



VDS-S96/M10N-R1-BG

450-470W

182 * 210mm Battery Cell Series, 96Cells

TOPCon Bifacial Solar Module

Status: 02/2025

23.5%

Module Efficiency

470W

Highest Power Output

15 YEARS

Product Warranty

30 YEARS

Linear Power Warranty

1.00% First year power degradation

0.40% Annual degradation

PRODUCT ADVANTAGES



16BB half-cut cell technology

New circuit design, lower internal current, lower Rs loss Ga dopped wafer, attenuation<1% (1st year) / ≤0.40% (Linear)



Significantly lower the risk of hot spot

Special circuit design with much lower hot spot temperature



Lower LCOE

2% more power generation, lower LCOE



Excellent Anti-PID performance

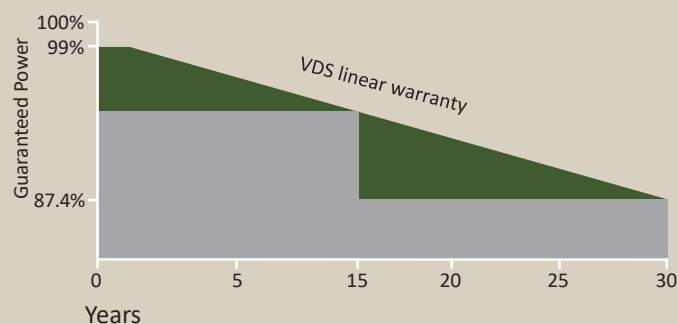
2 times of industry standard Anti-PID test by TUV SUD



IP68 junction box

High waterproof level

PERFORMANCE WARRANTY



Certifications of Product and Manufacturer



VDS Power GmbH

Rudolf-Diesel-Strasse 10, 33178 Borchten

www.vdspower.eu

VDS-S96/ M10N-R1-BG



ELECTRICAL DATA (STC)

Peak Power Watts-P _{MAX} (Wp)*	450	455	460	465	470
Maximum Power Voltage-V _{MP} (V)	29.7	29.9	30.1	30.3	30.5
Maximum Power Current-I _{MP} (A)	15.15	15.22	15.28	15.35	15.41
Open Circuit Voltage-V _{OC} (V)	35.6	35.8	36.0	36.2	36.4
Short Circuit Current-I _{SC} (A)	16.14	16.23	16.32	16.38	16.45
Module Efficiency η_m (%)	22.5	22.8	23.0	23.3	23.5
Power Tolerance-P _{MAX} (W)	0~+5				

STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5; *Measuring tolerance: ±3%

ELECTRICAL DATA (BNPI)

Peak Power-P _{MAX} (Wp)*	490	495	500	505	510
Maximum Power Voltage-V _{MP} (V)	29.7	29.9	30.1	30.3	30.5
Maximum Power Current-I _{MP} (A)	16.50	16.56	16.61	16.67	16.72
Open Circuit Voltage-V _{OC} (V)	35.6	35.8	36.0	36.2	36.4
Short Circuit Current-I _{SC} (A)	17.74	17.82	17.90	17.95	18.01

BNPI: Irradiance 1000W/m², module temperature 25°C

ELECTRICAL DATA (NMOT)

Maximum Power-P _{MAX} (Wp)*	339	343	347	351	355
Maximum Power Voltage-V _{MP} (V)	27.7	27.9	28.1	28.3	28.5
Maximum Power Current-I _{MP} (A)	12.24	12.29	12.35	12.40	12.46
Open Circuit Voltage-V _{OC} (V)	33.8	34.0	34.2	34.4	34.6
Short Circuit Current-I _{SC} (A)	12.94	13.02	13.09	13.15	13.20

NMOT: Irradiance 800W/m², module temperature 20°C, AM=1.5, wind speed 1m/s

MECHANICAL DATA

Solar Cells	N-Type TOPCon Monocrystalline Silicon
Cell Orientation	96pcs
Module Dimensions	1762x1134x30 mm
Weight	25.5 kg
Front Glass	2.0 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	POE/EVA
Back Glass	2.0 mm, Heat Strengthened Glass (White Grid Glass)
Frame	30mm Anodized Aluminium Alloy
Junction Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm ² Cable length 350 mm or customized length

*Please refer to regional datasheet for specied connector.

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	42°C (±2°C)
Temperature Coefficient of P _{MAX}	-0.29%/°C
Temperature Coefficient of V _{OC}	-0.25%/°C
Temperature Coefficient of I _{SC}	+0.046%/°C

(Do not connect Fuse in Combiner Box with two or more strings in parallel connection)

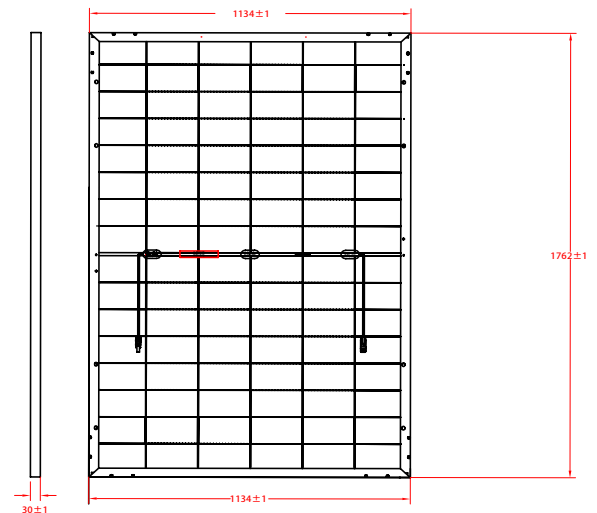
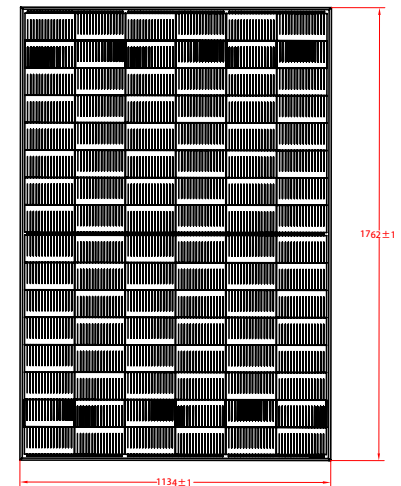
MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	35A

PACKAGING CONFIGURATION

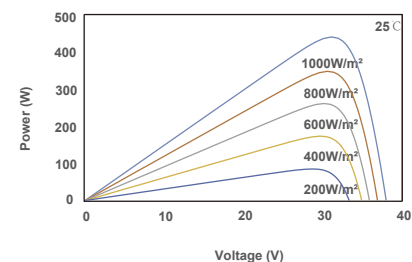
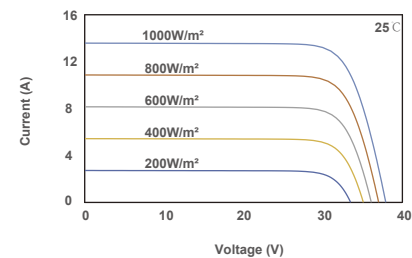
Modules per box	36 pieces
Modules per 40' container	936 pieces

DIMENSIONS OF PV MODULE (mm)



I-V CURVE

Current-Voltage & Power-Voltage Curve (450)



COMPANY PROFILE

VDS Power GmbH is a German based company with vast experience in providing photovoltaic solutions worldwide. Our management team has been focusing on the European market for more than 10 years. We have satisfied customers in Germany, Spain, Italy, Bulgaria and many other European countries. Through direct access to production, we control the quality of photovoltaic modules by monitoring and documenting the manufacturing processes from material procurement to final testing. With a warehouse in Rotterdam, we ensure fast delivery within the EU. This enables us to respond quickly to the needs of different purchase quantities. We attach great importance to a reliable partnership and cooperation with our customers. We value reliability, commitment, safety and transparency.