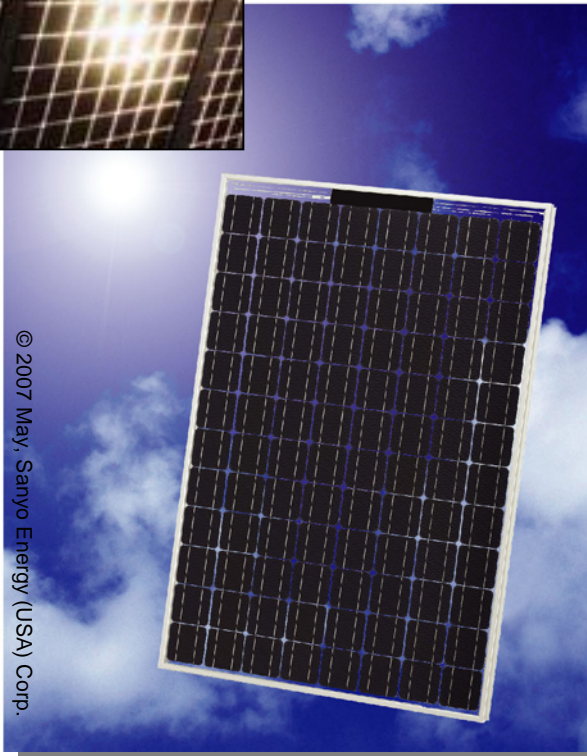


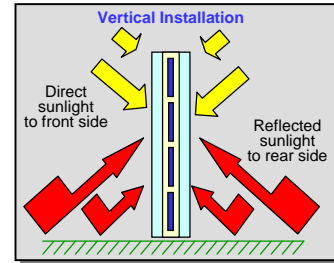
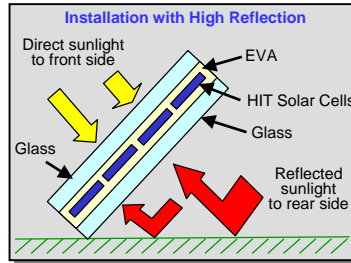
# HIT<sup>®</sup> Double BIFACIAL PHOTOVOLTAIC MODULES



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## Proprietary Technology

SANYO HIT<sup>®</sup> (Heterojunction with Intrinsic Thin layer) bifacial solar cells are hybrids of single crystalline silicon surrounded by ultra-thin amorphous silicon layers.



## Power from Both Sides

The back side of a SANYO HIT Double solar panel generates electricity from ambient light that has passed through the panel or is reflected off surrounding surfaces, while the front side operates simultaneously, which results in higher power generation compared to standard single-sided HIT panels at any angle and direction.

## Temperature Attributes

As temperatures rise, SANYO HIT Double solar panels produce more electricity than conventional crystalline silicon solar panels at the same temperature, because of their low temperature coefficient.

## High Efficiency

The SANYO HIT Double solar panels maximize power within a fixed amount of space. Depending on your installation design and location's albedo, HIT Double solar panels can capture additional back side ambient light, increasing system performance. These powerful panels are ideal for grid-connected solar systems, areas with performance based incentives, and renewable energy credits.

## Unique Structure

SANYO HIT Double solar panels have a double glass structure that enhances aesthetics and allows brilliant light and shadows to shine through the panels. The panels have a silver anodized aluminum, double-wall frame for extra strength. The panels come pre-equipped with touch-safe junction boxes, lead wires, MC<sup>TM</sup> plug-n-play connectors, and unique rails—all of which help to minimize support BOS materials, labor, installation time and costs.

## Valuable Features

SANYO HIT Double solar panels have no moving parts and weigh less than 51 pounds. The panels have a 20-Year Limited Power Output Warranty and 2-Year Limited Product Workmanship Warranty. The panels are UL 1703 safety rated for wind, hail, and fire—**Class A**. Unique eco-packaging minimizes cardboard waste at the job site.

## Quality & Ratings

SANYO's silicon wafers are manufactured in the USA, and the panels are assembled in Mexico at an ISO 9001 and 14001 certified factory. All panels undergo inspections to ensure strict compliance with electrical, mechanical, environmental, and visual criteria. SANYO's conservative power ratings, grant more kWh per rated kW, and assist with accurate predictions of performance and economics.

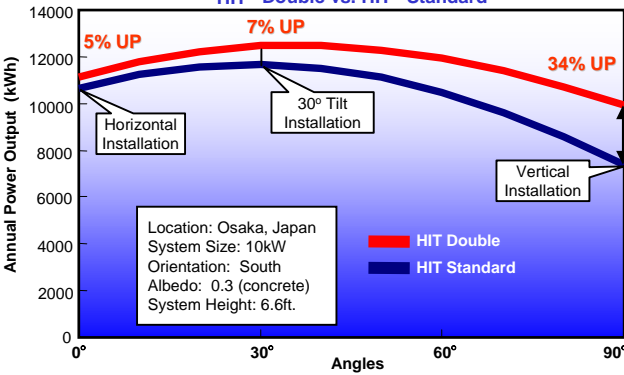
Example  
Bus Stop Shelter



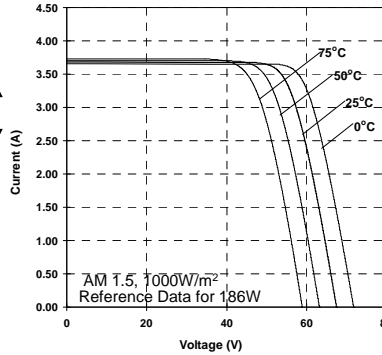
# All HIP-xxxDA3 Models



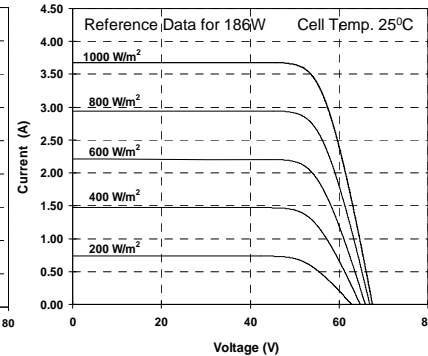
Comparison of Annual Output & Angles  
HIT<sup>®</sup> Double vs. HIT<sup>®</sup> Standard



Dependence on Temperature



Dependence on Irradiance



**IMPORTANT:** HIT<sup>®</sup> Double bifacial solar panel's *Rated Power* ( $P_{max}$ )<sup>1</sup> is measured at Standard Test Conditions (STC). STC does not include power produced from the backside bifacial effect of the panels. Bifacial panels may produce up to 130% of their STC rating, dependant upon installation design and location albedo—the site's reflectance rate. *Use caution when selecting, calculating and sizing system components, to account for the increase in power.*

## Models

### Electrical Specifications

180W 186W 190W 195W 200W

Electrical Specifications	180W	186W	190W	195W	200W	
Rated Power ( $P_{max}$ ) <sup>1</sup>	W	180	186	190	195	200
Maximum Power Voltage ( $V_{pm}$ )	V	54.4	54.8	55.3	55.8	56.2
Maximum Power Current ( $I_{pm}$ )	A	3.31	3.40	3.44	3.50	3.56
Open Circuit Voltage ( $V_{oc}$ )	V	67.0	67.5	68.1	68.7	68.8
Short Circuit Current ( $I_{sc}$ )	A	3.62	3.68	3.70	3.73	3.75
Minimum Power ( $P_{min}$ )	W	171.0	176.7	180.5	185.3	190.0
Max. System Voltage ( $V_{sys}$ )	V	600	600	600	600	600
Series Fuse Rating	A	15	15	15	15	15
Temperature Coefficient ( $P_{max}$ )	%/°C	-0.30	-0.30	-0.30	-0.29	-0.29
Temperature Coefficient ( $V_{oc}$ )	V/°C	-0.168	-0.169	-0.170	-0.172	-0.172
Temperature Coefficient ( $I_{sc}$ )	mA/°C	0.85	0.85	0.85	0.87	0.88
Electrical Tolerance	%	+10/-5	+10/-5	+10/-5	+10/-5	+10/-5
Warranted Tolerance	%	+10/-0	+10/-0	+10/-0	+10/-0	+10/-0
Cell Efficiency	%	17.8	18.4	18.8	19.3	19.7
Module Efficiency	%	14.8	15.3	15.7	16.1	16.5
Power per Square Foot	W	13.8	14.2	14.6	14.9	15.3

### Mechanical Specifications

Internal Bypass Diodes	4 Bypass Diodes
Module Area (ft <sup>2</sup> )	13.06 ft <sup>2</sup> (1.21m <sup>2</sup> )
Weight (kg)	50.7 lbs. (23kg)
Dimensions LxWxH (mm)	53.2x35.35x2.36in (1351x898x60mm)
Cable Lengths (mm)	39.4in each (1000mm)
Cable Size / Connector Type	No.12 AWG / MC <sup>TM</sup> Connectors
Static Load Wind / Snow	50PSF (2400Pa) / 39PSF (1876Pa)
Pallet Dimensions LxWxH (mm)	54.3x36x70.1in (1379x912x1781mm)
Pallet Quantity & Weight (kg)	20pcs / 1014lbs (460kg)
Qty per 20'/40'/53' Container	200pcs / 420pcs / 540pcs

### Safety Ratings & Limited Warranty

Hail Safety Impact Velocity	1" hailstone (25mm) at 52mph (23m/s)
Fire Safety Classification	Class A
Safety & Rating Certifications	UL 1703, cUL, CEC
Limited Warranties	2-Yrs Workmanship / 20-Yrs Output

<sup>1</sup>STC: Cell Temp. 25°C, AM1.5, 1000W/m<sup>2</sup>

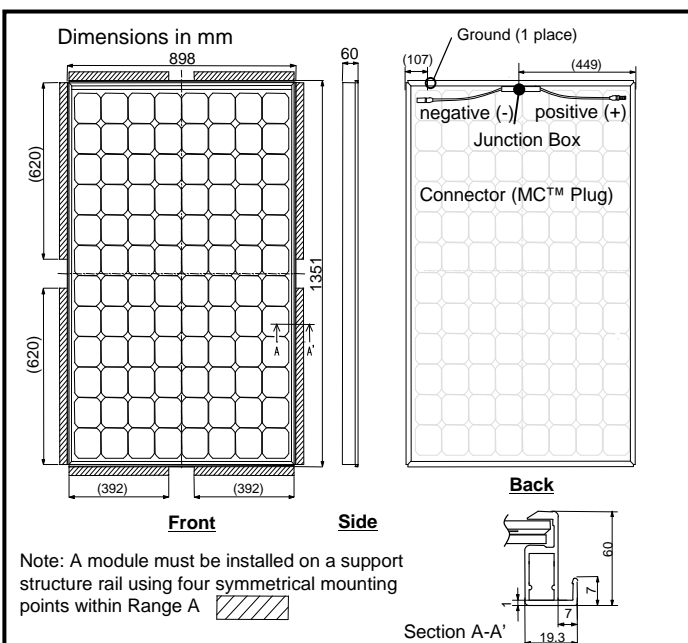
**Note:** Specifications and products above may change without notice. 5/1/07

## To Maximize Power

- Elevate panels above a surface as much as possible, to allow reflected and ambient light beneath the panels
- Place panels over light-colored surfaces
- Do not allow support rails to shade the panel's back face

## Application Possibilities

- Architectural, Awnings, Balconies, Bus Shelters, BIPV
- Deck & Porch Coverings, Canopies, Carports, Facades
- Fences, Siding, Trellises, Tracking Systems, Vertical...



Note: A module must be installed on a support structure rail using four symmetrical mounting points within Range A

**CAUTION!** Read the operating instructions carefully before use of products.

Visit [www.SANYO.com](http://www.SANYO.com) or contact an Authorized Representative for more info.