



Switch to SOLAR for
a Brighter Tomorrow

ORION SERIES

Mono-Perc 144

520Wp-550Wp

Warranty



Product Warranty: 12 Years: Materials & Workmanship
Linear Performance Warranty: 27 Years
First Year Degradation: Up to 2.0%
Annual Degradation: 0.55% till 27 Years

KEY FEATURES



M10 cells for enhanced power generation.



Multi-busbar technology to minimize electrical losses.



Round ribbon connectors for improved light utilization.



Non-destructive cell cutting for improved reliability and lower chances of micro-cracks.



Half-cut cell technology for superior low-light performance.



PID Free

CERTIFICATIONS



IS 14286:2010 | IEC 61215: 2005 IS | IEC 61730-2:2004 IS
| IEC 61730-1:2004 | IEC 62804 | IEC 61853 | IEC 61701



Performance under standard test conditions (1000w/m², AM 1.5, 25 °C)

ORION SERIES 144

Pm (Wp)	520	525	530	535	540	545	550
Voc (V)	49.02	49.21	49.40	49.61	49.82	49.97	50.12
Vm (V)	41.19	41.34	41.49	41.68	41.84	41.98	42.15
Isc (A)	13.38	13.46	13.53	13.61	13.67	13.74	13.81
Im (A)	12.65	12.72	12.79	12.85	12.92	12.99	13.06
Efficiency (%)	20.13	20.32	20.52	20.71	20.90	21.11	21.31

ELECTRICAL DATA PERFORMANCE

NOCT (Wp) at 45 ± 2 °C @800 W/m ²	520	525	530	535	540	545	550
Nominal Maximum Power (Pmax)	388.20	391.77	395.36	399.03	402.75	406.28	410.13
Optimum Operating Voltage (Vmp)	37.68	37.82	37.95	38.31	38.27	38.40	38.56
Optimum Operating Current (Imp)	10.30	10.35	10.41	10.46	10.52	10.57	10.63
Open Circuit Voltage (Voc)	45.6	45.77	45.95	46.14	46.34	46.48	46.62
Short Circuit Current (Isc)	10.94	11.00	11.06	11.12	11.18	11.23	11.29

Cell Temperature Coefficient

Open Circuit Voltage(α)	0.05 %/°C
Short Circuit Current(β)	-0.252 %/°C
Peak Power(δ)	-0.341 %/°C

Operating Conditions

Maximum System Voltage	DC1500V (IEC/UL)
Power Tolerance	0~+5%
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	30A
Mechanical Load Front Rear	5400Pa
Mechanical Load Back Rear	2400Pa

• Test uncertainty for Pmax ± 3%

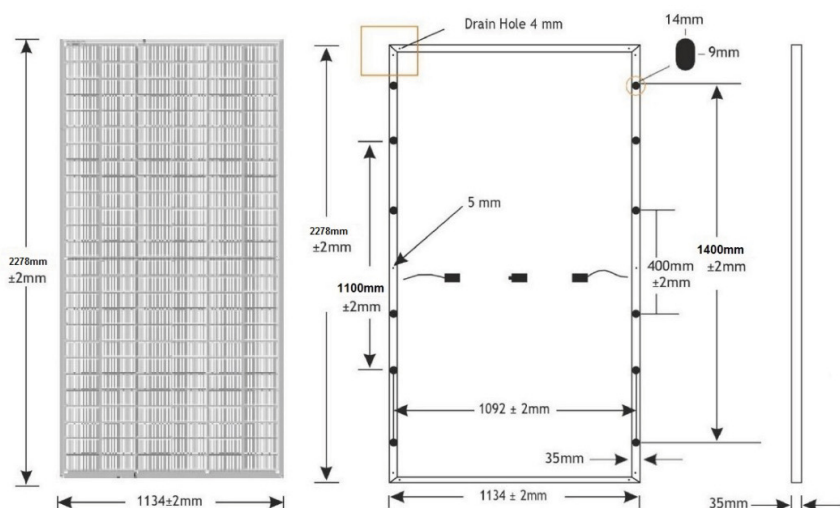
MODULE MECHANICAL DATA

SPECIFICATION DATA

Cell Type	Mono-Perc , 144 Cells
Dimensions	2278x1134x35 mm
Weight	29 Kgs
Front Cover	3.2mm Low Iron and Tempered Glass with ARC Coating
Rear Cover	Transparent Backsheet
Frame Material	"Anodized Aluminium Alloy,
J-Box	IP68, Split JB
Cable	4mm ² (IEC) - 0.3 meter (Length)
Connectors	Mc4 Compatible Connector

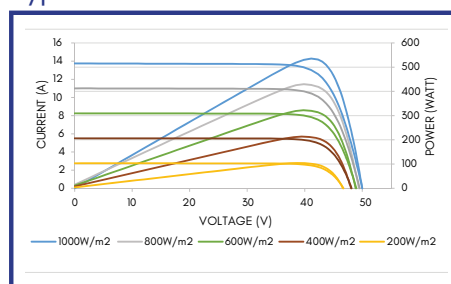
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Engineering Design



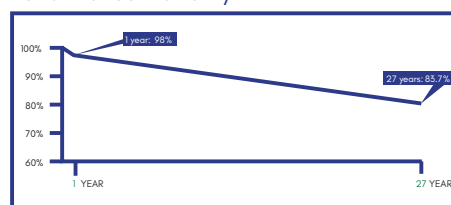
Characteristics

Typical I-V Curves



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

Performance Warranty





Switch to SOLAR for
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ORION SERIES

Mono-Perc Bifacial 144

520Wp-550Wp

Warranty



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Linear Performance Warranty: 27 Years
First Year Degradation: Up to 2.0%
Annual Degradation: 0.55% till 27 Years

KEY FEATURES



M10 cells for enhanced power generation.



Multi-busbar technology to minimize electrical losses.



Round ribbon connectors for improved light utilization.



Non-destructive cell cutting for improved reliability and lower chances of micro-cracks.



Half-cut cell technology for superior low-light performance.



Panels are designed as bifacial, capturing light from both the front and rear sides to boost energy generation.

CERTIFICATIONS



IS 14286:2010 | IEC 61215: 2005 IS | IEC 61730-2:2004 IS
| IEC 61730-1:2004 | IEC 62804 | IEC 61853 | IEC 61701



Performance under standard test conditions (1000w/m², AM 1.5, 25 °C)

ORION SERIES 144 Bi-Facial Gain @Different Albedo (%)

	Pm (Wp)	Voc (V)	Vm (V)	Isc (A)	Im (A)	Efficiency (%)	Pm (Wp)	Voc (V)	Vm (V)	Isc (A)	Im (A)	Efficiency (%)	Pm (Wp)	Voc (V)	Vm (V)	Isc (A)	Im (A)	Efficiency (%)	Pm (Wp)	Voc (V)	Vm (V)	Isc (A)	Im (A)	Efficiency (%)
Front @STC	520	49.02	41.19	13.38	12.65	20.13	525	49.21	41.34	13.46	12.72	20.32	530	49.40	41.49	13.53	12.79	20.52	535	49.61	41.68	13.61	12.85	20.71
5%	547.11	49.02	41.19	14.05	13.28	21.18	552.14	49.21	41.34	14.13	13.36	21.37	557.19	49.40	41.49	14.21	13.43	21.57	562.37	49.61	41.68	14.29	13.49	21.77
10%	573.16	49.02	41.19	14.72	13.92	22.19	578.43	49.21	41.34	14.81	13.99	22.39	583.72	49.40	41.49	14.88	14.07	22.60	589.15	49.61	41.68	14.97	14.14	22.81
20%	625.26	49.02	41.19	16.06	15.18	24.20	631.01	49.21	41.34	16.15	15.26	24.43	636.79	49.40	41.49	16.24	15.35	26.40	642.71	49.61	41.68	16.33	15.42	24.88
Front @STC	540	49.82	41.84	13.67	12.92	20.90	545	49.97	41.98	13.74	12.99	21.11	550	50.12	42.15	13.81	13.06	21.31						
5%	567.60	49.82	41.84	14.36	13.57	21.97	572.59	49.97	41.98	14.43	13.64	22.70	578.00	50.12	42.15	14.50	13.71	22.38						
10%	594.63	49.82	41.84	15.05	14.21	23.02	599.85	49.97	41.98	15.11	14.29	23.22	605.53	50.12	42.15	15.19	14.37	23.44						
20%	648.69	49.82	41.84	16.42	15.50	25.11	654.38	49.97	41.98	16.49	15.59	25.33	660.57	50.12	42.15	16.57	15.67	25.57						

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Maximum Series Fuse Rating	30A
Mechanical Load Front Rear	5400Pa
Mechanical Load Back Rear	2400Pa
Bifaciality	75±5%

- Test uncertainty for Pmax ± 3%
- Bi-facial gain subject to mounting structure specifications and albedo % of ground

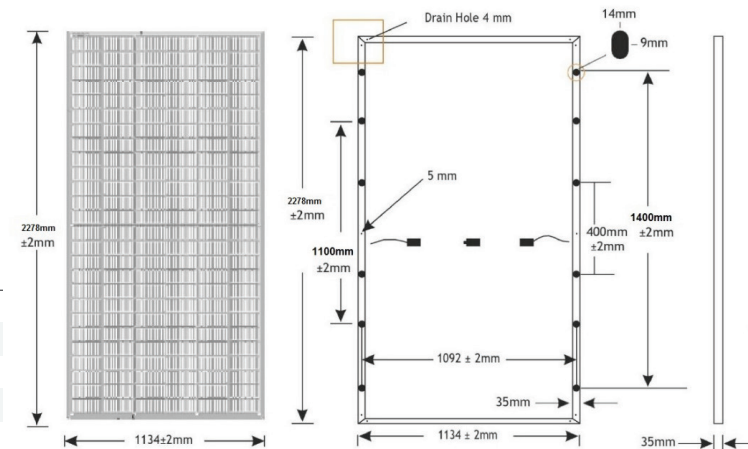
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Cable	4mm ² (IEC) - 0.3 meter (Length)
Connectors	Mc4 Compatible Connector

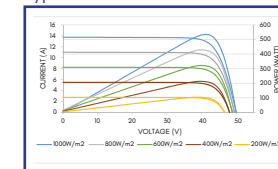
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