

# SHINGLED MODULE FULL BLACK

## 380-415W

PERC  
technology



Black Frame  
Black Backsheet

1719 x 1140 x 30 mm



### HIGH QUALITY AND RELIABLE MODULES

- Withstand up to 5400 Pa snow load
- 2 EL inspections per cell/module for defect-free consistency
- 0-+5 W guaranteed positive power tolerance
- Rugged design for long-term durability; passed extended reliability tests



### POWER OUTPUT WARRANTY

- 20-year product warranty
- 25-year linear power output warranty
  - 1st year: min. 98 % of the maximum nominal power output
  - 2nd - 24th year: linear degradation
  - 25th year: min. 84,8 % of the maximum nominal power output



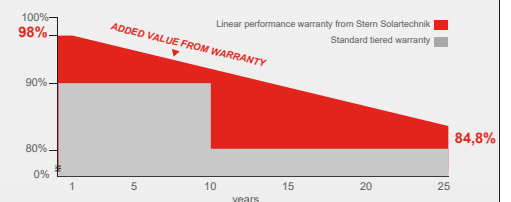
### COMPREHENSIVE CERTIFICATES FOR PRODUCTS AND MANAGEMENT

- IEC 61215, IEC 61730 and CE
- ISO 9001:2015 for Quality Management Systems
- ISO 14001:2015 for Environmental Management Systems
- OHSAS 18001 Occupational Health and Safety System
- PID-test IEC 62804
- EN 60904-3

0~+5W  
POWER TOLERANCE

21.2%  
MAXIMUM EFFICIENCY

380-415W  
POWER OUTPUT RANGE



## Electrical Characteristics STC

STC: AM1.5

Irradiance 1000 W/m<sup>2</sup> / 25°C

	ST 380 SH	ST 385 SH	ST 390 SH	ST 395 SH	ST 400 SH	ST 405 SH	ST 410 SH	ST 415 SH
Maximum Power (Pmax)	380 W	385 W	390 W	395 W	400 W	405 W	410 W	415 W
Maximum Power Current (Imp)	9.92 A	10.03 A	10.13 A	10.26 A	10.36 A	10.47 A	10.57 A	10.67 A
Maximum Power Voltage (Vmp)	38.3 V	38.4 V	38.5 V	38.5 V	38.6 V	38.7 V	38.8 V	38.9 V
Short Circuit Current (Isc)	10.77 A	10.82 A	10.87 A	10.92 A	10.97 A	11.02 A	11.07 A	11.12 A
Open Circuit Voltage (Voc)	46.1 V	46.2 V	46.3 V	46.3 V	46.4 V	46.5 V	46.6 V	46.7 V
Module Efficiency	19.4 %	19.6 %	19.9 %	20.2 %	20.4 %	20.7 %	20.9 %	21.2 %
Power Tolerance	0~+5 W	0~+5 W	0~+5 W	0~+5 W	0~+5 W	0~+5 W	0~+5 W	0~+5 W

## Electrical Characteristics NMOT

NMOT:

Irradiance 800 W/m<sup>2</sup> / 20°C / Wind speed 1m/s

	ST 380 SH	ST 385 SH	ST 390 SH	ST 395 SH	ST 400 SH	ST 405 SH	ST 410 SH	ST 415 SH
Maximum Power (Pmax)	286 W	290 W	294 W	297 W	301 W	305 W	309 W	312 W
Maximum Power Current (Imp)	7.84 A	7.92 A	8.00 A	8.10 A	8.18 A	8.27 A	8.35 A	8.43 A
Maximum Power Voltage (Vmp)	36.5 V	36.6 V	36.7 V	36.7 V	36.8 V	36.9 V	37.0 V	37.1 V
Short Circuit Current (Isc)	8.69 A	8.73 A	8.77 A	8.81 A	8.85 A	8.89 A	8.93 A	8.97 A
Open Circuit Voltage (Voc)	43.9 V	44.0 V	44.1 V	44.2 V	44.2 V	44.3 V	44.4 V	44.5 V

## Mechanical Characteristics

Solar Cell	Mono crystalline, Shingled
Glass	AR coating tempered glass 3.2 mm
Frame	Anodized aluminum profile
Junction Box	IP 68, two diodes
Cable	4 mm <sup>2</sup> (EU)/1200 mm long
Cell Orientation	340 (34°10')
Dimension	1719x1140x30 mm
Weight	21 KG

## Thermal Characteristics

Pmax Temperature Coefficient	-0.34%/K
Voc Temperature Coefficient	-0.27%/K
Isc Temperature Coefficient	+0.04%/K
NMOT	42.3°C (±2°C)

## Maximum Ratings

Operating Temperature	-40~85°C
Maximum Series Fuse Rating	20 A
Maximum System Voltage	DC 1500/1000(IEC)

## Packing Information

Pieces per pallet	36
Pallets per container (40HQ)	26
Pieces per container (40HQ)	936
Pallet weight/size	756KG/1719*1140*30mm

I-V Curves at different irradiances  
Test Temperature: 25°C

