ES-H SERIES
photovoltaic panels

250,255,260,265,270,275&280 W

evergreensolar®

CERTIFIED FOR COASTAL INSTALLATIONS

MORE electricity

Our ES-E series panels have one of the best power tolerances in the industry (-0/+5 W) and consistently deliver more electricity than competitors in field tests.

POSITIVE POWER TOLERANCE[1]
The rated power is the minimum so you never get less power than you pay for.

INDEPENDENTLY VERIFIED POWER[2]
Four independent test labs regularly check panel power to make sure you get the power we promise.

ANTI-REFLECTIVE GLASS
Delivering 2–3% more electricity compared to panels with standard glass.

TEMPERATURE RATINGS OVER 90%[3]
Maintaining up to 4% higher output than most other crystalline silicon panels under hot conditions.

MICRO-INVERTER COMPATIBLE
Panel voltage compatible with state-of-the-art micro-inverters used to improve performance of residential systems.

LESS impact

Evergreen Solar String Ribbon® panels have the smallest carbon footprint and fastest energy payback of any silicon-based solar panel ever made.

SMALLEST CARBON FOOTPRINT[4]
Our String Ribbon® wafers are made with a fraction of the emissions that result from making conventional silicon panels.

12-MONTH ENERGY PAYBACK[4]
Our panels begin generating truly clean electricity faster than any other silicon-based panel on the market.

100% CARDBOARD-FREE REUSABLE PACKAGING
Reduces disposal costs and on-site manpower while eliminating tons of landfill.

PV CYCLE

1 Guaranteed upon initial delivery of the panel to the customer; maximum power up to 4.99 W above nameplate rating; **2** Power regularly calibrated by taking the straight average of test data from NREL, TÜV Rheinland PTL, TÜV Rheinland Cologne and Fraunhofer ISE; **3** Based on comparing PTC/STC ratings of major competing multi-crystalline silicon brands

4 Evaluation completed by the Energy Research Foundation of the Netherlands (ECN), Q1 2012

STRING RIBBON® SOLAR PANELS OFFERING EXCEPTIONAL PERFORMANCE AND INDUSTRY-LEADING ENVIRONMENTAL CREDENTIALS. IN SHORT, MORE ELECTRICITY AND LESS IMPACT.

All Evergreen ES-H panels come with a 10 year workmanship and 25 year limited power warranty. For full details see the ***Evergreen Solar Limited Warranty*** *available upon request or online. This product is designed to meet cUL 1703, UL 4703, UL Fire Safety Class C, IEC 61215 Ed.2, IEC 61730 Class A and IEC 61701 (salt mist corrosion) standards.* ***Evergreen Solar*** *and* ***String Ribbon*** *are registered trademarks of Evergreen Solar (China) Co.,Ltd..Evergreen Solar's wafer manufacturing technology is patented in the United States and other countries.*

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CE IEC

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ELECTRICAL characteristics

Standard Test Conditions (STC)[1]

	ES-H-250 -fc3*	ES-H-255 -fc3*	ES-H-260 -fc3*	ES-H-265 -fc3*	
P_{mp}[2]	250	255	260	265	W
$P_{tolerance}$	-0/+4.99 (-0/+1.9)	-0/+4.99 (-0/+1.8)	-0/+4.99 (-0/+1.9)	-0/+4.99 (-0/+1.8)	W (%)
$P_{mp, max}$	254.99	259.99	264.99	269.99	W
$P_{mp, min}$	260.00	265.00	260.00	265.00	W
η_{min}	12.78	13.03	13.29	13.54	%
V_{mp}	34.81	34.97	35.13	35.28	V
I_{mp}	7.21	7.32	7.43	7.54	A
V_{oc}	42.54	42.78	43.02	43.38	V
I_{sc}	7.91	8.01	8.12	8.22	A

	ES-H-270 -fc3*	ES-H-275 -fc3*	ES-H-280 -fc3*	
P_{mp}[2]	270	275	280	W
$P_{tolerance}$	-0/+4.99 (-0/+1.8)	-0/+4.99 (-0/+1.8)	-0/+4.99 (-0/+1.8)	W (%)
$P_{mp, max}$	274.99	279.99	284.99	W
$P_{mp, min}$	270.00	275.00	280.00	W
η_{min}	13.80	14.05	14.31	%
V_{mp}	35.42	35.57	35.71	V
I_{mp}	7.65	7.76	7.87	A
V_{oc}	43.62	43.86	44.06	V
I_{sc}	8.33	8.44	8.55	A

Low Irradiance

The typical relative reduction of panel efficiency at an irradiance of 200 W/m² both at 25°C cell temperature and spectrum AM 1.5 is 0%.

Temperature Coefficients

γP_{mp}	-0.43	%/°C
βV_{mp}	-0.40	%/°C
αI_{mp}	-0.03	%/°C
βV_{oc}	-0.31	%/°C
αI_{sc}	0.05	%/°C

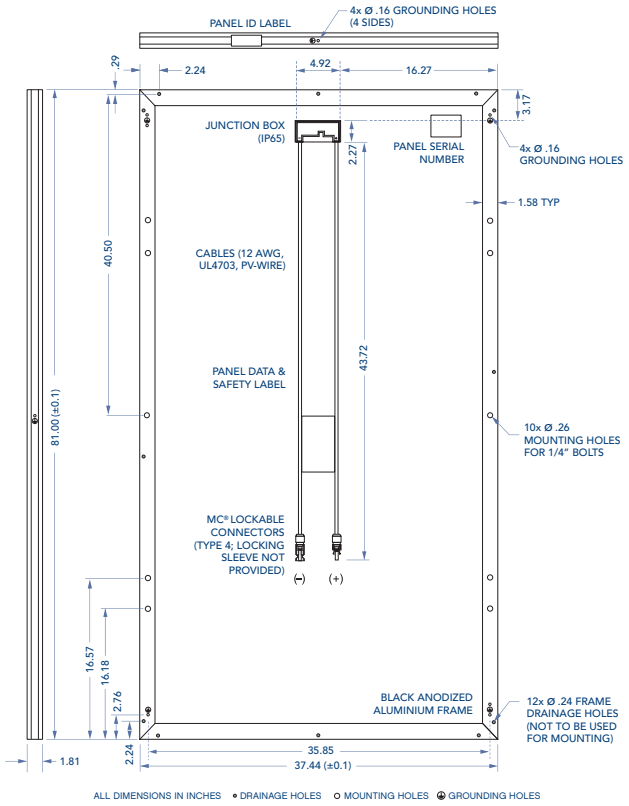
System Design

Series Fuse Rating[5]	15 A
UL Rated System Voltage	600 V

1 1000 W/m², 25°C cell temperature, AM 1.5 spectrum; 2 Maximum power point or rated power; 3 At PTC (PV-USA Test Conditions): 1000 W/m², 20°C ambient temperature, 1 m/s wind speed ; 4 800 W/m², 20°C ambient temperature, 1 m/s wind speed, AM 1.5 spectrum; 5 Also known as Maximum Reverse Current; 6 Cell color may vary due to our unique manufacturing process but does not affect performance of the panel; 7 Per IEC 61215. When using Mounting Method A (offset mounting) with rails 13.5" (344 mm) in 0.75"(±20 mm) from each short side of the panel as described in the Mounting Guide for this product; 8 Per UL1703 when using long side end mounting or three support rail mounting as described in the Mounting Guide for this product; 9 Per IEC 61215; ★f—framed, c—medium voltage circuit design, 3—matt blue (textured) cells, black frame & white back-skin

ELECTRICAL EQUIPMENT
CHECK WITH YOUR INSTALLER

MECHANICAL specifications



External Dimensions	81.0" X 37.5" X 1.8"/ 2057.5 X 951.3 X 46 mm
Weight	51.6 lbs.
Solar Cells[6]	144 Multi-Crystalline Silicon String Ribbon®
Frame	Black Anodized Aluminium—Doubled Walled
Front Cover	Anti-Reflective Tempered Solar Glass 1/8" Thickness
Encapsulant / Back Cover	EVA / White TPE
Maximum Certified Snow Load[7]	80 lbs./ft²
Maximum Combined Wind & Snow Load[8]	80 lbs./ft²
Hailstone Impact Test[9]	ø1"(25 mm) ice ball at 52 miles/h (83 km/h)

The above drawing is a graphical representation of the product; for engineering quality drawings please contact Evergreen Solar. MC® is a registered trademark of Multi-Contact AG. Product constructed with 120 poly-crystalline silicon String Ribbon® solar cells, anti-reflective tempered solar glass, EVA encapsulant, polymer back-skin and a black anodized double-walled aluminum frame. Product packaged 28 per pallet and tested to International Safe Transit Association (ISTA) Standard 2B. All specifications in this product information sheet conform to EN 50380. See the Evergreen Solar Safety, Installation and Operation Manual, Mounting Guide and Inverter Selection Guide for further information on approved installation and use of this product.

PARTNER

ES-H–250_255_260_265_270_275_280–fc3_US_061211; effective Dec6 th 2011 SM-0128 RevC

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