

VBMS245AE02  
VBMS240AE02

Module efficiency  
**\* 5% UP**

14.1% → 14.8%

Module output  
**\* 7% UP**

230W → 245W

Module weight  
**\* 22% lighter**

23kg → 18kg

\*compared with VBMS230AE01

### 25 year guarantee

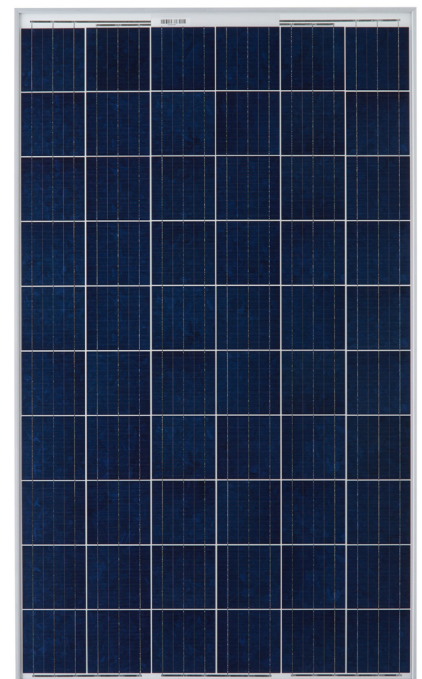
This module has a 25 year guarantee on output (10 years on 90% of Pmin, 25 years on 80% of Pmin) and a 10 year guarantee on product workmanship.

- Light capturing technology
- Reducing reflection and scattering of incoming light
  - Improving generated electricity levels in morning and evening times

### Anti-reflection glass

14.8%\*

\* For VBMS245AE02



**More than 35 years of experience in solar technology have earned us a reputation for reliability among our customers.**

- 2012** Started mass production of HIT photovoltaic modules at the factory in Malaysia
- 2009** Started production of Solar ingot and wafer at SANYO Solar of Oregon L.L.C.
- 2008** Started Shiga Plant operation.
- 2005** Started mass production of HIT photovoltaic modules at the factory in Hungary.
- 2003** 200W photovoltaic module with the world's highest\*<sup>1</sup> conversion efficiency marketed.
- 2001** SANYO Solar Ark, one of the world's largest photovoltaic power generating systems completed at Gifu Plant.
- 1997** HIT solar cells\*<sup>2</sup> marketed.
- 1994** Photovoltaic power generating system for residential use marketed.
- 1992** Japan's first installation of an on-grid photovoltaic power generating system for residential use.
- 1980** The world's first commercial production of amorphous silicon solar cells.
- 1975** Amorphous silicon solar cell development launched.



Malaysia factory



Kasai Green Energy Park



Solar Ark

\*<sup>1</sup> Highest in cell conversion efficiency of 19.7% and module efficiency of 17.0% ( as of April 1, 2003 at mass production level )

\*<sup>2</sup> HIT (Heterojunction with Intrinsic Thin-layer) hybrid solar cells are created by combining amorphous silicon and crystalline silicon and using an intrinsic semiconductor.

# Electrical and Mechanical Characteristics

## VBMS245AE02, VBMS240AE02

### Electrical data (at STC)

	VBMS245AE02	VBMS240AE02
Max. power (Pmax) [W]	245	240
Max. power voltage (Vmp) [V]	30.1	29.7
Max. power current (Imp) [A]	8.23	8.17
Open circuit voltage (Voc) [V]	37.1	36.8
Short circuit current (Isc) [A]	8.80	8.75
Conversion efficiency module [%]	14.8	14.5
Output power tolerance [%]	+10/-5*	
Max. system voltage [V]	1000	
No. of internal bypass diodes	4	

Note: Standard Test Conditions: Air mass 1.5; Irradiance = 1000W/m<sup>2</sup>; cell temp. 25°C  
\* All modules are measured with an output with positive tolerance.

### At NOCT

Max. power (Pmax) [W]	187	183
Max. power voltage (Vmp) [V]	28.1	27.7
Max. power current (Imp) [A]	6.64	6.58
Open circuit voltage (Voc) [V]	34.7	34.4
Short circuit current (Isc) [A]	7.08	7.03

Note: Nominal Operating Cell Temp.: Air mass 1.5 spectrum; Irradiance = 800W/m<sup>2</sup>;  
Air temperature 20°C; wind speed 1 m/s

Ambient temperature [°C]	-20 - +40
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### Temperature characteristics

Temperature (NOCT) [°C]	45.7°C	
Temp. coefficient of Pmax [%/°C]	-0.465	-0.465
Temp. coefficient of Voc [V/°C]	-0.128	-0.127
Temp. coefficient of Isc [mA/°C]	4.14	4.11

### Warranty (as detailed in the Warranty documentation)

Power output: 10 years (90% of Pmin), 25 years (80% of Pmin)  
Product workmanship: 10 years

### Connector

HOSIDEN HSC2009 (male), HSC2010 (female)

### Cable length (+ male / - female)

900/1200 mm

### Materials

Cell material: 6 inch cells  
Glass material: AR coated tempered glass  
Frame materials: Silver anodized aluminium

### Certificates



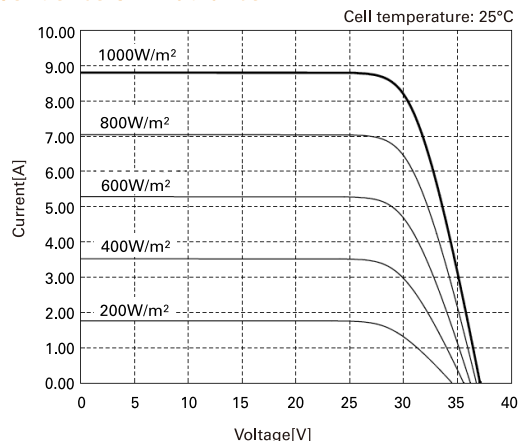
- Quality tested, IEC 61215  
- Safety tested, IEC 61730-1  
- Safety tested, IEC 61730-2



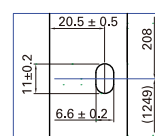
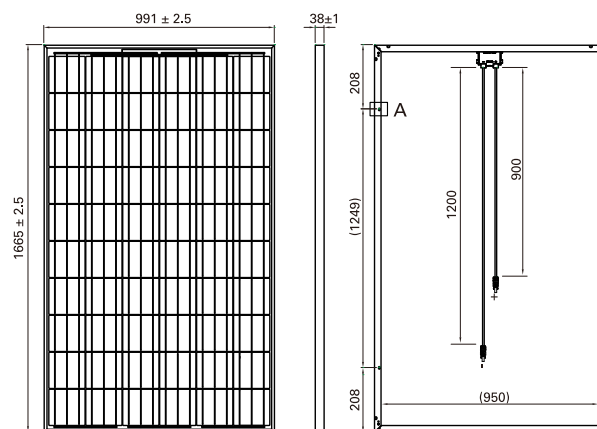
Electrical Protection  
Class II

CEC module approval certificate holder is  
SANYO Electric Co., Ltd.

### Dependence on irradiance



### Dimensions and weight



Section A

weight: 18kg  
unit: mm

### Packing Specifications

Number of modules per pallet	[pcs]	40
Number of modules per 40ft container	[pcs]	560
Number of modules per 20ft container	[pcs]	240

⚠ CAUTION! Please read the installation manual carefully before using the products.

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