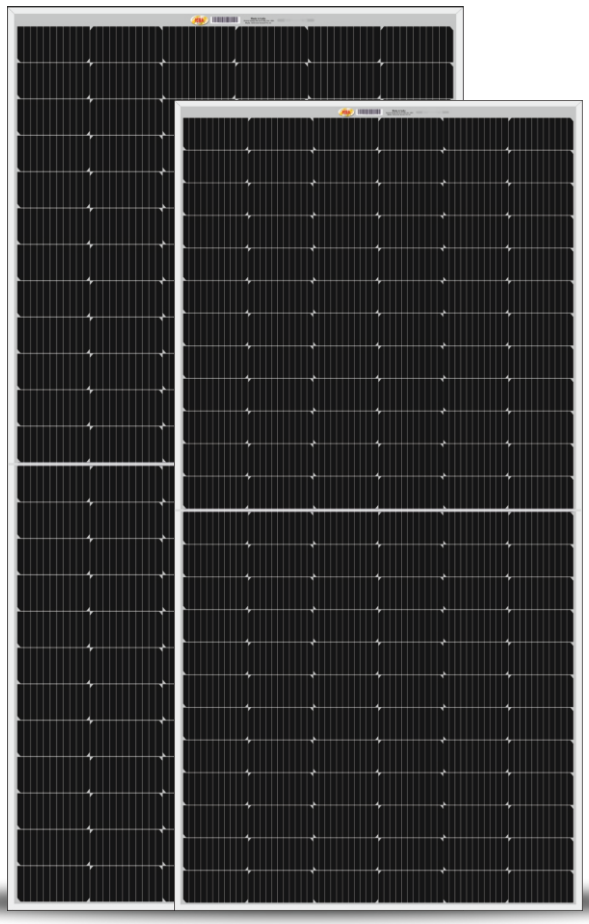
OSWAL
RENEWABLE ENERGY
Greener | Cleaner | Smarter
True Partner !

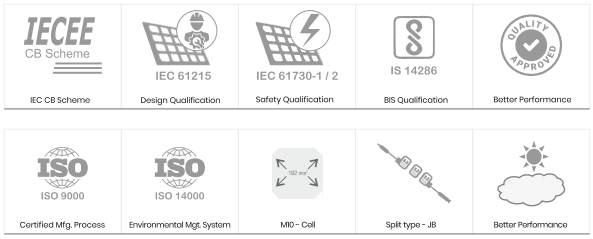


580 Wp - 600 Wp

N-TYPE TOPCon 16BB
BIFACIAL (Glass to Glass)

Next-Generation Oswal TOPCon Series – M10R. Powered by advanced N-type TOPCon technology, the series is designed to deliver higher efficiency, superior energy yield and long-term reliability for modern solar installations.

PRODUCT CERTIFICATES



MADE IN INDIA

30 YEARS — 30 Years Warranty for Linear Performance

12 YEARS — 12 Years Product warranty on Materials and Workmanship



PRODUCT | KEY FEATURES

- Higher Module Efficiency & Power Output
- Excellent Low-Light Performance & Superior Temperature Coefficient
- Lower Degradation for Enhanced Lifetime Generation
- Reduced LCOE (Levelized Cost of Energy)
- Built for Residential, Commercial & Utility-Scale Projects

TECHNICAL DATA

ELECTRICAL PERFORMANCE [Note: Power tolerance: 0 ~ +4.99 W. Power measurement uncertainty: <±3%. Average value of NOCT: 45.08 ± 2°C]

ELECTRICAL CHARACTERISTICS*	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Maximum Power (Pmax)	580 W	435 W	585 W	438 W	590 W	442 W	595 W	446 W	600 W	449 W
Optimum Operating Voltage (Vmp)	44.908 V	42.034 V	45.205 V	42.312 V	45.504 V	42.592 V	45.794 V	42.794 V	45.864 V	42.929 V
Optimum Operating Current (Imp)	12.923 A	10.338 A	12.949 A	10.356 A	12.975 A	10.378 A	13.019 A	10.415 A	13.084 A	10.467 A
Open Circuit Voltage (Voc)	51.402 V	48.832 V	51.541 V	48.964 V	51.768 V	49.180 V	52.056 V	49.453 V	52.344 V	49.727 V
Short Circuit Current (Isc)	13.713 A	11.069 A	13.772 A	11.117 A	13.805 A	11.143 A	13.817 A	11.153 A	13.824 A	10.758 A
Module Efficiency	22.45%		22.64%		22.84%		23.03%		23.22%	

BIFACIAL OUTPUT – BACKSIDE POWER GAIN @ STC* [Bifaciality Factor: 80% ± 10%]

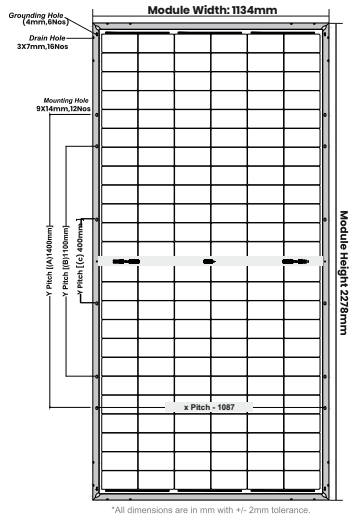
[Note: The bifacial gain depends on the power plant design and conditions. Electrical component ratings should be selected based on the actual bifacial gain at the site (module currents indicated below).]

5%	Nominal Maximum Power (Pmax)	609 W	614 W	620 W	625 W	630 W
	Module Short-Circuit Current / Efficiency	14.399 / 23.57 %	14.461 / 23.78%	14.495 / 23.98 %	14.508 / 24.18%	14.515 / 24.39%
10%	Nominal Maximum Power (Pmax)	638 W	644 W	649 W	655 W	660 W
	Module Short-Circuit Current / Efficiency	15.048 / 24.70%	15.149 / 24.91 %	15.186 / 25.12%	15.199 / 25.34%	15.206 / 25.55%
20%	Nominal Maximum Power (Pmax)	696 W	702 W	708 W	714 W	720 W
	Module Short-Circuit Current / Efficiency	16.456 / 26.94%	16.526 / 27.18%	16.566 / 27.41%	16.580 / 27.64%	16.589 / 27.87%
25%	Nominal Maximum Power (Pmax)	725 W	731 W	738 W	744 W	750 W
	Module Short-Circuit Current / Efficiency	17.141 / 28.07%	17.215 / 28.31%	17.256 / 28.55%	17.271 / 28.79%	17.280 / 29.03%

Mechanical Specifications

Dimensions	2278(L) x 1134(W) x 30(T) in mm
Weight(kg)	32.5 kg
Cell Type / No. of Cells	144 Half-cut N-type TOPCon Bifacial Solar cells
Frame	Anodized Aluminium Alloy (6005, Temper T6, Silver colour)
Front Cover	Low Iron semi-Tempered AR coated Glass (2 mm thick)
Encapsulant	PID resistant and UV resistant Polymeric Film
Back Cover	Low Iron semi-Tempered Glass (2 mm thick)
Junction Box	30A Split Junction Box (3 nos. with individual Bypass Diode) – Weatherproof (IP68)
Bypass Diode	50 A, 45 V, 200 °C max. junction temperature
Cable	4 sq. mm, 300 mm length (Customised cable length available on request)
Connectors	MC4 compatible (MC4 original available on request)
Application Class Rating	Class A
Safety Class Rating	Class II
Mechanical Load Test	5400 Pa-Front; 2400 Pa-Back (as per IEC & UL)
Mounting Holes Pitch (Y)-mm	[A] 1400, [B] 1100, [C] 400
Mounting Holes Pitch (X)-mm	1087

BACK VIEW

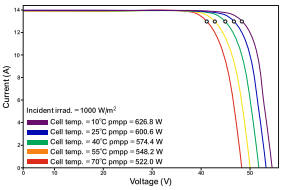


*All dimensions are in mm with +/- 2mm tolerance.

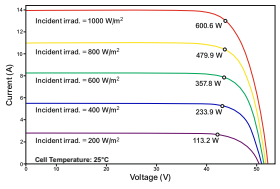
SIDE VIEW



IV Curve Variation with Temperature

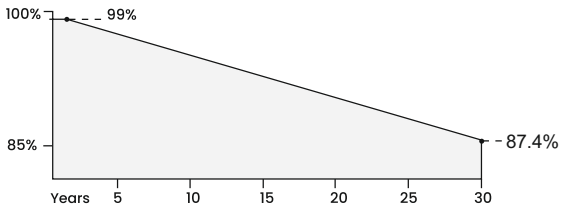


IV Curve Variation with Irradiance



IV Curves for Front-Side Illumination of 600 Wp Panel

LINEAR PERFORMANCE WARRANTY



MAXIMUM OPERATING CONDITIONS

Operating Temperature :	-40℃ to +85℃
Maximum System Voltage :	1500V
Maximum Series Fuse Rating :	30A

TEMPERATURE COEFFICIENT

Current α(Isc) :	0.045%/°C
Voltage β(Voc) :	-0.250%/°C
Power ϒ(Pmax) :	-0.320%/°C

STACKING STANDARD

	40FT
No. of Modules :	704 Nos
No of Pallets :	22 Pallets
Modules per Pallet / Weight :	32 Nos/1090 Kgs.
Pallet dimensions :	2320*990*1275

Caution: Please read the safety and installation instructions before using this product.
Warranty: Linear power warranty for 30 years, with degradation of up to 1.0% in the first year and 0.45% per year from year 2 to year 30. Please read the Oswal warranty documents thoroughly.
Disclaimer: Specifications included in this datasheet are subject to change without prior notice due to ongoing innovation in product development and R&D activities. OSWAL SOLAR reserves the right to make any adjustments to the information described here. The data contained in this specification do not represent the performance of an individual module. T&C apply.