SMARTEN®
FUSION IS THE FUTURE

SOLAR PANEL

DCR & NON-DCR BIFACIAL
TOPCon | MONOCRYSTALLINE

Key Features

Up To 24.1%
MODULE EFFICIENCY

660W
HIGHEST POWER OUTPUT

1.00% FIRST
YEAR POWER DEGRADATION

PRODUCT ADVANTAGES

16BB HALF-CUT CELL TECHNOLOGY
New circuit design, lower internal current, lower Rs loss.
Ga-doped wafer, attenuation <1% (1st year) / ≤0.40% (Linear)

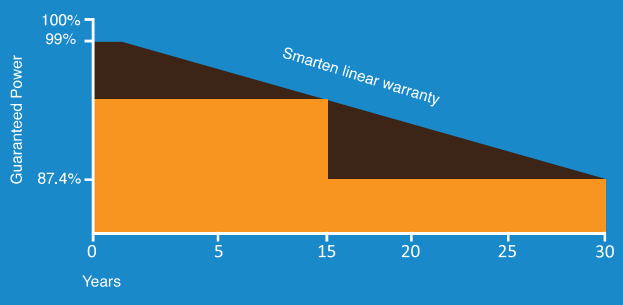
SIGNIFICANTLY LOWER RISK OF HOT SPOT
Special circuit design with much lower hot spot temperature

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



SMARTEN POWER SYSTEMS LIMITED

DCR & NON-DCR | BIFACIAL TOPCon MONOCRYSTALLINE 640–660W

ELECTRICAL DATA (STC)

Maximum Power (Pmax)	640	645	650	655	660
Optimum Operating Voltage (Vmp)	40.60	40.80	41.00	41.20	41.40
Optimum Operating Current (Imp)	15.52	15.57	15.61	15.66	15.71
Open Circuit Voltage (Voc)	48.90	49.10	49.30	49.52	49.77
Short Circuit Current (Isc)	16.38	16.44	16.50	16.55	16.59
Module Efficiency ηm (%)	23.3	23.5	23.7	23.9	24.1

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

ELECTRICAL DATA (BNPI)

Maximum Power (Pmax)	698	704	709	715	721
Optimum Operating Voltage (Vmp)	40.60	40.80	41.00	41.20	41.40
Optimum Operating Current (Imp)	17.20	17.25	17.30	17.35	17.41
Open Circuit Voltage (Voc)	48.90	49.10	49.30	49.52	49.77
Short Circuit Current (Isc)	18.15	18.22	18.28	18.34	18.38

BNPI: Irradiance 1000W/m², module temperature 25°C, backside irradiance 135W/m²

ELECTRICAL DATA (NMOT)

Maximum Power (Pmax)	481	485	489	493	497
Optimum Operating Voltage (Vmp)	38.30	38.50	38.70	38.90	39.10
Optimum Operating Current (Imp)	12.46	12.60	12.64	12.68	12.72
Open Circuit Voltage (Voc)	46.50	46.70	46.90	47.10	47.30
Short Circuit Current (Isc)	13.20	13.25	13.30	13.35	13.39

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

MECHANICAL DATA

Cell type	N-Type TOPCon Half-Cut Cells, 132 (6*22)
Module Dimensions	2382x1134x30 mm
Weigth	34.0 kg
Front Glass	2.0 mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant Material	EPE＋EVA
Back Glass	2.0 mm, Heat Strengthened Glass (White Grid)
Frame	30mm Anodized Aluminium Alloy
Junction Box	IP 68 rated
Cables	Positive 350mm，negative 280mm or customized length

*Please refer to regional datasheet for specified connector.

TEMPERATURE / APPLICATION CONDITIONS

NMOT(Nominal Module Operating Temperature)	42°C (±2°C)
Temperature Coefficient of PMAX	-0.29%/°C
Temperature Coefficient of VOC	-0.25%/°C
Temperature Coefficient of ISC	+0.046%/°C

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

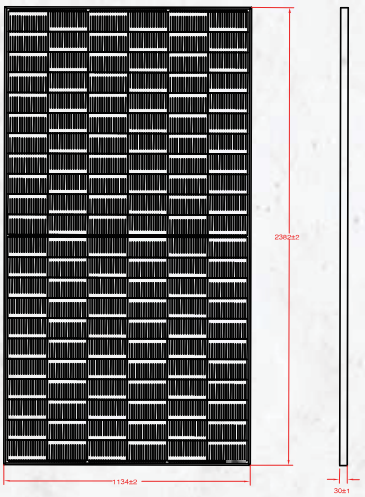
APPLICATION CONDITIONS

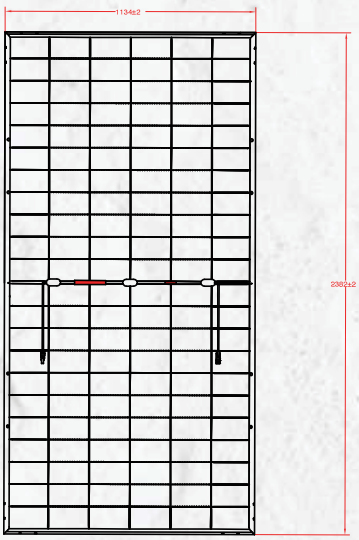
Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC)
Max Series Fuse Rating	30A
Bifaciality coefficient	ϕVoc:98±10%, ϕIsc:80±10%, ϕPmax:80±10%

PACKAGING CONFIGURATION

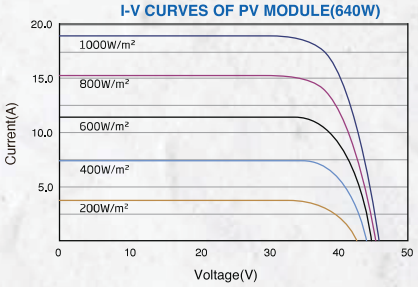
Modules per box	37 pieces
Modules per 40'container	740 pieces

DIMENSIONS OF PV MODULE (mm)

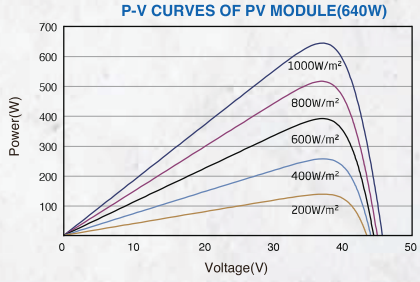




I-V CURVES OF PV MODULE(640W)



P-V CURVES OF PV MODULE(640W)



CONTACT US:
+91 85069 09749
info@smartenpowersystems.com
www.smartenpowersystems.com
Smarten Power Systems Ltd
Plot 374, Sector 37, Gurugram, Haryana 122001.