

VALANCE HC 144



High efficiency - **20.91%**



Mono-crystalline Silicon PERC Solar Cells With **High Transmission And Textured Glass**



Maximizing the kWh Output Per Unit Area



Tight **Positive Power** Tolerance of **0W** to **+5W**



With **stand wind** loads of up to **2.4 kPa** and **snow** loads of up to **5.4 kPa**



German Technology Manufacturing Facility

WARRANTIES

- 10-year limited product warranty*
- Limited power warranty*: 10 years at 92% of the minimal rated power output, 25 years at 83.1% of the minimal rated power output.
- Withstand wind loads of up to 2.4 kPa and snow loads of up to 5.4 kPa, confirming mechanical stability.

*in compliance with our Warranty Terms and Conditions

INTERNATIONAL & NATIONAL CERTIFICATIONS

- IEC 61215, IEC 61730-1, IEC 61730-2, IEC 61701-Salt Mist Corrosion Testing, IEC 62804 PID POLY/POLY PERC ,IEC 62804 PID MONO/MONO PERC.



VALANCE HC 144

ELECTRICAL PERFORMANCE

Electrical parameters at Standard Test Conditions (STC)

Module type		PM144 Series								
Power output	P _{max}	W	435	440	445	450	455	460	465	
Power output tolerances	ΔP _{max}	Positive Tolerance Only								
Module efficiency	η _m	%	19.56	19.79	20.01	20.23	20.46	20.68	20.91	
Voltage at P _{max}	V _{mpp}	V	41.4	41.5	41.5	41.6	41.6	41.7	41.8	
Current at P _{max}	I _{mpp}	A	10.51	10.62	10.72	10.82	11.03	11.07	11.13	
Open-circuit voltage	V _{oc}	V	48.7	48.8	48.9	49	49.1	49.2	49.3	
Short-circuit current	I _{sc}	A	11.45	11.56	11.67	11.77	11.88	11.99	12.09	

STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.
Average relative efficiency reduction of 5% at 200W/m² according to EN 60904-1.

THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	46+/-2
Temperature coefficient of P _{max}	γ	%/°C	-0.35
Temperature coefficient of V _{oc}	β _{Voc}	%/°C	-0.27
Temperature coefficient of I _{sc}	α _{Isc}	%/°C	0.0065
Temperature coefficient of V _{mp}	β _{Vmpp}	%/°C	-0.45

OPERATING CONDITIONS

Max. system voltage	1000 V _{DC}
Max. series fuse rating	20A
Limiting reverse current	20A
Operating temperature range	-40°C to 85°C
Max. static load, front (e.g., snow and wind)	5400Pa
Max. static load, back (e.g., wind)	2400Pa
Max. hailstone impact(diameter / velocity)	25mm / 23m/s

CONSTRUCTION MATERIALS

Front cover (material / thickness)	Low-iron Tempered Glass / 3.2mm
Cell (quantity / material / dimensions/number of busbars)	72 / mono- PERC (144 Half Cut)
Encapsulate(material)	PID free ethylene vinyl acetate (EVA)
Frame (material / color / anodization color /edge sealing)	Anodized Aluminum Alloy / Silver / Clear / Silicone Or Tape
Junction box (protection degree)	IP67/68, split JB with Individual bypass diode
Cable (length / cross-sectional area)	400 mm length cable
Plug connector(type / protection degree)	MC4 0r compatible

CAUTION: READ SAFETY AND INSTALLATION MANUAL BEFORE USING THE PRODUCT

Note :

- Soleos Solar Energy PVT. LTD. reserves the right to change the specification with prior notice:
- All measurements and warranty/guarantee applicability under standard test conditions (1000W/m², 25°C. AM 1.5), kindly refer our guarantee/warranty policy for further details.

Soleos Solar GmbH
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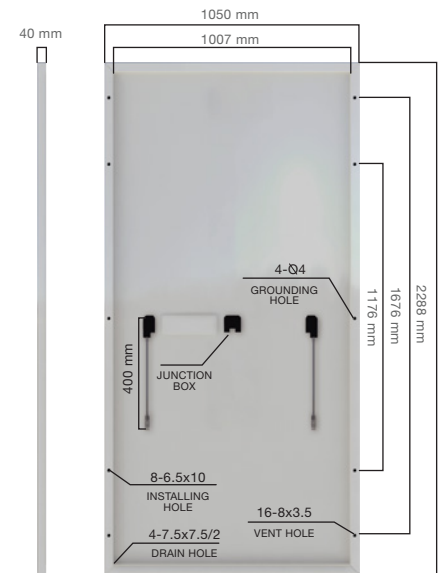
GENERAL CHARACTERISTICS

Dimensions (L / W / H)	2288 mm/ 1050 mm/ 35 mm
Weight	24 kg

PACKAGING SPECIFICATIONS

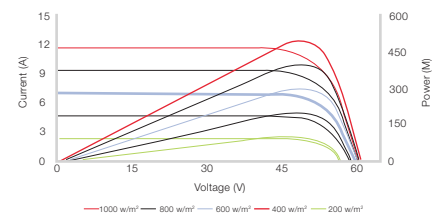
Number of modules per pallet	30
Number of pallets per 20'Vehicle	10
Packaging box dimensions(L / W / H)	2138 mm / 1085 mm / 1070 mm
Box weight	800 Kgs

BACK VIEW OF MODULE



SIDE VIEW

Typical I-V Curves⁴



4) Average relative efficiency reduction of 5% at 200 w/m² according to EN 60904-1

Performance warranty

