

AXIBLACK SERIES

# AXIblackbipерfect

440-450 Wp

High performance bifacial solar module  
108 halfcell, glass/glass, N-Type



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ENERGY *for a* BETTER WORLD

## AXIworldblackbip perfect GXXL 430 - 450 Wp

**Electrical data** (at standard conditions (STC) irradiance 1000 W/m², spectrum AM 1.5 at a cell temperature of 25°C)

| Type                           | AC-430TGB/108BB | AC-435TGB/108BB | AC-440TGB/108BB | AC-445TGB/108BB | AC-450TGB/108BB |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Nominal output                 | 430 Wp          | 435 Wp          | 440 Wp          | 445 Wp          | 450 Wp          |
| Nominal voltage $U_{mpp}$      | 32.83 V         | 33.03 V         | 33.24 V         | 33.45 V         | 33.66 V         |
| Nominal current $I_{mpp}$      | 13.10 A         | 13.17 A         | 13.24 A         | 13.31 A         | 13.38 A         |
| Short circuit current $I_{sc}$ | 13.88 A         | 13.95 A         | 14.02 A         | 14.09 A         | 14.16 A         |
| Open circuit voltage $U_{oc}$  | 39.44 V         | 39.64 V         | 39.84 V         | 40.04 V         | 40.24 V         |
| Module conversion efficiency   | 22.02 %         | 22.28 %         | 22.53 %         | 22.79 %         | 23.04 %         |

at BNPI test conditions: irradiance frontside 1000 W/m², backside 135 W/m², with spectrum AM 1.5 at a cell temperature of 25°C

|                                |         |         |         |         |         |
|--------------------------------|---------|---------|---------|---------|---------|
| Nominal output $P_{mpp}$       | 474 Wp  | 480 Wp  | 485 Wp  | 491 Wp  | 496 Wp  |
| Short circuit current $I_{sc}$ | 15.30 A | 15.38 A | 15.46 A | 15.54 A | 15.61 A |
| Open circuit voltage $U_{oc}$  | 39.44 V | 39.64 V | 39.84 V | 40.04 V | 40.24 V |

Bifacial coefficients:  $\phi U_{oc}$  0.98±5%;  $\phi I_{sc}$  0.80±10%;  $\phi P_{mpp}$  0.80±10%

### Design

|           |                                                  |
|-----------|--------------------------------------------------|
| Frontside | 2.0 mm low-reflection white glass                |
| Backside  | 2.0 mm glass, cell spaces black                  |
| Cells     | 108 N-Type TOPCon bifacial high efficiency cells |
| Frame     | 1.18 inch (30 mm) black aluminium frame          |

### Mechanical data

|           |                                                 |
|-----------|-------------------------------------------------|
| L x W x H | 67.80 x 44.65 x 1.18 inch (1722 x 1134 x 30 mm) |
| Weight    | 52.47 lbs (23.8 kg) with frame                  |

### Mechanical load

Design load (pressure/suction) 75.3 PSF / 33.3 PSF \*

Test load (pressure/suction) 113 PSF / 50 PSF \*

\* depending on the type of installation according to the installation instructions

### Power connection

|                |                                        |
|----------------|----------------------------------------|
| Socket         | Protection Class IP68, 3 bypass diodes |
| Wire           | 47.24 inch, AWG 12                     |
| Plug-in system | Plug/socket IP68, Stäubli MC4-EVO 2A   |

### Limit values

|                         |                                             |
|-------------------------|---------------------------------------------|
| System voltage          | 1500 VDC (UL) 1500 VDC (IEC)                |
| Module Fire Performance | TYPE 29 (UL 1703)<br>or CLASS C (IEC 61730) |
| Protection class        | C (UL790) / II                              |

NOCT (nominal operating cell temperature)\* 45°C +/-2K

Reverse current feed IR 30.0 A

Permissible operating temp. -40°C to 85°C / -40F to 185F

(No external voltages greater than  $V_o$  may be applied to the module)

\* NOCT, irradiance 800 W/m²; AM 1.5; wind speed 1 m/s; Temperature 20°C

### Temperature coefficients

|                  |           |
|------------------|-----------|
| Voltage $U_{oc}$ | -0.28 %/K |
| Current $I_{sc}$ | 0.046 %/K |
| Output $P_{mpp}$ | -0.31 %/K |

### Low-light performance without Bifacial-effect

(Example for AC-450TGB/108BB)

| I-U characteristic curve | Current $I_{pp}$ | Voltage $U_{pp}$ |
|--------------------------|------------------|------------------|
| 200 W/m²                 | 2.73 A           | 32.39 V          |
| 400 W/m²                 | 5.52 A           | 32.77 V          |
| 600 W/m²                 | 8.24 A           | 33.02 V          |
| 800 W/m²                 | 10.90 A          | 33.31 V          |
| 1000 W/m²                | 13.38 A          | 33.66 V          |

### Packaging

|                                |     |
|--------------------------------|-----|
| Module pieces per pallet       | 36  |
| Module pieces per HC-container | 936 |

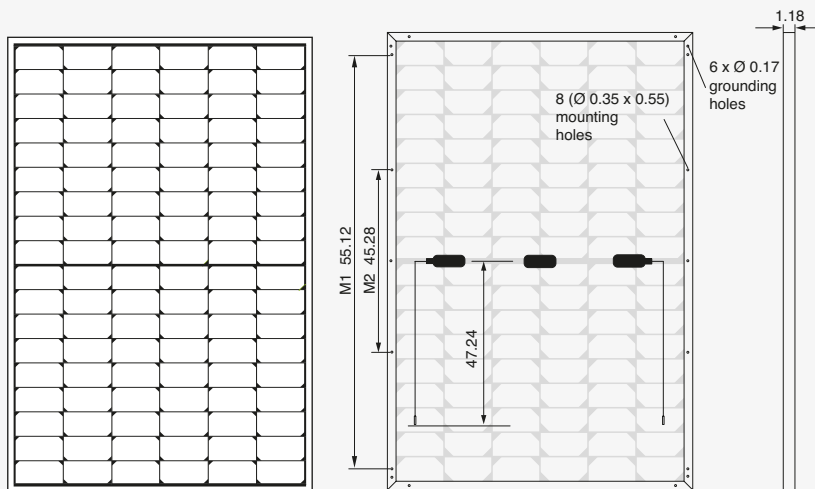


Fig. principle sketch

All dimensions in inch