SolarUnion

HAS EARNED THE PRESTIGIOUS

DIAMOND CERTIFIED®

AWARD

We declare that
SolarUnion
has been independently rated highest in
quality and has received the prestigious
Diamond Certified® award.

Jim Stein
Founder & Chief Executive Officer
American Ratings Corporation

RATING REQUIREMENTS TO QUALIFY FOR DIAMOND CERTIFIED:

1. **APPLY** Companies must apply to be certified.
2. **SAMPLE** A random sample of typically 400 past customers is pulled from all customer files of the applicant company.
3. **SURVEY** A confidental telephone survey captures the customer satisfaction score based on quality.
4. **TABULATION** The quality score is tabulated. To qualify, the company must score a very high 90 on a 100 scale.
5. **CREDENTIALS** The applicant company's credentials are independently rated (license, insurance, complaint status and credit for contractors).
6. **PRACTICES** Are the company's business practices "customer friendly"? It must stand behind its performance.
7. **AGREEMENT** The company agrees to adhere to the Diamond Certified Customer Satisfaction Principles.
8. **AWARD** If quality rating, credential rating and business practices qualify, the company is awarded Diamond Certified.
9. **RE-RATING** Ongoing customer satisfaction ratings are completed.
10. **MEDIATION** If ever necessary, the company participates in Diamond Certified mediation.
11. **GUARANTEE** A limited guarantee ensures performance.
12. **QUALITY** The Company participates in the onging elite Diamond Certified Quality Satisfaction Program.

Panasonic

EverVolt™
AUTHORIZED INSTALLER

AUTHORIZED PANASONIC WARRANTY PROVIDER

This is to certify that

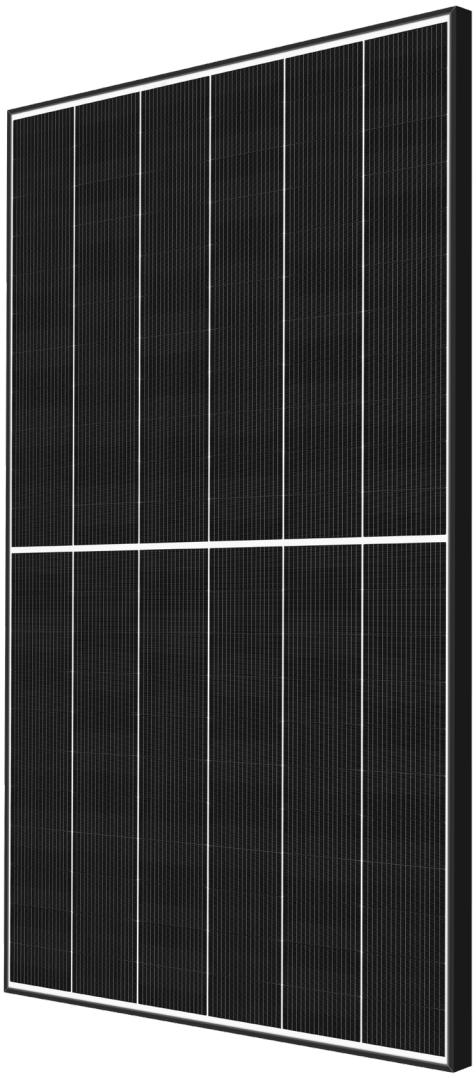
SOLARUNION

is authorized to offer Panasonic AllGuard and TripleGuard 25-year warranties covering product, performance, and labor for Panasonic solar panel systems.

Expires December 31st, 2022

410W/400W

The Panasonic Advantage



Higher Module Efficiency
Superior module efficiency of 22.2% and 21.6%, respectively, allows maximum power production with less roof space. With one of the industry's lowest annual degradation rates, power output of at least 92% is guaranteed after 25 years.

AllGuard and TripleGuard 25-Year Warranty[1]
A long-term warranty is only as reliable as the company behind it. AllGuard and TripleGuard 25-year warranties cover EverVolt panels for performance, product, parts and labor for 25 years. Whether in year three or year 25, your Panasonic warranty will be there when you need it.

High Efficiency in High Temperatures
Produce more energy throughout the day even on the hottest days in the warmest climates. EverVolt solar panels outperform others when temperatures rise due to our industry-leading 0.26%/°C temperature coefficient.

Heterojunction Cell Technology with Gapless Connections
Half-cut cells with heterojunction technology with gapcell connections minimizes electron loss, maximizes conversion efficiency, and produces considerably higher power output over conventional panels.

Durability & Quality Assurance
N-type cells result in minimal Low Induced degradation (LID) and Potential Induced degradation (PID), which supports reliability and longevity. As a solar pioneer for over 40 years, Panasonic EverVolt solar panels are backed by innovation, experience and a brand you can trust.

Improved Performance When Shaded
Continuous power production in shaded areas for greater energy yields and output. More sunlight absorption means more clean power to your home.

Panasonic

Panasonic Life Solutions Company of America
Two Riverfront Plaza, Newark, NJ 07102
panasonicHIT@us.panasonic.com
na.panasonic.com/us/solar

EverVolt™ | EVERVOLT™ SOLAR MODULE SERIES

Panasonic

410W/400W

ELECTRICAL SPECIFICATIONS

Model	EVPV410H	EVPV400H
Rated Power (Pmax)[1]	410W	400W
Maximum Power Voltage (Vpm)	42.7V	42.1V
Maximum Power Current (Ipm)	9.61A	9.51A
Open Circuit Voltage (Voc)	49.0V	48.8V
Short Circuit Current (Isc)	10.35A	10.25A
Temperature Coefficient (Pmax)	-0.26 %/°C	
Temperature Coefficient (Voc)	-0.24 %/°C	
Temperature Coefficient (Isc)	0.04 %/°C	
NOCT	44°C (±2°C)	
CEC PTC Rating	390.4W	381.0W
Module Efficiency	22.2%	21.6%
Power Density	20.6 W/ft²	20.1 W/ft²
Maximum System Voltage	1000V	
Maximum Series Fuse	25 A	
Watt Class Sorting	-0/+10W	

MECHANICAL SPECIFICATIONS

Junction Box	3-part, 3 bypass diodes, IP68 rated in accordance with IEC 62790
Connector Type	Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852 only when connected
Cable Size / Type	12AWG(4mm2) PV Wire, 43in + 47in in accordance with EN 50618
Max Snow Load (+)[2]	146 psf (7000 Pa)+
Max Wind Load (-)[2]	83.5 psf (4000 Pa)+
Dimensions LxWxH	71.7 x 40.0 x 1.2 in (1821 x 1016 x 30 mm)
Weight	45.0 lbs (20.5kg)
Pallet Dimensions LxWxH	74 x 41.5 x 47.5 in
Quantity per Pallet / Pallet Weight	33 pcs/ 1620 lbs.(735kg)
Quantity per 40' Container	792 pcs

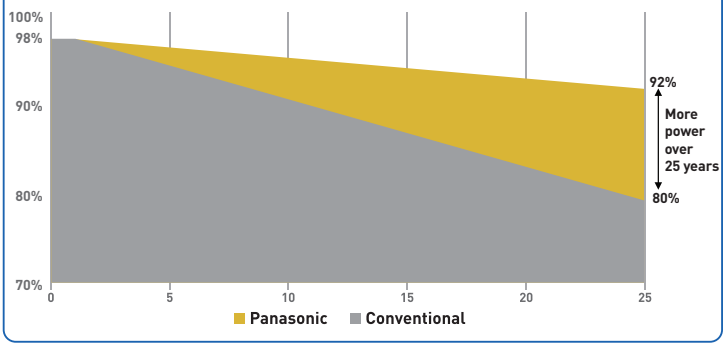
+Test Load. Design Load should be multiplied by two thirds.

OPERATING CONDITIONS AND SAFETY RATINGS

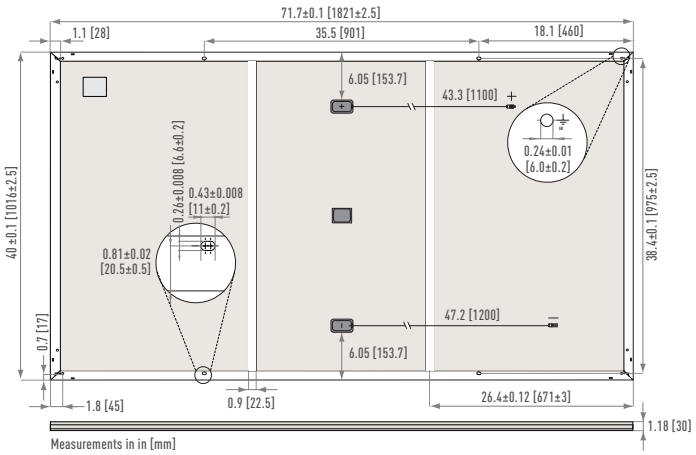
Certifications	IEC61215-2:2016 (Hailstone 35mm)
	Fire Type 2 (UL 61730)
	Salt Mist (IEC 61701)
	PID (IEC 62804)
	Ammonia Resistance (IEC 62716)
	Lead-free acc. to RoHS EU 863/2015 (IEC 62321)
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Limited Warranty	25' Yrs Workmanship and Power Output (Linear)***
Power Output in Year 1	98%
Annual Degradation	0.25%
Power Output in Year 25	92%

NOTE: Values at standard test conditions(STC: air mass AM1.5 irradiance 1000W/m2, temperature 25°C).
* Maximum power at delivery. For guarantee conditions, please check our guarantee document.
** Installation need to be registered through our website www.panasonicusahitwarranty.com within 60 days in order to receive twenty-five (25) year Product workmanship. Otherwise, Product Workmanship will be only fifteen (15) years.
[1]Equipment must be installed by a Panasonic Authorized, Premium, or Elite installer and registered at www.panasonicusahitwarranty.com within 60 days in order to receive twenty-five (25) year AllGuard and TripleGuard warranty.
[2] Refer to installation manual for detailed mechanical loading information
*** 1st year 98%, after 2nd year 0.25% annual degradation to year 25.

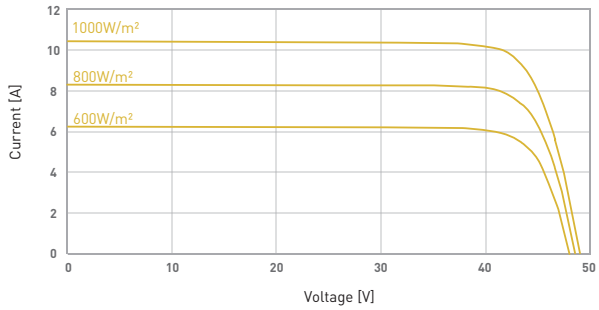
PERFORMANCE WARRANTY



DIMENSIONS



DEPENDENCE ON IRRADIANCE



Reference data for model : EVPV410H
Cell temperature : 77°F (25°C)

NOTE: Specifications and information above may change without notice.

⚠CAUTION! Please read the installation manual carefully before using the products.

Used electrical and electronic products must not be mixed with general household waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points in accordance with your national legislation.

Panasonic

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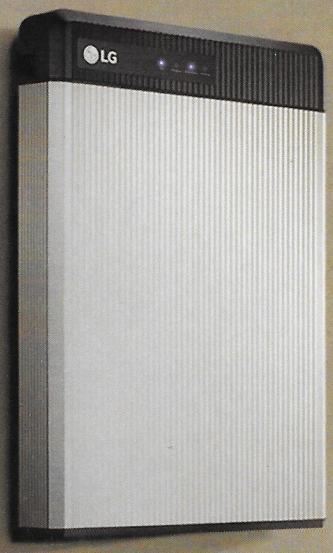
Innovation
for a Better Life

LG Chem

ees AWARD 2016 WINNER

CHANGE YOUR ENERGY CHARGE YOUR LIFE



RESU

Compact Size & Easy Installation

The compact and lightweight nature of the RESU is world-class. It is designed to allow easy wall-mounted or floor-standing installation for both indoor and outdoor applications. The inverter connections have also been simplified, reducing installation time and costs.

Powerful Performance

The new RESU series features industry-leading continuous power (4.2kW for RESU6.5) and DC round-trip efficiency (95%). LG Chem's L&S (Lamination & Stacking) technology provides durability ensuring 80% of capacity retention after 10 years.

Proven Safety

LG Chem places the highest priority on safety and utilizes the same technology for its ESS products that has a proven safety record in its automotive battery. All products are fully certified in relevant global standards.

www.lgesspartner.com

LG Chem

RESU

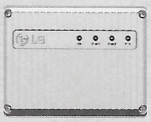
Change Your Energy, Charge Your Life

48V

Models		RESU3.3	RESU6.5	RESU10
Total Energy [kWh]		3.3	6.5	9.8
Usable Energy [kWh]		2.9	5.9	8.8
Capacity [Ah]		63	126	189
Nominal Voltage [V]		51.8	51.8	51.8
Voltage Range [V]		42.0~58.8	42.0~58.8	42.0~58.8
Max Power [kW]		3.0	4.2	5.0
Peak Power [kW] (for 3 sec.)		3.3	4.6	7.0
Dimension [W x H x D, in]		17.8 x 15.8 x 4.7	17.8 x 25.7 x 4.7	17.8 x 19.0 x 8.9
Weight [lb]		68	115	165
Enclosure Protection Rating		IP55		
Communication		CAN 2.0 B		
Certificates	Cell	UL1642		
	Product	UL1973 / TUV (IEC 62619) / CE / FCC / RCM		

Compatible Inverter Brands : SMA, SolaX, Sungrow, Schneider, Ingeteam, GoodWe, Redback, Victron Energy (As of 3Q. 2016, More brands to be added)

RESU PLUS



RESU Plus is an expansion kit specially designed for 48V models of new RESU series.
With RESU Plus, all 48V models can be cross-connected with each other.

- Dimension: 6.1 x 8.5 x 4.8 (W x H x D, in)
- Number of Expandable Battery Units: Up to 2EA
- IP55

400V

Models		RESU7H	RESU10H	
Total Energy [kWh]		7.0	9.8	
Usable Energy [kWh]		6.6	9.3	
Capacity [Ah]		63	63	
Voltage Range [V]		350~450	350~450	385~550
Max Power [kW]		3.5	5.0	
Peak Power [kW] (for 10 sec.)		5.0	7.0	
Dimension [W x H x D, in]		29.3 x 27.2 x 8.1	29.3 x 35.7 x 8.1	
Weight [lb]		168	214	220
Enclosure Protection Rating		IP55		
Communication		RS485	RS485	CAN 2.0 B
Certificates	Cell	UL 1642		
	Product	TUV (IEC 62619) / CE / RCM	UL1973 / TUV (IEC 62619) / CE / FCC / RCM	

Compatible Inverter Brands : SMA(RESU10H) , SolarEdge(RESU7H,10H) (As of 3Q. 2016, More brands to be added)

solaredge

SolarEdge Single Phase StorEdge™ Solutions for North America

STOREDGE™

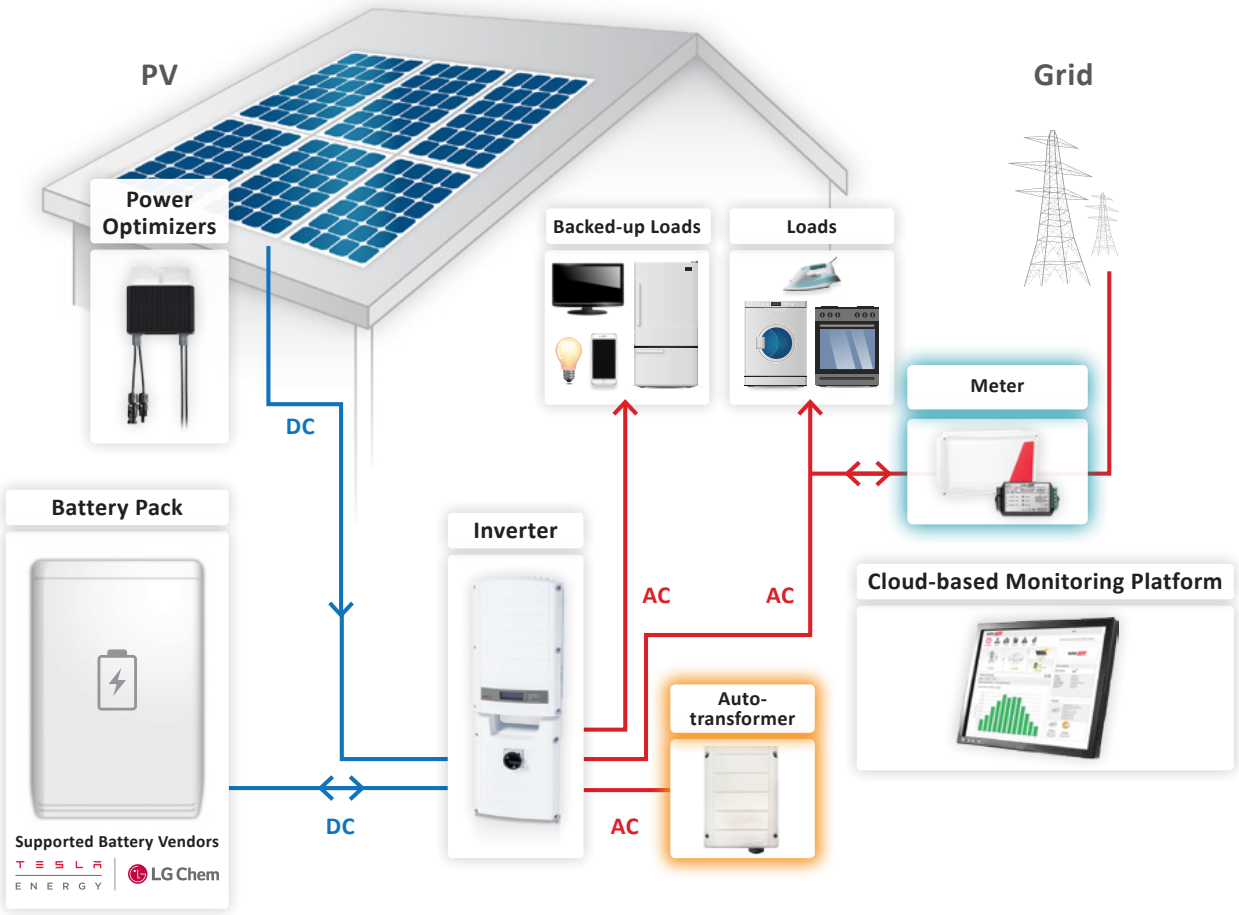
SolarEdge StorEdge™ Solutions Benefits:

- **More Energy** - DC-coupled architecture stores PV power directly to the battery without AC conversion losses
- **Simple Design & Installation** - single inverter for PV, battery storage, grid-tied and backup applications
- **Enhanced Safety** - no high voltage during installation, maintenance or firefighting
- **Full Visibility** - monitor battery status, PV production, remaining backup power and self-consumption data

SolarEdge Single Phase StorEdge™ Solutions for North America

StorEdge™ Features:

- Smart Energy Management - export control, time-of-use shifting, maximized self-consumption, demand response and peak shaving capabilities
- Backup power - automatically provides power to backed-up loads in the event of grid interruption
- All-in-one solution uses a single DC optimized phase inverter to manage and monitor both PV generation and energy storage
- Compatible with Tesla Powerwall Home Battery and the LG Chem RESU



SolarEdge StorEdge™ Solutions for North America - Product Selector				
	Grid-tied solar, backup power and smart energy management	Grid-tied solar and backup power	Grid-tied solar and smart energy management	
Single Phase StorEdge™ Inverter	✓	✓	✓	
Auto-transformer	✓	✓		
SolarEdge Electricity Meter	✓		✓	
Battery	✓	✓	✓	

SolarEdge Single Phase StorEdge Inverter
for North America SE7600A-US[1]

- Single inverter for PV, grid-tied storage and backup power
- Includes the hardware required to provide automatic backup power to backed-up loads in case of grid interruption
- Includes all interfaces needed for battery connection

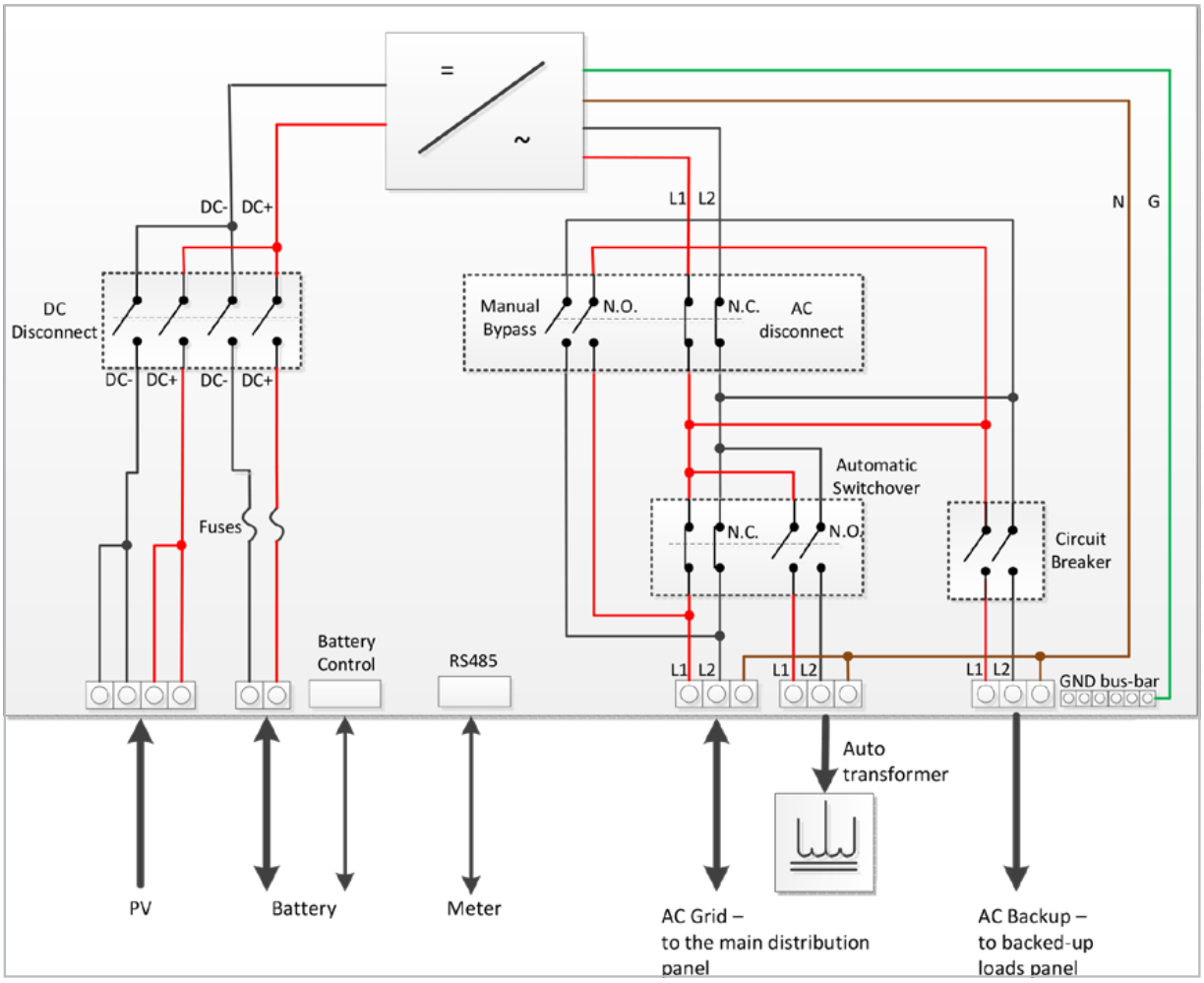
SE7600A-US			
OUTPUT - AC (LOADS/GRID)			
Rated AC Power Output	7600		VA
Max AC Power Output	8350		VA
AC Output Voltage Min-Nom-Max (L-L)[2]	211-240-264		Vac
AC Frequency Min-Nom-Max[2]	59.3 - 60 - 60.5		Hz
Maximum Continuous Output Current @240V	32		A
GFDI	1		A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes		
Charge Battery from AC (if Allowed)	Yes		
THD	<3		%
Power factor with rated power	>0.99 (configurable; 0.9 leading to 0.9 lagging)		
Typical Nighttime Power Consumption	<5		W
OUTPUT - AC (BACKUP POWER)[3]			
Rated AC Power Output	5000[4]		VA
Max AC Power Output - Surge	6600		VA
AC Output Voltage Min-Nom-Max (L-L)	211-240-264		Vac
AC Output Voltage Min-Nom-Max (L-N)	105-120-132		Vac
AC Frequency Min-Nom-Max	55 - 60 - 65		Hz
Maximum Continuous Output Current @240V - Backup Mode	21		A
Max Continuous Output Current per Phase @120V	25		A
GFDI	1		A
AC Circuit Breaker	Yes		
THD	<5		%
Power factor with rated power	0.2 leading to 0.2 lagging		
Automatic switchover time	<2		sec
Typical Nighttime Power Consumption	<5		W
INPUT - DC (PV and BATTERY)			
Transformer-less, Ungrounded	Yes		
Max Input Voltage	500		Vdc
Nom DC Input Voltage	400		Vdc
Reverse-Polarity Protection	Yes		
Ground-Fault Isolation Detection	600kΩ Sensitivity		
Maximum Inverter Effciency	98		%
CEC Weighted Effciency	97.5		%
INPUT - DC (PV)			
Maximum DC Power (STC)	10250		W
Max Input Current[5]	23		Adc
2-pole Disconnection	Yes		
INPUT - DC (BATTERY)			
Continuous Peak Power	3300		W
Number of Batteries per Inverter[6]	1	2 for high capacity	
Supported Battery Types	LG Chem RESU 10H Tesla Powerwall 1	Tesla Powerwall 1	
Max Input Current	8.5		Adc
2-pole Disconnection	Yes		
DC Fuses on Plus and Minus	12A (field replaceable)		
ADDITIONAL FEATURES			
Supported Communication Interfaces	RS485 for battery, RS485, Ethernet, ZigBee (optional)		
Battery Power Supply	Yes, 12V / 53W		
Revenue Grade Data, ANSI C12.20	Optional[7]		
Integrated AC, DC and Communication Connection Unit	Yes		
AC Disconnect	Yes		
Manual Inverter Bypass Switch	Yes		
DC Voltage Rapid Shutdown (PV and Battery)	Yes, according to NEC 2014 690.12		
Auto-transformer thermal protection	Yes		

(1) These specifcatons apply to inverters with part numbers SE7600A-USS0XXXXX and connecton unit model number BCU-1PH-USS
(2) For other regional settings please contact SolarEdge Support
(3) Not designed for standalone applications and requires AC for commissioning
(4) The rated AC power output is the minimum between 5000VA and the battery continuous peak power
(5) A higher current source may be used; the inverter will limit its input current to the values stated
(6) For two batteries for double power contact SolarEdge technical support
(7) Revenue grade inverter P/N: SE7600A-USS02NNG2

SolarEdge Single Phase StorEdge Inverter
for North America SE7600A-US

SE7600A-USS		
STANDARD COMPLIANCE		
Safety	UL1741, UL1699B, UL1998, UL9540, CSA 22.2	
Grid Connection Standards	IEEE1547, Rule 21, Rule 14	
Emissions	FCC part15 class B	
INSTALLATION SPECIFICATIONS		
AC Output (Loads/Grid) conduit size / AWG range	1" / 14-6 AWG	
AC Output (Backup) conduit size / AWG range	0.75-1" knockouts / 14-6 AWG	
AC Input (Auto-transformer) conduit size / AWG range	0.75-1" / 14-6 AWG	
DC Input (PV) conduit size / # of Strings / AWG range	0.75" / 1-2 Strings 14-8 AWG	
DC Input (Battery) conduit size / AWG range	0.75" / 16-10 AWG	
Dimensions with Connection Unit (HxWxD)	37 x 12.5 x 7.2 / 940 x 315 x 184	in / mm
Weight with Connection Unit	58.5 / 26.5	lb / kg
Cooling	Natural convection and internal fan (user replaceable)	
Noise	<50	dBA
Min - Max Operating Temperature	-13 to +140 / -25 to +60	˚F / ˚C
Protection Rating	NEMA 3R	

Inverter Interface



SolarEdge Auto-transformer

SEAUTO-TX-5000

	SEAUTO-TX-5000	
ELECTRICAL RATINGS		
Rated Power - Continuous	5000	VA
Rated Power - Peak	7600 for 10sec	VA
Output Voltage	120/240V Split Phase	
Max Continuous Output Current per Phase @120V	25	A
Split Phase Imbalance (@Rated Power)	Yes, up to 25A difference between phases	
Thermal Protection	Yes	
INSTALLATION SPECIFICATIONS		
AC Output conduit size / AWG range	0.75" / 14-6 AWG	
Dimensions (HxWxD)	6.7 x 7.9 x 5.5 / 170 x 200 x 140	in / mm
Weight	29.7 / 13.5	lb / kg
Min - Max Operating Temperature	-13 to +140 / -25 to +60	°F / °C
Protection Rating	NEMA 3R	
Installation	Wall mounted	

SolarEdge Electricity Meter for North America

SE-MTR240-0-000-S2

For meter specifications refer to: https://www.solaredge.com/sites/default/files/se_electricity_meter_na.pdf

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge

/ Power Optimizer
For North America
P320 / P340 / P370 / P400 / P405 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P405 (for thin film modules)	P505 (for higher current modules)	
INPUT							
Rated Input DC Power[1]	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125[2]	83[2]	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	Adc
Maximum Efficiency	99.5						%
Weighted Efficiency	98.8					98.6	%
Overvoltage Category	II						
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)							
Maximum Output Current	15						Adc
Maximum Output Voltage	60				85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)							
Safety Output Voltage per Power Optimizer	1 ± 0.1						Vdc
STANDARD COMPLIANCE							
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3						
Safety	IEC62109-1 (class II safety), UL1741						
RoHS	Yes						
INSTALLATION SPECIFICATIONS							
Maximum Allowed System Voltage	1000						Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters						
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4[3]						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						˚C / ˚F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

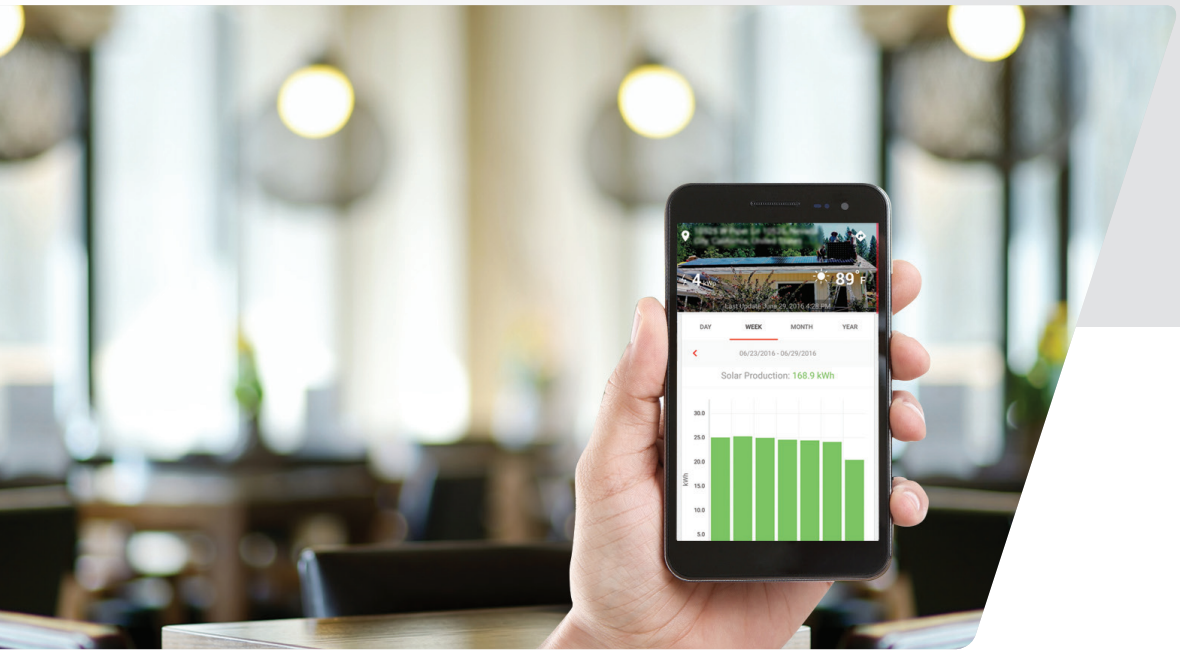
[1] Rated STC power of the module. Module of up to +5% power tolerance allowed
[2] NEC 2017 requires max input voltage be not more than 80V
[3] For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter[4][5]		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8		10	18	
	P405 / P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50[6]	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000[7]	12750[8]	W
Parallel Strings of Different Lengths or Orientations		Yes				

[4] For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
[5] It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
[6] A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
[7] For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W
[8] For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W

CE RoHS

Monitoring App



Know that your PV system is producing to its maximum potential.
View historic and real-time energy production of your SolarEdge optimized system on the go with your smart phone.

Easy to use charts show your PV performance.
Compare today's production to past measurements.

Want to know how your PV system stacks up against your friends?
You can share real-time system performance details with your friends across many social platforms: email, messaging apps, Facebook and on Twitter.

Real-time and forecasted weather data.
Evaluate your system's performance by understanding what environmental conditions affect energy production.

See and share your system's performance on the go: real-time insight to home energy production and usage.

Gain visibility into your system performance in real-time with this intuitive, user-friendly app. Share your system performance at the push of a button.

Don't have a solar system yet? You can explore and learn about features by using the demo account.

Download the app for free on iPhone or Android by visiting the AppStore or Google Play.

Download on the App Store

GET IT ON Google Play

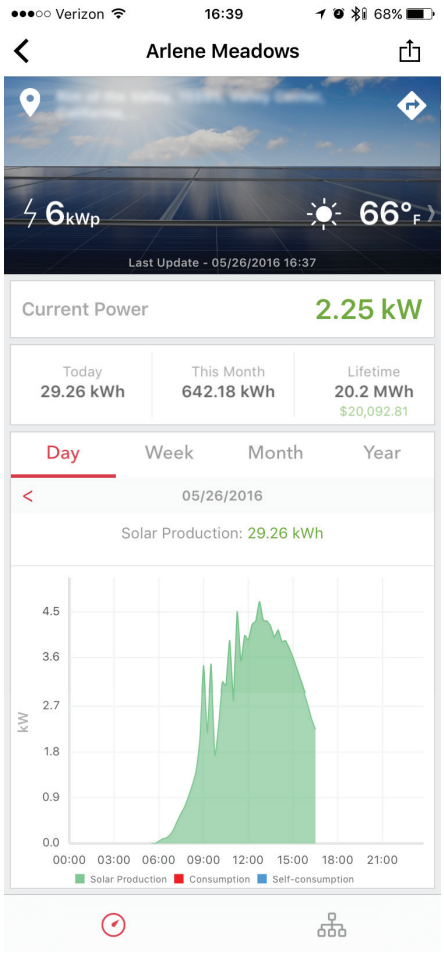
Getting Started with the SolarEdge Monitoring App

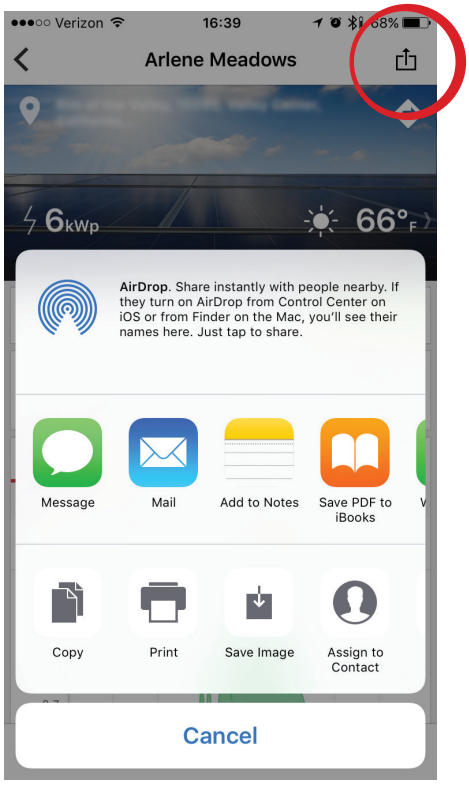
After your inverter connects to the internet, SolarEdge automatically begins tracking and reporting your site's performance. Your installer will need to create the physical layout in the SolarEdge portal for you to view. **Confirm with your installer regarding completion date of your homeowner account.**

* Before you can register you need to ensure that SolarEdge email isn't getting stuck in your SPAM folder. Add DoNotReply@solaredge.com to your contacts and watch for a registration email with the subject line: *Registration to SolarEdge Monitoring Portal*.

To begin using:

1. A link to register will be sent to you in email. *Note: if you click the link and nothing happens, simply copy and paste the same URL into your web browser address bar.
2. Register your site with SolarEdge:
   - You will need to enter your name, phone number, language, create a password and select units (*Imperial* for Fahrenheit and *Metric* for Celsius)
   - Check the box agreeing to SolarEdge's terms and conditions and select if you want news, updates or technical notifications from SolarEdge
   - Click Confirm, log-in and view your energy performance
3. To get updated information on your smart phone, download the free monitoring app:
   - Visit Google Play or the App Store to download the "SolarEdge Monitoring" app.
   - Login using the same email address and password that you created during registration. The app will remember your login information; allowing you to see your system's performance at any time.
4. You can begin sharing your system's performance on your favorite social network or by email or text.





Click on the icon to share

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