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# **EnergyPal**

## **Solar Panel Guide Specification Data Sheet**

### **Sunpreme Maxima HxB 390-410 HxB 400**

Also available on the web at  
[EnergyPal.com/sunpreme-solar-panels/hxb-400](http://EnergyPal.com/sunpreme-solar-panels/hxb-400)

## MAXIMA HxB 400 Bifacial Module

A Trusted Quality Brand in Solar



### High Performance

Bifacial technology generates power from both the front and back faces of the module, resulting in up to 20% higher energy harvest (kWh). Our HCT cells packaged in framed double glass modules yield higher power and do not suffer from light-induced degradation (LID) or potential induced degradation (PID).



### Robust Quality & Reliability

Double glass modules designed for durability. Certified to international certification body standards: IEC, UL, and CEC listed. Manufactured according to the International Quality Management System ISO9001.



### Extreme Climate Performance

As temperatures rise, our patented SmartSilicon hybrid cell technology produces more power [kW] than conventional crystalline silicon solar panels at the same elevated temperature.



### Guaranteed Performance

All modules have a 15 year product warranty and 30 year power output warranty.



### Superior Aesthetics

Double-glass construction provides superior aesthetics that are a perfect complement to roofs, carports, and canopies.

### About Sunpreme

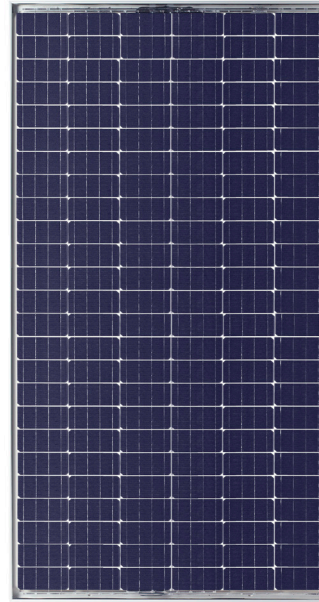
Sunpreme is an innovative solar PV module manufacturer headquartered in Sunnyvale, California with manufacturing facilities in the United States and China. We provide high quality, reliable and aesthetically superior modules to residential, commercial, and utility customers globally. Sunpreme solar systems are delivering clean energy on 5 continents.

Sunpreme solar panels are designed and engineered in Silicon Valley, CA, USA.

### Hybrid Cell Technology

Sunpreme modules use our patented Hybrid Cell Technology platform that utilizes enabling thin-film materials on surface engineered Silicon substrate to achieve high-efficiency power output and reliable energy production for increased project returns.

Unlike conventional crystalline silicon cell technologies, Sunpreme uses highly-scalable process to deliver high output solar power at very competitive Levelized Cost of Energy (LCOE).



Front view



Back view

### High Efficiency

19.0% Module Efficiency (STC),  
20.9% Efficiency with 10% Backside Power Boost, and  
22.8% with 20% Backside Power Boost

### Bifacial Energy Boost

Harvests sun from the backside to increase power output up to 20%

### Dual-Glass Framed Design

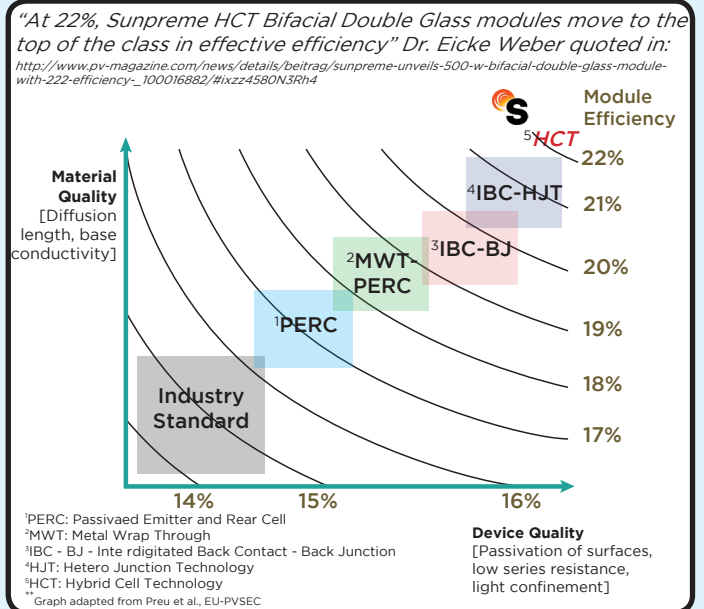
Sunpreme's robust dual-glass design for high reliability, now with frames for ease of integration with traditional racking system

### 15 YEAR

PRODUCT WARRANTY

### 30 YEAR

POWER WARRANTY



<b>ELECTRICAL SPECIFICATIONS<sup>1</sup></b>	<b>390</b>	<b>400</b>	<b>410</b>
STC rated output $P_{MPP}$ (W)	390	400	410
Cell Efficiency	21.2%	21.8%	22.3%
Module Efficiency STC	18.5%	19.0%	19.5%
Standard sorted output	-3%/+5%	-3%/+5%	-3%/+5%
Open Circuit Voltage $V_{OC}$ (V)	55.0	55.2	55.4
Short circuit current $I_{SC}$ (A)	9.44	9.50	9.57
Rated Voltage $V_{MPP}$ (V)	47.5	47.9	48.2
Rated Current $I_{MPP}$ (A)	8.2	8.4	8.5

<sup>1</sup>: Standard Test Conditions for front-face of panel: 1000 W/m<sup>2</sup>, 25°C.

### BI-FACIAL OUTPUT\*

#### With 10% Backside Power Boost

Power Output (W)	429	440	451
Module Efficiency	20.4%	20.9%	21.5%

#### With 20% Backside Power Boost

Power Output (W)	468	480	492
Module Efficiency	22.3%	22.8%	23.4%

\*Backside boost for flush mount configuration is ≤5%, resulting in  $I_{sc}$  ≤9.56 - 9.77 A

### TEST OPERATING CONDITIONS

Operating Temperature	- 40 to + 85°C
Storage Temperature	- 40 to + 85°C
Maximum Series Fuse	20 A
Maximum System Voltage	1,500VDC (UL & IEC)
Power/Sq.Ft. w/ 20% backside power boost	19.0 W / Sq. Foot
Maximum load capacity	5,400 Pa (snow load) 185 mph wind rating
Fire Class	Class A

### TEMPERATURE COEFFICIENTS

Temperature coefficient $P_{MPP}$	-0.258%/C
Temperature coefficient $I_{SC}$	+0.03%/C
Temperature coefficient $V_{OC}$	-0.23%/C
Normal operating cell temperature (NOCT)°C	46C +/- 2

### WARRANTY

15 year extended product warranty

97.5% power warranty first 5 years

-0.5% per year degradation for the following 25 years

### CERTIFICATION (in process)

Certified to IEC 61646, IEC 61730-01, IEC 61730-02, IEC 61701, UL 1703, ISO 9001, ISO 14001, CEC, CE Mark, FSEC, MCS, SEC, and TUV



### MECHANICAL SPECIFICATIONS

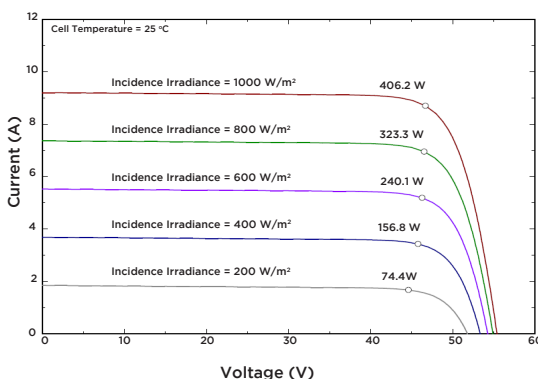
Dimensions	2,092 x 1005 x 40 mm (6.86 x 3.30 x 0.13 ft)
Mass	35.5 kg (78.26 lbs)
Area	2.10m <sup>2</sup> (22.63 ft <sup>2</sup> )
Cell type	Bifacial Hybrid Cell Technology (HCT)
Module type	Framed double glass design
Glass	Tempered 2.8mm anti-reflective coating, low-iron
Junction Boxes	IP-67 rated; 1,500V UL/IEC, 3 diodes
Cables	4mm <sup>2</sup> x 0.6 m cable: MC4 or MC4 compatible connectors

### PACKAGING

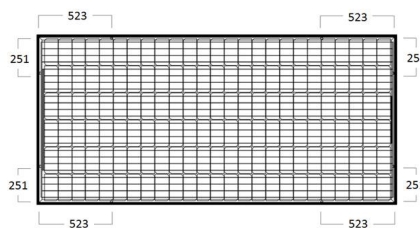
Modules per pallet	24
Pallets per shipping container	22

$I_{max} - V_{max}$

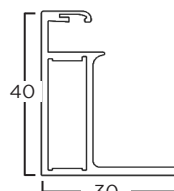
Multi-Irradiance Curve for Maxima HxB 400



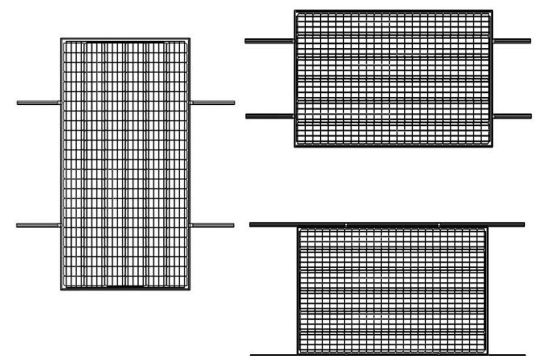
### Rear View with Clamp locations (mm)



### Frame cross section



### Mounting methods



Covered by one or more of the following U.S. patents:  
7,951,640; 7,956,283; 7,960,644