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Solar Panel Guide Specification Data Sheet

Sunpreme Maxima HxB 420 410

Also available on the web at
EnergyPal.com/sunpreme-solar-panels/410

Maxima HxB 420 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 frameless 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 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

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

About Sunpreme

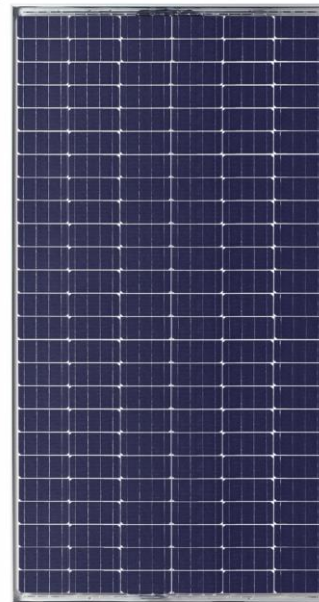
Sunpreme is an innovative solar PV module manufacturer headquartered in Sunnyvale, California with manufacturing facilities in the United States and China. We provide high quality, reliable and aesthetically superior modules to residential, commercial, and utility customers globally. Sunpreme solar systems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

20.0% Module Efficiency (STC)
22.0% Module Efficiency with 10% Backside Power Boost
24.0% Module Efficiency with 20% Backside Power Boost

Bifacial Energy Boost

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

Double-Glass Framed Design

Sunpreme Design is more robust, and does require module grounding

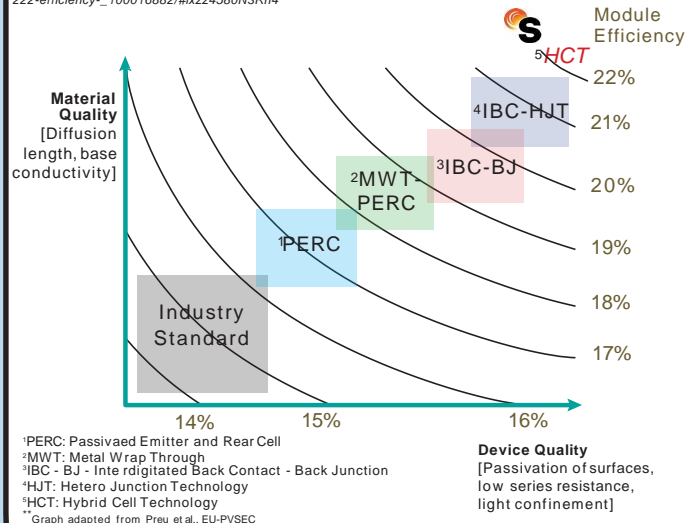
15 YEAR

PRODUCT WARRANTY

30 YEAR

POWER WARRANTY

"At 22%, Sunpreme HCT Bifacial Double Glass modules move to the top of the class in effective efficiency" Dr. Eicke Weber quoted in:
<http://www.pv-magazine.com/news/details/beitrag/sunpreme-unveils-500-w-bifacial-double-glass-module-with-222-efficiency-100016882/#ixzz4580N3Rh4>



ELECTRICAL SPECIFICATIONS

STC rated output P_{mpp} (W)	400	410	420
Cell Efficiency	21.8%	22.2%	22.5%
Module Efficiency	19.0%	19.5%	20.0%
Standard sorted output	-3%/5%	-3%/5%	-3%/5%
Open Circuit Voltage V_{oc} (V)	55.2	55.4	55.6
Short circuit current I_{sc} (A)	9.50	9.57	9.63
Rated Voltage V_{mpp} (V)	47.9	48.2	48.9
Rated Current I_{mpp} (A)	8.36	8.50	8.60

1: Standard Test Conditions for front-face of panel: 1000 W/m², 25°C

BIFACIAL OUTPUT*

With 10% Backside PowerBoost

Power Output (W)	440	451	462
Module Efficiency	20.9%	21.5%	22.0%

With 20% Backside PowerBoost

Power Output (W)	480	492	502
Module Efficiency	22.8%	23.4%	24.0%

*Backside boost for flush mount configuration is ≤5%, resulting in $I_{sc} \leq 9.98\text{-}10.11\text{A}$

TEST OPERATING CONDITIONS

Operating Temperature	-40 to 85°C
Storage Temperature	-40 to 85°C
Maximum Series Fuse	20 A
Maximum System Voltage	1,500 VDC (UL & IEC)
Power/Sq. Ft. w/ 20% backside power boost	22.2 W/Sq. Foot
Maximum load capacity	5,400 PA (snow load) 185 mph/300 km/h wind rating
Fire Class	Class A

TEMPERATURE COEFFICIENTS

Temperature coefficients P_{mpp}	-0.258%/C
Temperature coefficients I_{sc}	+0.03%/C
Temperature coefficients V_{oc}	-0.23%/C
Normal operating cell temperature (NOCT)°	46°C +/- 2° C

WARRANTY

15-year extended product warranty
97.5% power warranty first 5 years
-0.5% per year degradation for the following 25 years

CERTIFICATION

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



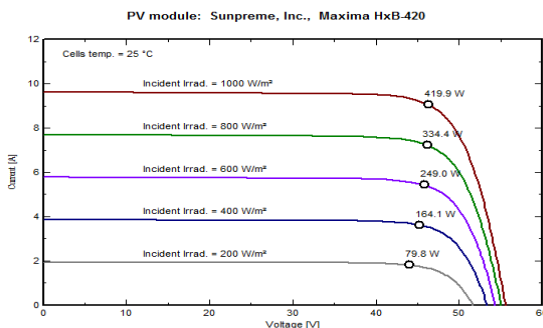
MECHANICAL SPECIFICATIONS

Dimensions	2092 x 1005 x 35 mm (6.86 x 3.3 x 0.11 ft)
Weight	35.5 kg (78.3 lbs)
Area	2.1 m ² (22.6 ft ²)
Cell Type	Bifacial Hybrid Cell Technology (HCT)
Module Type	Framed double glass design with tempered glass
Glass	Tempered 2.9 mm anti-reflective coating, low iron
Junction Box	IP-67 rated; 1000V UL/IEC, 3 diodes
Cables	4 mm ² x 0.6 m cable with MC4 connectors or MC4 compatible connectors

PACKAGING

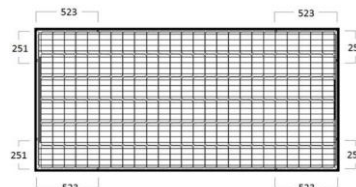
Modules per crate	24
Crate per shipping container	22

$I_{max} - V_{max}$
Multi-Irradiance Curve for Maxima HxB 420

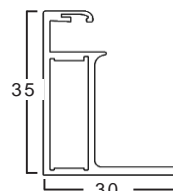


Covered by one or more of the following U.S. patents:
7,951,640; 7,956,263; 7,960,644

Rear View with Clamp locations (mm)



Frame cross section



Mounting methods

