

VDS-S108/M10N-BG

**415-440W**

182 mm Half Cell, 108 Cells

TOPCon Bifacial Solar Module, Full Black

Status: 10/2024

**22.5%**

Module Efficiency

**440W**

Highest Power Output

**15 YEARS**

Product Warranty

**30 YEARS**

Linear Power Warranty

**1.00%** First year power degradation

**0.40%** Annual degradation

## PRODUCT ADVANTAGES



### High module conversion efficiency

Module efficiency up to 22.5% achieved through advanced cell technology and manufacturing process



### Lower operating temperature

Lower operating temperature and temperature coefficient increase the power output



### Excellent weak light performance

More power output in weak light condition ,such as cloudy, morning and sunset



### Extended wind and snow load tests

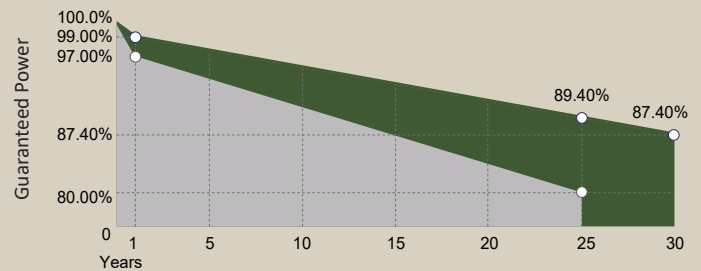
Module certified to withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)



### IP68 junction box

High waterproof & dustproof level

## PERFORMANCE WARRANTY



## Certifications of Product and Manufacturer



**VDS Power GmbH**

Rudolf-Diesel-Strasse 10, 33178 Borchten

[www.vdspower.eu](http://www.vdspower.eu)

## ELECTRICAL DATA (STC)

Peak Power Watts-P <sub>MAX</sub> (Wp)*	415	420	425	430	435	440
Maximum Power Voltage-V <sub>MPP</sub> (V)	31.9	32.1	32.3	32.5	32.7	32.9
Maximum Power Current-I <sub>MPP</sub> (A)	13.01	13.09	13.16	13.24	13.31	13.38
Open Circuit Voltage-V <sub>OC</sub> (V)	38.5	38.7	38.9	39.1	39.3	39.5
Short Circuit Current-I <sub>SC</sub> (A)	13.72	13.81	13.91	14.01	14.10	14.19
Module Efficiency $\eta_m$ (%)	21.2	21.5	21.7	22.0	22.3	22.5
Power Tolerance-P <sub>MAX</sub> (W)	0~+5					

STC: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C, AM=1.5; \*Measuring tolerance: ±3%

## ELECTRICAL DATA(BNPI)

Peak Power-P <sub>MAX</sub> (Wp)*	440	445	450	455	460	465
Maximum Power Voltage-V <sub>MPP</sub> (V)	31.9	32.1	32.3	32.5	32.7	32.9
Maximum Power Current-I <sub>MPP</sub> (A)	13.79	13.86	13.93	14.00	14.07	14.14
Open Circuit Voltage-V <sub>OC</sub> (V)	38.5	38.7	38.9	39.1	39.3	39.5
Short Circuit Current-I <sub>SC</sub> (A)	14.47	14.56	14.64	14.73	14.82	14.91

BNPI: Irradiance 1000W/m<sup>2</sup>, module temperature 25°C

## ELECTRICAL DATA (NMOT)

Maximum Power-P <sub>MAX</sub> (Wp)*	317	321	325	329	333	337
Maximum Power Voltage-V <sub>MPP</sub> (V)	30.0	30.2	30.4	30.6	30.8	31.0
Maximum Power Current-I <sub>MPP</sub> (A)	10.57	10.63	10.70	10.76	10.82	10.88
Open Circuit Voltage-V <sub>OC</sub> (V)	36.4	36.6	36.8	37.0	37.2	37.4
Short Circuit Current-I <sub>SC</sub> (A)	11.10	11.18	11.25	11.33	11.41	11.48

NMOT: Irradiance 800W/m<sup>2</sup>, module temperature 20°C, AM=1.5, wind speed 1m/s

## MECHANICAL DATA

Solar Cells	N-Type TOPCon Monocrystalline silicon
Cell Orientation	108 cells (6 x 18)
Module Dimensions	1724x1134x30 mm
Weight	25.1 kg
Front Glass	2.0 mm tempered glass
Encapsulant Material	POE/EVA
Back Glass	2.0 mm semi-tempered glass
Frame	30 mm Anodized Aluminium Alloy (Silver/Black Frame optional)
Junction Box	IP 68 rated
Cables	Photovoltaic Technology Cable 4.0 mm <sup>2</sup> 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 <sub>MAX</sub>	-0.29%/°C
Temperature Coefficient of V <sub>OC</sub>	-0.25%/°C
Temperature Coefficient of I <sub>SC</sub>	0.046%/°C

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

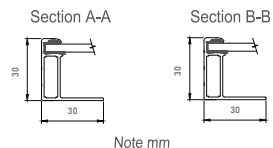
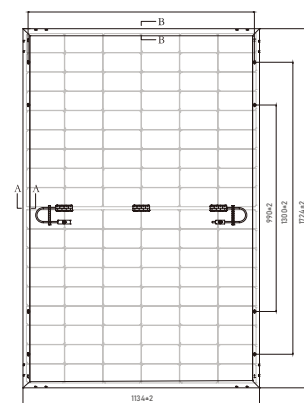
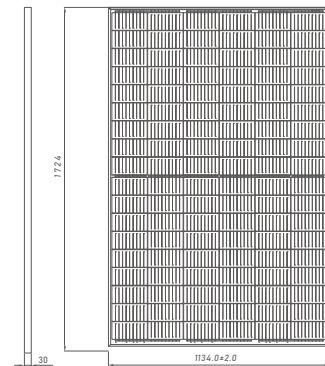
## MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	25 A

## PACKAGING CONFIGURATION

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

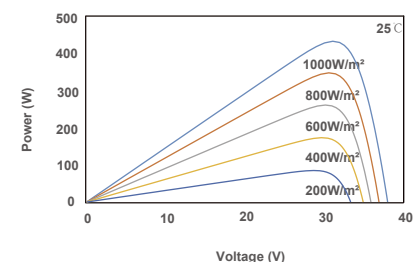
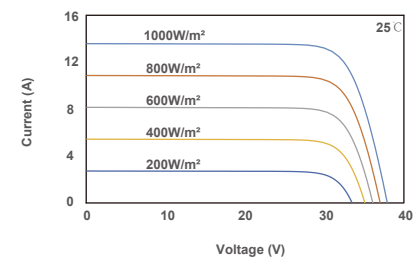
## DIMENSIONS OF PV MODULE (mm)



Note mm

## I-V CURVE

Current-Voltage & Power-Voltage Curve (430)



## 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.