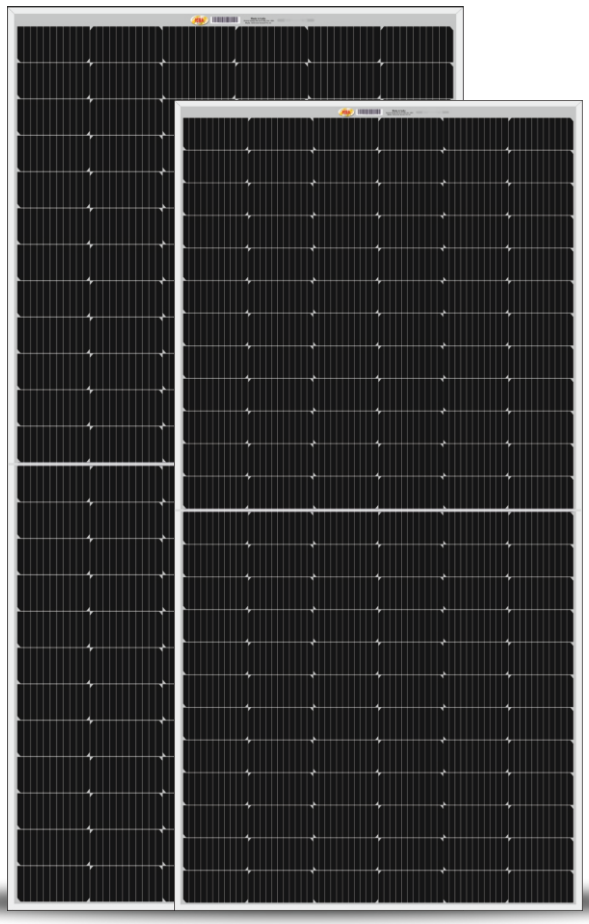
OSWAL
RENEWABLE ENERGY
Greener | Cleaner | Smarter
True Partner !



OSWAL SOLAR MODULES MONO PERC HALF-CUT 505 Wp - 560 Wp

Bifacial PV Modules

Engineered for higher power generation and space efficiency, Oswal Solar's Bifacial PV Modules feature a transparent back sheet, half-cut cells, and 10-busbar technology. With efficiency up to 21.67%, enhanced low-light performance and potential power gains of up to 25% from reflected sunlight, they deliver reliable, durable and efficient solar solutions.

PRODUCT CERTIFICATES

IECEE CB Scheme — IEC CB Scheme
IEC 61215 — Design Qualification
IEC 61730-1 / 2 — Safety Qualification
IS 14286 — BIS Qualification
Better Performance
ISO 9000 — Certified Mfg. Process
ISO 14000 — Environmental Mgt. System
M10 - Cell
Split type - JB
Better Performance

MADE IN INDIA

27 YEARS — 27 Years Warranty for linear performance

12 YEAR — Product warranty on materials and workmanship

PRODUCT | KEY FEATURES

OSWAL SOLAR

- Anti-Reflective (AR) coated glass to enhance solar energy
- Excellent module efficiency with Passivated Emitter Rear Cell (PERC) to achieve higher energy conversion efficiency
- Positive power tolerance with current binning to prevent mismatch losses
- Pre- and post-lamination electroluminescence (EL) inspection with high-resolution cameras to detect hidden defects such as cell cracks and diode failures
- IP68 Junction Box ensures long-term endurance, even in harsh environmental conditions
- Hi-Pot testing verifies insulation strength for electrical safety and quality
- 10-busbar (10BB) half-cut cell technology brings stronger resistance to shade and lower risk of hot spots



TECHNICAL DATA

ELECTRICAL PERFORMANCE [Note: Power tolerance: 0 ~ +4.99 W. Power measurement uncertainty: <±3%. Average value of NOCT: 45°C]

ELECTRICAL CHARACTERISTICS*	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Maximum Power (Pmax)	520 W	389 W	540 W	412 W	545 W	410.4 W	550 W	412 W
Optimum Operating Voltage (Vmp)	41.02 V	38.895 V	42.34 V	40.147 V	42.65 V	38.70 V	42.984 V	40.757 V
Optimum Operating Current (Imp)	12.68 A	10.227 A	12.76 A	10.292 A	12.78 A	10.59 A	12.8 A	10.324 A
Open Circuit Voltage (Voc)	47.858 V	45.379 V	48.97 V	46.433 V	49.24 V	46.70 V	49.60 V	47.038 V
Short Circuit Current (Isc)	13.33 A	10.751 A	13.45 A	10.848 A	13.48 A	11.22 A	13.52 A	10.905 A
Module Efficiency	20.13 %		20.90 %		21.10 %		21.29 %	
Fill Factor	80.53 %		80.03 %		82.11 %		82.03 %	

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

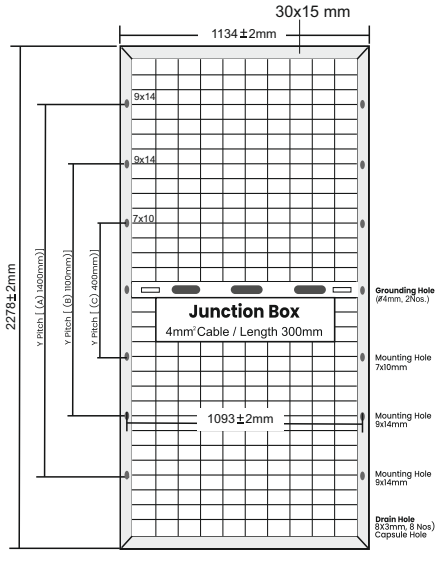
[Note: The bifacial gain depends on the power plant design and conditions. Electrical component ratings should be selected based on the actual bifacial gain at the site (module currents indicated below).]

15%	Nominal Maximum Power (Pmax)	598 W	621 W	627 W	633 W
	Module Efficiency	23.15 %	24.04 %	24.26 %	24.48 %
20%	Nominal Maximum Power (Pmax)	624 W	648 W	654 W	660 W
	Module Efficiency	24.16 %	25.08 %	25.32 %	25.55 %
25%	Nominal Maximum Power (Pmax)	650 W	675 W	681 W	688 W
	Module Efficiency	25.16 %	26.13 %	26.37 %	26.61 %

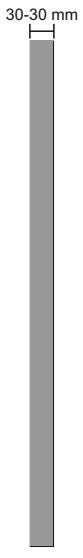
Mechanical Specifications

Dimensions (L x W x T in mm)	2278 x 1134 x 30
Weight (Kg)	26.5 kg ± 0.4 kg
Cell Type / No. of Cells	Mono PERC Half-Cut Bifacial / 144 Cells (12*6, 12*6)
Frame	Silver Anodized Aluminum Alloy (6005, Temper T6, Silver Colour)
Front Cover	ARC Coated Low-Iron Tempered Glass (3.2 mm Thick)
Encapsulant	Ethylene Vinyl Acetate (EVA) Sheet - PID free and UV Resistant
Back Sheet	Fluoro-polymer Based Composite Film / Polymer Based Composite Film
Junction Box	Split Junction Box (3 units with bypass diode) - Weatherproof (IP68), MC4 Compatible Connectors
Cable	4 sq. mm, 300 mm. / 400 mm. Length (As per Customer Requirement)
Application Class Rating	Class A
Safety Class Rating	Class II
Mechanical Load Test (as per IEC & UL)	5400 Pa-front, 2400 Pa-back
Mounting Holes Pitch (Y)-mm	[A] 1400, [B] 1100, [C] 400
Mounting Holes Pitch (X)-mm	1093 ± 2mm

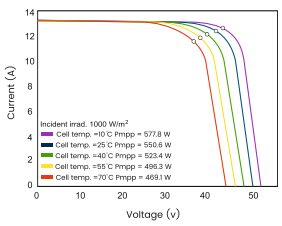
BACK VIEW



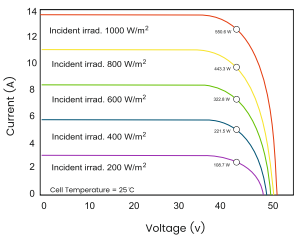
SIDE VIEW



IV Curve Varies with Temperature

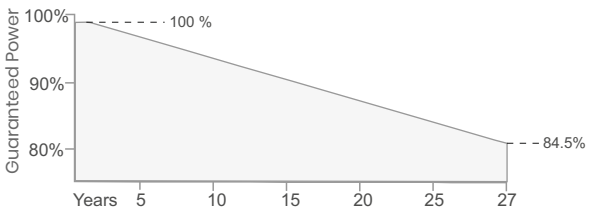


IV Curve Varies with Irradiance



IV Curves for Front-Side Illumination of 550 Wp Panel

LINEAR PERFORMANCE WARRANTY



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

Graphics shown above are for reference purposes only.

MAXIMUM OPERATING CONDITIONS	
Operating Temperature :	-40°C to +85°C
Maximum System Voltage :	1500V
Maximum Series Fuse Rating :	25A

TEMPERATURE COEFFICIENT	
Current α(Isc) :	0.041%/°C
Voltage β(Voc) :	-0.259%/°C
Power ϒ(Pmax) :	-0.320%/°C

STACKING STANDARD	32FT	40FT
No. of Modules :	512 Nos	704 Nos
No of Pallets :	16 Pallets	22 Pallets
Modules per Pallet / Weight :	32 Nos/886 Kgs.	32 Nos/886 Kgs.
Pallet dimensions :	2300*1010*1210	2300*1010*1210

Caution: Please read the safety and installation instructions before using this product.
Warranty: Linear power warranty for 27 years, with degradation of up to 2.5% in the first year and 0.5% per year from year 2 to year 27. 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.