

# HPC-160 Module

## Benefits

- 14.1% module efficiency
- Same kWh yield with 72% less silicon
- Use direct, diffuse, high incidence and reflected light
- Increased low-light performance
- Excellent option for commercial white roofs and large scale installations
- Wide range of mounting options for other installations

## 1/3 the Silicon – Greatly Reduced Cost

Prism Solar's breakthrough Holographic Planar Concentrator™ (HPC) modules generate the same energy as conventional panels but with 50-72% less silicon, for highly efficient, economically attractive solar collection.

HPC Series modules take full advantage of the benefits of Prism Solar's HPC Film, which diffracts and guides direct, diffuse and reflected energy to the PV cells. Bi-facial HPC modules consist of crystalline PV cells strips integrated between strips of HPC Film. The HPC Film and cells collect light from the front and back surfaces, so the PV cells receive 2.4 – 3.4 times the irradiance at peak hours and over the entire day.

## Passive Tracking

HPC Film collects light over a wide range of incident angles, concentrating energy to keep the cells near peak efficiency through the day and season. This "passive tracking" ability enables HPC modules to operate efficiently in flat and sloped roof installations, vertical walls and window mountings, and large scale arrays.

## More Energy in Reflection

HPC bi-facial modules generate energy from the back surface of the silicon and HPC Film as well as the front. When mounted on a white roof Prism bi-facial panels generate as much as an additional 30% more kWh, without additional cooling or tracking.

## Better Temperature Performance

HPC Film allows wavelengths that cannot be converted by the PV cells to pass through the module rather than being absorbed as in conventional panels. The cells operate close to their ideal temperature curve without mechanical cooling—even at 3X concentration.

## Improved PV Cell Efficiency

In HPC modules the PV cells are diced into narrow strings to be placed between rows of HPC film. Dicing and finishing the strings improves electrical flow, adding another 3/4% efficiency over full-size cells.

## More Efficient Cell Packing

Novel methods for overlapping and interconnecting cells results in better current handling and more reliable long-term electrical performance.

## Rugged, Reliable

HPC modules are designed to face the rigors of real-world installation, with many innovative features for improved reliability.

# HPC-160 Module Preliminary Specifications

## Electrical Specifications\*

Module Design	Bi-Facial, glass-glass
Frame Type	Frameless; frame optional
Rated Power (Pmax)	160 W $\pm 5\%^{**}$
Watts/m <sup>2</sup>	141.6
Grams Silicon/ Watt	1.29 <sup>***</sup>
Power from cells	59.3 Watts
Power from HOEs	100.7 Watts
Cell Efficiency	16%
Module Efficiency	14.1% <sup>**</sup>
Max Power Voltage (Vpm)	54 Volts
Max Power Current (Ipm)	2.96 Amps
Open Circuit Voltage (Voc)	67.96 Volts
Short Circuit Current (Isc)	3.31 Amps
Minimum Power (Pmin)	152 Watts
Max. System Voltage (Vsys)	600, 1000 Volts
Series Fuse Rating	15 Amps
Temp. Coefficient (Pmax)	-0.25%/°C
Temp. Coefficient (Voc)	-0.17%/°C

## Mechanical Specifications

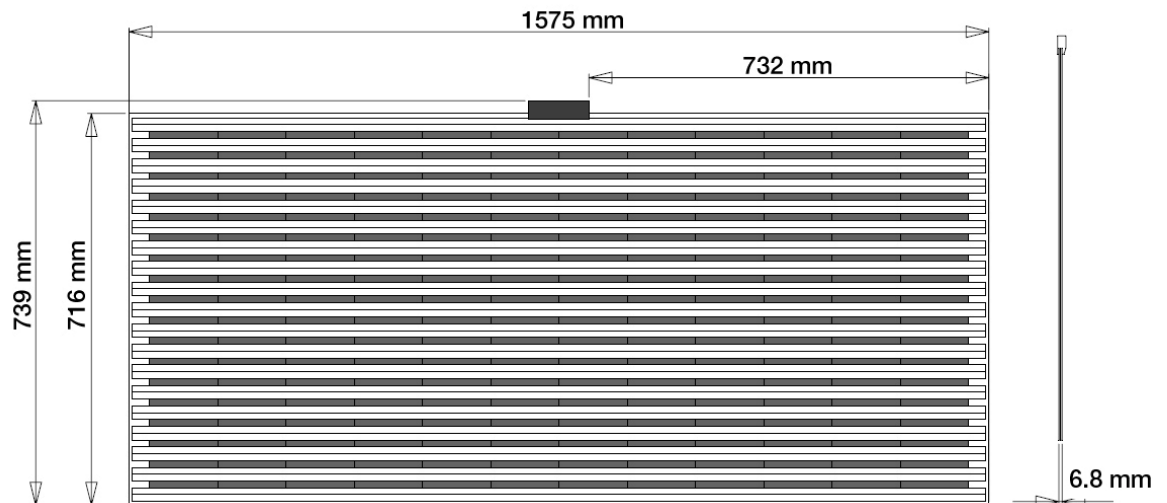
Solar Cells	216 cells; (2) 108 bi-facial monocrystalline cell strings
Glass	Front and back 3.2mm low iron, tempered
Junction Box	Multi-Contact with bypass diode
Cable	600 mm (23.6 in), 1.2 m (47.2 in); No. 12 AWG, MC™ connectors
Weight	23kg (50.7 lbs)
Dimensions	1575 x 739 x 6.8 mm (62 x 29.1 x 0.27 in)

## Tested Operating Conditions

Temperature	-40°C to 85°C (-40°F to 185°F)
Impact Resistance	Hail 25 mm (1 in) at 23 m/s (52 mph)
Max Load	50PSF (2400Pa) front and back
Safety & Ratings Certifications	Testing to UL 1703 standard pending; Class C Fire Rating
Limited Warranty	5 years workmanship 10 years 90% power 25 years 80% power

## Mounting Configurations

Commercial white roof, flat roof, pitched roof, horizontal, vertical, large arrays, etc. Framing determined by application.



\* At standard conditions (cell temp. 25°C, AM1.5, 1000W/m<sup>2</sup>)

\*\* PMax, Module Efficiency specifications include contributions from front and back sides of module

\*\*\* Actual measured value. Does not include silicon losses incurred during cell manufacturing.



CAUTION: Read all installation and operating instructions before use of this product.

Specifications subject to change without notice. 11/08

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