

# MiaSolé MS SERIES -02

## CIGS Modules: Delivering c-Si Performance with Thin Film

135W – 155W MODULES WITH EFFICIENCIES UP TO 14.5%

### SUPERIOR PROJECT RETURNS

- ▶ Low Voc enables up to 30 modules per 1000V string; 25A fuse rating allows two strings to be combined in parallel
- ▶ Corner junction boxes reduce install labor and eliminate cable tie downs
- ▶ Frameless design eliminates need for module grounding
- ▶ Better ground coverage ratios and increased energy in partial shading due to embedded bypass diodes
- ▶ Higher output due to +5/-0 watts positive binning

### RELIABLE PERFORMANCE

- ▶ Innovative UltraWire™ creates fault tolerant, low resistance interconnect
- ▶ Unique weather protection system provides optimum defense against adverse weather, humidity and mechanical damage
- ▶ Rigorous test-to-fail philosophy; thermal tested to 1400 cycles; damp heat tested to 7000 hours for moisture barrier
- ▶ Ten-year product warranty and 5/10/25 year warranty against power loss
- ▶ Dual tempered glass ensures extremely low breakage

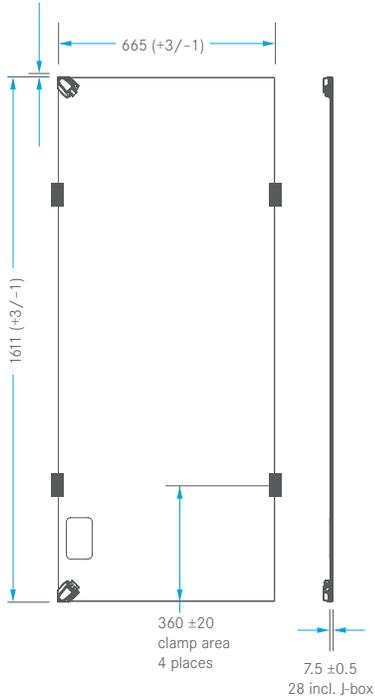
### SAFETY AND ENVIRONMENT

- ▶ Sophisticated and comprehensive quality management system
- ▶ Fully equipped UL certified internal test facilities
- ▶ Fully automated factory ensures repeatable build quality
- ▶ Three month energy payback

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2.4 (+2/0) J-Box extension beyond glass edge



MiaSolé will evaluate alternate clamping solutions upon customer request. All dimensions in millimeters.

## ELECTRICAL PERFORMANCE AT STC<sup>1</sup>

|                                 |           |     | MS135GG-02 | MS140GG-02 | MS145GG-02 | MS150GG-02 | MS155GG-02 |
|---------------------------------|-----------|-----|------------|------------|------------|------------|------------|
| Nominal Power                   | $P_{MPP}$ | [W] | 135        | 140        | 145        | 150        | 155        |
| Power Output Tolerance          |           | [W] | +5/-0      | +5/-0      | +5/-0      | +5/-0      | +5/-0      |
| Maximum Power Voltage           | $V_{MPP}$ | [V] | 23.0       | 23.0       | 23.0       | 23.0       | 23.1       |
| Maximum Power Current           | $I_{MPP}$ | [A] | 5.87       | 6.09       | 6.30       | 6.52       | 6.71       |
| Open Circuit Voltage            | $V_{OC}$  | [V] | 29.0       | 29.0       | 29.0       | 29.0       | 29.1       |
| Short Circuit Current           | $I_{SC}$  | [A] | 6.80       | 6.92       | 7.12       | 7.28       | 7.47       |
| Maximum Series Fuse Rating      |           | [A] | 25         |            |            |            |            |
| Maximum System Voltage (IEC/UL) |           | [V] | 1000/600   |            |            |            |            |

<sup>1</sup>Standard Test Conditions (STC): 1000 W/m<sup>2</sup>, 25°C cell temperature, AM 1.5 spectrum

## ELECTRICAL PERFORMANCE AT NOCT<sup>2</sup>

|                       |           |     | MS135GG-02 | MS140GG-02 | MS145GG-02 | MS150GG-02 | MS155GG-02 |
|-----------------------|-----------|-----|------------|------------|------------|------------|------------|
| Nominal Power         | $P_{MPP}$ | [W] | 95.6       | 99.3       | 102.1      | 107.3      | 109.9      |
| Maximum Voltage       | $V_{MPP}$ | [V] | 20.4       | 20.5       | 20.6       | 20.7       | 20.8       |
| Maximum Current       | $I_{MPP}$ | [A] | 4.69       | 4.84       | 4.97       | 5.19       | 5.28       |
| Open Circuit Voltage  | $V_{OC}$  | [V] | 26.2       | 26.3       | 26.2       | 26.3       | 26.3       |
| Short Circuit Current | $I_{SC}$  | [A] | 5.44       | 5.54       | 5.70       | 5.83       | 5.98       |

<sup>2</sup>Nominal Operating Cell Temperature (NOCT): 800 w/m<sup>2</sup>, 20°C ambient temperature, 1 m/s wind speed  
Power measurement uncertainty is within ±3% using best in Class AAA solar simulator.

## THERMAL CHARACTERISTICS

|                                      |        |        |
|--------------------------------------|--------|--------|
| NOCT                                 | [°C]   | 49     |
| Temperature Coefficient of $P_{MPP}$ | [%/°C] | -0.45  |
| Temperature Coefficient of $V_{OC}$  | [%/°C] | -0.36  |
| Temperature Coefficient of $I_{SC}$  | [%/°C] | -0.003 |

## PHYSICAL AND MECHANICAL SPECIFICATIONS

|                                     |  |
|-------------------------------------|--|
| Length                              | 1611 mm (63.4 in)  |
| Width                               | 665 mm (26.2 in)   |
| Depth                               | 7.5 mm (0.3 in); 28 mm (1.1 in) including junction box             |
| Weight                              | 18 kg (39.7 lbs)   |
| Junction Box / Output Terminal Type | 2 corner connection boxes / MC4 type                               |
| Cell Type                           | Copper Indium Gallium Diselenide (CIGS)                            |
| Maximum Load                        | Tested snow load: 5400 N/m <sup>2</sup>                            |
| Warranty Term                       | 5/10/25 year power output, 10 year workmanship                     |
| Certifications                      | IEC 61646, IEC 61730 (Application Class A), UL 1703 (Fire Class A) |

<sup>3</sup>Please see full warranty for details.



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Silicon Valley, USA

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