

# MAXIMA GxB 320 SM

## Bifacial Smart 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).



### Integrated Optimizer with TIGO TS4-L

Impedance Matching Technology results in enhanced energy yield at string level. AC/DC output at string level up to 0.95.



**Longer Strings: String length increased up to 30%**  
Less BOS. Faster Installation. Lower Costs



### Safety, Enhanced O&M

Rapid shut down, Module Level Monitoring



### 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.



### Superior Aesthetics

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

### About Sunpreme

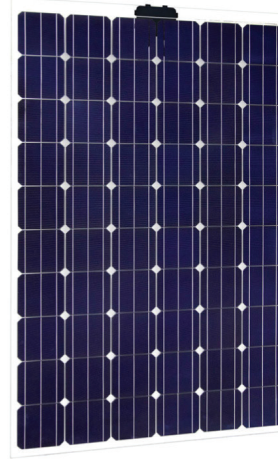
Sunpreme is an innovative solar PV module manufacturer headquartered in Sunnyvale, California with manufacturing facilities in the United States and China. We provide high quality, reliable and aesthetically superior modules to residential, commercial, and utility customers globally. Sunpreme solar systems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

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

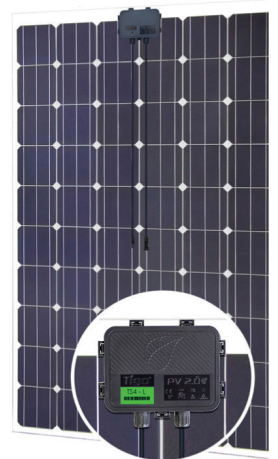
### Hybrid Cell Technology

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

19.4% Module Efficiency (STC)  
21.0% Efficiency with 10% Backside Power Boost  
23.2% with 20% Backside Power Boost

### Bifacial Energy Boost

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

### Double-Glass Frameless Design

Sunpreme Design is more robust, and does not require module grounding

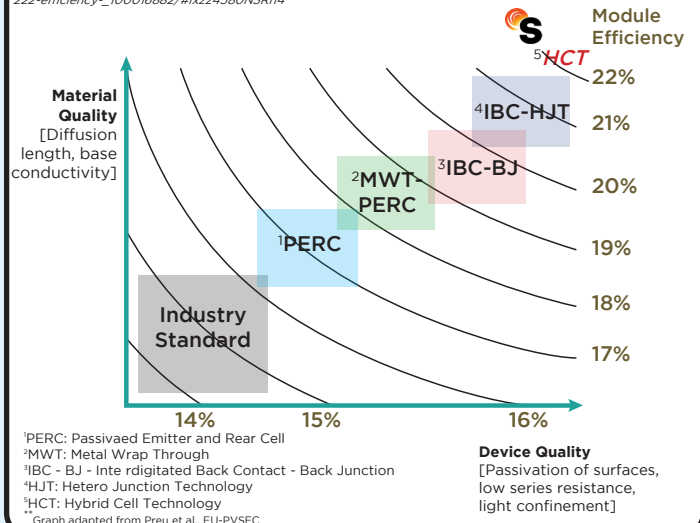
### 15 YEAR

PRODUCT WARRANTY

### 25 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-22-efficiency\\_100016882/#ixzz4580N3Rh4](http://www.pv-magazine.com/news/details/beitrag/sunpreme-unveils-500-w-bifacial-double-glass-module-with-22-efficiency_100016882/#ixzz4580N3Rh4)



# Maxima GxB 320 SM Bifacial Smart Solar Module

## A Trusted Quality Brand in Solar

Electrical Specifications <sup>1</sup>	300	310	320
STC rated output $P_{MPP}$ (W)	300	310	320
Cell Efficiency	21.3%	21.6%	22.0%
Module Efficiency STC	18.2%	18.8%	19.4%
Standard sorted output	-3%/+5%	-3%/+5%	-3%/+5%
Maximum Voltage (V)	39.4	39.5	39.7
Maximum current (A)	12.0	12.0	12.0
Rated Voltage $V_{MPP}$ (V)	34.5	35.2	36.3
Rated Current $I_{MPP}$ (A)	8.7	8.9	9.0

Module voltage will not exceed the Maximum Voltage values stated above

### Bi-Facial Output\*

#### With 10% Backside Power Boost

Power Output (W)	330	341	352
Module Efficiency	20.1%	20.7%	21.0%

#### With 20% Backside Power Boost

Power Output (W)	360	372	384
Module Efficiency	22.0%	22.6%	23.2%

### Test Operating Conditions

Operating Temperature	- 40 to + 85°C
Storage Temperature	- 40 to + 85°C
Maximum Series Fuse	15 A
Maximum System Voltage	1,000VDC UL
Power/Sq.Ft. w/ 20% backside power boost	20.9 W / Sq. Foot
Maximum load capacity	5,400 Pa (snow load) 185 mph wind rating
Fire Class	Class A - Type 3

### Temperature Coefficients

Temperature coefficient $P_{MPP}$	-0.28%/C
Temperature coefficient $I_{SC}$	+0.015%/C
Temperature coefficient $V_{OC}$	-0.00%/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 20 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, and TUV



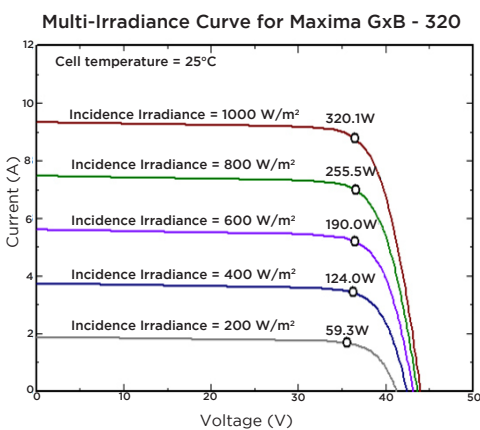
### Mechanical Specifications

Dimensions	1,663 x 990 x 6 mm (5.46 x 3.25 x 0.02 ft)
Weight	25.2 kg (55.56 lbs)
Area	1.64 m <sup>2</sup> (17.7 ft <sup>2</sup> )
Cell type	Bifacial Hybrid Cell Technology (HCT)
Module type	60 Cells, Frameless double glass design with tempered glass, no grounding required
Glass	Tempered 2.9 mm anti-reflective coating, low-iron
Smart Junction Box	Tigo TS4-L Optimization
Cables	4 mm <sup>2</sup> x 1.0 m cable with MC4 connectors
Clamps	Recommended Sunpreme 200 mm

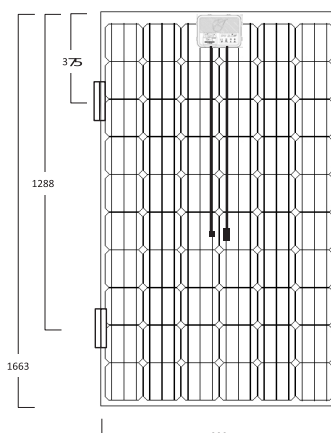
### Packaging

Modules per crate	26
Crates per shipping container	28

### $I_{max} - V_{max}$ (60 cell Version)



### Rear View (mm)



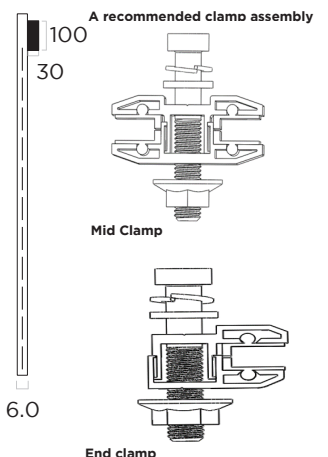
### Mounting method

Rail structure runs parallel to short-side of module if in portrait mount on roof top (1.0 m cable length)

Rail structure runs parallel to long side of module in ground mount (1.0 m cable length)

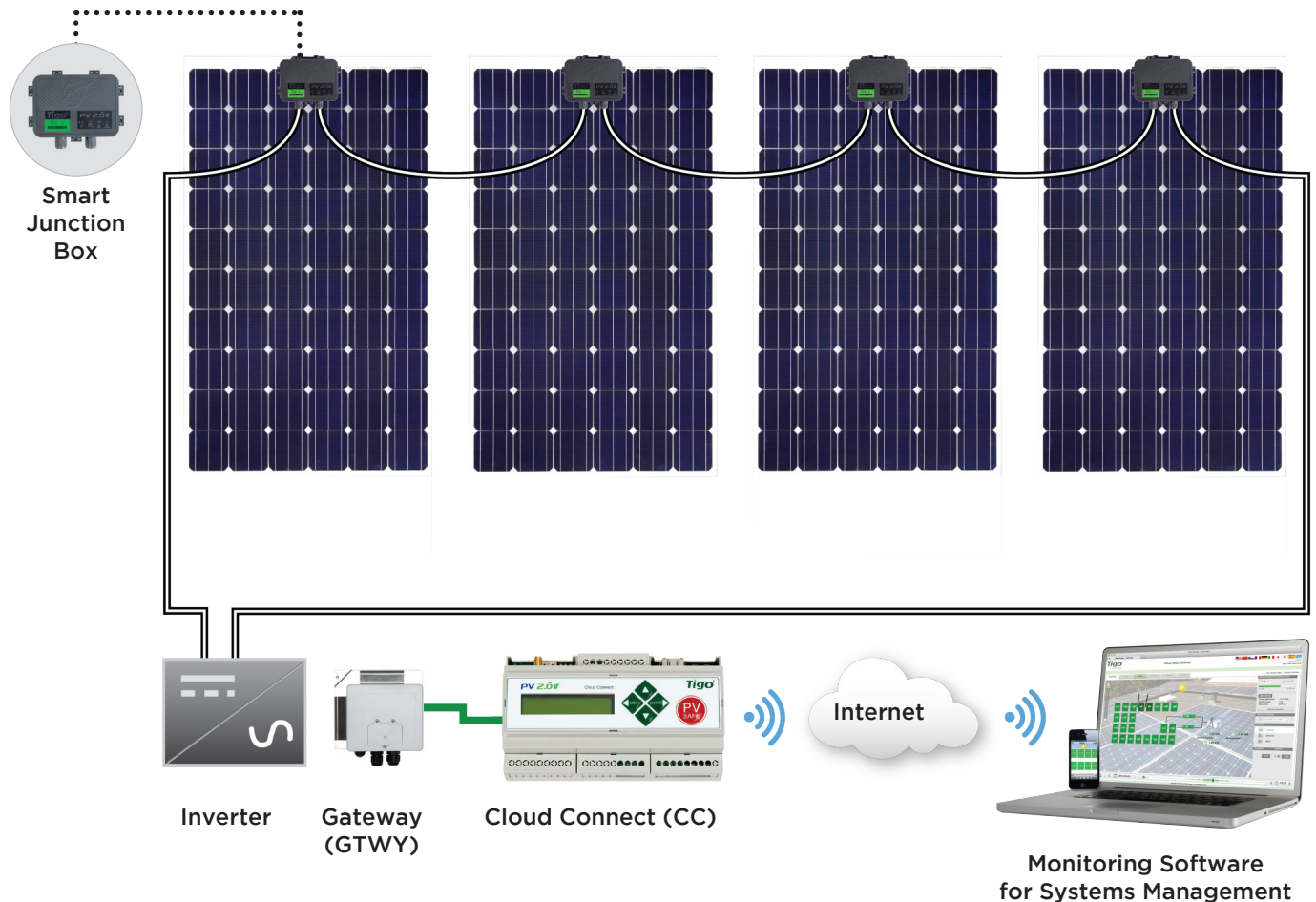
Retaining clip

### Side View (mm)



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

## System Architecture Overview



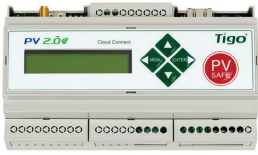
### Connectivity Detail

#### Cloud Connect

- Can connect with up to 7 GTWYs and 320 PV modules
- All Smart Modules in the same string must be assigned to the same CC

#### Gateway

- Can connect up to 120 PV modules
- Modules must be within 10m-15m (33-50 ft.) from the GW, depending on mounting surface topology



## Cloud Connect

The Cloud Connect is the data logger and communication hub of the Tigo smart platform. It controls optimization, provides safety features, and enable module-level monitoring via the Tigo cloud. It also acts as a data logger for Modbus-equipped devices, like AC meters, weather stations, and selected inverters. The Cloud Connect is the next generation Management Unit.

- Built-in Wi-Fi
- Free iOS/Android app for monitoring and commissioning
- Easy-to-install DIN rail form factor

## Electrical Specifications

### Electrical

Supply Voltage: 24VDC +/- 1VDC

Power Consumption: Max 10W

Power Supply: 100-240VAC

Din Rail: Terminal Block or;

Socket: EU/UK/US/AU Interchangeable, 2-Pin Plug

### Capacity

Single Cloud Connect supports up to 360 PV Modules  
(In case of 2Es: 180 Optimizers)

Single Cloud Connect supports up to 7 Tigo Gateways

### Internet Connectivity Options

Ethernet Interface: 10/100-BaseT

Wireless Interface: Wi-Fi

### Mechanicals

Mounting Type: DIN Rail / Wall Mount

Dimensions: 159.5 mm x 90.2 mm x 57.5 mm (6.28" x 3.55" x 2.26")

Weight: .5 kb / 1.1 lb.

Operating Temperature Range: -20 to +60°C (-4 to 140°F)

Cooling: Natural Convection - No Fans

Enclosure: Indoor NEMA 1

### Features

Safety: CE, UL1741, EN62109,-1:2010, NEC 690.12 Rapid Shutdown (Approval Pending)

EMC: FCC Part 15, IC Canada, VCCI Japan

### Optional Accessories

NEMA 3R Outdoor-Rated Enclosure

External Emergency Safety Button (ANSI/UL) Recognized



## Gateway

The Tigo Energy Gateway provides robust and scalable wireless communications with each smart module. This solution provides clear, concise communication with the smart modules on the array, vastly exceeding the quality of data transmission over previous powerline methods.

Each Gateway can communicate with up to 120 smart modules and easily combines with other Gateways to accommodate larger arrays.

## Electrical Specifications

### Electrical

Supply Voltage: 24VDC +/- 1VDC

Power Consumption: Max 10W

Power Supply: 100-240VAC

Din Rail: Terminal Block or;

Socket: EU/UK/US/AU Interchangeable, 2-Pin Plug

### Gateway

Communications with Maximizer

Wireless (802.15)

Communication with Cloud Connect

RS-485 cable connection; in series with other Gateways

Mounting Location

Center of array

Mounting Method

Mounted to module frame or rack. Clips included for frame mounting

Wireless Range

50ft (15m) line-of-sight

Maximum Number of Modules per Gateway

120

## Mechanical Specifications

### Mechanical Data

Dimensions (W x H x D)

141.3 x 48.5 x 33.3 mm w/bracket

Weight

900 gm (1.98 lbs.)

Operating Temperature Range

-30°C + 70°C (-86°F + 158°F)

Enclosure Environmental Rating

IP 65

## TS4-L

### Mechanical

Ambient Temperature Range

-40 to + 85°C (-40 to +185°F)

Storage Temperature Range

-40 to + 85°C (-40 to +185°F)

Cooling Method

Natural Convection

Dimensions (with cover)

152.5 x 108 x 25 mm

Weight

550 g (1.20 lbs.)

Environmental Rating

IP65/67, NEMA 3R

### Cabling

Cabling Type

PV1-F, PV wire

Cable Length

1.0 m / other lengths per request

Connector

MC4

UV Resistance

500 hr with UVB light between 300-400 nm @ 65°C

Maximum String Voltage

1000V UL

Outer Cable Diameter

IP65/67, NEMA 3R

Wire Cross Section

4.0 mm<sup>2</sup> (12AWG)