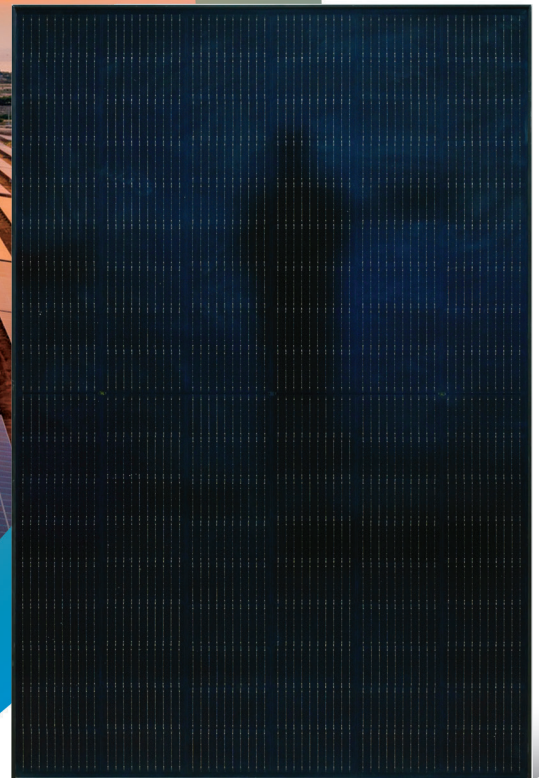




YOUR RELIABLE
PARTNER FOR
SOLAR ENERGY
SINCE 1992



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/m², 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/M², 25°C and AM1.5) the module yields at least 95% of the STC efficiency.

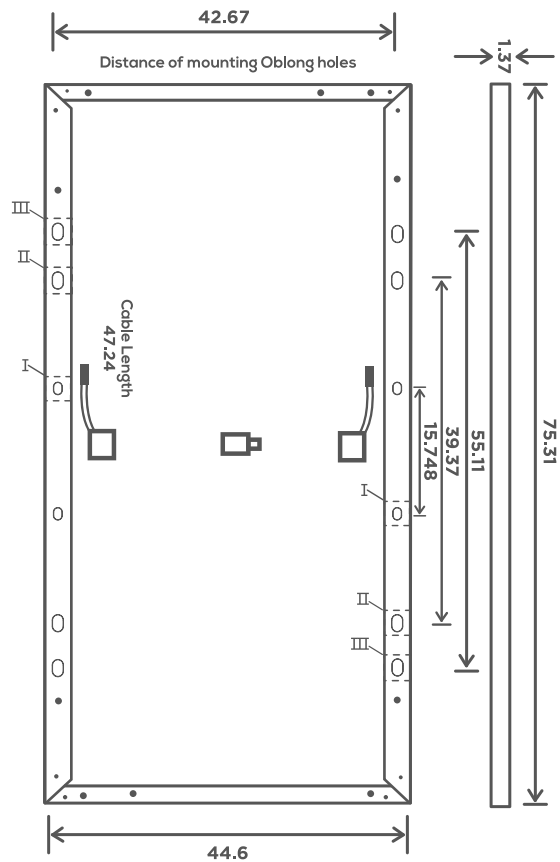
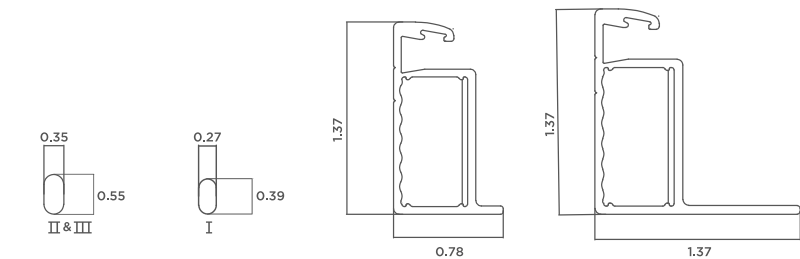
Test uncertainty for Pmax ±3%

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	4mm² 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%
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108 CUT CELL N-TYPE MONOFACIAL GLASS TO BLACK BACK SHEET MODULE

TECHNICAL SPECIFICATION

Electrical data at 1000W/m², 25°C and A.M1.5 (STC in accordance with IEC 60904-3)

Model Name	E415HCM108-BT	E420HCM108-BT	E425HCM108-BT	E430HCM108-BT	E435HCM108-BT
Rated Power at STC	415	420	425	430	435
Power Tolerance	+5W	+5W	+5W	+5W	+5W
Module Efficiency at STC	21.30%	21.50%	21.80%	22.00%	22.30%
Open Circuit Voltage-VOC(Volts)(±10%)	38.35	38.5	38.64	38.9	39.06
Short Circuit Current-ISC (AMPS)(±10%)	13.65	13.73	13.78	13.83	13.19
Max Power Voltage-VPM(Volts)	31.95	32.16	32.39	32.6	32.81
Max Power Current-IPM (AMPS)	12.99	13.09	13.12	13.19	13.26

At low irradiance (200W/M², 25°C and AM1.5) the module yields at least 95% of the STC efficiency.

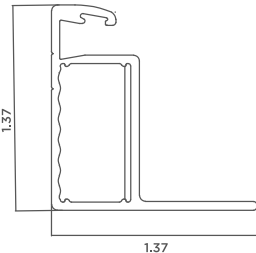
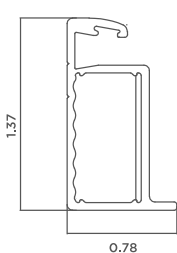
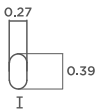
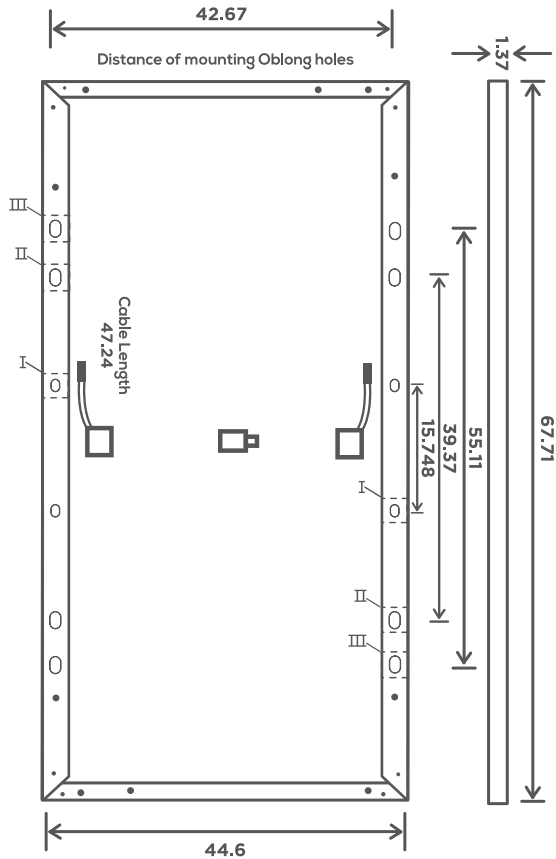
Test uncertainty for Pmax ±3%

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	108 Topcon solar cells (182x91mm)
Dimensions: (L X W X H)	67.71 inch x 44.64 inch x 1.37 inch
Weight	44.09 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	4mm² Solar Cables, Length 47.24 inch
Connectors	mc4 Compatible, Staubli Option Available

Warranty	
Product Warranty	12 years
Performance Warranty	25 years

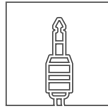


1ST YEAR DEGRADATION	1.0%	YEAR 2-25 POWER DEGRADATION	0.40%	END OF 25 YEARS	89.40%
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FEATURES



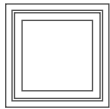
AR Coated High
Transmission
Glass



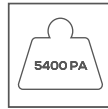
MC4
Compatible
Connectors



PID
Resistance



Anodised
Aluminium
Frame

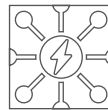


Snow Load
Resistance
upto 5400 Pa

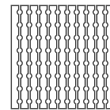
BENEFITS



Low LCOE,
Faster Payback
Period



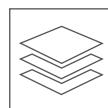
Best In Class
Efficiency
upto 23%



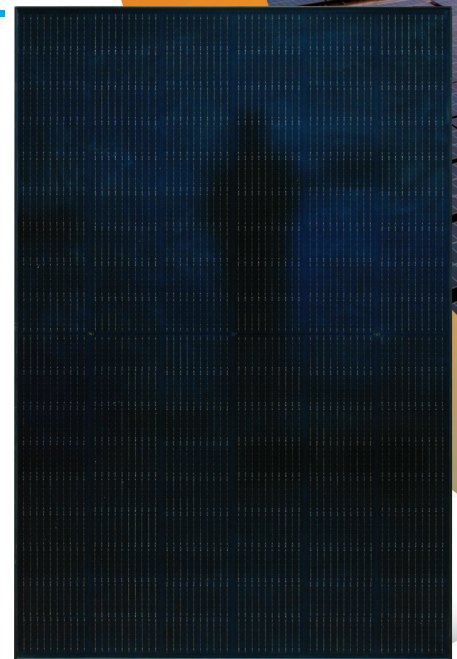
Multi-Bus Bar
Technology for
Better Current
Collection



Lowest
Guaranteed First
Year and Annual
Degradation



Well-Composed
Components
Stress to Reduce
Micro Cracks



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