



SINDH SOLAR
ENERGY PROJECT



ANNEX VIII: EQUIPMENT DATASHEETS

620W



Higher power generation better LCOE



n-type with very Lower LID



Better Temperature Coefficient



Better low irradiance response



12-year product warranty



30-year linear power output warranty

n-type Bifacial Double Glass High Efficiency Mono Module JAM66D45 LB

595 - 620

Comprehensive Certificates

- IEC 61215, IEC 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing



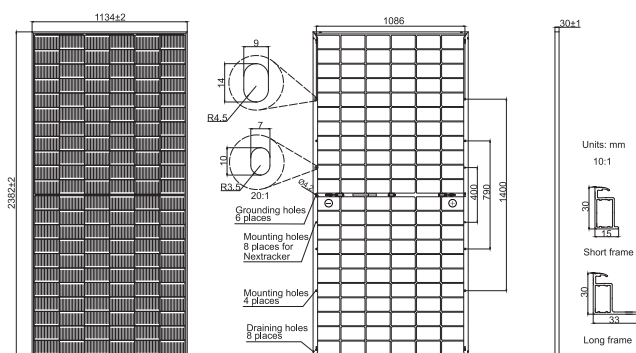


620W

595-620

JAM66D45

LB
Series



Remark: customized frame color and cable length available upon request

Cell	Mono-16BB
Weight	33.1kg
Dimensions	2382±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm² (IEC), 12 AWC(UL)
No. of cells	132(6×22)
Junction Box	IP68, 3 diodes
Connector	QC 4.10-351/ MC4-EVO2A
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1500mm(+)/1500mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	36pcs/Pallet, 720pcs/40HQ Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM66D45 -595/LB	JAM66D45 -600/LB	JAM66D45 -605/LB	JAM66D45 -610/LB	JAM66D45 -615/LB	JAM66D45 -620/LB
Rated Maximum Power(Pmax) [W]	595	600	605	610	615	620
Open Circuit Voltage(Voc) [V]	47.50	47.70	47.90	48.10	48.30	48.50
Maximum Power Voltage(Vmp) [V]	39.27	39.44	39.60	39.77	39.96	40.21
Short Circuit Current(Isc) [A]	15.90	15.95	16.00	16.05	16.10	16.13
Maximum Power Current(Imp) [A]	15.15	15.21	15.28	15.34	15.39	15.42
Module Efficiency [%]	22.0	22.2	22.4	22.6	22.8	23.0
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α_{Isc})	+0.046%/ °C					
Temperature Coefficient of Voc(β_{Voc})	-0.260%/ °C					
Temperature Coefficient of Pmax(γ_{Pmp})	-0.300%/ °C					
STC	Irradiance 1000W/m²,cell temperature 25 °C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM66D45 -595/LB	JAM66D45 -600/LB	JAM66D45 -605/LB	JAM66D45 -610/LB	JAM66D45 -615/LB	JAM66D45 -620/LB
Rated Max Power(Pmax) [W]	643	648	653	659	664	670
Open Circuit Voltage(Voc) [V]	47.50	47.70	47.90	48.10	48.30	48.50
Max Power Voltage(Vmp) [V]	39.27	39.44	39.60	39.77	39.96	40.21
Short Circuit Current(Isc) [A]	17.17	17.23	17.28	17.33	17.39	17.42
Max Power Current(Imp) [A]	16.36	16.43	16.50	16.56	16.62	16.65
Irradiation Ratio (rear/front)	10%					

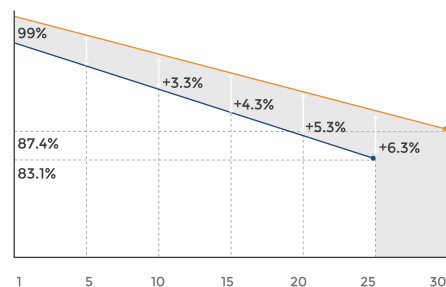
*For Nextracker installations, maximum static load please take compatibility approve letter between JA Solar and Nextracker for reference.

$$^{**}\text{Bifaciality} = P_{\text{max, rear}} / \text{Rated } P_{\text{max, front}}$$

CHARACTERISTICS

 Superior Warranty

1% 1st-year Degradation
0.4% Annual Degradation Over 30 years

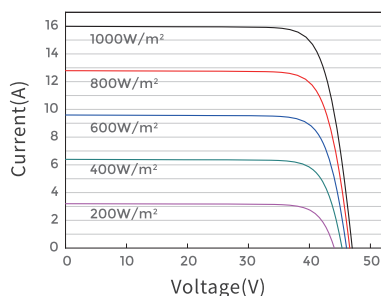
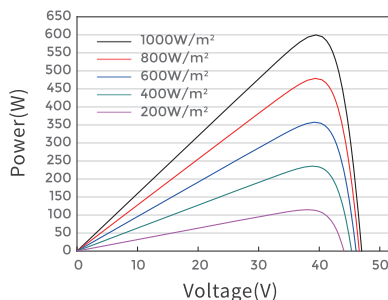
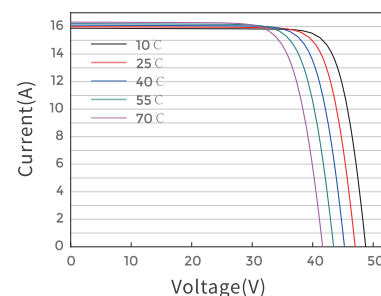


- n-type Bifacial Double Glass Module Linear Performance Warranty
- Standard Module Linear Performance Warranty

OPERATING CONDITIONS

Maximum System Voltage	1500V DC
Operating Temperature	-40 °C ~+85 °C
Maximum Series Fuse Rating	35A
Maximum Static Load,Front*	5400Pa(112 lb/ft²)
Maximum Static Load,Back*	2400Pa(50 lb/ft²)
NOCT	45±2 °C
Bifaciality**	80%±10%
Fire Performance	UL Type 29

Current-Voltage Curve **JAM66D45-600/LB**

Power-Voltage Curve **JAM66D45-600/LB**Current-Voltage Curve **JAM66D45-600/LB**

SG6600UD-MV

SG8800UD-MV

Turnkey Station for 1500 Vdc System MV Transformer Integrated



HIGH YIELD

- Advanced three-level technology, max. inverter efficiency 99%
- Effective cooling, full power operation at 45 °C



SMART O&M

- Integrated zone monitoring and MV parameters monitoring function for online analysis and trouble shooting
- Modular design, easy for maintenance



SAVED INVESTMENT

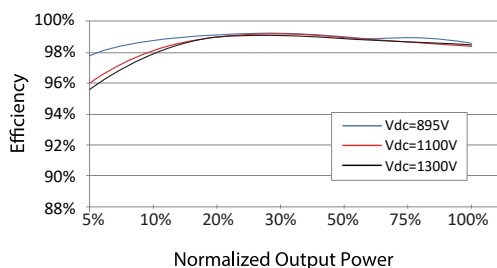
- Low transportation and installation cost due to 40-foot container design
- DC 1500V system, low system cost
- Integrated MV transformer, switchgear, and LV auxiliary power supply
- Q at night function optional



GRID SUPPORT

- Compliance with standards: IEC 61727, IEC 62116, IEC 62271-202, IEC 62271-200, IEC 60076
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

EFFICIENCY CURVE



Type Designation	SG6600UD-MV	SG8800UD-MV
Input (DC)		
Max. PV input voltage	1500 V	
Min. PV input voltage / Startup input voltage	895 V / 905 V	
MPP voltage range	895 – 1500 V	
No. of independent MPP inputs	6	8
No. of DC inputs	30 (optional: 36/42 inputs negative grounding)	40 (optional: 48/56 inputs negative grounding)
Max. PV input current	6 * 1435 A	8 * 1435 A
Max. DC short-circuit current	6 * 3528 A	8 * 3528 A
PV array configuration	Negative grounding or floating	
Output (AC)		
AC output power	6600 kVA @ 45 °C 6798 kVA @ 40 °C 7590 kVA @ 22.5 °C	8800 kVA @ 45 °C 9064 kVA @ 40 °C 10120 kVA @ 22.5 °C
Max. inverter output current	6 * 1160 A	8 * 1160 A
Max. AC output current	438.3 A	292.2 A
AC voltage range	10 kV – 35 kV	20 kV – 35 kV
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
Harmonic (THD)	< 3 % (at nominal power)	
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / AC connection	3 / 3	
Efficiency		
Inverter max. efficiency / Inverter European efficiency	99.0 % / 98.8 %	
Transformer		
Transformer rated power	6600 kVA	8800 kVA
Transformer max. power	7590 kVA	10120 kVA
LV / MV voltage	0.63 kV / 0.63 kV / (10 – 35) kV	0.63 kV / 0.63 kV / (20 – 35) kV
Impedance	8 % (0 – ±10 %) @ 6600 kVA	9.5 % (0 – ±10 %) @ 8800 kVA
Transformer vector	Dy11y11	
Transformer cooling type	ONAN	
Oil type	Mineral oil (PCB free) or degradable oil on request	
Protection & Function		
DC input protection	Load break switch + fuse	
Inverter output protection	Circuit breaker	
AC MV output protection	Circuit breaker	
Surge protection	DC Type II / AC Type II	
Grid monitoring / Ground fault monitoring	Yes / Yes	
Insulation monitoring	Yes	
Overheat protection	Yes	
Q at night function	Optional	
General Data		
Dimensions (W*H*D)	12192 * 2896 * 2438 mm	
Weight	27.5 T	31.5 T
Degree of protection	Inverter: IP65 / Others: IP54	
Auxiliary power supply	5 kVA (optional: max. 40 kVA)	
Operating ambient temperature range	-35 to 60 °C (>45 °C derating)	
Allowable relative humidity range	0 – 100 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	1000 m (standard) / > 1000 m (optional)	
Display	LED indicators, WLAN+WebHMI	
Communication	Standard: RS485, Ethernet; Optional: optical fiber; MPLC	
Compliance	CE, IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, IEC62271-202, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, EN 50549-2, UNE 206007-1:2013, P.O.12.3, UTE C15-712-1:2013	
Grid support	Q at night (Optional), L/HVRT, active & reactive power control and power ramp rate control	