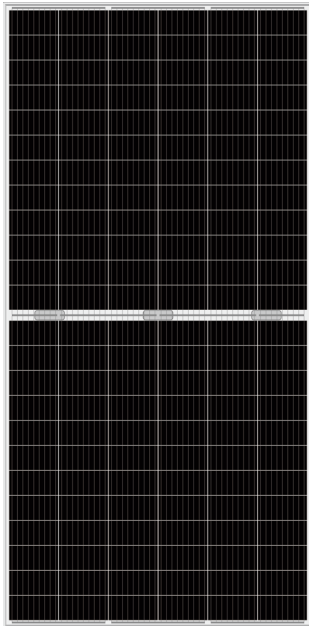


PANDA BIFACIAL 144CELL

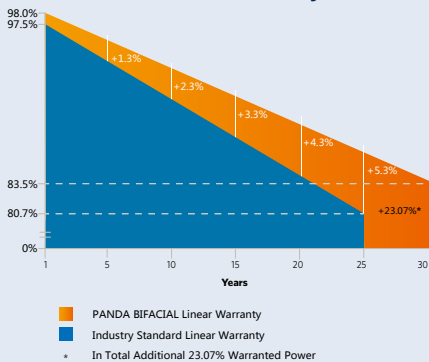


22.5%
CELL EFFICIENCY

12 YEAR
PRODUCT WARRANTY

0 to +5W
POWER SELECTION TOLERANCE

30 Years Linear Warranty



DUAL POWER MAXIMIZED YIELD

PANDA BIFACIAL modules generate power from the front side as well as from the back. Together with the cutting-edge PANDA n-type crystalline silicon solar cells, which wake up earlier than conventional p-type and go to sleep later, the energy yield can be highest increased by 30%.



Bifacial Power

In contrast to conventional modules, PANDA BIFACIAL modules can generate energy from both sides. As the backside makes use of the reflected and scattered light from the surroundings, these modules could yield significantly more power, depending upon the albedo.



High Yield

PANDA BIFACIAL modules often generate more energy due to their low LID, good low-light performance and the temperature coefficient of n-type monocrystalline silicon solar cells.



Higher Bifaciality

Imagine a solar module flipped upside down with its back to the sun. The amount of power that it can still produce is compared against the nameplate badge, which is the bifaciality factor. A major advantage of choosing PANDA BIFACIAL modules is that the backside will perform at an industry leading of bifacial modules.



Higher Durability

The double glass construction improves the long-term mechanical performance of the module. Furthermore, PANDA BIFACIAL modules work well in muggy conditions, and independently tested for harsh environmental conditions, such as exposure to salt mist, ammonia, dust or known PID risk factors.



Optimal Self-cleaning

Choose our frameless "CL" module for optimal self-cleaning.



Mechanical Performance

Choose our specially designed aluminium framed "CF" module for enhanced mechanical performance and more ease of use in traditional installation methods.

Yingli Solar

Founded in 1987, Yingli Energy (China) Company Limited, known as "Yingli Solar", is one of the world's oldest leading solar panel manufacturers with the mission to provide affordable green energy for all. Yingli Solar makes solar power possible for communities everywhere by using our global manufacturing and logistics expertise to address unique local challenges.

PANDA BIFACIAL 144CELL

ELECTRICAL PERFORMANCE



Module type	144CL (144 cell, n-type mono-Si, frameless): YLxxxCG2536L-2 1/2 (xxx=Pmax) 144CF (144 cell, n-type mono-Si, framed): YLxxxCG2536F-2 1/2 (xxx=Pmax)
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Electrical Parameters at Standard Test Conditions (STC)								
Power output	P_{max}	W	415	410	405	400	395	390
Voltage at P_{max}	V_{Pmax}	V	42.74	42.40	42.06	41.72	41.37	41.01
Current at P_{max}	I_{Pmax}	A	9.71	9.67	9.63	9.59	9.55	9.51
Open-circuit voltage	V_{oc}	V	50.70	50.30	49.90	49.50	49.10	49.00
Short-circuit current	I_{sc}	A	10.20	10.16	10.12	10.08	10.04	10.00
Power output tolerance	ΔP_{max}	W	0 / + 5					
Module efficiency@144CL	η_{Pmax}	%	20.45	20.21	19.96	19.71	19.47	19.22
Module efficiency@144CF	η_{Pmax}	%	20.27	20.03	19.78	19.54	19.29	19.05

Electrical Parameters at Nominal Module Operating Temperature (NMOT)								
Power output	P_{max}	W	315.74	311.93	308.15	304.39	300.58	296.72
Voltage at P_{max}	V_{Pmax}	V	40.76	40.44	40.11	39.79	39.45	39.11
Current at P_{max}	I_{Pmax}	A	7.75	7.71	7.68	7.65	7.62	7.59
Open-circuit voltage	V_{oc}	V	48.08	47.71	47.33	46.95	46.57	46.47
Short-circuit current	I_{sc}	A	8.21	8.17	8.14	8.11	8.08	8.04

Bifacial Power Output (Backside Power Gain)								
Power output (power gain 10%)	P_{max10}	W	457	451	446	440	435	429
Power output (power gain 15%)	P_{max15}	W	477	472	466	460	454	449
Power output (power gain 25%)	P_{max25}	W	519	513	506	500	494	488

Other Characteristics								
Nominal module operating temperature	NMOT	°C	39±2	Temperature coefficient of I_{sc}	α_{Isc}	% / °C	0.04	
Bifaciality factor	ϕ	%	80±5	Temperature coefficient of V_{oc}	β_{Voc}	% / °C	-0.30	
Measurement tolerance of P_{max} , V_{oc} and I_{sc}		%	±3	Temperature coefficient of P_{max}	γ_{Pmax}	% / °C	-0.35	

STC: 1000W·m⁻² irradiance, 25°C cell temperature, AM1.5 spectrum according to EN 60904-3.
NMOT: temperature near maximum power point at 800W·m⁻² irradiance, 20°C ambient temperature, 1m·s⁻¹ wind speed.

OPERATING CONDITIONS

CONSTRUCTION MATERIALS

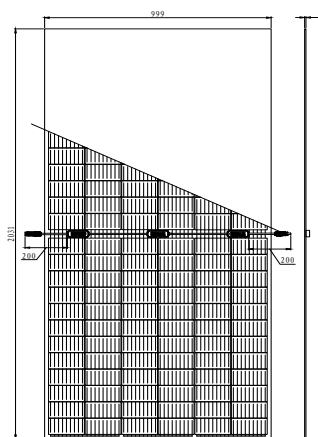
Max. system voltage	1500V _{DC}	Cell (material / number)	n-type mono-Si / 2 x 6 x 12
Max. series fuse rating*	20A	Glass (material / thickness)	low-iron semi-tempered glass / 2.0mm x 2
Operating temperature range	-40°C to 85°C	Frame (144CL / 144CF)	none / anodized aluminium alloy
Fire resistance	Class A	Junction box (type / protection degree)	3 diodes / ≥ IP67
Hailstone impact (diameter / velocity)	25mm / 23m·s ⁻¹	Cable (length / cross-sectional area)	200mm, can be customized / 4mm ²
Snow load, front (144CL / 144CF)	3000Pa / 5400Pa	Plug connector (type / protection degree)	match the junction box / IP67
Wind load, back (144CL / 144CF)	2400Pa / 2400Pa		

*DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection.

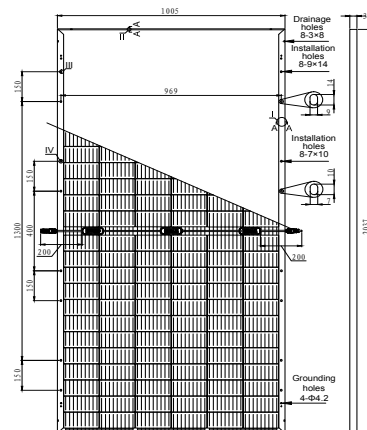
PACKAGING SPECIFICATIONS

Packaging Specifications@144CL		Packaging Specifications@144CF	
Dimensions (L / W / H)	2031mm / 999mm / 5mm	Dimensions (L / W / H)	2037mm / 1005mm / 30mm
Weight	24.2kg	Weight	26.0kg
Number of modules per pallet	32	Number of modules per pallet	36
Number of pallets per 40' container*	22	Number of pallets per 40' container*	22
Packaging pallets dimensions (L / W / H)	2160mm / 1125mm / 1182mm	Packaging pallets dimensions (L / W / H)	2050mm / 1110mm / 1157mm
Pallet weight	850kg	Pallet weight	978kg

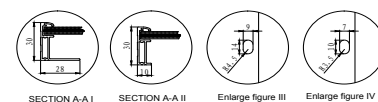
*Truck transport is prohibited to exceed its maximum load.



Figure@144CL unit: mm



Figure@144CF unit: mm



QUALIFICATIONS & CERTIFICATES

IEC 61215, IEC 61730, CE, ISO 9001: 2015, ISO 14001: 2015, BS OHSAS 18001: 2007



- Due to continuous innovation, research and product improvement, the specifications in this product information sheet are subject to change without prior notice. The specifications may deviate slightly and are not guaranteed.
- The data does not refer to a single module and they are not part of the offer, they only serve for comparison to different module types. The company reserves the final right to explain any of the data included here.
- Proudly made in China.



Warning: Read the Installation and User Manual in its entirety before handling, installing and operating Yingli Solar modules.

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