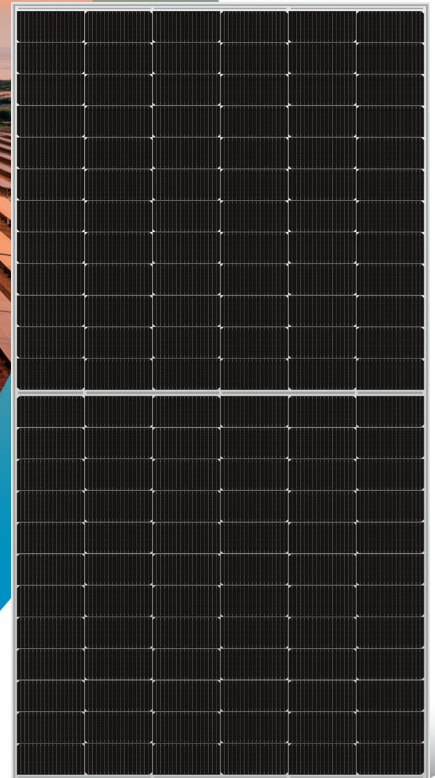




YOUR RELIABLE  
PARTNER FOR  
SOLAR ENERGY  
SINCE 1992



# EMMVEE CRAFTING SMART AND ADVANCED SOLAR ENERGY SOLUTIONS



## TITANIUM BLACK

N-TYPE MONOFACIAL GLASS TO BLACK BACK SHEET MODULE



Committed to Quality, Punctuality, and Customer Support since 1992.



Over 15 Years of Sustainable Power with Photovoltaic Modules, New High WP Modules United with Quality and Efficiency



With presence in Green Energy Projects Across the Globe



Our Mission: Delivering Clean, Reliable Energy while Reducing Carbon Footprint through wide range of Residential and Commercial Solar Offerings.

# 120 CUT CELL N-TYPE MONOFACIAL GLASS TO BLACK BACK SHEET MODULE

## TECHNICAL SPECIFICATION

Electrical data at 1000W/m<sup>2</sup>, 25°C and A.M1.5 (STC in accordance with IEC 60904-3)

Model Name	E465HCM120-BT	E470HCM120-BT	E475HCM120-BT	E480HCM120-BT	E485HCM120-BT
Rated Power at STC	465	470	475	480	485
Power Tolerance	+5W	+5W	+5W	+5W	+5W
Module Efficiency at STC	21.50%	21.70%	22.00%	22.20%	22.40%
Open Circuit Voltage-VOC(Volts)(±10%)	42.68	42.82	42.01	43.18	43.32
Short Circuit Current-ISC (AMPS)(±10%)	13.74	13.81	13.88	13.94	14.02
Max Power Voltage-VPM(Volts)	35.71	35.91	36.12	36.34	36.51
Max Power Current-IPM (AMPS)	13.02	13.09	13.15	13.21	13.12

At low irradiance (200W/M<sup>2</sup>, 25°C and AM1.5) the module yields at least 95% of the STC efficiency.

Test uncertainty for Pmax ±3%

### Permissible Operating Conditions

Operating Temperature Range	-40° C TO 85° C
Max.system Voltage	1500V DC
Maximum Snow Load Capacity	5400PA
Resistance Against Hail	MaxØ24mm With Impact Speed of 51 Mph
Protection Class Against Electrical Shock	II
Maximum Reverse Current	30 A

### Thermal Data

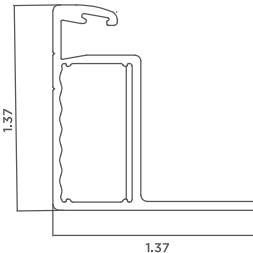
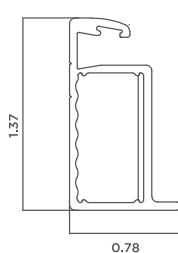
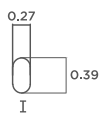
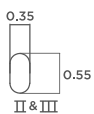
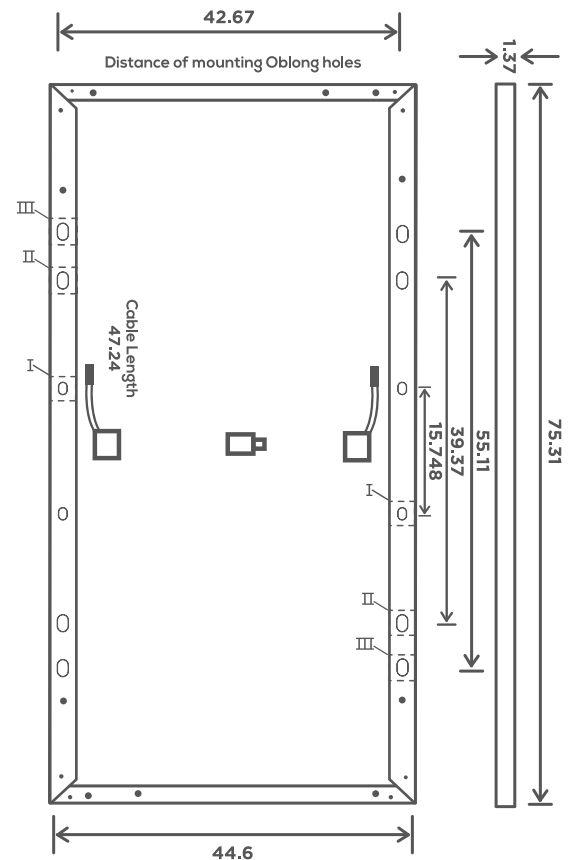
Temp. Coefficient Open-circuit Voltage	-0.25%/°C
Temp. Coefficient Short Circuit Current	0.045%/°C
Temp. Coefficient Rated Power	-0.29%/°C
NOCT (Normal operating cell temperature)	45°C ±2°C

### Mechanical Data

Number of Cells and Cell Type	120Topcon Solar Cells (182mm X 91mm)
Dimensions: (L X W X H)	75.31 inch X 44.65 inch X 1.38 inch
Weight	52.91 Pounds
Front Glass	3.2 mm High Transmission, Solar Glass
Embedding	EVA/POE/EPE
Back Sheet	Black Back sheet
Junction Box	3 Split Junction Box IP68
Number of Bypass Diodes	3
Cables	4mm <sup>2</sup> Solar Cables, Length 47.24 inch
Connectors	mc4 Compatible, Staubli Option Available

### Warranty

Product Warranty	12 years
Performance Warranty	25 years

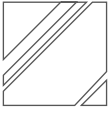


1ST YEAR DEGRADATION 1.0%

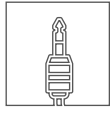
YEAR 2-25 POWER DEGRADATION 0.40%

END OF 25 YEARS 89.40%

# FEATURES



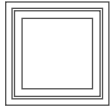
AR Coated High Transmission Glass



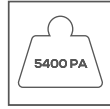
MC4 Compatible Connectors



PID Resistance



Anodised Aluminium Frame

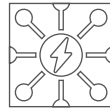


Snow Load Resistance upto 5400 Pa

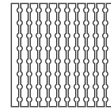
# BENEFITS



Low LCOE, Faster Payback Period



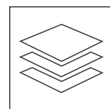
Best In Class Efficiency upto 23%



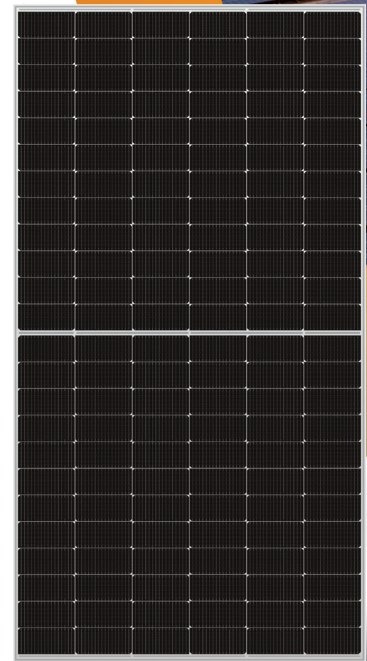
Multi-Bus Bar Technology for Better Current Collection



Lowest Guaranteed First Year and Annual Degradation



Well-Composed Components Stress to Reduce Micro Cracks



## EMMVEE PHOTOVOLTAIC POWER PRIVATE LIMITED

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(An ISO 9001:2015, ISO 14001:2015 & OHSAS 45000:2018 Certified Company)