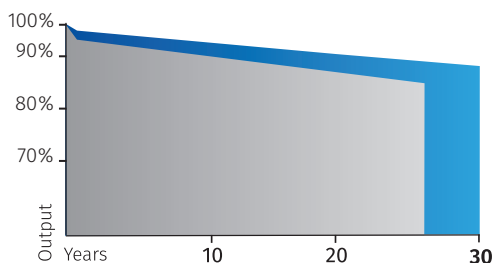


FU 460/465/470/475/480 MVL Velvet Pro Bifacial Heterojunction half-cut cells

PERFORMANCE GUARANTEE

Max power decrease from 2nd year 0.4%/year
99% at the end of first year
91% at the end of 20th year
88% at the end of 30th year



Market standard performances
FuturaSun performances

CERTIFICATIONS

IEC 61215:2016 - IEC 61730:2016
Fire Resistance - Class C

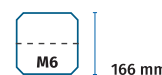


460 - 480 Wp

POWER RANGE

-0.26 %/°C

TEMPERATURE COEFFICIENT



144 BIFACIAL HJT HALF-CUT MBB CELLS

GENERAL FEATURES & KEY BENEFITS



· 30-year performance guarantee & 15-year product warranty

· Half-cut design in combination with multi-busbar reduces operating current and internal resistance

· Superior module efficiency up to 22.1 % equal to 221.0 Wp/m²



· Excellent temperature coefficient -0.26 %/°C

· Up to 85% bifaciality factor



· Mechanically strong thanks to the dual glass configuration that moreover reduces the risk of microcracks

· Better colour uniformity, particularly on the rear, thanks to additional TCO layers



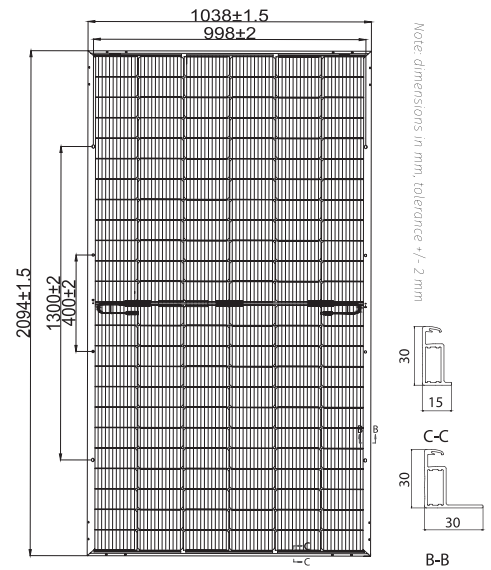
· Resistant to LID (Light Induced Degradation)

· Improved low light performance



MECHANICAL SPECIFICATIONS

Dimensions	2094 x 1038 x 30 mm
Weight	27.5 kg
Glass	Front - 2.0 mm Solar glass with ARC Back - 2.0 mm Solar glass with white grid
Cells	144 half-cut bifacial HJT cells 166 x 83 mm
Bifaciality	80 ± 5 %
Frame	Anodized aluminium frame with mounting and drainage holes
Junction box	Certified according to IEC 62790, IP67 / IP68 approved, 3 bypass diodes
Cables	Solar cable, length 1300 mm length or customized assembled with 4 mm ² compatible connectors
Maximum reverse current (I _r)	20 A
Maximum system voltage	1500 V
Mechanical load (snow)	Design load: 3600 Pa 5400 Pa (including safety factor 1.5)
Mechanical load (wind)	Design load: 1600 Pa 2400 Pa (including safety factor 1.5)
Protection Class	II - accordance to IEC 61730



ELECTRICAL DATA - STC*

		FU 460 MVL	FU 465 MVL	FU 470 MVL	FU 475 MVL	FU 480 MVL
Module power (P _{max})	W	460	465	470	475	480
Open circuit voltage (V _{oc})	V	53.21	53.34	53.49	53.62	53.76
Short circuit current (I _{sc})	A	10.59	10.65	10.71	10.75	10.81
Maximum power voltage (V _{mpp})	V	45.23	45.46	45.65	45.87	46.11
Maximum power current (I _{mpp})	A	10.18	10.23	10.31	10.36	10.41
Module efficiency	%	21.2	21.4	21.6	21.9	22.1

BIFACIAL STANDARD TEST CONDITIONS - BSTC**

		FU 460 MVL	FU 465 MVL	FU 470 MVL	FU 475 MVL	FU 480 MVL
Module power (P _{max})	W	514	519	523	528	532
Open circuit voltage (V _{oc})	V	54.32	54.74	55.34	55.92	56.53
Short circuit current (I _{sc})	A	11.52	11.56	11.62	11.66	11.69
Maximum power voltage (V _{mpp})	V	46.19	46.39	46.59	46.81	47.02
Maximum power current (I _{mpp})	A	11.14	11.19	11.23	11.28	11.33

TEMPERATURE RATINGS

Temperature coefficient I _{sc}	%/°C	0.04
Temperature coefficient V _{oc}	%/°C	-0.24
Temperature coefficient P _{max}	%/°C	-0.26
NOCT	°C	44 ± 2
Operating temperature	°C	from -40 to 85

PACKAGING INFORMATION

Quantity / Pallet	36 pcs
Container 40' HQ	792 pcs / 22 pallets

*Standard Test Conditions STC: 1000 W/m² - AM 1,5 - 25 °C - tolerance: P_{max} (±3%), V_{oc} (±4%), I_{sc} (±5%).

**Bifacial Standard Test Conditions (BSTC) Front side irradiation 1000 Wp / sqm Back side reflection irradiation 135 Wp / sqm Ambient temperature 25 °C.

*Notice: All data and specifications are preliminary and subject to change without notice.

