

## N-type TOPCon (All-Black)

VE-420~440-54M

# 420~440W

High Efficiency

Lower LCOE & system cost

Lower temperature coefficient increases energy yield in hot climate

Minimizes micro-crack impacts

Excellent anti-LeTID & anti-PID performance. Low power degradation, high energy yield

Heavy snow load up to 5400 Pa, wind load up to 2400 Pa\*

### WARRANTY

**12 YEARS** Guarantee on product material and workmanship

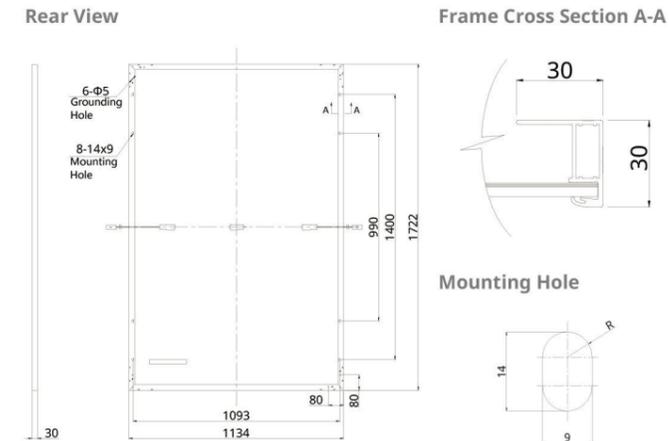
**30 YEARS** Linear power output warranty

### CERTIFICATION

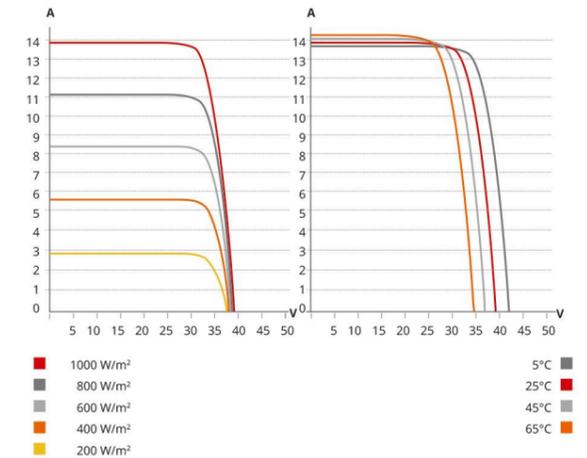


- ISO 9001: 2015/quality management system
- ISO 14001: 2015/environment management system
- ISO 45001: 2018/occupation health safety management system

### ENGINEERING DRAWING (mm)



### I-V CURVES



### ELECTRICAL DATA | STC\*

Module type	VE-420	VE-425	VE-430	VE-435	VE-440
Nominal Max. Power (Pmax)	420 W	425 W	430 W	435 W	440 W
Opt. Operating Voltage (Vmp)	31.6 V	31.8 V	32.0 V	32.2 V	32.4 V
Opt. Operating Current (Imp)	13.30 A	13.37 A	13.44 A	13.51 A	13.59 A
Open Circuit Voltage (Voc)	38.6 V	38.8 V	39.0 V	39.2 V	39.4 V
Short Circuit Current (Isc)	13.71 A	13.78 A	13.86 A	13.94 A	14.01 A
Module Efficiency	21.5%	21.8%	22.0%	22.3%	22.5%
Operating Temperature	-40°C ~ +85°C				
Max. System Voltage	1500V (IEC/UL) or 1000V (IEC/UL)				
Module Fire Performance	TYPE 1 (UL 61730 1500V) or TYPE 2 (UL 61730 1000V) or CLASS C (IEC 61730)				
Max. Series Fuse Rating	25 A				
Application Classification	Class A				
Power Tolerance	0 ~ + 10 W				

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C.

### ELECTRICAL DATA | NMOT\*

	317 W	321 W	324 W	328 W	332 W
Nominal Max. Power (Pmax)	317 W	321 W	324 W	328 W	332 W
Opt. Operating Voltage (Vmp)	29.8 V	30.0 V	30.2 V	30.3 V	30.5 V
Opt. Operating Current (Imp)	10.63 A	10.69 A	10.75 A	10.81 A	10.87 A
Open Circuit Voltage (Voc)	36.5 V	36.6 V	36.8 V	37.0 V	37.2 V
Short Circuit Current (Isc)	11.06 A	11.12 A	11.18 A	11.25 A	11.30 A

### MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
No. of cells	108 [2 X (9 X 6)]
Dimension(mm)	1722 x 1134 x 30 mm (67.8 x 44.6 x 1.18 in)
Weight	21.3 kg (47.0 lbs)
Front Cover	3.2 mm tempered glass with anti-reflective coating
Frame	Anodized aluminium alloy,
J-Box	IP68, 3 bypass diodes
Cable	4 mm <sup>2</sup> (IEC), 12 AWG (UL)
Connector	T6 or MC4 or MC4-EVO2 or MC4-EVO2A
Cable Length (Including Connector)	Portrait: 350 mm (13.8 in) (+) / 250 mm (9.8 in) (-); landscape: 1100 mm (43.3 in)*
Per Pallet	35 pieces
Per Container (40' HQ)	910 pieces or 840 pieces

### TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.29 % / °C
Temperature Coefficient (Voc)	-0.25 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3°C