



**SMART
SOLAR
SOLUTION**

OSWAL

SOLAR MODULES

PRODUCT CATALOG





INTRO

Oswal Solar Structures is a pioneering manufacturing company specializing in solar PV modules. Entrenched in 2023, Oswal Solar Structures is dedicated to revolutionizing the renewable energy sector through the production of high-quality, durable and efficient solar panels. At Oswal Solar Structures, we understand the need of the hour for transforming into a clean energy source and reduce dependency on fossil fuels. Our solar PV modules adopts the power of the sun to generate clean, renewable electricity, offering an environmental friendly and cost-effective solution for residential, commercial, and industrial applications. With a steadfast commitment to sustainability and a vision to create a greener future, we have positioned ourselves as a renowned name in the industry.

Changing the face of India.



OSWAL SOLAR

500Wp to 595Wp
Mono Half Cut Bifacial
(DCR & NON-DCR)

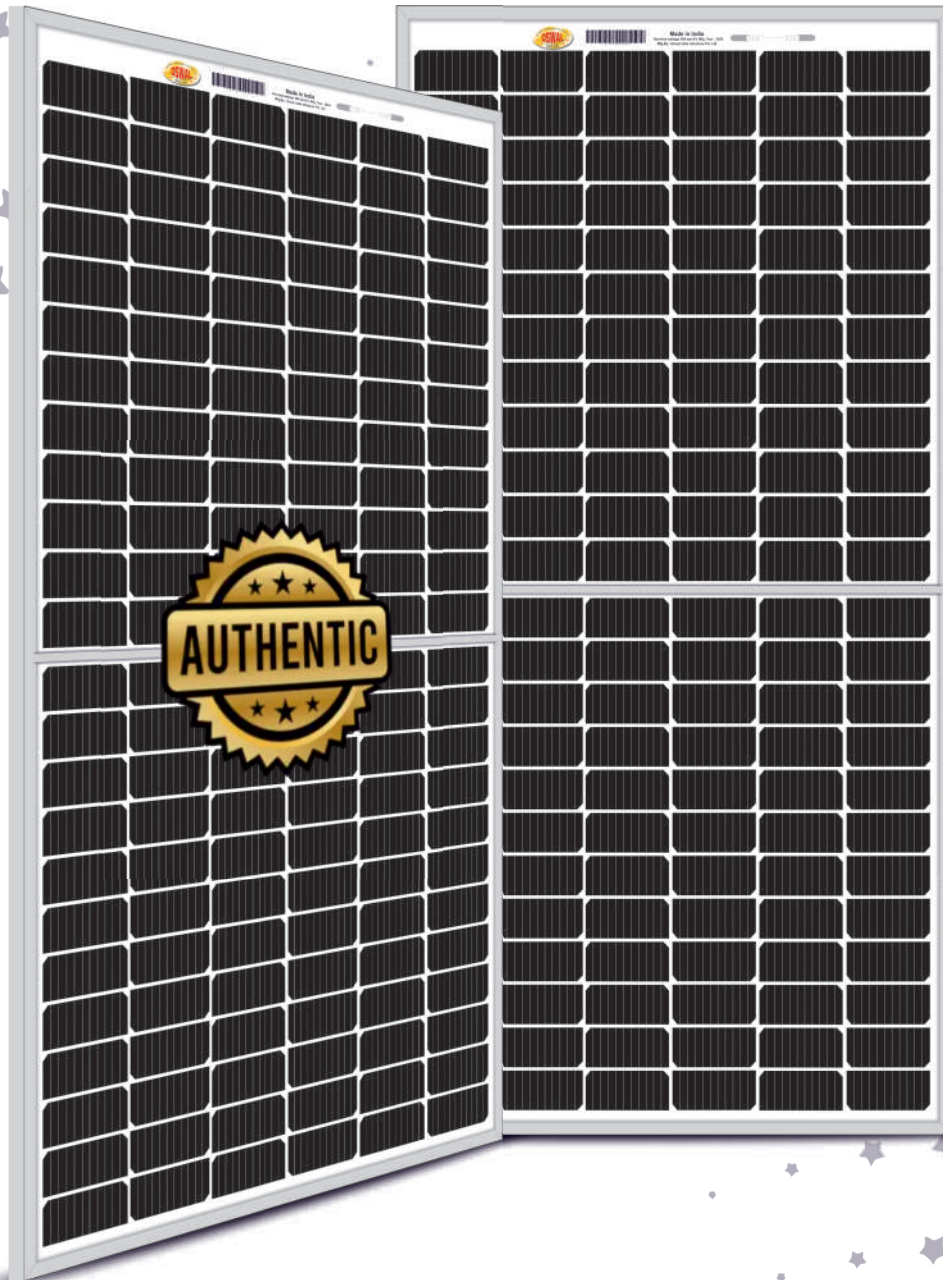
Trust the Brand,
Count the Promise!



500Wp to 595Wp Mono Half Cut (DCR & NON-DCR)

ALMM Approved

Latest Technology Solar Modules



Our Solar Modules

**MONO PERC HALF CUT
OSWAL 540-550 Wp
Mono (Non-DCR)**

**MONO PERC HALF CUT
OSWAL 540-550 Wp
Mono Bifacial (Non-DCR)**

**MONO PERC HALF CUT
OSWAL 540 Wp
Mono (DCR)**

**MONO PERC HALF CUT
OSWAL 540 Wp
Mono Bifacial (DCR)**

Our Services



Technical support



Always ready to support



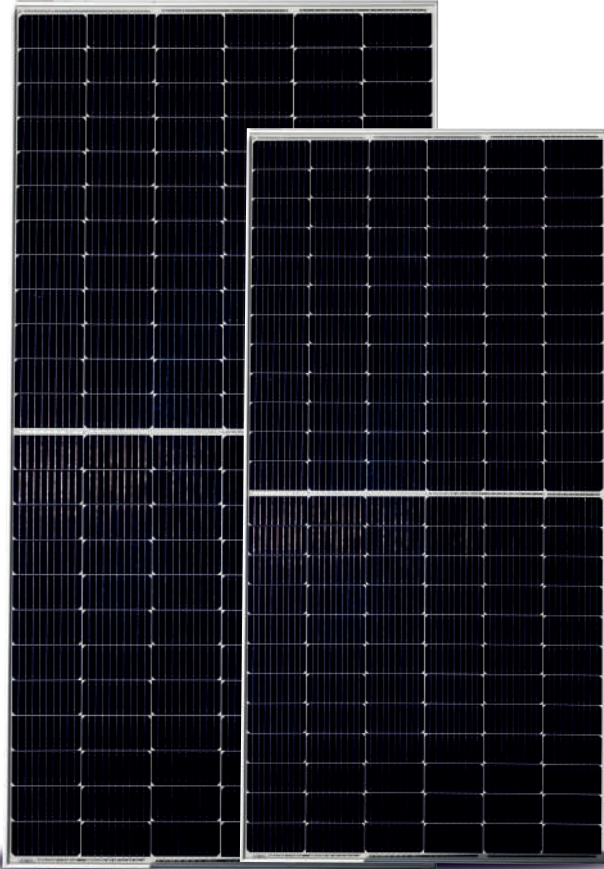
Single point of support for customer



9*6 Customer care access support operation



Onsite Service Solutions



OSWAL SOLAR MODULES MONO PERC HALF CUT 540 – 550 Wp

Mono (Non-DCR)

THE INDUSTRY'S BENCHMARK








Oswal Solar is an internationally renowned leading solar energy cost effective befitting solutions provider having core competency in high efficiency PV module manufacturing and providing wide range EPC solutions. PV modules are the best in class in terms of power output and long-term reliability.

PRODUCT CERTIFICATES



MADE IN INDIA

PRODUCT | KEY FEATURES

-  Anti-Reflective (AR) Coated Glass for Enhanced Power
-  Excellent Module Efficiency with Bifacial Power Gain
-  Positive Power Tolerance with Current Binning to Prevent Mismatch Losses
-  Pre and Post EI Checking With High Resolution Camera
-  IP68 Junction Box for Long Term Endurance
-  100% Hi-Pot Testing to Ensure Safety
-  MBB Half-Cell Technology provides Better Performance under Partial Shading



OSWAL

TECHNICAL DATA

ELECTRICAL PERFORMANCE [Note : Power tolerance : 0 ~ +4.99 W. Power measurement uncertainty : $\pm 3\%$. Average value of NOCT : 44.28 \pm 2 C]

ELECTRICAL CHARACTERISTICS*	OSWAL540MPN144		OSWAL545MPN144		OSWAL550MPN144	
	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Maximum Power (Pmax)	540 W	400 W	545 W	403 W	550 W	407 W
Optimum Operating Voltage (Vmp)	41.86 V	38.54 V	42.01 V	38.68 V	42.14 V	38.80 V
Optimum Operating Current (I _{mp})	12.91 A	10.37 A	12.98 A	10.43 A	13.07 A	10.49 A
Open Circuit Voltage (V _{oc})	49.78 V	46.82 V	49.91 V	46.94 V	50.06 V	47.09 V
Short Cut Current (I _{sc})	13.53 A	10.96 A	13.59 A	11.01 A	13.65 A	11.06 A
Module Efficiency	20.94 %		21.13 %		21.32 %	

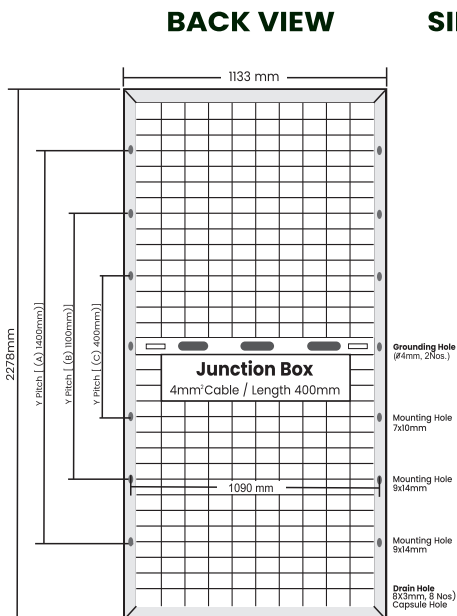
BIFACIAL OUTPUT – BACKSIDE POWER GAIN @ STC* [Bifaciality Factor : 75% \pm 10%]

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

Gain %	Parameter	OSWAL540MPN144	OSWAL545MPN144	OSWAL550MPN144
5%	Nominal Maximum Power (Pmax)	567 W	573 W	578 W
	Module Short Circuit Current / Efficiency	14.21 A / 21.99 %	14.27 A / 22.18 %	14.33 A / 22.39 %
10%	Nominal Maximum Power (Pmax)	594 W	600 W	605 W
	Module Short Circuit Current / Efficiency	14.88 A / 23.03 %	14.95 A / 23.24 %	15.02 A / 23.46 %
25%	Nominal Maximum Power (Pmax)	676 W	682 W	688 W
	Module Short Circuit Current / Efficiency	16.91 A / 26.17 %	16.99 A / 26.41 %	17.06 A / 26.65 %

Mechanical Specifications

Dimensions (L x W x T in mm)	2278 x 1133 x 35
Weight(kg)	33
Cell type / No Of Cell	144 Half-cut Mono PERC Bifacial Solar cells
Frame	Anodized Aluminum Alloy (6005, Temper T6, Silver colour)
Front Cover	Low Iron Heat-strengthened AR coated Glass (2 mm thick)
Encapsulate	PID resistant and UV resistant polymeric film
Back Cover	Low Iron Heat-strengthened Glass (2 mm thick)
Junction Box	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, 400 mm length (1200 mm available on request)
Connectors	Mc4 compatible (MC4 original available on request)
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] 140, [B] 1100
Mounting Holes Pitch (X)-mm	1095

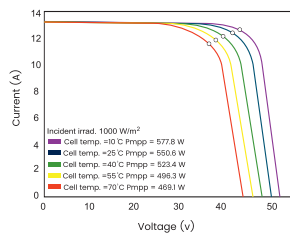


*All dimensions are in mm with +/- 2mm tolerance.

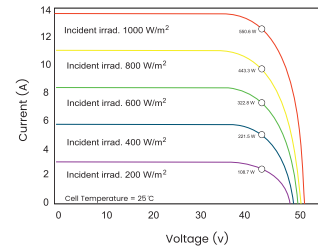
SIDE VIEW



IV Curve Varies on with Temperature

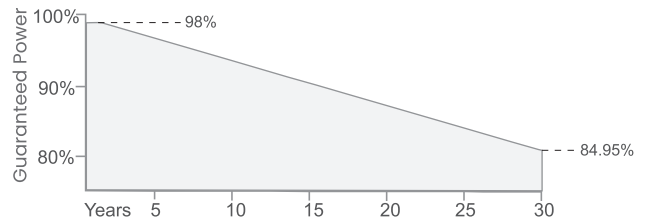


IV Curve Varies on with Irradiance



IV Curves for Front-Side Illumination of 550 Wp Panel

LINEAR PERFORMANCE WARRANTY



*graphics shown herein above are reference purpose only.

MAXIMUM OPERATING CONDITIONS

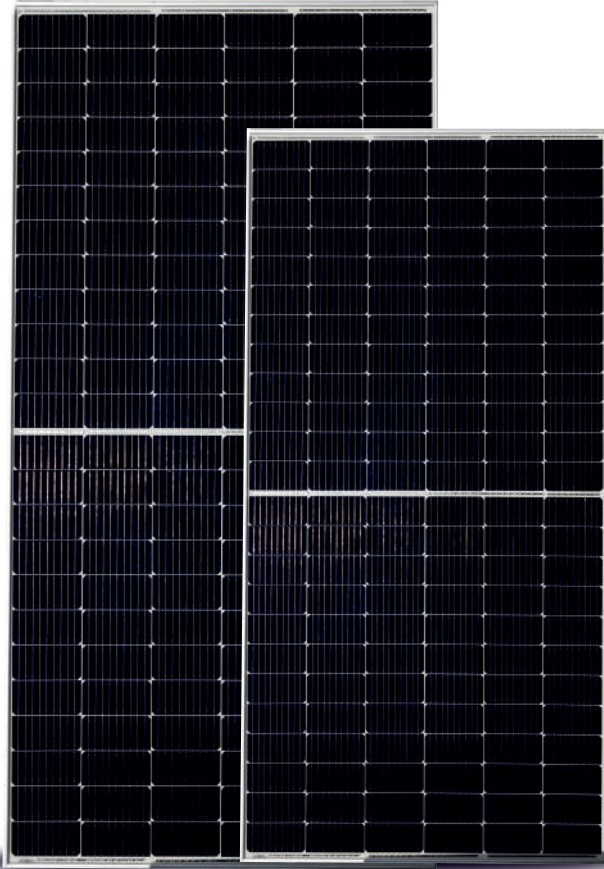
Operating Temperature :	-40°C to +85°C
Maximum System Voltage :	1500V
Maximum Series Fuse Rating :	25A

TEMPERATURE COEFFICIENT

Current α (I _{sc}) :	0.0286%/°C
Voltage β (V _{oc}) :	-0.2488%/°C
Power γ (Pmax) :	-0.3290%/°C

STACKING STANDARD 32FT 40FT

No. of Modules	434	620
No of Pallets	14	20
Modules per Pallet / Weight	31 Nos/1070 Kg	31 Nos/1070 Kg
Pallet dimensions	2320*1130*1275	2320*1130*1275



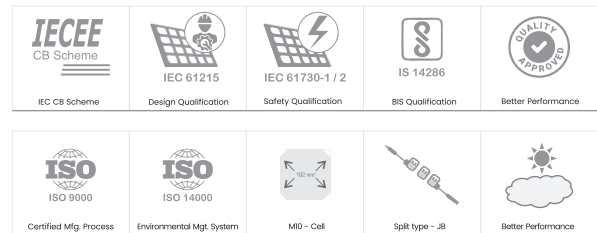
OSWAL SOLAR MODULES MONO PERC HALF CUT 540 – 550 Wp

Mono Bifacial (Non-DCR)

THE INDUSTRY'S BENCHMARK

Oswal Solar is an internationally renowned leading solar energy cost effective befitting solutions provider having core competency in high efficiency PV module manufacturing and providing wide range EPC solutions. PV modules are the best in class in terms of power output and long-term reliability.








PRODUCT CERTIFICATES



MADE IN INDIA

PRODUCT | KEY FEATURES

OSWAL

-  AR Coated Tempered Glass
Anti-Reflective Module Surface
-  Excellent Module Efficiency
with Mono PERC Cells
-  Positive Power Tolerance
Up to 5W
-  Pre and Post EL Checking
to ensure Defect Free Modules
-  IP68 Junction Box for Long
Term Endurance
-  100% Hi-Pot Testing to Ensure
Safety
-  High Module Reliability using
Multi Busbar Half-cut Cell Technology



TECHNICAL DATA

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC) (irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.)

Model Number	OSWAL540MPN144	OSWAL545MPN144	OSWAL550MPN144
Nominal Maximum Power (Pmax)	540W	545W	550W
Power Tolerance	<-----	0 ~ +5 W	----->
Optimum Operating Voltage (Vmp)	41.86 V	42.01 V	42.14 V
Optimum Operating Current (Imp)	12.91 A	12.98 A	13.07 A
Open Circuit Voltage (Voc)	49.78 V	49.91 V	50.06 V
Short Circuit Current (Isc)	13.53 A	13.59 A	13.65 A
Module Efficiency	20.94 %	21.13 %	21.32 %
Fill Factor	80.24 %	80.39 %	80.54 %

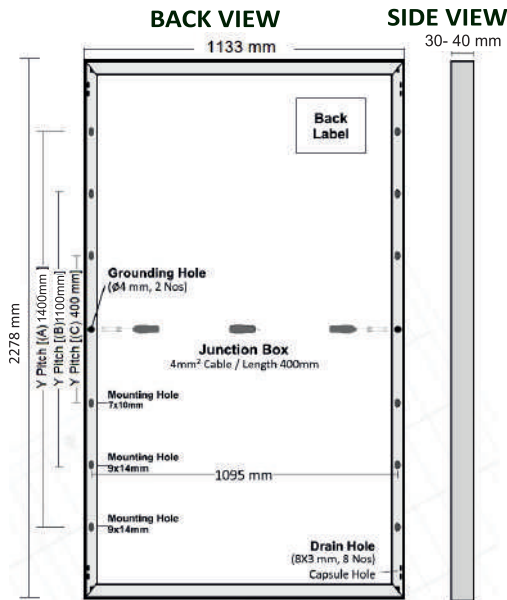
Note: Power measurement uncertainty: $\pm 3\%$

PERFORMANCE UNDER NOCT (NOCT irradiances of 800 W/m², ambient temperature of 20°C, Wind speed 1m/s, Average NOCT = 45.25°C)

Maximum Power (Pmax)	400 W	403W	407 W
Optimum Operating Voltage (Vmp)	38.54 V	38.68 V	38.80 V
Optimum Operating Current (Imp)	10.37 V	10.43 V	10.49 V
Open Circuit Voltage (Voc)	46.82 V	46.94 V	47.09 V
Short Circuit Current (Isc)	10.96 A	11.01 A	11.06 A

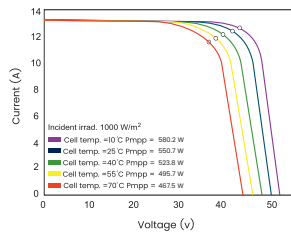
Mechanical Specifications

Dimensions (L x W x T in mm)	2278 x 1133 x 40
Weight (kg)	28.6
No Of Cell	144 [12 x 6 / 12 x 6]
Frame	Silver Anodized Aluminum Alloy (6063, Temper T5, silver colour)
Front Cover	ARC coated Low Iron Tempered Glass (3.2 mm thick)
Encapsulate	Ethylene Vinyl Acetate (EVA) Sheet - PID free and UV resistant
Back Sheet	Fluro-polymer based Composite Film
Junction Box	Split Junction Box (3 nos with Bypass Diode) - Weatherproof (IP68), MC4 Compatible
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	1095

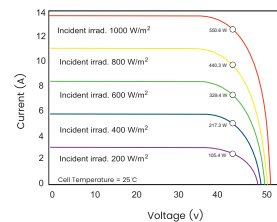


*All dimensions are in mm with ± 2 mm tolerance

IV Curve Varies on with Temperature

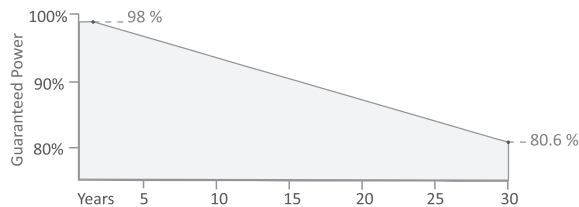


IV Curve Varies on with Irradiance



* I-V curves shown for front-side illumination of 550 Wp panel.

LINEAR PERFORMANCE WARRANTY



graphics shown here in above are reference purpose only

MAXIMUM OPERATING CONDITIONS

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

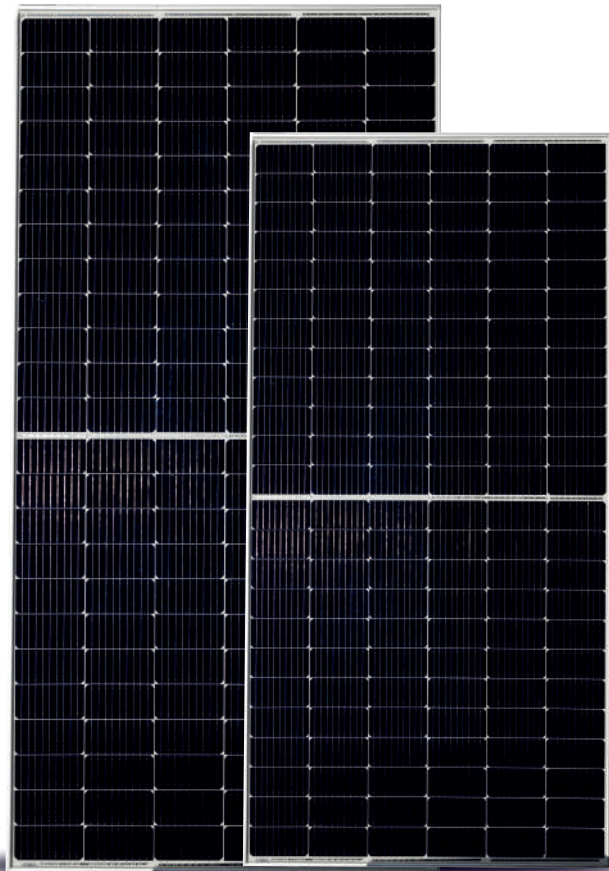
TEMPERATURE COEFFICIENTS

Current α (Isc) :	0.0271 %/ C
Voltage β (Voc) :	-0.2355 %/ C
Power γ (Pmax) :	-0.3164 %/ C

STACKING STANDARD

	19FT	32FT
No. of Modules	192 Nos	432Nos
No of Pallets	8 Pallets	16 Pallets
Modules per Pallet / Weight	24 Nos/730 Kgs.	27 Nos/820 Kgs.
Pallet dimensions	2320*1000*1275	2320*1130*1275

Caution: Please read safety and installation instructions for using the product. ***Warranty:** Linear power warranty for 30 years, with degradation up to 2% in 1st year and 0.6% / year from year 2 to year 30. Please read Oswal warranty documents thoroughly. **Disclaimer:** Specifications included in the datasheet are subject to change without prior notice owing to conditions innovation on the product Development and R&D Activities. OSWAL SOLAR reserves the right to make any adjustment to the information described here. Dataset contained in this specification do not form a representative of a single module data. @T&C Apply.



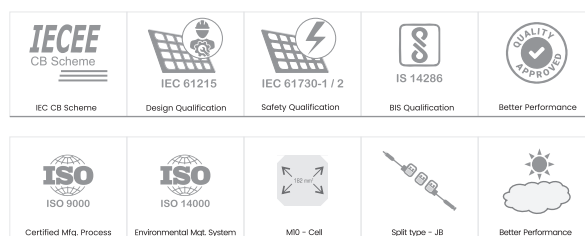
OSWAL SOLAR MODULES MONO PERC HALF CUT 540 Wp

Mono (DCR)

THE INDUSTRY'S BENCHMARK

Oswal Solar is an internationally renowned leading solar energy cost effective befitting solutions provider having core competency in high efficiency PV module manufacturing and providing wide range EPC solutions. PV modules are the best in class in terms of power output and long-term reliability.








PRODUCT CERTIFICATES



MADE IN INDIA

PRODUCT | KEY FEATURES

OSWAL

-  Anti-Reflective (AR) Coated Glass for Enhanced Power
-  Excellent Module Efficiency with Bifacial Power Gain
-  Positive Power Tolerance with Current Binning to Prevent Mismatch Losses
-  Pre and Post EI Checking With High Resolution Camera
-  IP68 Junction Box for Long Term Endurance
-  100% Hi-Pot Testing to Ensure Safety
-  MBB Half-Cell Technology provides Better Performance under Partial Shading



TECHNICAL DATA

ELECTRICAL PERFORMANCE [Note : Power tolerance : 0 ~ +4.99 W. Power measurement uncertainty : < 3%. Average value of NOCT : 44.28 2 C]

ELECTRICAL CHARACTERISTICS*	OSWAL535MPI44		OSWAL540MPI44		OSWAL545MPI44	
	STC	NOCT	STC	NOCT	STC	NOCT
Nominal Maximum Power (Pmax)	535 W	396 W	540 W	400 W	545 W	403 W
Optimum Operating Voltage (Vmp)	41.72 V	38.42 V	41.86 V	38.54 V	42.01 V	38.68 V
Optimum Operating Current (Imp)	12.83 A	10.31 A	12.91 A	10.37 A	12.98 A	10.43 A
Open Circuit Voltage (Voc)	49.64 V	46.68 V	49.78 V	46.82 V	49.91 V	46.94 V
Short Circuit Current (Isc)	13.47 A	10.91 A	13.53 A	10.96 A	13.59 A	11.01 A
Module Efficiency	20.75 %		20.94 %		21.13 %	

BIFACIAL OUTPUT – BACKSIDE POWER GAIN @ STC* [Bifaciality Factor : 75% 10%]

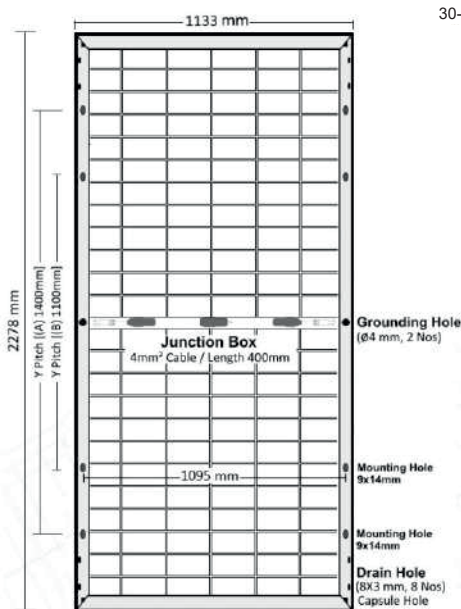
[Note: The bifacial gain depends on the power plant design and conditions. Electrical component ratings should be selected as actual Bifacial Gain at site (module currents indicated below)]

Gain at site	Parameter	OSWAL535MPI44	OSWAL540MPI44	OSWAL545MPI44
5%	Nominal Maximum Power (Pmax)	562 W	567 W	573 W
	Module Short Circuit Current / Efficiency	14.14 A / 21.78 %	14.21 A / 21.99 %	14.27 A / 22.18 %
10%	Nominal Maximum Power (Pmax)	589 W	594 W	600 W
	Module Short Circuit Current / Efficiency	14.82 A / 22.82 %	14.88 A / 23.03 %	14.95 A / 23.24 %
25%	Nominal Maximum Power (Pmax)	669 W	676 W	682 W
	Module Short Circuit Current / Efficiency	16.84 A / 25.93 %	16.91 A / 26.17 %	16.99 A / 26.41 %

Mechanical Specifications

Dimensions (L x W x T in mm)	2278 x 1133 x 40
Weight(kg)	28.6
Cell type / No Of Cell	144 Half-cut Mono PERC Bifacial Solar cells
Frame	Anodized Aluminum Alloy (6005, Temper T6, Silver colour)
Front Cover	ARC coated Low Iron Tempered Glass (3.2 mm thick)
Encapsulate	Ethylene Vinyl Acetate (EVA) - PID resistant and UV resistant
Back Cover	Corona treated PVDF Fluoro-polymer based transparent Backsheet
Junction Box	Split type (3 nos. with individual Bypass Diode) . Weatherproof (IP68)
Bypass Diode	40 A, 45 V, 200 °C Max. junction temperature
Cable	4 sq. mm, 400 mm length (1200 mm available on request)
Connectors	MC4 compatible (MC4 original available on request)
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
Mounting Holes Pitch (X)-mm	1095

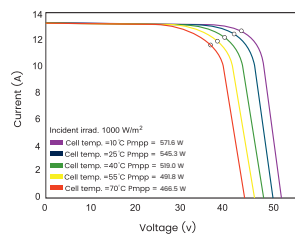
BACK VIEW



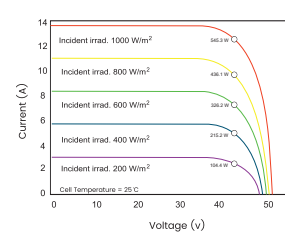
SIDE VIEW



IV Curve Varies on with Temperature

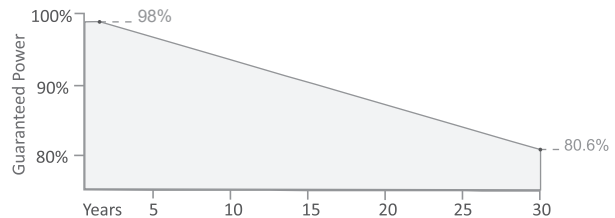


IV Curve Varies on with Irradiance



IV Curves for Front-Side Illumination of 545 Wp Panel

LINEAR PERFORMANCE WARRANTY



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

graphics shown here in above are reference purpose only

MAXIMUM OPERATING CONDITIONS

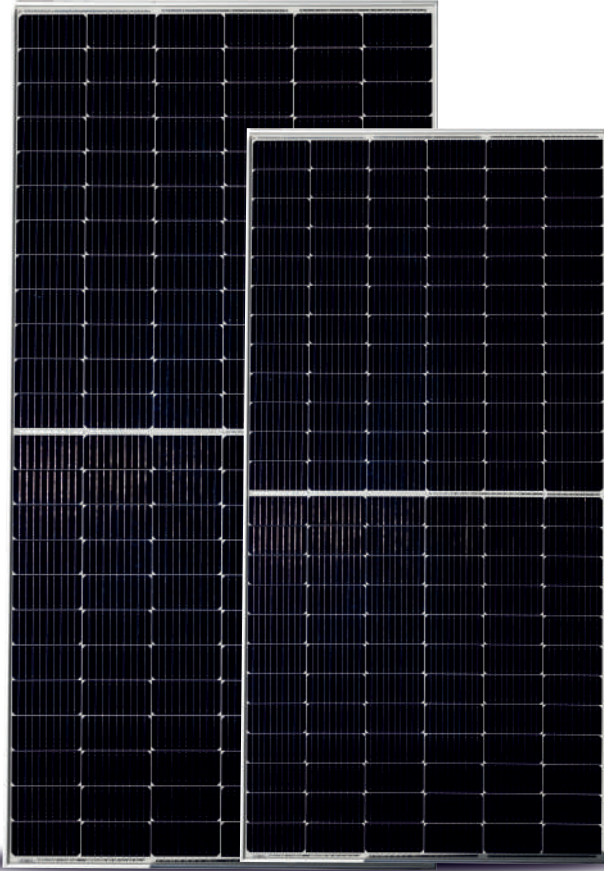
Operating Temperature:	-40°C to +85°C
Maximum System Voltage:	1500V
Maximum Series Fuse Rating:	25A

TEMPERATURE COEFFICIENTS

Current α(Isc) :	0.0284%/°C
Voltage β(Voc) :	-0.2444%/°C
Power γ(Pmax) :	-0.3210%/°C

STACKING STANDARD

	19FT	32FT
No. of Modules	192	486
No of Pallets	8	18
Modules per Pallet / Weight	24 Nos/ 730 Kg	27 Nos/ 820 Kg
Pallet dimensions	2320*1000*1275	2320*1130*1275



OSWAL SOLAR MODULES MONO PERC HALF CUT 540 Wp

Mono Bifacial (DCR)

THE INDUSTRY'S BENCHMARK

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PRODUCT CERTIFICATES



MADE IN INDIA

PRODUCT | KEY FEATURES

OSWAL

-  AR Coated Tempered Glass
Anti-Reflective Module Surface
-  Excellent Module Efficiency with
Mono PERC cells through 100%
Automation
-  Positive Power Tolerance with
Current Binning to Prevent
Mismatch Losses
-  Pre and Post EL Checking
to ensure Defect Free Modules
-  IP68 Junction Box for Long
Term Endurance
-  100% High Voltage Testing to Ensure
Safety
-  MBB Half-Cell Technology
provides Better Performance
under Partial Shading



TECHNICAL DATA

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC) (irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.)

Model Number	OSWAL535MP144	OSWAL540MP144	OSWAL545MP144	OSWAL550MP144
Nominal Maximum Power (Pmax)	535 W	540 W	545 W	550 W
Power Tolerance	0 to +4.99 W	0 to +4.99 W	0 to +4.99 W	0 to +4.99 W
Optimum Operating Voltage (Vmp)	41.72 V	41.86 V	42.01 V	42.14 V
Optimum Operating Current (Imp)	12.83 A	12.91 A	12.98 A	13.06 A
Open Circuit Voltage (Voc)	49.64 V	49.78 V	49.91 V	50.06 V
Short Circuit Current (Isc)	13.47 A	13.53 A	13.59 A	13.65 A
Module Efficiency	20.74 %	20.94 %	21.13 %	21.32 %
Fill Factor	80.05 %	80.24 %	80.39 %	80.54 %

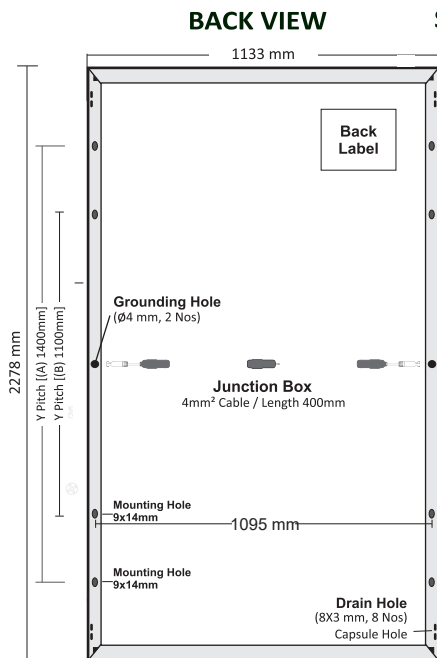
Note: Power Measurement uncertainty: < ±3%

PERFORMANCE UNDER NOCT (NOCT irradiances of 800 W/m², ambient temperature of 20°C, Wind speed 1m/s, Average NOCT = 45.25°C)

	OSWAL535MP144	OSWAL540MP144	OSWAL545MP144	OSWAL550MP144
Maximum Power (Pmax)	396 W	400W	408 W	407 W
Optimum Operating Voltage (Vmp)	38.42 V	38.54V	38.68V	38.80 V
Optimum Operating Current (Imp)	10.31 A	10.37A	10.43 A	10.49 A
Open Circuit Voltage (Voc)	46.68 V	46.82V	46.94V	47.09 V
Short Circuit Current (Isc)	10.91 A	10.96A	11.01 A	11.06 A

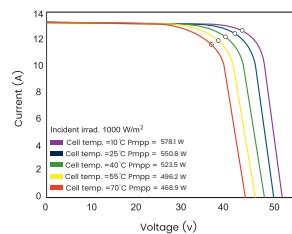
Mechanical Specifications

Dimensions (L x W x T in mm)	2278 x 1133 x 40
Weight(kg)	28.6
Cell type / No Of Cell	144 Half-cut Mono PERC Solar cells
Frame	Anodized Aluminum Alloy (6005, Temper T6, silver colour)
Front Cover	ARC coated Low Iron Tempered Glass (3.2 mm thick)
Encapsulate	Ethylene Vinlyl Acetate (EVA) Sheet - PID resistant and UV resistant
Back Cover	Corona treated PVDF Fluoro-polymer Backsheet (white colour)
Junction Box	Split Junction Box (3 nos. with individual Bypass Diode) - Weatherproof (IP68)
Bypass Diode	40 A, 45 V, 200 °C max. junction temperature
Cable	4 sq. mm, 400 mm length (1200 mm available on request)
Connectors	MC4 compatible (MC4 original available on request)
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
Mounting Holes Pitch (X)-mm	1095

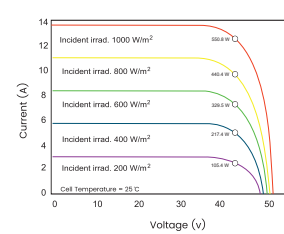


SIDE VIEW

IV Curve Varies on with Temperature

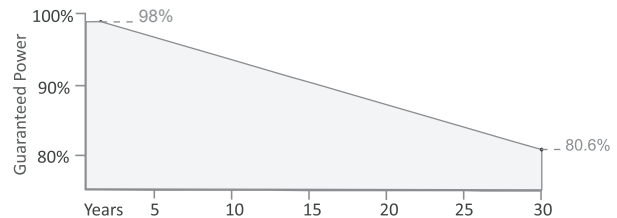


IV Curve Varies on with Irradiance



IV Curves for 550 Wp Panel

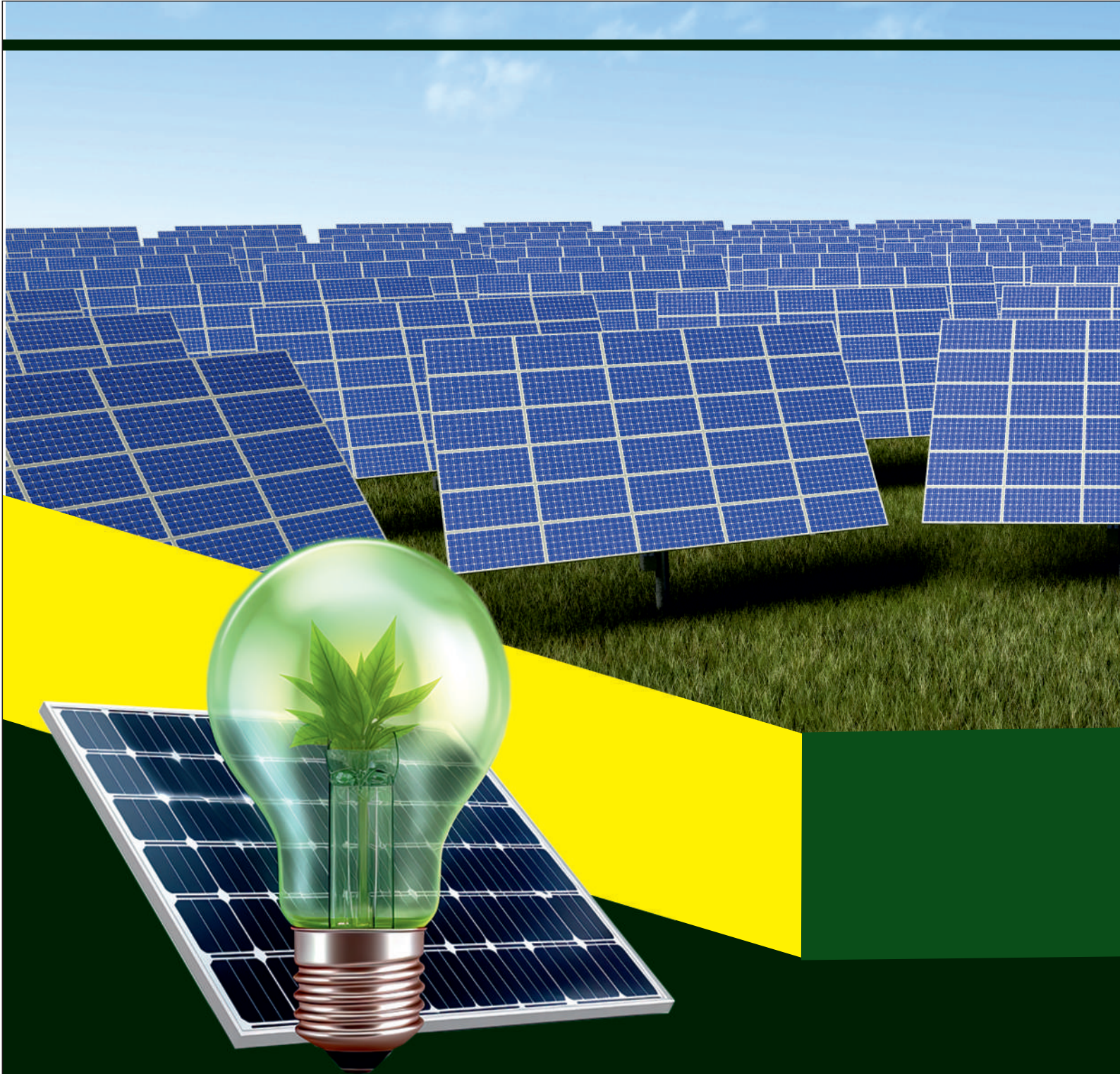
LINEAR PERFORMANCE WARRANTY



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

graphics shown here in above are reference purpose only

MAXIMUM OPERATING CONDITIONS	TEMPERATURE COEFFICIENTS	STACKING STANDARD	19FT	32FT
Operating Temperature: -40°C to +85°C	Current α(Isc) : 0.0297%/°C	No. of Modules	192	486
Maximum System Voltage: 1500V	Voltage β(Voc) : -0.2470%/°C	No of Pallets	8	18
Maximum Series Fuse Rating: 25A	Power γ(Pmax) : -0.3303%/°C	Modules per Pallet / Weight	24 Nos/ 730 Kg	27 Nos/ 820 Kg
		Pallet dimensions	2320*1000*1275 2320*1130*1275	



Solar Energy Solutions



Industrial
Solar



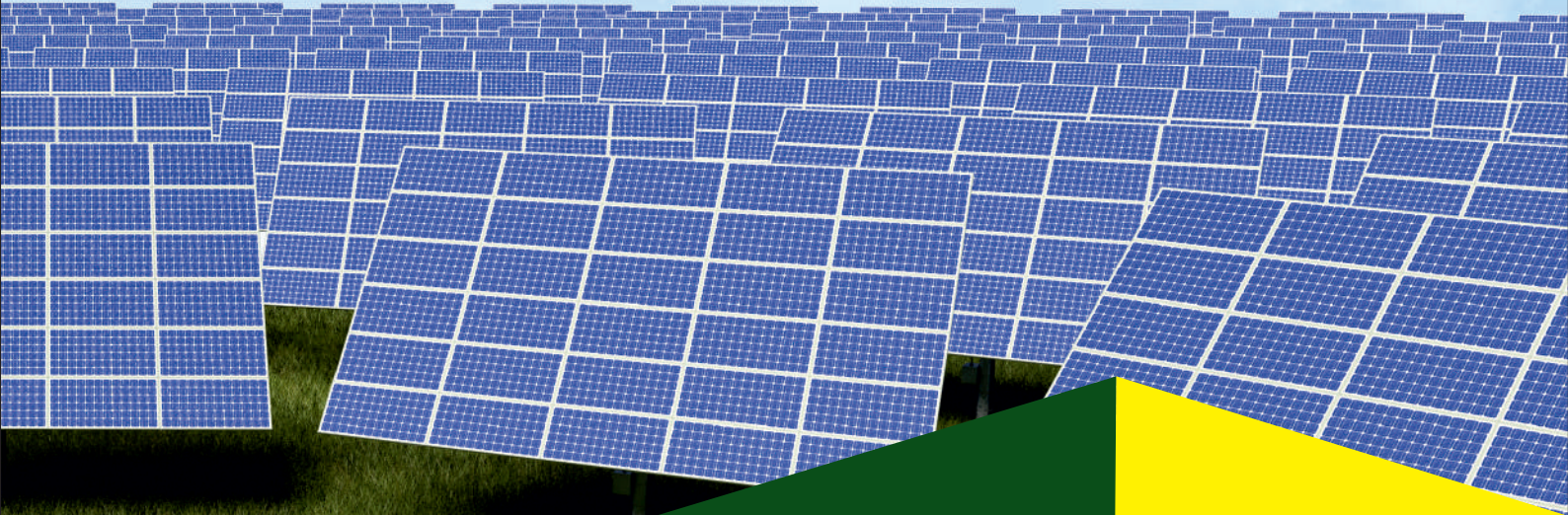
Residential
Rooftop Solar



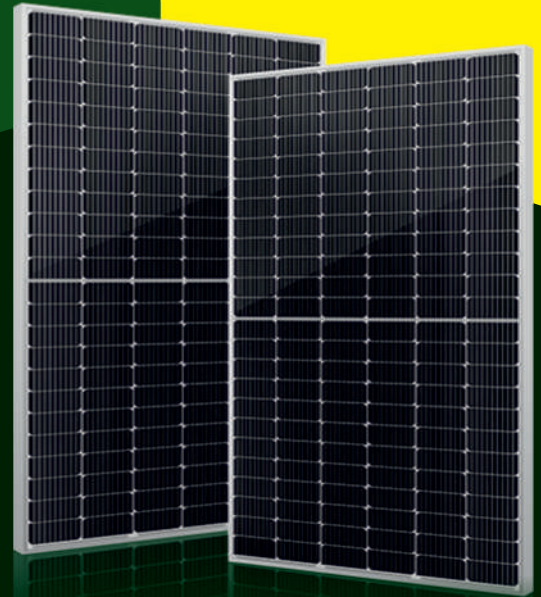
Solar R&D
Support System



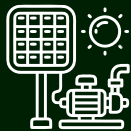
Solar Business
Models



Solar makes your life better



AC Solar
Plants



Agriculture Solar
(Water Pumps)



Agricultural Solutions
(VFD-based Flour Mill,
Oil expellers, and Others)



Commercial Solar

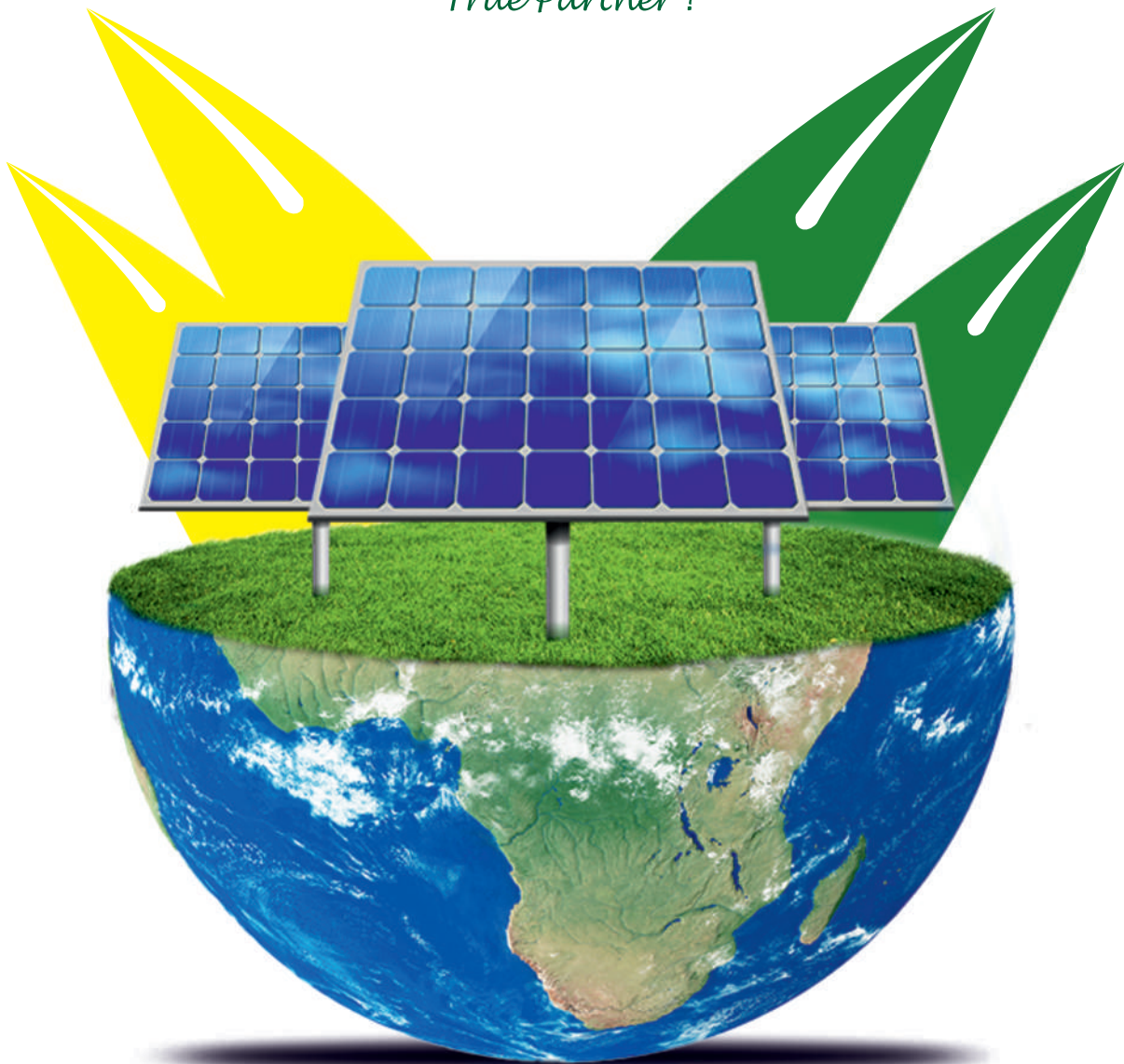


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