

BLACK FRAME

450W

PERC
TECHNOLOGY

KEY FEATURES



10 years
**Product
Warranty**



25 years
**Performance
Warranty**



Cell efficiency
up to **2.5 %**



Module
efficiency
up to

20.58 %



Heavy snow load
up to **5,400 Pa**



Wind load
up to **2,400 Pa**



PID Free



ELECTRICAL PARAMETERS

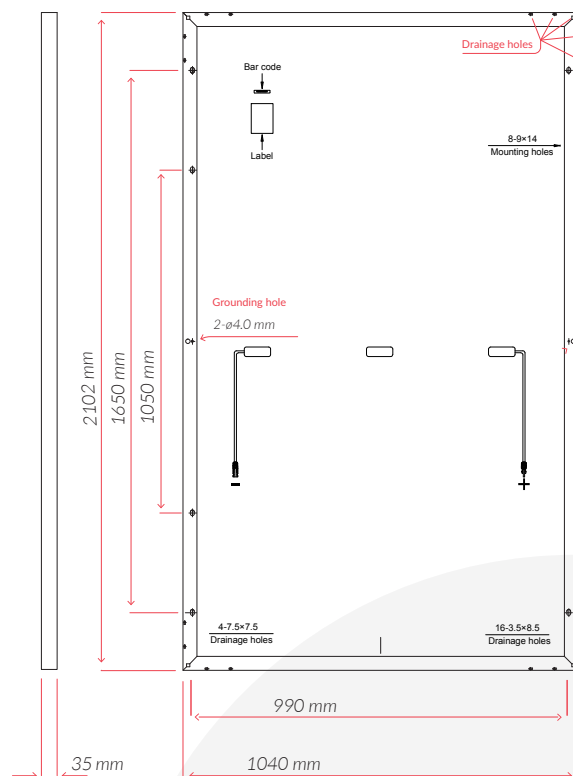
| | |
|--------------------------------|----------------------------------|
| Model | IBS144M-450BF Black Frame |
| Maximum Power (Pmax/W) | 450 |
| Operating Voltage (Vmpp/V) | 41.8 |
| Operating Current (Impp/A) | 10.77 |
| Open-Circuit Voltage (Voc/V) | 50.2 |
| Short-Circuit Current (Isc/A) | 11.28 |
| Module Efficiency η_m (%) | 20.58 |
| Power Tolerance | 0+5 Wp |
| NOCT | 43°C±2°C |

Values at Standard Test Conditions STC (AM 1.5, Irradiance 1000 W/m², Cell Temperature 25°C)

SPECIFICATIONS

| | |
|--------------------------|--------------------------------------|
| Cell Type | Mono Crystalline PERC |
| Cells size | 166x83mm |
| Number of cells | 144 (6x24) |
| Weight | 24.0 kg |
| Front side glass | 3,2 mm hardened solar tempered glass |
| Dimensions | 2,102x1,040x35 mm |
| Cable length | 1,400 mm |
| Cable cross section size | 4 mm ² |
| Number of bypass diodes | 3 |
| Connectors | MC4 connectable |
| Frame | Anodized Aluminium Alloy |
| Junction Box | IP68 |

ENGINEERING DRAWINGS



WORKING CONDITIONS

| | |
|-------------------------|--------------------------------------|
| Maximum System Voltage | DC 1,000 V (IEC) / 1,500 V available |
| Operating temperature | -40°C / +85° C |
| Maximum reverse current | 20A |
| IP protection level | IP68 |
| Safety class | II |

TEMPERATURE COEFFICIENTS

| | |
|---------------------------------------|------------|
| Power temperature coefficient (Pmax) | -0,36 %/°C |
| Voltage temperature coefficient (Voc) | -0,28 %/°C |
| Current temperature coefficient (Isc) | +0,05 %/°C |



PACKAGING INFORMATION (I)

| | |
|------------------|----------------------|
| Pallet dimension | 2,120/1,150/1,130 mm |
| Pallet weight | 770 kg |
| Modules/pallet | 31 |

PACKAGING INFORMATION (II)

| | | | |
|-----------------------|-------|-----------|------------|
| Container | 20 GP | 40 HQ (I) | 40 HQ (II) |
| Pallets per container | 5 | 22 | 22 |
| Pieces per container | 155 | 682 | 715 |

PARTNERS