

# PHOTOVOLTAICS



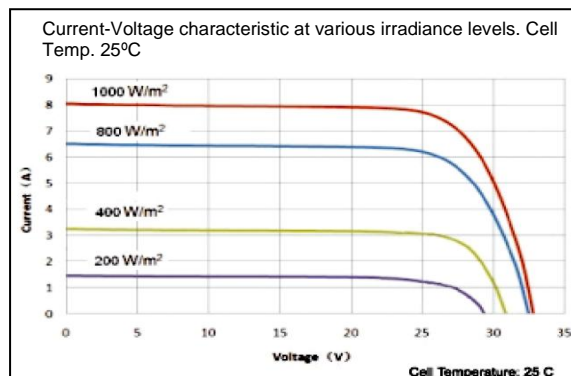
**NA-POLY** CRYSTALLINE MODULES

## Quality criteria and certificates

- IEC 61215, IEC 61730, CE-Certification, ISO 9001 and ILB-ISO 14001
- Tolerance  $\pm 3\%$
- 5 years product-warranty
- 10 years 90% and 25 years 80% performance warranty

Type	NA200W-PB	NA210W-P	NA220W-P	NA230W-P
<b>Electrical Specification</b>				
Peak Power (Pmpp)	200 W	210 W	220 W	230 W
Open Circuit Voltage (Voc)	34.66 V	35.22 V	35.72V	36.18 V
Short Circuit Current (Isc)	7.85 A	8.08 A	8.32 A	8.57 A
Maximum Power Voltage (Vmpp)	27.95 V	28.38 V	28.70V	29.00 V
Maximum Power Current (Impp)	7.15 A	7.41 A	7.67 A	7.95 A
No. of Diodes	3			
Maximum System Voltage	1000 VDC			
Working Temperature	-40°C to +85°C			
Storage Temperature	-40°C to +85°C			
<b>Mechanical Characteristics</b>				
Dimension (AxBxC) mm	1650x990x40			
Weight	25.5 kg			
Cabel	$\varnothing$ 4mm <sup>2</sup> ; length: 1000 mm			
Connector	MC4			
Container Capacity	20 feet 252 pcs / 40 feet 504 pcs			
Cell	Poly Crystalline 156 x 156 mm			
No. of cells and connections	60 (6x10)			
<b>Temperature/Coefficients (TÜV measurement)</b>				
NOCT	45.30°C ( $\pm 2^\circ\text{C}$ )			
Temperature Coefficient VOC ( $\beta_2$ )	-0.3277 %/K			
Temperature Coefficient Isc ( $\alpha_2$ )	0.0822 %/K			
Temperature Coefficient Pmpp ( $\gamma_2$ )	-0.4594 %/K			

Standard test conditions emittance 1000W/m<sup>2</sup>; module temperature 25°C; AM=1,5



ILB Helios AG / ILB International Logistikbetriebe AG  
 Bruggstrasse 71 | CH-5401 Baden | Phone: +41 56 205 30 60 | Fax: +41 56 210 02 28

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## Materials

Our ILB Helios-Modules are manufactured only with top material on the highest technology standards.

ILB Helios uses only the best supplier, qualified, and approved materials to make sure that we can guarantee the highest performance and the longest life time. All used materials are international certified and the whole manufacturing process is under a total quality control (TQM), to make sure we can guarantee a Suisse-Quality-Product.

Components	Producer	Location
<b>Aluminum Frame</b>	Jiang Su Kailun / Xixia	China
<b>Backside Cover (TÜV)</b>	DNP / Madico / Isovolta	Japan / USA / Austria
<b>Cells</b>	Mosel Vitelic Inc. / JA / Motech	Taiwan / China
<b>Cable</b>	LAPPKABEL	Germany
<b>Connector</b>	MC4	Switzerland
<b>Diodes</b>	ON Semiconductor	USA
<b>EVA Film</b>	Bridgestone	Japan
<b>Front Glass</b>	Beijing Huamei Glass	China
<b>Interconnecting and Buss Ribbon</b>	Sunlight	China
<b>Junction Box (TÜV)</b>	ILB Helios	German Patent
<b>Silicon</b>	Shin Etsu	Japan

## ImpP Class

To improve the efficiency of the array on the installation (up to 5% of the total output per year), ILB Helios is preselecting the modules according to the ImpP range list as shown below. Moreover, to ensure an easy handling on the installation side, all modules are marked with an ImpP Class tag and a sticker with the specific measurement of ImpP and Pmpp.

Class	A	B	C	D
<b>ImpP range</b>	< 7.00A	7.00 A – 7.29 A	7.30 A – 7.60 A	> 7.60 A



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## ILB Helios Aluminum Junction Box

### Technical Data

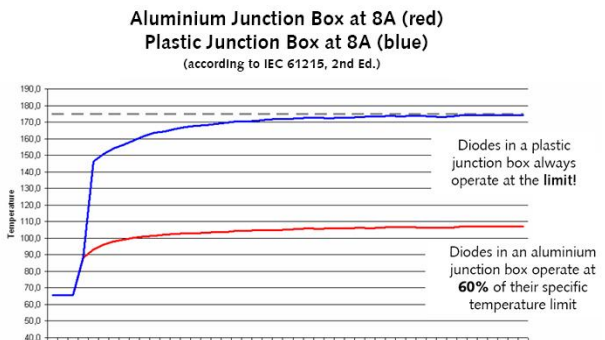
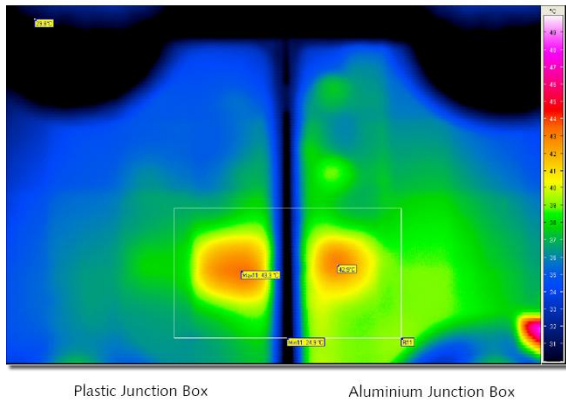
IEC 61215 2nd ed and IEC 61730 1st ed

Dimension	150 x 131 x 25 mm
Rated current	16 A
Maximal current* (3 Diodes / 4 Diodes)	12.5 A / 11 A
Test current* (3 Diodes / 4 Diodes)	15.60 A / 13.75 A
Rated voltage	1000 V DC
Protection type**	IP 67
Safety class	Class II
Connecting capacity	4-6 mm <sup>2</sup>
Flat cable	3-6 mm
Operating temperature range	-40°C to +85°C
Schottky Diodes	3 or 4

\*IEC 61215, 2ndED. "Bypass-Diode Test"  
 \*\*max 1.0m/30min



### Thermal Advantage of Aluminum Junction Box



Every day ... for over 20 years ... for over 7.300 days!  
 With the Aluminium Junction Box you are far below the limit!

### Advantage Aluminum Junction Box

- Top Performance over live time
- Aluminum case is not flammable
- Up to 8x increased life time due to cooled down diodes
- Extreme resistance in a harsh lifelong ambient due to aluminium
- Corrosion free contacts due to Goretex® membrane
- Schottky Diodes



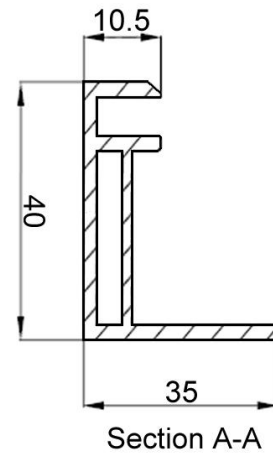
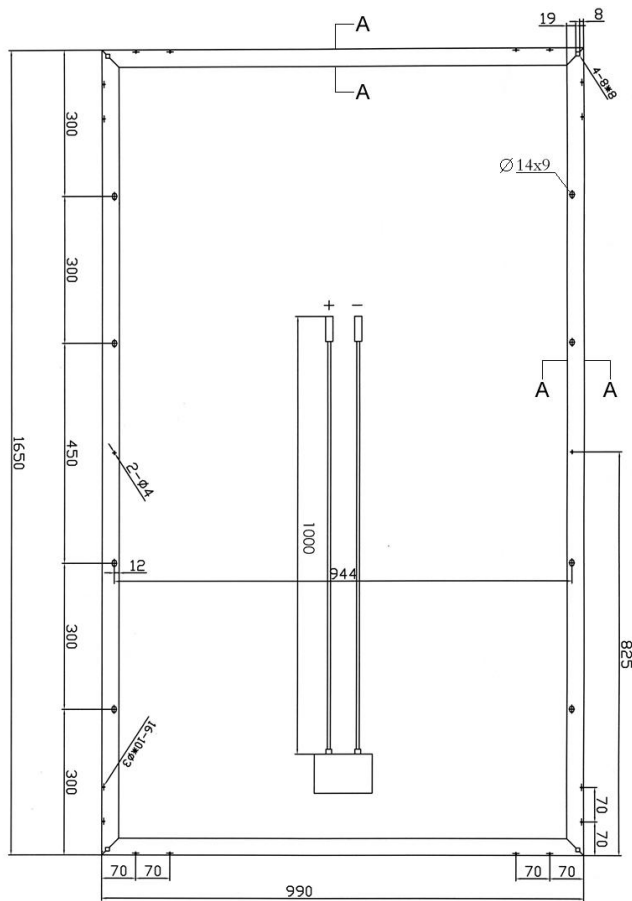
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## Dimensions

NA200W-PB to NA230W-P



(Unit of measurement is mm)