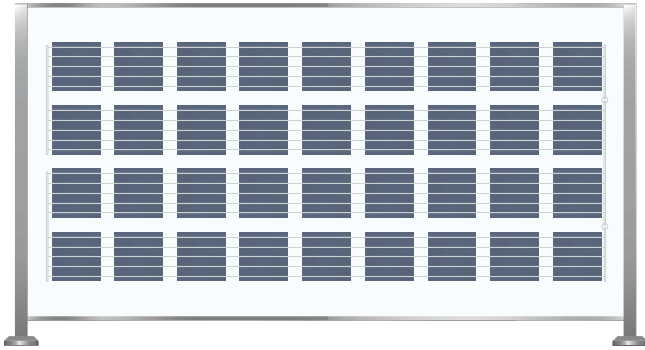
TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	STANDARD SOLAR RAILING BIFACIAL OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C



SolaRail Datasheet

⚡ Semi-Opaque - Monocrystalline Solar Cell



SOLARAIL

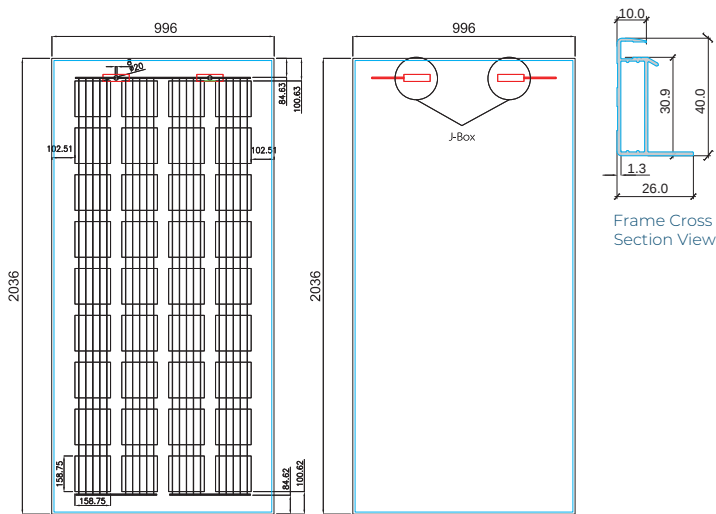
Bifacial Semi-Opaque

High Efficiency Mono Module

195 W

1000V

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

SOLARAIL - BIFACIAL - SEMI-OPAQUE				
SPECIFICATIONS	FRONT ONLY	BIFACIAL GAIN		
		10%	20%	30%
Nominal Max. Power (Pmax)	195W	214W	234W	253W
MPP Operating Voltage (Vmp)	20.9V	20.9V	20.9V	20.9V
MPP Operating Current (Imp)	9.31A	10.24A	11.17A	12.10A
Open Circuit Voltage (Voc)	24.1V	24.1V	24.1V	24.1V
Short Circuit Current (Isc)	9.77A	10.75A	11.72A	12.70A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

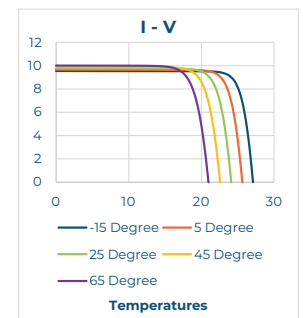
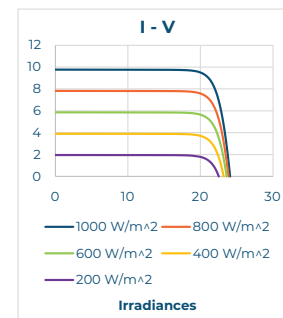
* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

MECHANICAL DATA

SPECIFICATIONS	SOLARAIL - BIFACIAL - SEMI-OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	36 (9x4)
Overall Dimensions	2036x996x40mm
Front Cover	3.2 mm tempered glass
Frame	Anodized Aluminum Alloy
Weight	22kg
J-Box	IP68, 2 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length (Including Connector)	1000mm, 1200mm
Connector	MC4

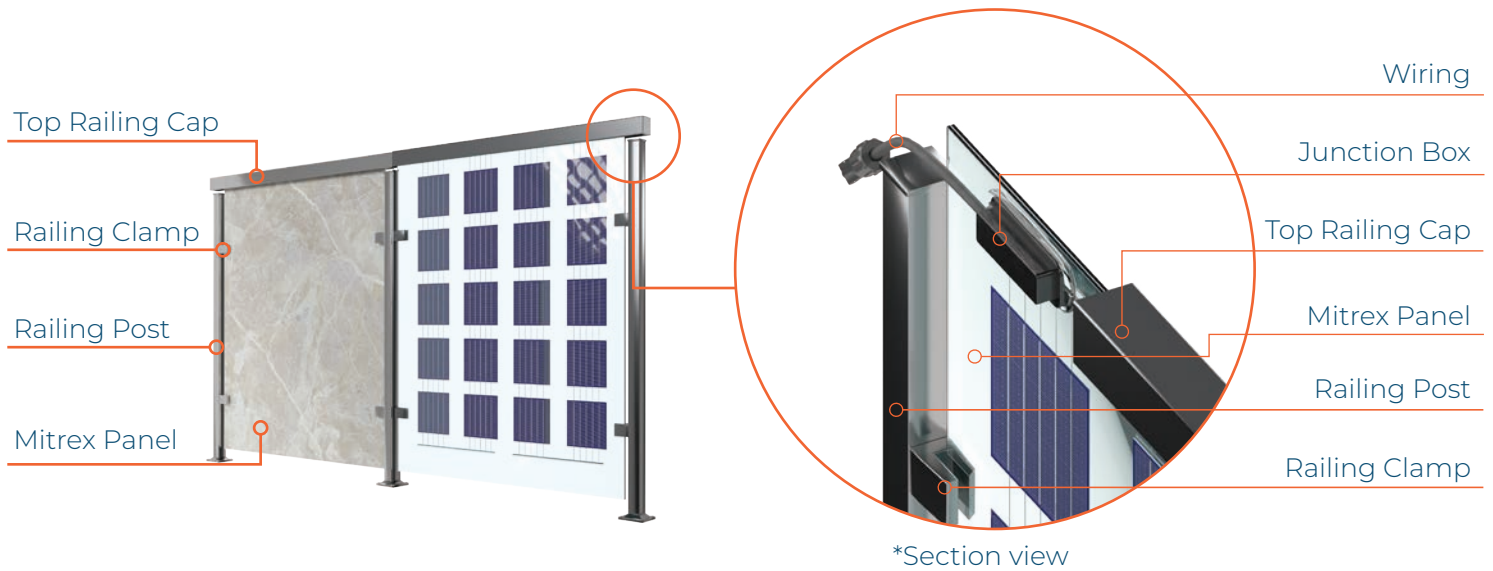
TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	SOLARAIL - BIFACIAL - SEMI-OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C

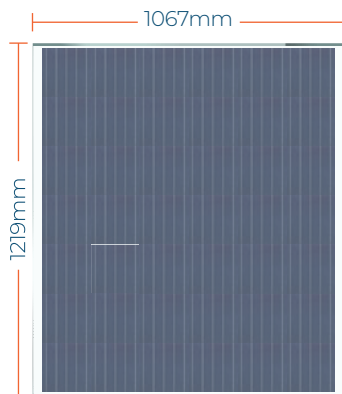


Mitrex Solar Railing Types

SolaRail²

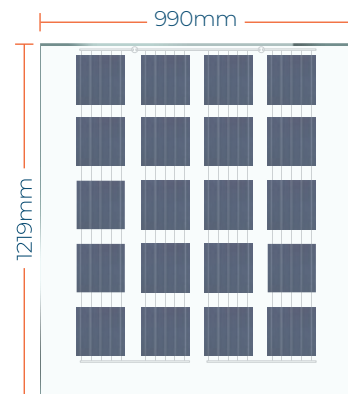


⚡ **Opaque** - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 42 Cells
Gap between cell: 2mm (0.07").
Transparency: ~0%.
Power: ⚡ 225W

⚡ **Semi-Opaque** - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 20 cells
Gap between cell: 50mm (2").
Transparency: ~60%.
Power: ⚡ 105W

CERTIFIED
IEC
61730

CERTIFIED
IEC
61215

UL
61730

UL
61215

SA
61730

SA
61215

ANSI
Z97.1

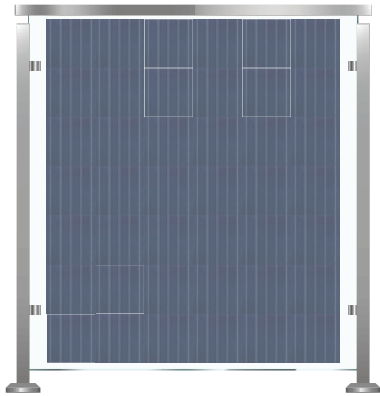
ASTM
C1048

ASTM
E2353

ASTM
E935

SolaRail² Datasheet

⚡ Opaque - Monocrystalline Solar Cell



SOLARAIL²

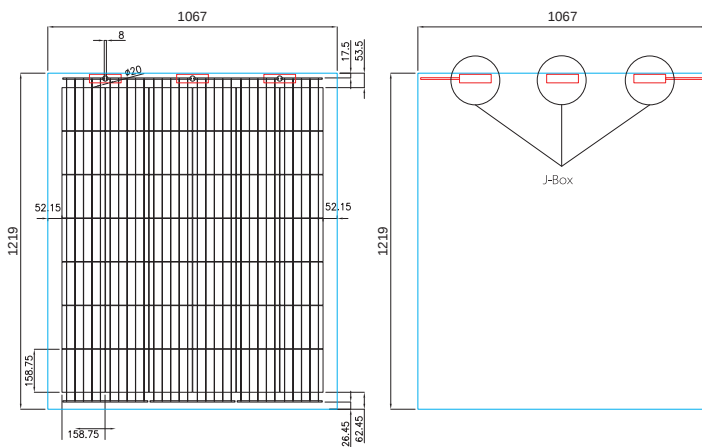
Bifacial Opaque

High Efficiency Mono Module

225 W

1000V

ENGINEERING DRAWING (mm)



MECHANICAL DATA

SPECIFICATIONS	SOLARAIL ² - BIFACIAL - OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	42 (7x6)
Glass Dimensions	1219 X 1067 mm
Front Cover	3.2 mm tempered glass
Back Cover	3.2 mm tempered glass
Weight	22kg
J-Box	IP68, 3 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length (including Connector)	500 mm, 1000mm, 1200mm
Connector	MC4

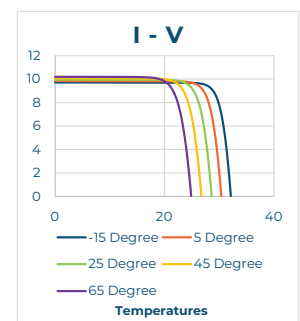
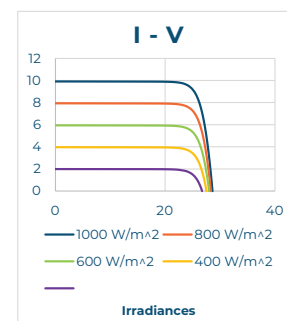
ELECTRICAL DATA | STC*

SOLARAIL ² - BIFACIAL - OPAQUE				
SPECIFICATIONS	FRONT ONLY	BIFACIAL GAIN		
		10%	20%	30%
Nominal Max. Power (Pmax)	225W	247W	270W	292W
MPP Operating Voltage (Vmp)	24.3V	24.3V	24.3V	24.3V
MPP Operating Current (Imp)	9.26A	10.19A	11.11A	12.04A
Open Circuit Voltage (Voc)	28.6V	28.6V	28.6V	28.6V
Short Circuit Current (Isc)	9.91A	10.90A	11.89A	12.88A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

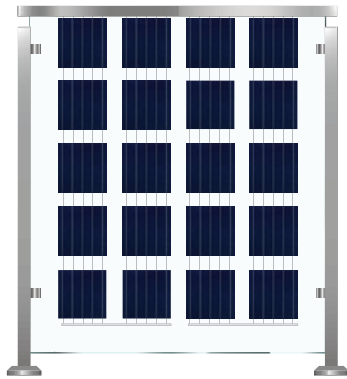
TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	SOLARAIL ² - BIFACIAL - OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C



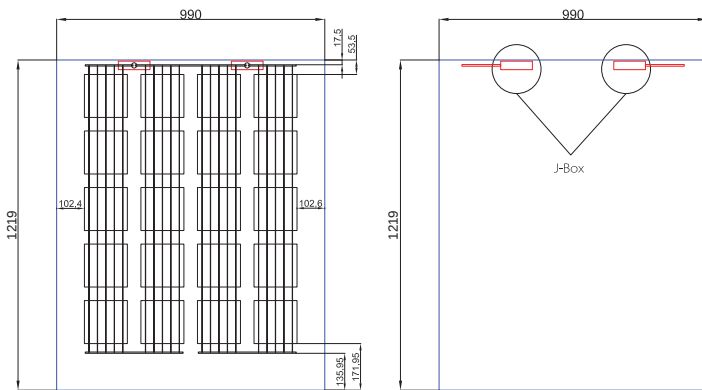
SolaRail² Datasheet

⚡ Semi-Opaque - Monocrystalline Solar Cell



SOLARAIL² Bifacial Semi-Opaque High Efficiency Mono Module 105 W 1000V

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

SOLARAIL ² - BIFACIAL - SEMI-OPAQUE				
SPECIFICATIONS	FRONT ONLY	BIFACIAL GAIN		
		10%	20%	30%
Nominal Max. Power (Pmax)	105W	115W	120W	136W
MPP Operating Voltage (Vmp)	11.3V	11.3V	11.3V	11.3V
MPP Operating Current (Imp)	9.29A	10.22A	11.15A	12.08A
Open Circuit Voltage (Voc)	13.6V	13.6V	13.6V	13.6V
Short Circuit Current (Isc)	9.92A	10.91A	11.90A	12.90A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

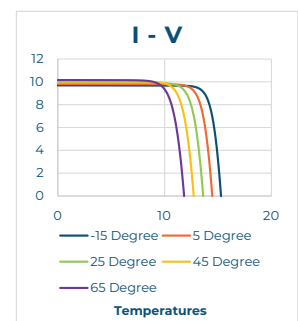
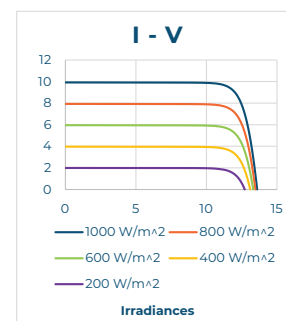
* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

MECHANICAL DATA

SPECIFICATIONS	SOLARAIL ² - BIFACIAL - SEMI-OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	20 (5x4)
Glass Dimensions	1219 X 990 mm
Front Cover	3.2 mm tempered glass
Back Cover	3.2 mm tempered glass
Weight	20kg
J-Box	IP68, 2 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length(Including Connector)	500 mm, 1000mm, 1200mm
Connector	MC4

TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	SOLARAIL ² - BIFACIAL - SEMI-OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C

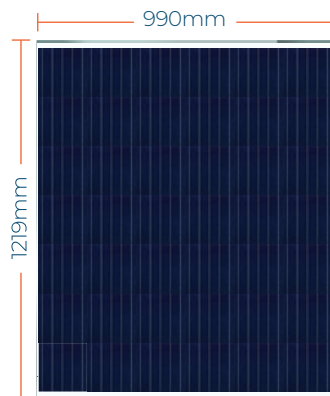


Mitrex Solar Railing Types

SolaRail³

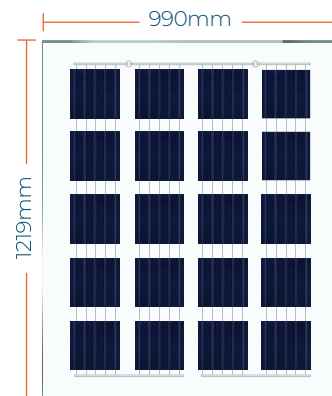


⚡ Opaque - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 42 Cells
Gap between cell: 2mm (0.07").
Transparency: ~0%.
Power: ⚡ 225W

⚡ Semi-Opaque - Monocrystalline Solar Cell



Cell type: G1 158.75 X 158.75mm (6.25").
Number of cells: 20 cells
Gap between cell: 50mm (2").
Transparency: ~60%.
Power: ⚡ 105W

CERTIFIED
IEC
61730

CERTIFIED
IEC
61215

UL
61730

UL
61215

SP
61730

SP
61215

ANSI
Z97.1

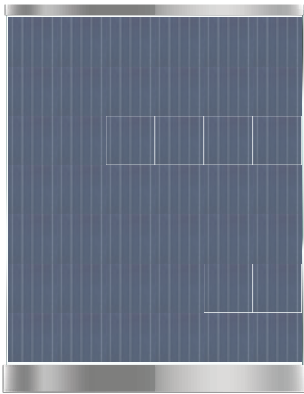
ASTM
C1048

ASTM
E2353

ASTM
E935

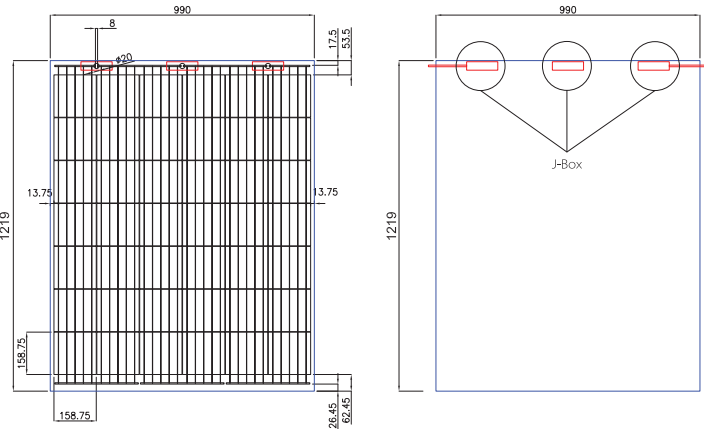
SolaRail³ Datasheet

⚡ **Opaque** - Monocrystalline Solar Cell



SOLARAIL³
Bifacial Opaque
High Efficiency Mono Module
225 W
1000V

ENGINEERING DRAWING (mm)



ELECTRICAL DATA | STC*

SOLARAIL ³ - BIFACIAL - OPAQUE				
SPECIFICATIONS	FRONT ONLY	BIFACIAL GAIN		
		10%	20%	30%
Nominal Max. Power (Pmax)	225W	247W	270W	292W
MPP Operating Voltage (Vmp)	24.3V	24.3V	24.3V	24.3V
MPP Operating Current (Imp)	9.26A	10.19A	11.11A	12.04A
Open Circuit Voltage (Voc)	28.6V	28.6V	28.6V	28.6V
Short Circuit Current (Isc)	9.91A	10.90A	11.89A	12.88A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

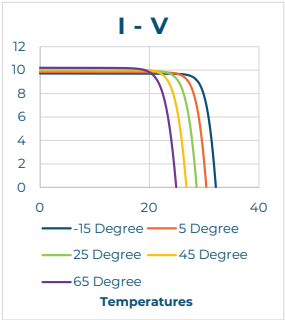
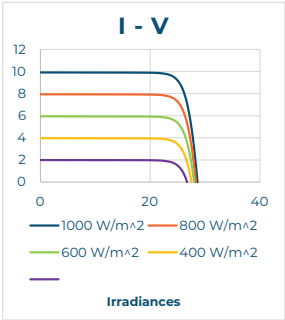
* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

MECHANICAL DATA

SPECIFICATIONS	SOLARAIL ³ - BIFACIAL - OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	42 (7x6)
Glass Dimensions	1219 X 990 mm
Front Cover	3.2 mm tempered glass
Back Cover	3.2 mm glass + 6 mm glass
Weight	38kg
J-Box	IP68, 3 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length (Including Connector)	500 mm, 1000mm, 1200mm
Connector	MC4

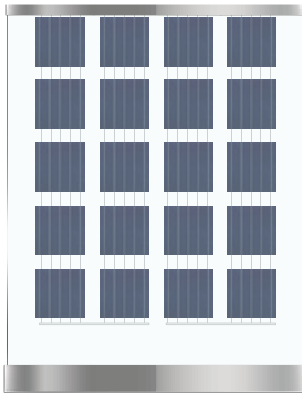
TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	SOLARAIL ³ - BIFACIAL - OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C



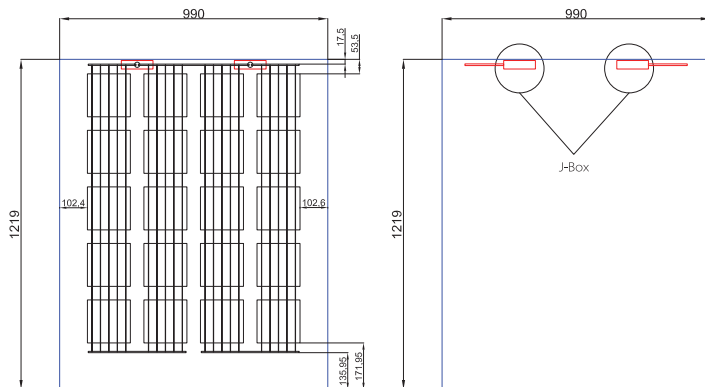
SolaRail³ Datasheet

⚡ Semi-Opaque - Monocrystalline Solar Cell



SOLARAIL³
Bifacial Semi-Opaque
High Efficiency Mono Module
105 W
1000V

ENGINEERING DRAWING (mm)



MECHANICAL DATA

SPECIFICATIONS	SOLARAIL ³ - BIFACIAL - SEMI-OPAQUE
Cell Type	Mono-crystalline
Cell Arrangement	20 (5x4)
Glass Dimensions	1219 X 990 mm
Front Cover	3.2 mm tempered glass
Back Cover	3.2 mm glass + 6 mm glass
Weight	38kg
J-Box	IP68, 2 bypass diodes
Cable	4mm ² , 12 AWG (UL)
Cable Length (Including Connector)	500 mm, 1000mm, 1200mm
Connector	MC4

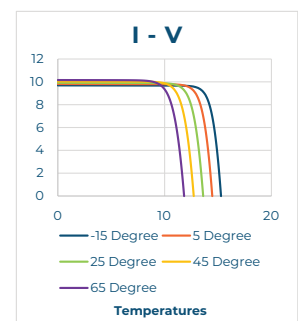
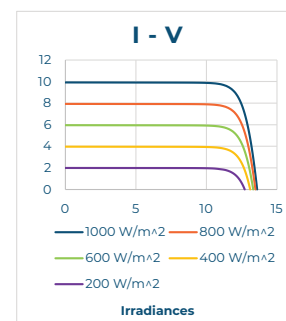
ELECTRICAL DATA | STC*

SPECIFICATIONS	SOLARAIL ³ - BIFACIAL - SEMI-OPAQUE			
	FRONT ONLY	BIFACIAL GAIN		
Nominal Max. Power (Pmax)	105W	115W	120W	136W
MPP Operating Voltage (Vmp)	11.3V	11.3V	11.3V	11.3V
MPP Operating Current (Imp)	9.29A	10.22A	11.15A	12.08A
Open Circuit Voltage (Voc)	13.6V	13.6V	13.6V	13.6V
Short Circuit Current (Isc)	9.92A	10.91A	11.90A	12.90A
Cell Efficiency	22% - 22.5%			
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1000V (IEC/UL)			
Max. Series Fuse Rating	20A			
Application Classification	Class A			

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

TEMPERATURE CHARACTERISTICS

SPECIFICATIONS	SOLARAIL ³ - BIFACIAL - SEMI-OPAQUE
Temperature Coefficient Pmax	-0.36% / °C
Temperature Coefficient Voc	-0.30% / °C
Temperature Coefficient Isc	0.046% / °C
Nominal Module Operating Temperature	42 ± 3°C





Learn More:

 mitrex.com

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