

Puma Series

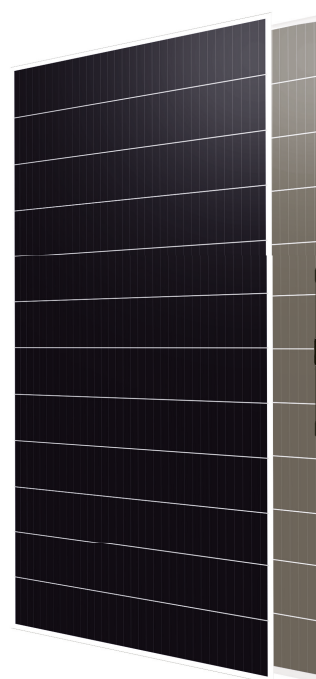


Superior Performance and Reliability

Shingled technology eliminates traditional ribbon connection with shingles connected in series. By removing the soldered ribbons, the active area of the module is improved and thermal stresses are reduced - resulting in exceptional efficiency and reliability over standard interconnections.

Key Benefits

	Higher yield per surface area		Higher Light Conversion
	Higher yield in hot climate		25 Years Limited Product Warranty
	Low LCOE		Low Resistive Losses



Outstanding performance under extreme heat as well as low intensity solar radiation



Industry leading low Pmax thermal coefficient



Positive Tolerance

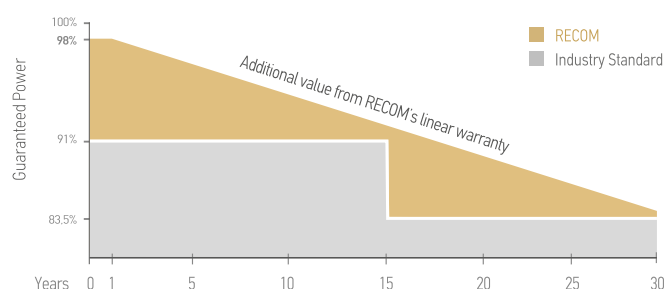


100 % electro-luminescence tested

Tests, Certifications and Warranties

Standard Tests	IEC 61215, IEC 61730
Factory Quality Tests	ISO 9001: 2015, ISO 14001: 2015
Certifications	Conformity to CE, PV CYCLE
Insurance	Product liability insurance provided by Allianz
Wind and Snow Loads Testing	Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal)
Power Tolerance	Guaranteed +0%/+5% (STC condition)
Warranties	• 25-year limited product warranty • 15-year manufacturer warranty on 91% of the nominal performance • 30-year transferable linear power output warranty

Linear Performance Warranty



First Year Output $\geq 98.0\%$ 2-30 Year Decline $\leq 0.50\%$ 30 Year Output $\geq 83.5\%$

BIFACIAL MONO CRYSTALLINE DOUBLE GLASS MODULE SHINGLED CELL TECHNOLOGY - FRAMELESS

RCM-xxx-SBMA (xxx=415-440)

Electrical Characteristics

POWER CLASS ⁽¹⁾			415		420		425		430		435		440	
Testing Condition			STC ⁽²⁾	NMOT ⁽³⁾	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power	Pmax	[Wp]	415	306	420	310	425	314	430	317	435	321	440	325
Maximum Power Voltage	Vmp	[V]	37,30	35,10	37,40	35,20	37,60	35,40	37,80	35,60	38,00	35,80	38,20	36,00
Maximum Power Current	Imp	[A]	11,13	8,72	11,23	8,80	11,30	8,86	11,38	8,92	11,45	8,97	11,52	9,03
Open Circuit Voltage	Voc	[V]	46,00	43,30	46,10	43,40	46,30	43,60	46,50	43,80	46,70	44,00	46,90	44,10
Short Circuit Current	Isc	[A]	11,86	9,59	11,90	9,62	11,95	9,66	12,00	9,70	12,05	9,74	12,10	9,78
Module Efficiency	Eff	[%]	19,10		19,30		19,60		19,80		20,00		20,30	
Maximum Series Fuse	Ir	[A]	20											
Maximum System Voltage	Vsys	[V]	1000 V DC (IEC - UL) / 1500 V DC (IEC)											

(1) Measurement Tolerances: P_{max} (± 3%), I_{sc} & V_{oc} (± 5%) - Power Classification 0/+5W

(2) STC (Standard Testing Condition): Irradiance 1000W/m², Cell Temperature 25°C, AM 1.5

(3) NMOT (Nominal Operating Module Temperature): Irradiance 800W/m², NMOT, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

Bi Facial Output (4)

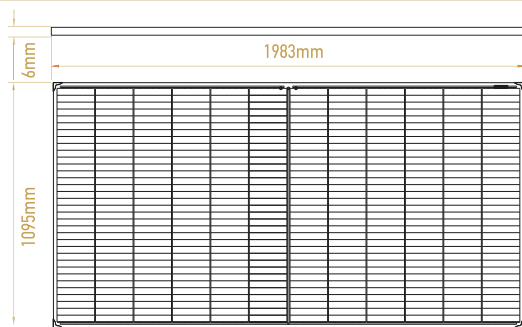
POWER CLASS		415		420		425		430		435		440	
		P _{max} [Wp]	Eff [%]	P _{max} [Wp]	Eff [%]	P _{max} [Wp]	Eff [%]	P _{max} [Wp]	Eff [%]	P _{max} [Wp]	Eff [%]	P _{max} [Wp]	Eff [%]
Power with Backside Gain	+5 [%]	435,8	20,1%	441,0	20,3%	446,3	20,6%	451,5	20,8%	456,8	21,0%	462,0	21,3%
	+10 [%]	456,5	21,0%	462,0	21,3%	467,5	21,5%	473,0	21,8%	478,5	22,0%	484,0	22,3%
	+15 [%]	477,3	22,0%	483,0	22,2%	488,8	22,5%	494,5	22,8%	500,3	23,0%	506,0	23,3%
	+20 [%]	498,0	22,9%	504,0	23,2%	510,0	23,5%	516,0	23,8%	522,0	24,0%	528,0	24,3%
	+25 [%]	518,8	23,9%	525,0	24,2%	531,3	24,5%	537,5	24,8%	543,8	25,0%	550,0	25,3%
	+30 [%]	539,5	24,8%	546,0	25,1%	552,5	25,4%	559,0	25,7%	565,5	26,0%	572,0	26,3%

(4) Bifaciality Factor > 70% - Back-side power gain depends upon the specific project albedo - Efficiency is according to the surface of the module

Mechanical Data

Dimensions	1983mm x 1095mm x 6mm (except junction box)
Weight	31.0 Kg
Cell Type	Bifacial PERC Mono Solar Cells (158.75 mm)
Front Glass	AR coating tempered glass, 2.5mm
Encapsulation	POE
Backsheet	Tempered glass, 2.5mm
Frame	No frame
Junction Box	Rated current: 18A, IP68, TUV&UL
Cable	4.0mm ² - Length 1.2m
Connector	MC4 compatible connector

Dimensions

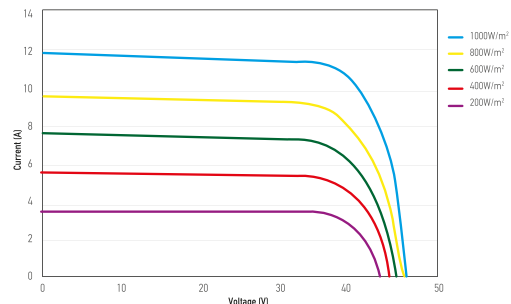


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I-V Curve

The module relative power loss at low light irradiance of 200W/m² is less than 3%.



Temperature Characteristics

P _{max} Temperature Coefficient	-0.45% / °C
V _{oc} Temperature Coefficient	-0.34% / °C
I _{sc} Temperature Coefficient	+0.06% / °C
Operating Temperature	-40 ~ +85 °C
(NMOT) Nominal Module Operating Temperature	42.3 ± 2 °C

Packing Configuration

Container	40'HC
Pieces per Pallet	30
Pallets per Container	22
Pieces per Container	660

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