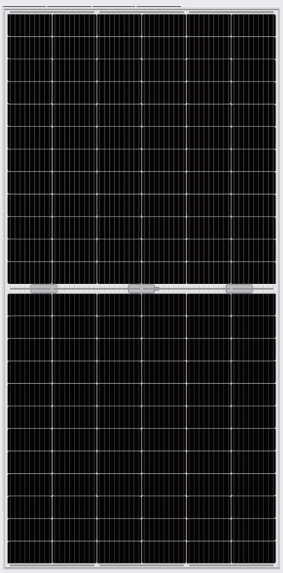
YINGLI SOLAR

PANDA BIFACIAL 144HC

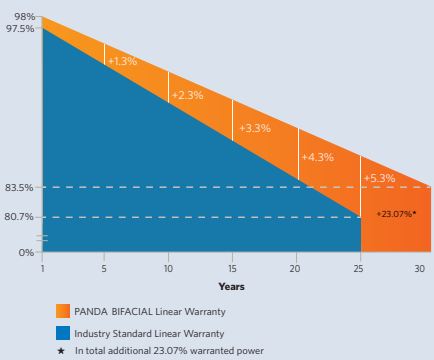


Up to 20.2%
MODULE EFFICIENCY

12 YEAR
PRODUCT WARRANTY

0 to +5 W
POWER SELECTION TOLERANCE

30 Years Linear Warranty



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DUAL POWER
MAXIMIZED YIELD

With over two decades of manufacturing experience and millions of PV systems installed worldwide you can trust that our product quality and long term reliability have been proven in the field.

Bifacial Power
In contrast to conventional modules, PANDA BIFACIALs 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
Once used, PANDA BIFACIAL modules generate more energy, because of low LID, good low-light performance and temperature coefficient of n-type monocrystalline silicon solar cells.

High Bifaciality
Imagine a solar panel flipped upside down with it's back to the sun. The amount of power that it can still produce is compared against the nameplate badge. This is the bifaciality factor. A major advantage of choosing PANDA BIFACIAL modules is that the backside will perform at an industry leading 82% of the nameplate badge.

Higher Durability
The double glass construction improves the long-term mechanical performance of the module and is our most fire resistant product achieving an industry leading Fire Class A rating.

Optimal Self-cleaning
Choose our frameless "HCL" module design for optimal self-cleaning.

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

Yingli Green Energy

Founded in 1987, Yingli Green Energy Holding 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 144HC

ELECTRICAL PERFORMANCE

Module type	144HCL (144 half-cell, frameless): YLxxxCG2536L-2 1/2 (xxx=Pmax) 144HCF (144 half-cell, framed): YLxxxCG2536F-2 1/2 (xxx=Pmax)

Electrical Parameters at Standard Test Conditions (STC)							
Power output	P_{max}	W	410	405	400	395	390
Voltage at P_{max}	V_{mpp}	V	42.40	42.06	41.72	41.37	41.01
Current at P_{max}	I_{mpp}	A	9.67	9.63	9.59	9.55	9.51
Open-circuit voltage	V_{oc}	V	50.30	49.90	49.50	49.10	49.00
Short-circuit current	I_{sc}	A	10.16	10.12	10.08	10.04	10.00
Power output tolerance	ΔP_{max}	W	0 / + 5				
Module efficiency@144HCL	η_{mpp}	%	20.21	19.96	19.71	19.47	19.22
Module efficiency@144HCF	η_{mpp}'	%	20.03	19.78	19.54	19.29	19.05

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

Bifacial Output (Backside Power Gain)							
Power output (power gain 10%)		W	451	446	440	435	429
Power output (power gain 15%)		W	472	466	460	454	449
Power output (power gain 25%)		W	513	506	500	494	488

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.
Measurement tolerance of P_{max}, V_{oc} and I_{sc} is ±3%.

THERMAL CHARACTERISTICS

Nominal module operaing temperature	NMOT	°C	39±2	Bifaciality			
Temperature coefficient of P_{max}	γ_{Pmax}	% / °C	-0.35	Bifaciality of P_{max}	ϕ_{Pmax}	%	82.0
Temperature coefficient of V_{oc}	β_{Voc}	% / °C	-0.30	Bifaciality of V_{oc}	ϕ_{Voc}	%	99.1
Temperature coefficient of I_{sc}	α_{Isc}	% / °C	0.04	Bifaciality of I_{sc}	ϕ_{Isc}	%	81.5

OPERATING CONDITIONS

Max. system voltage	1500V_{DC}
Max. series fuse rating*	20A
Operating temperature range	-40°C to 85°C
Fire resistance	Class A
Hailstone impact (diameter / velocity)	25mm / 23m·s^{-1}
Snow load, front (144HCL / 144HCF) Wind load, back (144HCL / 144HCF)	3000Pa / 5400Pa 2400Pa / 2400Pa

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

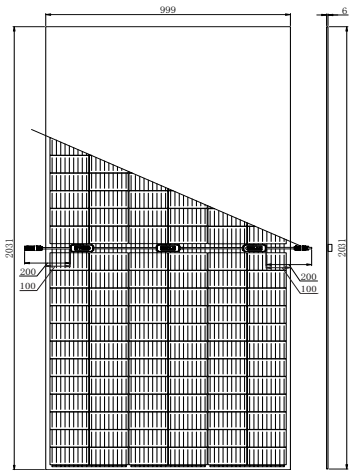
CONSTRUCTION MATERIALS

Front and back cover (material / thickness)	high transmission semi -tempered glass / 2.5mm x 2
Cell	n-type monocrystalline silicon multi-busbar
Frame (144HCL / 144HCF)	none / anodized aluminium alloy
Cable (length / cross-sectional area)	200mm, longer lengths are available on request / 4mm^2
Junction box (protection degree)	≥ IP67
Plug connector	RH 05-8 or YT08-1A or Genuine MC4 EVO 2

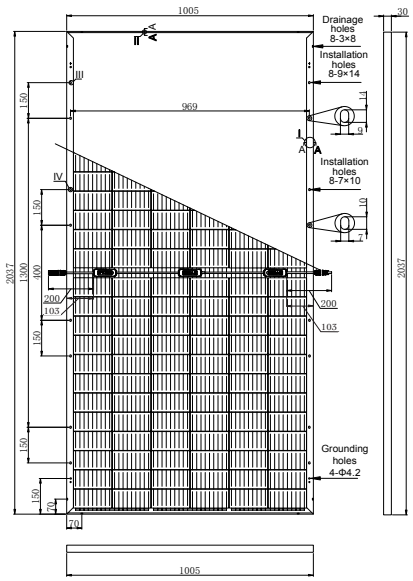
PACKAGING SPECIFICATIONS

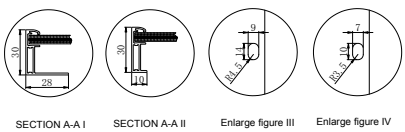
Packaging Specifications@144HCL		Packaging Specifications@144HCF	
Dimensions (L / W / H)	2031mm / 999mm / 6mm	Dimensions (L / W / H)	2037mm / 1005mm / 30mm
Weight	28.4kg	Weight	29.8kg
Number of modules per pallet	32	Number of modules per pallet	35
Number of pallets per 40' container*	22	Number of pallets per 40' container*	22
Packaging pallets dimensions (L / W / H)	2160mm / 1125mm / 1182mm	Packaging pallets dimensions (L / W / H)	2090mm / 1110mm / 1157mm
Pallet weight	984kg	Pallet weight	1087kg

*Truck transport is prohibited to exceed its maximum load.



Figure@144HCL unit: mm





Figure@144HCF unit: mm

QUALIFICATIONS & CERTIFICATES

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

Certificates are held by Yingli Energy (China) Co., Ltd.,
a wholly owned subsidiary of Yingli Green Energy Holding Co., Ltd.

- 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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