

DHOOP PP48 Cells 35mm SERIES POLY

DHOOP PP48 235
DHOOP PP48 230
DHOOP PP48 225
DHOOP PP48 220
DHOOP PP48 215
DHOOP PP48 210



AGRAWAL RENEWABLE ENERGY PVT LTD

Agrawal Group, Goa having interests in Solar aims to bring solar energy systems and solutions, to all rural and urban areas and bring about a revolution in the quality of life. As part of this initiative, we are manufacturing DHOOP series solar PV Modules and offering range of Products, systems and solutions – from solar Lantern, home lighting systems, street lighting systems, solar pump, roof top system to independent power plants- all based on solar energy.

Our product is IEC 61215, IEC 61730-1, IEC 61730-2, IEC 61701, IEC 62804 Approved.

PERFORMANCE

- High efficiency, multi-crystalline silicon solar cells with high transmission and textured glass deliver a module efficiency of up to 17.78 %, minimizing installation costs and maximizing the kWh output of your system per unit area.
- Tight positive power tolerance of 0W to +5W ensures you receive modules at or above nameplate power and contributes to minimizing module mismatch losses leading to improved system yield.

RELIABILITY

- Tests by independent laboratories prove that DHOOP Solar modules:
- Fully conform to certification and regulatory standards.
- Withstand wind loads of up to 2.4kPa and snow loads of up to 5.4kPa, confirming mechanical stability.
- Successfully endure salt-mist exposure at the highest severity level, ensuring their performance in adverse conditions.
- Manufacturing facility certified by UL India Private Limited.

WARRANTIES

- 10-year limited product warranty¹.
- Limited power warranty¹: 10 years at 90 % of the minimal rated power output, 25 years at 80% of the minimal rated power output.

*In compliance with our Warranty Terms and Conditions.

INTERNATIONAL & NATIONAL CERTIFICATIONS

- IEC 61215
- IEC 61730-1
- IEC 61730-2
- IEC 61701- Salt Mist Corrosion Testing.
- IEC 62804 PID POLY/POLY PERC
- IEC 62804 PID MONO/MONO PERC



AGRAWAL RENEWABLE ENERGY PVT LTD.

AnandBhavan, Station Road, Margao, Goa, India – 403 601

DHOOP PP48 Cell

35mm SERIES

POLY



ELECTRICAL PERFORMANCE

Electrical parameters at Standard Test Conditions (STC)								
DHOOP PP48 Series								
Power output	P _{max}	W	210	215	220	225	230	235
Power output tolerances	ΔP _{max}	Positive Tolerance Only						
Module efficiency	η _m	%	15.89	16.27	16.64	17.02	17.40	17.78
Voltage at P _{max}	V _{mpp}	V	25.39	25.53	25.71	26.00	26.11	26.41
Current at P _{max}	I _{mp}	A	8.30	8.43	8.56	8.66	8.81	8.9
Open-circuit voltage	V _{oc}	V	30.09	30.16	30.31	30.52	30.97	31.19
Short-circuit current	I _{sc}	A	8.85	8.96	9.01	9.07	9.16	9.25

STC: 1000W/m² irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.
Average relative efficiency reduction of 5% at 200W/m² according to EN 60904-1.

GENERAL CHARACTERISTICS

Dimensions (L / W / H)	1332mm / 992mm / 35mm
Weight	16.4kg

PACKAGING SPECIFICATIONS

Number of modules per pallet	30
Number of pallets per 20' Vehicle	14
Packaging box dimensions (L / W / H)	1345mm / 1060mm / 1005mm
Box weight	410

THERMAL CHARACTERISTICS

Nominal operating cell temperature	NOCT	°C	46 +/- 2
Temperature coefficient of P _{max}	γ	%/°C	-0.38
Temperature coefficient of V _{oc}	β _{Voc}	%/°C	-0.28
Temperature coefficient of I _{sc}	α _{Isc}	%/°C	0.0051
Temperature coefficient of V _{mp}	β _{Vmpp}	%/°C	-0.45

OPERATING CONDITIONS

Max. system voltage	1000V _{oc}
Max. series fuse rating	20A
Limiting reverse current	20A
Operating temperature range	-40°C to 85°C
Max. static load, front (e.g., snow and wind)	5400Pa
Max. static load, back (e.g., wind)	2400Pa
Max. hailstone impact (diameter / velocity)	25mm / 23m/s

CONSTRUCTION MATERIALS

Front cover (material / thickness)	low-iron tempered glass / 3.2mm
Cell (quantity / material / dimensions / number of busbars)	48 / multi-crystalline silicon / 157 mm x 157 mm / 5
Encapsulate (material)	PID free ethylene vinyl acetate (EVA)
Frame (material / color / anodization color / edge sealing)	anodized aluminum alloy / silver / clear / silicone or tape
Junction box (protection degree)	TUV certified IP67 rated / Weatherproof PPO enclosure with 3 bypass diodes
Cable (length / cross-sectional area)	TUV certified cable with length 1.25 m / 4mm ²
Plug connector (type / protection degree)	MC4 or compatible

Certificates: The Modules are certified to IEC 61215, IEC 61701 & IEC 61730, Electrical Protection Class II and the CE-guidelines. Moreover Agrawal Renewable is Certified and Registered to ISO 9001, ISO 14001 and OHSAS 18001
CAUTION: READ SAFETY AND INSTALLATION MANUAL BEFORE USING THE PRODUCT

Note:
1. Agrawal Renewable Energy reserves the right to change the specification with prior notice
2. All measurements and warranty/guarantee applicability under standard test conditions (1000W/m², 25°C, AM 1.5), kindly refer our guarantee/warranty policy for further details.

BACK VIEW OF MODULE

