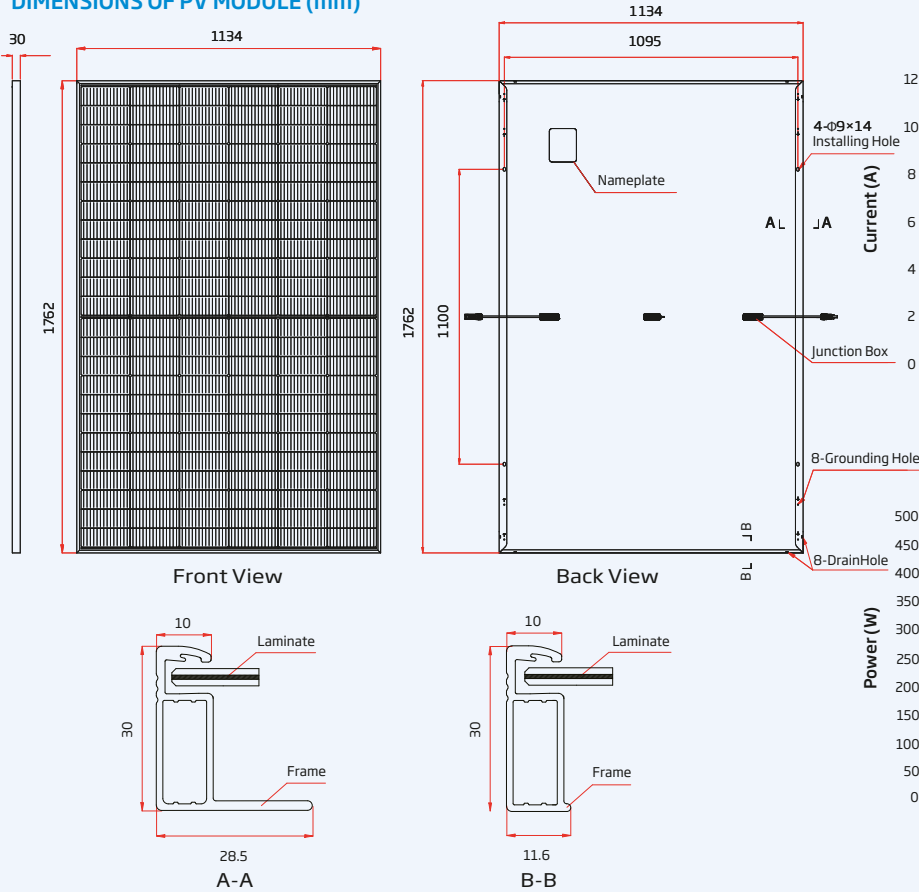
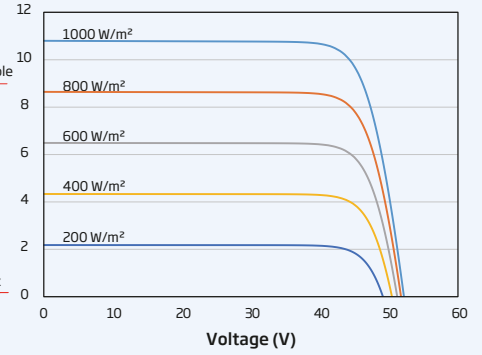
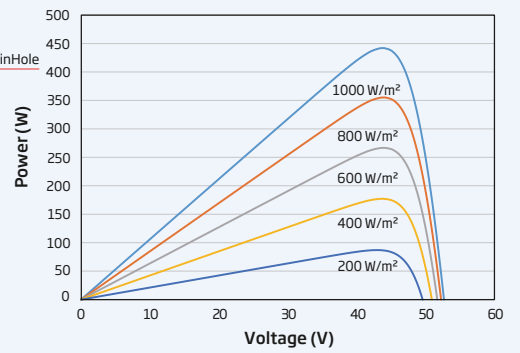


DIMENSIONS OF PV MODULE (mm)

I-V CURVES OF PV MODULE (445 W)

P-V CURVES OF PV MODULE (445 W)

ELECTRICAL DATA (STC)

	TSM-430 NEG9R.25	TSM-435 NEG9R.25	TSM-440 NEG9R.25	TSM-445 NEG9R.25	TSM-450 NEG9R.25	TSM-455 NEG9R.25
Peak Power Watts-P _{MAX} (Wp)*	430	435	440	445	450	455
Power Tolerance-P _{MAX} (W)**	0/+5					
Maximum Power Voltage-V _{MPP} (V)	43.2	43.6	44.0	44.3	44.6	45.0
Maximum Power Current-I _{MPP} (A)	9.96	9.99	10.01	10.05	10.09	10.11
Open Circuit Voltage-V _{OC} (V)	51.4	51.8	52.2	52.6	52.9	53.4
Short Circuit Current-I _{SC} (A)	10.59	10.64	10.67	10.71	10.74	10.77
Module Efficiency η _m (%)	21.5	21.8	22.0	22.3	22.5	22.8

STC: Irradiance 1000 W/m², Cell Temperature 25 °C, Air Mass AM 1.5. *Measuring tolerance: ±3%. ** Power selection up to: +3%

ELECTRICAL DATA (NOCT)

	TSM-430 NEG9R.25	TSM-435 NEG9R.25	TSM-440 NEG9R.25	TSM-445 NEG9R.25	TSM-450 NEG9R.25	TSM-455 NEG9R.25
Maximum Power-P _{MAX} (Wp)	329	333	337	341	344	348
Maximum Power Voltage-V _{MPP} (V)	40.7	41.0	41.4	41.7	42.0	42.3
Maximum Power Current-I _{MPP} (A)	8.08	8.12	8.14	8.17	8.19	8.22
Open Circuit Voltage-V _{OC} (V)	48.7	49.1	49.5	49.9	50.2	50.6
Short Circuit Current-I _{SC} (A)	8.54	8.58	8.60	8.63	8.66	8.68

NOCT: Irradiance at 800 W/m², Ambient Temperature 20 °C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline
No. of cells	144 cells
Module Dimensions	1762×1134×30 mm
Weight	21.0 kg
Front Glass	1.6 mm, AR Coated Heat Strengthened Glass
Back Glass	1.6 mm, Heat Strengthened Glass
Frame	30 mm Anodized Aluminium Alloy, Black
J-Box	IP 68, 3 bypass diodes
Cables	Photovoltaic Technology Cable 4.0 mm ² Landscape: 1100/1100 mm Portrait: 200/320 mm*
Connector	TS4 / TS4 Plus / MC4 EVO2*

*Special order only

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	43 °C (±2 °C)
Temperature Coefficient of P _{MAX}	-0.29 %/°C
Temperature Coefficient of V _{OC}	-0.24 %/°C
Temperature Coefficient of I _{SC}	0.04 %/°C

MAXIMUM RATINGS

Operational Temperature	-40 to +70 °C
Maximum System Voltage	1500 V DC (IEC)
Max Series Fuse Rating	25 A

WARRANTY

25 year Product Workmanship Warranty
30 year Power Warranty
1% first year degradation
0.4% Annual Power Attenuation

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box:	36 pieces
Modules per 40' container:	936 pieces