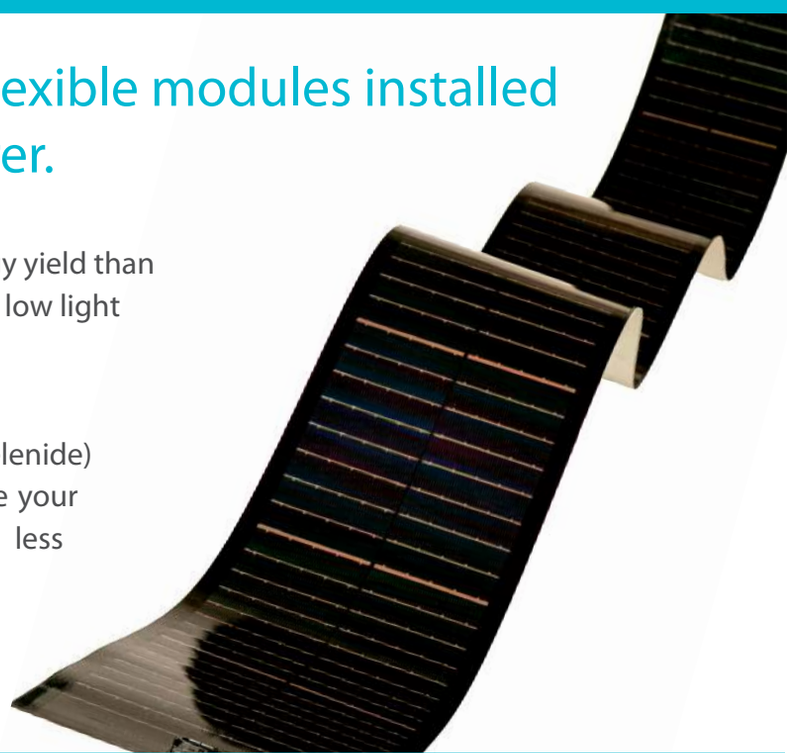
GLOBAL SOLAR®

A Hanergy Company

PowerFLEX®+ BAPV

100/105/110/115 - 200/210/220/230 - 270/285/300/315W

Global Solar Energy® has more flexible modules installed than any other CIGS manufacturer.



PowerFLEX®+ systems produce up to 4.5% higher energy yield than polycrystal silicon systems, especially in hot, overcast, or low light environments, and at higher latitudes.

Our PowerFLEX®+ CIGS (Copper Indium Gallium DiSelenide) Building Applied Photovoltaic (BAPV) systems can make your installation quicker, easier, aesthetically superior, and less costly for your commercial and industrial rooftops.

PowerFLEX®+ BAPV advantages

4.5% Higher Annual Energy Yield (kWh/kWp)

- Superior high temperature performance vs. p-Si (up to 3%)
- Performs better than p-Si in low and diffuse light conditions (up to 1%)
- Performs better than p-Si at low incidence angles (up to 0.5%)
- Superior Shade Tolerance
- 90% more efficient than flexible a-Si

Lightweight

- 3.0 kg/m^2 (0.68 lb/ft^2) including adhesive
- 110 watts/m^2
- 26% of the weight per roof area than p-Si

Rugged and Non-Breakable

- No damage from earthquakes, hail, golf balls, hurricanes, etc...
- Avoids theft and avoids vandalism
- Low profile - No added wind lift

Versatile Integration

- Fits any roof type
- Flexible and Conforming
- Can be applied to diameters as small as 50cm(20")
- Simple peel and stick application
  - No mounting or grounding hardware
  - No roof penetrations
- Low profile
  - Lays flat. No racking or ballast required
  - No added wind load nor wind lift
  - Aesthetically pleasing
  - Minimized module spacing maximizes roof coverage and power

Lower Maintenance Cost

- Requires less surface cleaning
- Soiling resistant surface
- Higher annual energy production

PowerFLEX®+ BAPV 100/105/110/115 - 200/210/220/230 - 270/285/300/315W

Electrical Specifications

Capacity rating	P max	100 W	105 W	110 W	115W	200 W	210 W	220 W	230 W	270 W	285 W	300 W	315 W
Tolerance of Pmax	W	+5/-0	+5/-0	+5/-0	+5/-0	+10/-0	+10/-0	+10/-0	+10/-0	+15/-0	+15/-0	+15/-0	+15/-0
Module aperture area efficiency	%	12.7%	13.3%	14.0%	14.6%	12.7%	13.3%	14.0%	14.6%	12.5%	13.2%	13.8%	14.5%
Rated voltage	Vmpp	32.0 V	33.1 V	34.1 V	35.1 V	64.1 V	66.2 V	68.2 V	70.1 V	86.7 V	90.0 V	93.2 V	96.3V
Rated current	Impp	3.2 A	3.2 A	3.3 A	3.3 A	3.2 A	3.2 A	3.3 A	3.3 A	3.2 A	3.2 A	3.3 A	3.3 A
Open circuit voltage	Voc	41.4 V	42.3 V	43.1 V	43.4 V	82.8 V	84.6 V	86.2 V	86.8 V	113.9 V	116.3 V	118.5 V	119.4V
Short circuit current	Isc	3.7 A	3.7 A	3.8 A	3.8 A	3.7 A	3.7 A	3.8 A	3.8 A	3.7 A	3.7 A	3.8 A	3.8 A

Note 1: Standard Test Conditions (STC): Cell Temperature at 25°C; Solar irradiance intensity of 1000 W/m^2; AM1.5 solar reference spectrum (ASTM E892)
Note 2: Average aperture efficiency is calculated using the average of rating and aperture area: 0.81m^2 for 100-115W, 1.62m^2 for 200-230W, and 2.22m^2 for 270-315W
Note 3: Electrical parameters are +/-10% unless stated otherwise

Temperature Coefficients

Maximum power	P max	-0.36%/°C
Voltage at Maximum Power	Vmax	-0.31%/°C
Open circuit voltage	Voc	-0.28%/°C
Short circuit current	Isc	+0.01%/°C

Note: Relative to Standard Test Conditions (STC): Solar irradiance intensity of 1000 W/m^2; AM1.5 solar reference spectrum (ASTM E892)

Low-Light Performance

Intensity	1000W/m^2	800W/m^2	600W/m^2	400W/m^2	200W/m^2
Relative Efficiency	100%	100.9%	101.5%	100.7%	97.1%

Note: Relative to Standard Test Conditions (STC): Cell Temperature at 25°C; AM1.5 solar reference spectrum (ASTM E892)

Mechanical Specifications

Model Numbers	FG-M6BP(M or N)-(270, 285, 300, or 315)	FG-M4BP(M or N)-(200, 210, 220, or 230)	FG-M2BP(M or N)-(100, 105, 110, or 115)
	Note: where M is for mastic or N is for no mastic, and 100, 105, 110, 115, 200, 210, 220, 230, 270, 285, 300, or 315 indicates wattage		
Dimensions	5411 x 494 x <3 mm (213 x 19.4 x <0.12 in)	3978 x 494 x <3 mm (156.6 x 19.4 x <0.12 in)	2068 x 494 x <3 mm (81.4 x 19.4 x <0.12 in)
Weight - without adhesive	6.3 kg (2.4 kg/m^2) ± 5%	4.6 kg (2.3 kg/m^2) ± 5%	2.4 kg (2.3 kg/m^2) ± 5%
Weight - with adhesive	8.1 kg (3.0 kg/m^2) ± 5%	6.0 kg (3.0 kg/m^2) ± 5%	3.1 kg (3.0 kg/m^2) ± 5%
Junction Box - Top Mounted	TE Connectivity Micro Junction Box, 4.0mm^2, 2 Double Insulated PV Cable, 1000VDC, MC4 compatable connector (IP 67 Rated)		
Top Surface Material	Low reflectivity, and soil and dust resistant ETFE		
Solar Cells	176, 128 or 64 CIGS cells (211.5 mm x 58 mm)		
Adhesive	ADCO HelioBond™ PVA 600BT butyl mastic		
Hot Spot Protection	Bypass diodes at every other cell; 1 at junction box		
Maximum Series Fuse Rating	6 Amp		

Operating Conditions

Temperature Range	-40°C to + 85°C
Maximum System Voltage	1000VDC IEC, 1000VDC UL

Certifications and Warranty*

EN 61646, EN 61730, UL 1703; Fire Rating UL790, Class C, CE Mark
Materials and workmanship - 5 years
Power output - 25 years (90% @ 10 yrs; 80% @ 25 yrs) Limited Warranty

*Contact GSE for complete warranty terms

Call Global Solar® to find out if PowerFLEX®+ BAPV is right for you.

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5-27-2018 PowerFLEX®+ datasheet 1000781 rev D