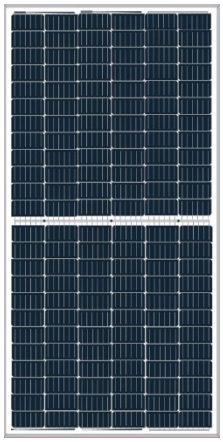


Picture shown may not reflect actual configuration

PVC430-460 MP03 H Monocrystalline Halfcut Photovoltaic Module

The monocrystalline halfcut PV (photovoltaic) modules feature high efficiency low LID (light-induced- degradation) Mono PERC (passivated emitter rear cell) technology and provide excellent performance under low temperature or low light environment. The modules provide high power output at high levels of reliability.

Features

Proven Energy Yield

- 19.8% to 21.2% efficiency
- Power tolerance 0~3%

Excellent Performance in Low Irradiance

- Outstanding power output in low irradiance conditions such as dawn, dust, and cloudy days.
- Reduced resistive loss with lower operating current.
- Higher energy yield with lower operating temperature.
- Reduced hot spot risk with optimized electrical design.

Anti-PID

- Anti-PID (Potential-induced degradation) techniques for processing solar cells and encapsulation of modules applied.

Adaptability to Harsh Environments

- Excellent anti-salt mist and anti-ammonia capability; adaptable to harsh environments such as seaside and farms.

Robust Frame

- Robust module construction enables installed module to withstand 5400 Pa front side static loading and 25 mm hail impact at 23 m/s.

Built with Higher Quality Material

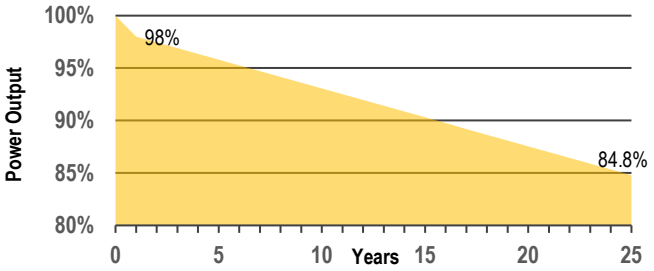
- Cat® PV modules are highly durable, providing higher reliability and more confidence in long term performance.
- The bill of materials (BOM) for modules manufactured for US and Canada markets have been qualified by independent labs through extended durability tests that are significantly more stringent than normal IEC/UL certification requirements as shown below:

DURABILITY TEST CYCLE				
Accelerated Tests	Competitor Products *	Cat Product		Cat Product Advantage
		Outside US§	US	
Light Induced Degradation (LID)	Not required	Not required	60-100 kWh/m²	Validation of early hour performance
Light and elevated temp. degradation (LeTID)	Not required	Not required	Pass Proprietary test	Validation of long term PERC performance
Salt mist	Not required	Pass IEC test	Pass IEC test	Validated for use in harsh environment
Ammonia	Not required	Pass IEC test	Pass IEC test	
Dust and Sand	Not required	Pass IEC test	Pass IEC test	
Damp Heat	1000 hrs.	1000 hrs.	2000 hrs.	2x testing hrs.^
Thermal Cycling	200 cycles	200 cycles	600 cycles	3x testing cycles ^
PID (85ºC/85RH)	96 hrs.	96 hrs.	192 hrs.	2x testing hrs.^
Mechanical load**	Static	Static	Dynamic + Thermal Cycle + Humidity Freeze	Much less cell breakage and power loss^

* Certified to minimum IEC/UL standards
** Dynamic Mechanical Load Test: The only mechanical test in IEC 61215 is a static mechanical load test that is performed after the accelerated stress tests.
^ US
§ US product is available outside US on request

Module Warranty

• 12-year warranty for materials and processing
• 25-year warranty for linear power output. Produces more than 98% power in the first year, then declining by 0.55% per year, ending at 84.8% power after 25 years.



Worldwide Product Support

• Cat® dealers have over 1,800 dealer branch stores operating in over 200 countries.
• Your local Cat dealer provides extensive pre-sale and post-sale support, including design consultation, service contracts, and all maintenance agreement.

Standards

- IEC 61215
- IEC 61730 Class C according to UL790
- UL 61730, Type 29 fire rating
- IEC 61701, Salt mist corrosion test
- IEC 62716, Ammonia corrosion test
- IEC 60068, Dust and Sand test
- ISO 9001:2015: ISO Quality Management System
- ISO 14001:2015: ISO Environment Management System
- TS62941: Guideline for module design qualification and type approval
- ISO 45001:2018 Occupational Health and Safety

Certifications

• Available listing: TUV SUD, CSA, CE

MODULE RATING†		*Test uncertainty for P_{MAX}: ± 3%*													
Model‡	**PVC**	**430 MP03 H**		**435 MP03 H**		**440 MP03 H**		**445 MP03 H**		**450 MP03 H**		**455 MP03 H**		**460 MP03 H**	
Test Conditions		STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Power (-0/+5W)	P_{MPP} (W)	430	321.1	435	324.9	440	328.6	445	332.3	450	336.1	455	339.8	460	343.5
Voltage at P_{MAX}	V_{MPP} (V)	40.7	37.9	40.9	38.1	41.1	38.3	41.3	38.5	41.5	38.6	41.7	38.8	41.9	39.0
Current at P_{MAX}	I_{MPP} (A)	10.57	8.47	10.64	8.53	10.71	8.59	10.78	8.64	10.85	8.70	10.92	8.75	10.98	8.80
Open Circuit Voltage (± 3%)	V_{OC} (V)	48.5	45.5	48.7	45.7	48.9	45.8	49.1	46.0	49.3	46.2	49.5	46.4	49.7	46.6
Short Circuit Current (± 3%)	I_{SC} (A)	11.31	9.15	11.39	9.21	11.46	9.27	11.53	9.33	11.60	9.38	11.66	9.43	11.73	9.48
Module Efficiency	%	19.8		20.0		20.2		20.5		20.7		20.9		21.2	
Maximum System Voltage	V_{SYS} (V)	DC 1500 V													
Maximum Series Fuse	I_{CF} (A)	20A													
Standard Test Conditions	STC	Irradiance 1000W/m2, Spectra AM 1.5, cell temperature 25°C													
Nominal Operating Cell Temp.	NOCT	Irradiance 800W/m2, 20°C air temperature, Spectra AM 1.5, 1m/s wind speed.													

TEMPERATURE CHARACTERISTICS	(STC)	
Module Operating Temp. Range	(°C)	-40 to +85
Temperature Coefficient of P_{MPP}	$T_K(P_{MPP})$	-0.340%/°C
Temperature Coefficient of V_{OC}	$T_K(V_{OC})$	-0.265%/°C
Temperature Coefficient of I_{SC}	$T_K(I_{SC})$	+0.050%/°C

MECHANICAL LOADS	
Front Side Max Static Load	5400 Pa
Rear Side Max Static Load	2400 Pa
Hailstone Test	25 mm hailstone at 23 m/s

† Listed ratings are dependent on project time frames and may not all be available, consult and confirm module rating availability with factory.

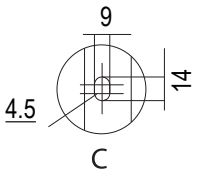
‡ Models and ratings are subject to change without notice and may vary by territory.

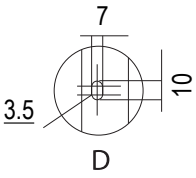
MECHANICAL DETAILS	
Cell Type	Monocrystaline, 144 cells per panel
Junction Box	IP68, three diodes
Application Safety Class	Class II (per IEC 61140)
Single Glass	3.2 mm coated tempered
Frame Material	Anodized Aluminum Alloy

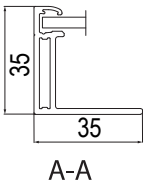
DIMENSION DETAILS		
Length	2094 mm	(82.4 in)
Width	1038 mm	(40.9 in)
Thickness	35 mm	(1.4 in)
Weight	24.3 kg	(53.6 lbs.)
Packaging Information:		
Modules per pallet	30 per pallet	
Modules per container	660 per 40' High Cube	

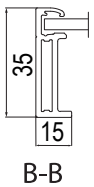
Country of Manufacture:	China	Vietnam
Leadwire 4 mm^2	+400 mm/-200 mm	+400 mm/-200 mm or +1400 mm/-1400 mm
Connectors	LONGi PV-LR5	Stäubli MC4 EVO2, LONGi PV-LR5

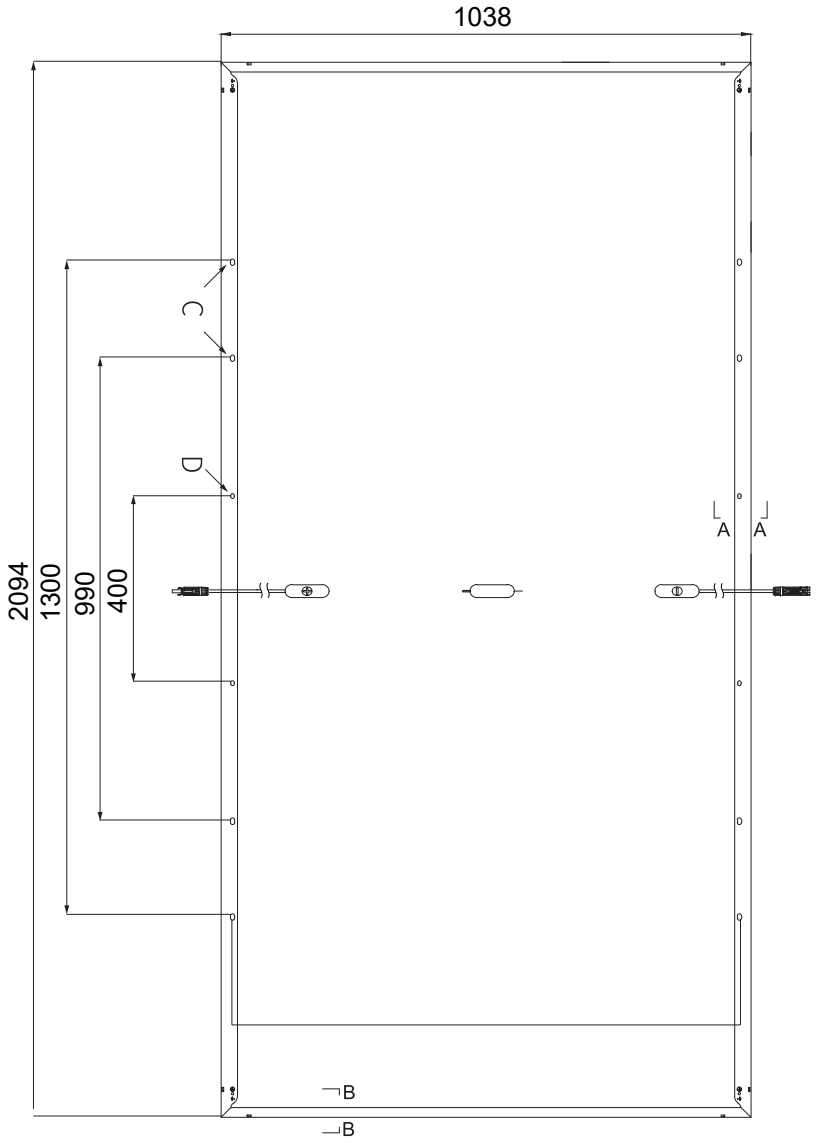
Units: mm
Tolerance:
Length: ± 2 mm
Width: ± 2 mm
Height: ± 1 mm
Pitch-row: ± 1 mm











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