

VSP-T SERIES

Enhancing The Power, Powering The Future








445-460W



• VSP-T SERIES

Vespa Energy redesigned the architecture of PV modules with bifacial 182mm (M10) multibusbar cell technology to have top quality and high efficiency PV modules

• KEY FEATURES

-  3 times EL (Electroluminescence) test for high quality
-  Half-Cut Technology minimizes the loss due to the shading effect
-  Improved low light performance
-  By reducing BoS and proposing better ROI, suitable for Residential, C&I and Utility Scale projects
-  Excellent heat dissipation by high quality UV blocking backsheet
-  Extra Power from back side
-  Certified reliability for
 - Sand, acid, salt and hail stones
 - Anti PID
 - 5400 Pa snow load and 2400 Pa wind load

Module Efficiency	No.of Cells	Weight	Dimensions
21.25%	120 (6X20)	24.0 kg	1909x1134x35 mm

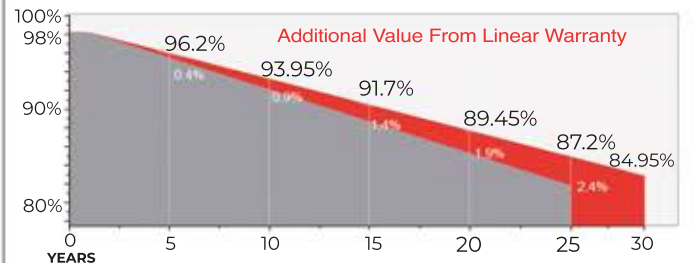
• PRODUCT CERTIFICATION



IEC 61215-1:2016
IEC 61215-1-1:2016
IEC 61215-2:2016
IEC 61730-1:2016
IEC 61730-2:2016



• WARRANTY



Guarantee on Product Material and Workmanship



Linear Power Output Warranty

PID RESISTANT

0/+5w Positive Power Tolerance



VSP SOLAR



VESPA

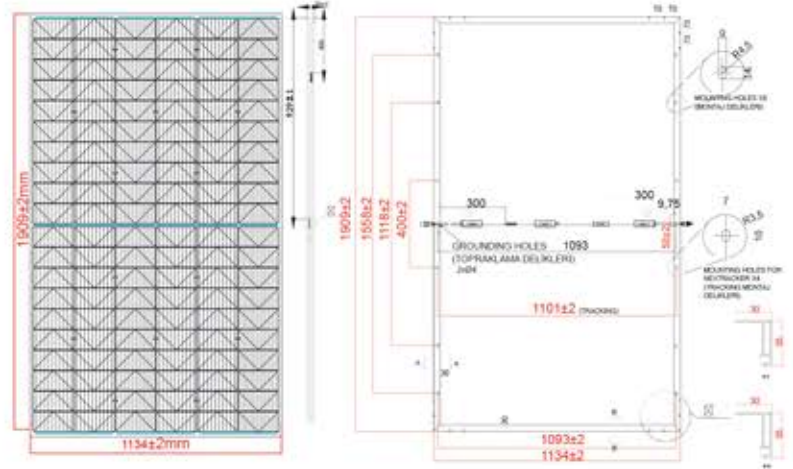
SOLAR ENERGY

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Mechanical Specifications

External Dimension	1909 x 1134 x 35 mm
Weight	24.0 kg
Solar Cells	Bifacial Perc Mono Crystalline 182 mm (M10) 120 Pcs
Glass	3.2 mm, AR coating, Tempered, Low Iron
Backsheet	Fully Transparent, UV Cutting
Frame	Anodized aluminium alloy
Junction Box	IP68, 3 diodes
Output Cables	4.0mm ² , 900mm(+),900mm(-) or Customized Length Available

Technical drawing



Packing Configuration

Container	20'GP	40'HQ
Pieces per Pallet	31	31
Pallets per Container	5	24
Pieces per Container	155	744

Electrical Characteristics

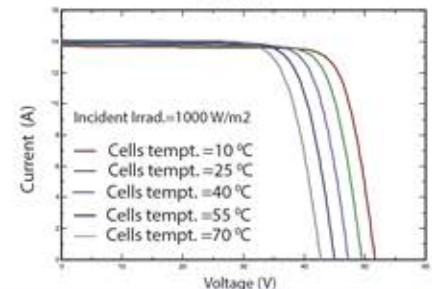
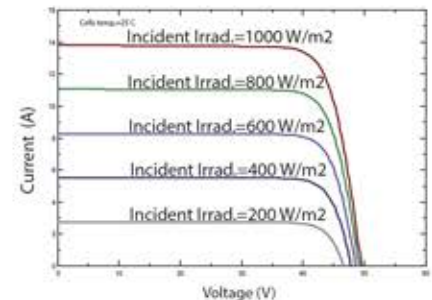
Module Type	VSP445T-M10-120H			VSP450T-M10-120H			VSP455T-M10-120H			VSP460T-M10-120H		
	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC	Front STC	Front NOCT	Back STC
Maximum Power- P_{mp} (w)	445	333	312	450	337	315	455	341	319	460	345	322
Maximum Power Voltage- V_{mp} (V)	34.63	31.82	34.22	34.78	31.98	34.29	34.93	32.06	34.42	35.08	32.18	34.49
Maximum Power Current- I_{mp} (A)	12.86	10.48	9.12	12.95	10.56	9.19	13.04	10.64	9.27	13.13	10.73	9.34
Open Circuit Voltage- V_{oc} (V)	41.18	38.41	41.20	41.33	38.57	41.30	41.48	38.67	41.40	41.63	38.77	41.50
Short Circuit Current- I_{sc} (A)	13.83	11.04	9.63	13.90	11.12	9.70	13.97	11.20	9.77	14.04	11.28	9.84
Module Efficiency STC- η_m (%)	20.56			20.79			21.02			21.25		
Power Tolerance (W)	(0.+4.99)											
Pmax Temperature Coefficient	-0.34 %/°C											
Voc Temperature Coefficient	-0.26 %/°C											
Isc Temperature Coefficient	+0.05 %/°C											

STC: Irradiance 1000 W/m² Module Temperature 25 °C AM=1.5 / Power Measurement Tolerance: +/-3% / Noct: Irradiance 800W / m², Ambient Temperature 20 °C, AM=1.5, Wind Speed 1m/s

Rear Side Power Gain (VSP450T-M10-120H)

Power Gain	10%	15%	20%	25%	30%
Maximum Power- P_{mp} (w)	495	518	540	563	585
Maximum Power Voltage- V_{mp} (V)	34.28	34.28	34.28	34.28	34.28
Maximum Power Current- I_{mp} (A)	14.44	15.10	15.76	16.41	17.07
Open Circuit Voltage- V_{oc} (V)	41.32	41.32	41.32	41.32	41.32
Short Circuit Current- I_{sc} (A)	15.14	15.82	16.51	17.20	17.89

I-V Curve



Application Conditions

Maximum System Voltage	1500V DC
Maximum Series Fuse Rating	25 A
Operating Temperature	-40~+85°C
Nominal Operating Cell Temperature	45±2°C
Bifaciality	70%±10%
Mechanical Load	Front Side 5400 Pa/ Back Side 2400 Pa

Specifications are subject to change without further notification © Copyright 2022 Vespa Solar Energy

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