

# Optimized Systems by UPSOLAR & SOLAREEDGE

## Perform at your best with Upsolar and SolarEdge

Get **up to 25% more total output** from your photovoltaic system using the Upsolar Power Optimized System. Our comprehensive solution allows you to install across multiple roof orientations and in areas of partial-shading without losing any of the potential from the sun.

### Energy Harvest Optimization

Up to 25% more energy: Increased energy yield & faster return on investment through module level MPP tracking:

- More energy harvesting in shade
- No soiling mismatch loss
- No aging mismatch loss

### Constraint Free Design

Maximum space optimization with minimum design time:

- Modules on different orientation and tilts in the same string
- Different modules types in a single string
- Strings of different lengths connected to same inverter
- Longer strings - up to 50 modules per string



### Automatic DC Safety - Safe DC™

Safety during installation, maintenance and firefighting, to prevent electric shock and arcing:

- Installation: Safe string voltage - until inverter & AC supply are turned on
- Maintenance: Safe string voltage - automatic once inverter/AC supply is turned off
- Emergency: Safe string voltage - automatic after grid disconnection

### Cost Efficient Maintenance

Full visibility of system performance & remote troubleshooting:

- Module-level performance data
- Presentation of complete system on virtual site map
- Automatic alerts on system issues for precise fault recognition
- Easy access via web browser from a computer or a smartphone



# System Overview

All of the components used adhere to Upsolar stringent quality standards, resulting in exceptional system safety and stable output that will last for decades.



## Upsolar modules with integrated SolarEdge DC power optimizer units

- High efficiency monocrystalline and polycrystalline cell technology
- High Quality Bill of Materials
- Performance stability without PID losses
- MPP tracking at module level with Integrated SolarEdge Power Optimizer
- Advanced, real-time performance logging
- Easy installation
- Automatic module shut-down for installer and firefighter safety
- Unique PassThru Connector enables quick filed replacements
- 10 year product warranty
- 25 year performance guarantee - 6 levels



## SolarEdge Inverter

- Single-phase for system sizes from 2.2 – 6 kWp; three-phase for system sizes from 5 – 17 kWp
- Highest reliability at lowest cost with 98% efficiency
- Compliant with new Low Voltage Directive (VDE-AR-N 4105) and EEG 2012
- Built-in communication hardware for recording power
- 12 year product warranty - optional extension up to 25 years



## Monitoring

- Module-level, string and system level performance data
- Presentation of complete system on virtual site map
- Automatic alerts on system issues
- Easy access via web browser from a computer or smartphone
- Free basic monitoring for 25 years

## Upsolar Modules

Cell Type	No. of Cells	Backsheet Color	Frame	Min power	Max power
Mono 5"	72 cells		Standard & ZEP	185 Wp	205 Wp
Mono 5"	72 cells		Standard & ZEP	180 Wp	200 Wp
Mono 6"	60 cells		Standard & ZEP	250 Wp	270 Wp
Mono 6"	60 cells		Standard & ZEP	245 Wp	265 Wp
Poly 6"	60 cells		Standard & ZEP	240 Wp	260 Wp
Poly 6"	60 cells		Standard & ZEP	235 Wp	255 Wp
Poly 6"	72 cells		Standard	290 Wp	310 Wp

## Output during operation (modules connected to SolarEdge inverter)

Maximum Output Current	15	A <sub>dc</sub>
Operating Output Voltage	5 - 60	V <sub>dc</sub>
Total Maximum String Voltage (Controlled by Inverter) - EU 1-ph	500	V <sub>dc</sub>
Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph	950	V <sub>dc</sub>

## Output during standby

Safety Output Voltage per Power Optimizer	1	V <sub>dc</sub>
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## PV System design using a SolarEdge inverter

Minimum Number of Modules per String	8 (1-ph system) / 16 (3-ph system)	
Maximum Number of Modules per String	Module power dependent; maximum 25 (1-ph system) / 50 (3-ph system)	
Maximum Power per String	5250 (1-ph system) / 11250 (3-ph system)	W
Parallel Strings of Different Lengths or Orientations	Yes	

# Ideal for Residential Rooftops



## 6" Monocrystalline PV module 60 cells

SolarEdge  
Mono 60 Cells

### Electrical Characteristics @ STC\*

MODEL	UP-M250MS	UP-M255MS	UP-M260MS	UP-M265MS	UP-M270MS
Max Power Pm (Wp)	250	255	260	265	270
Max Power Voltage Vm (V)	30.0	30.2	30.4	30.6	30.8
Max Power Current Im (A)	8.34	8.44	8.55	8.66	8.77
Open-Circuit Voltage Voc (V)**	37.7	38.0	38.3	38.6	38.9
Short-Circuit Current Isc (A)	8.80	8.88	8.96	9.04	9.12
Module Efficiency	15.4%	15.7%	16.0%	16.3%	16.6%
Maximum System Voltage (V)	1000(IEC)/600(UL)				
Power Tolerance	±3%				
Series Fuse Rating (A)	20A				

\*STC: Irradiance 1000 W/m<sup>2</sup>, Module temperature 25°C, AM=1.5

\*\*V<sub>oc</sub> = 1V when module disconnected

### Components & Mechanical Data

Front Glass	High Transparency Tempered Glass 0.125" // 3.2 mm
Junction Box	SolarEdge OPJ300-LV
Bypass Diode	3 diodes - ST STPS20H100CG
Output Cables	Amersol 37-713 (cross section: 6.0 mm <sup>2</sup> )
Connectors	MC4 Compatible (IP67, IEC and UL approved)
Frame	Anodized aluminium alloy type 6063-T5
Encapsulation Material	EVA (0.018" // 0.45 mm ± 0.001" // 0.03 mm thickness)
Back Sheet	White multilayer polymer film
Temperature Range	-40°F to +185°F // -40°C to +85°C
Max Load	75 lbs / ft <sup>2</sup> (UL Standard) // 5400 Pa (IEC Standards)
Impact Resistance	Steel ball - 1.18 lbs // 535g dropped from 51" // 1.3 m high

### Specifications

Cells Monocrystalline silicon solar cells 6" x 6"  
// 156 mm x 156 mm

Cell Diameter 7.9" // 200 mm

Number of Cells 60 (6 x 10)

Dimensions (in // mm) 64.57 x 39.06 x 1.57 // 1640 x 992 x 40

Weight (lb // kg) 41.9 // 19.0

### Temperature Coefficients

NOCT (°C) 45°C ± 2°C

Temperature Coefficients of Isc (% / °C) 0.05 ± 0.01

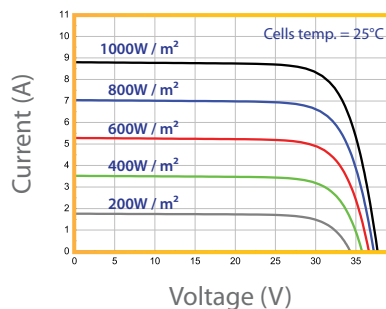
Temperature Coefficients of Voc (% / °C) -0.32 ± 0.01

Temperature Coefficients of Im (% / °C) -0.02 ± 0.02

Temperature Coefficients of Vm (% / °C) -0.42 ± 0.03

Temperature Coefficients of Pm (% / °C) -0.43 ± 0.05

### IV Curves



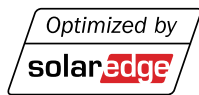
● Deviation of Vm (V), Im (A), Voc (V) and Isc (A) of ±2.5%

### Options available

Black Type

ZEP Frame

# Ideal for Residential Rooftops



## 6" Polycrystalline PV module 60 cells



SolarEdge  
Poly 60 Cells

### Electrical Characteristics @ STC\*

MODEL	UP-M240PS	UP-M245PS	UP-M250PS	UP-M255PS	UP-M260PS
Max Power Pm (Wp)	240	245	250	255	260
Max Power Voltage Vm (V)	30.2	30.4	30.6	30.8	31.0
Max Power Current Im (A)	7.95	8.06	8.17	8.28	8.39
Open-Circuit Voltage Voc (V)**	37.6	37.8	38.0	38.2	38.4
Short-Circuit Current Isc (A)	8.40	8.45	8.50	8.55	8.60
Module Efficiency	14.8%	15.1%	15.4%	15.7%	16.0%
Maximum System Voltage (V)	1000(IEC)/600(UL)				
Power Tolerance	±3%				
Series Fuse Rating (A)	20A				

\*STC: Irradiance 1000 W/m<sup>2</sup>, Module temperature 25°C, AM=1.5

\*\*V<sub>oc</sub> = 1V when module disconnected

### Components & Mechanical Data

Front Glass	High Transparency Tempered Glass 0.125" // 3.2 mm
Junction Box	SolarEdge OPJ300-LV
Bypass Diode	3 diodes - ST STPS20H100CG
Output Cables	Amersol 37-713 (cross section: 6.0 mm <sup>2</sup> )
Connectors	MC4 Compatible (IP67, IEC and UL approved)
Frame	Anodized aluminium alloy type 6063-T5
Encapsulation Material	EVA (0.018" // 0.45 mm ± 0.001" // 0.03 mm thickness)
Back Sheet	White multilayer polymer film
Temperature Range	-40°F to +185°F // -40°C to +85°C
Max Load	75 lbs / ft <sup>2</sup> (UL Standard) // 5400 Pa (IEC Standards)
Impact Resistance	Steel ball - 1.18 lbs // 535g dropped from 51" // 1.3 m high

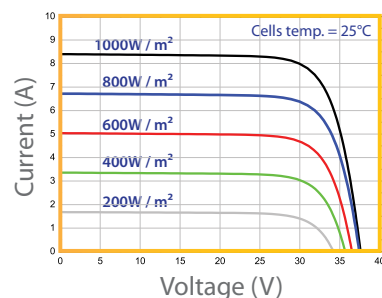
### Specifications

Cells	Polycrystalline silicon solar cells 6" x 6" // 156 mm x 156 mm
Number of Cells	60 (6 x 10)
Dimensions (in // mm)	64.57 x 39.06 x 1.57 // 1640x992x40
Weight (lb // kg)	41.9 // 19.0

### Temperature Coefficients

NOCT (°C)	45°C ± 2°C
Temperature Coefficients of Isc (% / °C)	0.05 ± 0.01
Temperature Coefficients of Voc (% / °C)	-0.32 ± 0.01
Temperature Coefficients of Im (% / °C)	-0.02 ± 0.02
Temperature Coefficients of Vm (% / °C)	-0.42 ± 0.03
Temperature Coefficients of Pm (% / °C)	-0.43 ± 0.05

### IV Curves



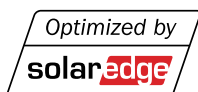
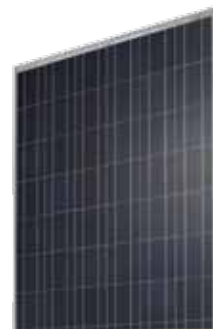
● Deviation of Vm (V), Im (A), Voc (V) and Isc (A) of ±2.5%

### Options available

Black Type

ZEP Frame

# Ideal for Commercial Rooftops



## 6" Polycrystalline PV module 72 cells

SolarEdge  
Poly 72 Cells

### Electrical Characteristics @ STC\*

MODEL	UP-M290PS	UP-M295PS	UP-M300PS	UP-M305PS	UP-M310PS
Max Power Pm (Wp)	290	295	300	305	310
Max Power Voltage Vm (V)	35.5	35.7	35.9	36.1	36.3
Max Power Current Im (A)	8.17	8.26	8.36	8.45	8.54
Open-Circuit Voltage Voc (V)**	45.2	45.4	45.6	45.8	46.0
Short-Circuit Current Isc (A)	8.50	8.58	8.66	8.74	8.82
Module Efficiency	14.9%	15.2%	15.5%	15.70%	16.0%
Maximum System Voltage (V)	1000(IEC)/600(UL)				
Power Tolerance	±3%				
Series Fuse Rating (A)	20A				

\*STC: Irradiance 1000 W/m<sup>2</sup>, Module temperature 25°C, AM=1.5

\*\*V<sub>oc</sub> = 1V when module disconnected

### Components & Mechanical Data

Front Glass	High Transparency Tempered Glass 0.157" // 4.0 mm
Junction Box	SolarEdge OPJ300-LV
Bypass Diode	3 diodes - ST STPS20H100CG
Output Cables	Amersol 37-713 (cross section: 6.0 mm <sup>2</sup> )
Connectors	MC4 Compatible (IP67, IEC and UL approved)
Frame	Anodized aluminium alloy type 6063-T5
Encapsulation Material	EVA (0.018" // 0.45 mm ± 0.001" // 0.03 mm thickness)
Back Sheet	White multilayer polymer film
Temperature Range	-40°F to +185°F // -40°C to +85°C
Max Load	75 lbs / ft <sup>2</sup> (UL Standard) // 5400 Pa (IEC Standards)
Impact Resistance	Steel ball - 1.18 lbs // 535g dropped from 51" // 1.3 m high

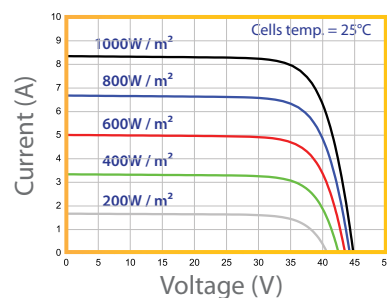
### Specifications

Cells	Polycrystalline silicon solar cells 6" x 6" // 156 mm x 156 mm
Number of Cells	72 (6 x 12)
Dimensions (in // mm)	77 x 39.06 x 1.97 // 1956 x 992 x 50
Weight (lb // kg)	59.52 // 27.0

### Temperature Coefficients

NOCT (°C)	45°C ± 2°C
Temperature Coefficients of Isc (% / °C)	0.05 ± 0.01
Temperature Coefficients of Voc (% / °C)	-0.32 ± 0.01
Temperature Coefficients of Im (% / °C)	-0.02 ± 0.02
Temperature Coefficients of Vm (% / °C)	-0.42 ± 0.03
Temperature Coefficients of Pm (% / °C)	-0.43 ± 0.05

### IV Curves



● Deviation of Vm (V), Im (A), Voc (V) and Isc (A) of ±2.5%

### Options available

Black Type