Aaditya Raksha Renewables Private Limited

Ref No. ARR/SLS/PPSL/XXXXX/YYDDMM-001 Date: DD-MM-YYYY

To

Mr.XXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXX
Mobile: XXXXXXXXXX

Dear Sir,

Sub: Quotation for On-Grid Rooftop Solar Photovoltaic Power Plant–Reg

We, **Aaditya Raksha Renewables Private Limited (ARRPL)** is a Chennai-based clean tech company for Rooftop Solar Solution founded in 2021. We are an empanelled vendor in TANGEDCO for "PM Surya Ghar Muft Bijli Yojana" Scheme. Our Empanelment No. is **D.953/2023.**

We specialize in Design, Engineering, Supply, Installation, Erection and Commissioning of small Rooftop Solar Systems. We also maintain more than 1000 clients by of our associate company all over India.

Please find enclosed our proposal for your kind perusal.

Option 1

Sl. No	Part / Item	Unit	Quantity	Total Price in INR
1	Supply & installation of **2.725KWp** On-grid Rooftop Solar system **(Standard Structure)**	Set	1	**Rs.1,74,250.00**
2	**GST 13.8%**			**Rs.24,046.50**
	TOTAL (Rounded off) ***(Rupees One Lakh Ninety Eight Thousand Two Hundred and Ninety Seven Only)***			**Rs.1,98,297.00**

Option 2

Sl. No	Part / Item	Unit	Quantity	Total Price in INR
1	Supply & installation of **2.725KWp** On-grid Rooftop Solar system **(Elevated Structure)**	Set	1	**Rs.1,89,750.00**
2	**GST 13.8%**			**Rs.26,185.50**
	TOTAL (Rounded off) ***(Rupees Two Lakh Fifteen Thousand Nine Hundred and Thirty Six Only)***			**Rs.2,15,936.00**

For **Aaditya Raksha Renewables Private Limited**

Authorized Signatory

AADITYA RAKSHA RENEWABLES PRIVATE LIMITED,
Plot No:22E, First Floor, Fourth Phase,
Thiru-Vi-Ka Industrial Estate, Ekkaduthangal, Chennai – 600 032
Email:sales@arrpl.co.in; CIN:U29307TN2021PTC140620, GST: 33AAUCA6184A1ZO
Startup India: DIPPI57663

Aaditya Raksha Renewables Private Limited

1. Terms & Conditions

Taxes & Duties	GST at 13.8%
Payment Terms	60% Advance along with confirmed Purchase Order, followed by 40% against delivery All payments shall be done within 5 working days of documentation as per schedule of payment against proforma invoice/related documents. Final tax invoices will be raised after technical commissioning. The delay in payment, even partial, of ARRPL invoices beyond the agreed deadline results in the immediate effect of the interest on arrears to the extent of 18% per annum will be charged & this shall also affect the project schedule accordingly.
Validity	10 days from the date of this Offer. After this period a **Reconfirmation** has to be taken.
Transportation & Labour Charges	Transportation Charges Rs.4,000/- per system Labour Charges - upto 2 Floors – Rs.2,000/- will be applicable Any additional Floors Rs.500/- will be extra
Installation Charges	included in this offer
Other Charges	(1) Rs.1,500/- has to be paid by customer for earth pit and civil works, any other major civil works shall be client scope as per the site condition. (2) If cables used more than 50 meters – Rs.200/- per Meter +GST will be charged extra.
Netmeter Charges	Has to be paid by customer to DISCOM, For single phase: Rs.3,000/-; For three phase: Rs.5,000 approx. as per DISCOM Any incidental expenses will be borne by customer
Network charges	After Netmeter installation, Network charges are applicable on your electricity bill as per TANGEDCO Tariff order Network charges = Solar Generation x Rs. 1.53 +GST per Unit Solar generation= Capacity x 21% CUF fixed by TNERC x 24 x No. of days) 80% Network charges will be discounted for Residential customers with up to 10KW
Subsidy	Central Financial Assistance (CFA)/ Central Government Subsidy is available for rooftop solar plant installed by a residential consumer under simplified procedure For LA1A Rs. 30,000/- for 1KW, Rs.60,000/- for 2KW; Rs.78,000/- for 3KW and above under PM–Surya Ghar: Muft Bijli Yojana scheme
Timeline	3 weeks, from the Purchase Order along with Advance payment
Warranty	PV Modules: 25 years back-to-back manufacturer's warranty Inverter: 5 years replacement warranty, No warranty covers for any mishandling, abused wear and tear, sabotage/ force majeure conditions
Maintenance	Five years Maintenance is included as per PM Surya Ghar Muft Bijli Yojana" Scheme
Annual Maintenance	A separate AMC contract can be executed as per the customer's requirement
Force Majeure	This offer is subject to Force Majeure conditions
Legal	Any arbitrations will be within Chennai jurisdictions.

Govt Approvals	Above 10KW, CEIG Approval is mandatory. CEIG Approval can be done using your electrical contractor or we will suggest the third party electrical contractor; service cost shall be extra and to be paid to them directly
Client Scope	Site-office, Water, Internet, Power for Construction, Security, Object-shifting for shadow-easement, Access Ladder, Barricades, Water RO etc. Safety line is not included in this quote.
Bank Details	Company Name : **Aaditya Raksha Renewables Pvt. Ltd** Bank Account No : 1278135000014192 IFSC Code : KVBL0001278; MICR Code : 600053026 Bank Account Type : Current Account Bank Name : Karur Vysya Bank Ltd., Branch Name : Ashok Nagar Bank Address : No.22 A, 7th Avenue, Ashok Nagar, Chennai – 600 083, Tamil Nadu ***UPI ID: kvbupiqr.105000000010379@kvb*** *If paid by credit card, 2.5% bank charges will be applicable for each transaction* BHIM UPI Merchant Name : AADITYA RAKSHA RENEW UPI ID : kvbupiqr.105000000010379@kvb

The following circumstances shall be regarded as cases of force majeure if they occur after acknowledge of order and if they are beyond ARRPL reasonable control such as but not limited to the act of God, war, riots, civil commotion, storm, floods, fire and industrial disputes, DISCOM Approvals, pandemic and any other circumstances beyond the reasonable control of ARRPL

2. Technical Specification:

Sl.No	Part	Specification	Make
1	Panel	1) **DCR based Solar Module** - Made in India , Positive Tolerance 2) Efficiency - higher than 20% 3) Temperature coefficient - Not less than -0.50%/degree Celsius 4) IEC61215,IS14286,IS /IEC61730,IEC61853 part1& IS16170-part1 5)Back to back Warranty -above 90% for 1st 10yrs / above 80% for next 15Yrs	Renew/ Premier/ Vikram / Leading Tier 1 make as per MNRE Specs
2	Inverter	1) Solar Power Generator / Micro inverter (MI) – upto 3.3kw ***(BIS Certified)*** 2) String Inverters above 4Kw 3) Peak Efficiency >92% 4) IEC 61683/IS 61683 & IEC 60068-2 (1,2,14,30)	**MI Make:** Sunsine **String Make:** Growatt / Sofar Any reputed make as per MNRE standard
3	Structure	1) Standard MS/GI Structure 2) Material thickness - Minimum 2.5mm for GI, 0.7mm for Al 3) Should withstand 150Km/hr wind Speed	Reputed Make
4	Cables	1) IEC 60227/IS 694, IEC 60502 /IS1554 2) Voltage drop - AC cable max 2% / DC cable max 1% 3) Temperature range - -10 degree to +80 degree Celsius 4) Flexible & voltage range 660/1000V	Lapp Kabel / Polycab / Asmon / Reputed Make
5	Earthing	1) IS:3043-1987 2) 1meter Electrode & Chemical Bag 3) Earth Resistance - as low as possible	Reputed Make
6	ACDB / Junction boxes	1) Indoor -IP54 & outdoor IP65 2) 1PH 230V / 3PH 415V 3) Ambient temp - 45 degree Celsius & 80% humidity & dusty weather 4) Equipment with bus support insulator, CB, SPD, MCB - upto 63A / MCCB -above 63A	Reputed make with Schneider / ABB / Reputed Make components

Aaditya Raksha Renewables Private Limited

ROI for Roof Top "PM Surya Ghar Muft Bijli Yojana" Scheme based on TANGEDCO billing Calculation			
Sl. No.	**Particulars For 2.725kW**	**Option 1**	**Option 2**
1	Average Bi-monthly electricity consumption in Units	1,100	1,100
2	Bi-monthly electricity bill*	Rs.7,711	Rs.7,711
3	Estimated project cost	Rs.1,74,250	Rs.1,89,750
4	Government Subsidy	Rs.72,960	Rs.72,960
5	Estimated consumer share#	Rs.1,01,290	Rs.1,16,790
6	Annual Estimated Solar Generation in units##	4340	4340
7	Annual Financial savings using Solar	Rs.34,155	Rs.34,155
8	**Payback period ROI in years**	**2.97**	**3.42**
9	Required Space for Installation in Sq.ft	**125**	**125**
Note:	***** *Electricity bill is as per the calculation TANGEDCO* # *Bank financing options available in the portal – http://pmsuryaghar.gov.in* ## Annual Stimulated data as per Annexure – Annual Generation Chart		

LA1A Tariff Rate

Consumption upto 500 units

Units	Rate / Units
0 - 100	0
101 - 200	2.25
201 - 400	4.8
401 - 500	6.45

Consumption >500 units

Units	Rate / Units
0 - 100	0
101 - 400	4.8
401-500	6.45
501-600	8.55
601-800	9.65
801-1000	10.7
Above 1000	11.8

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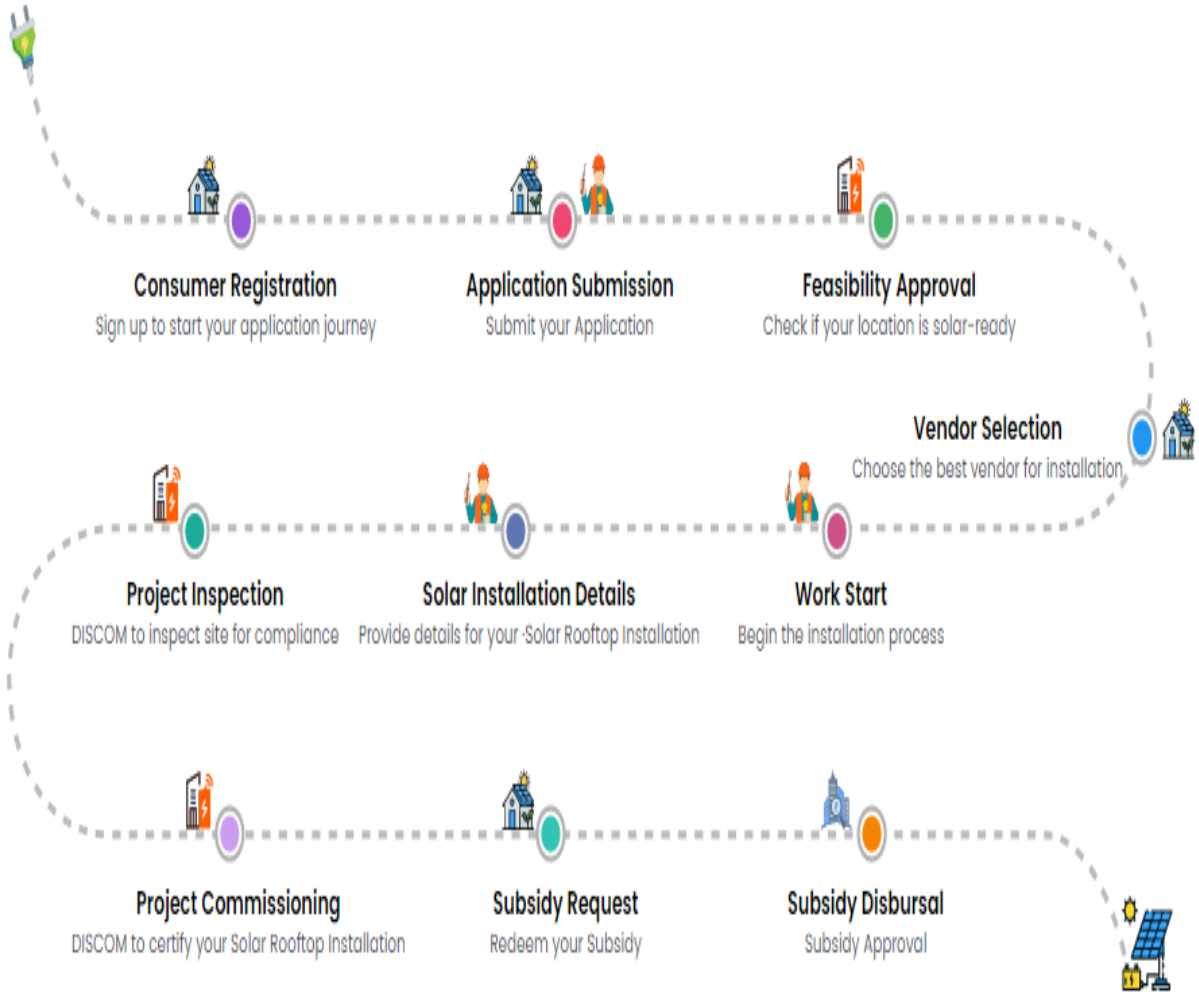
Procedure for Installation of Rooftop Solar Plant through National Portal



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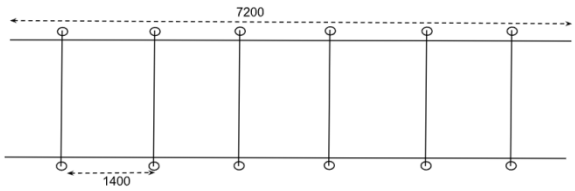
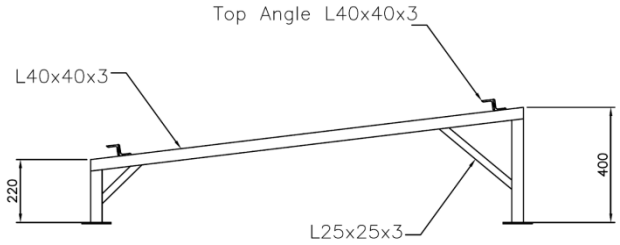
Standard Structure:

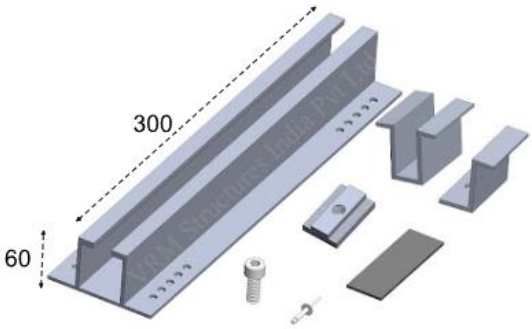
Top View



Side View

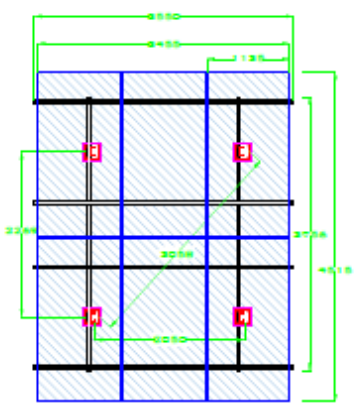


Sheet Roof Mounting:

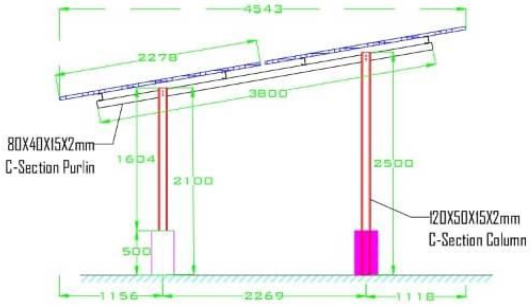


Sheet Roof

Elevated Structure:



2X3 STRUCTURE



SIDE VIEW FOR HIGH RAISE

Standard

Elevated

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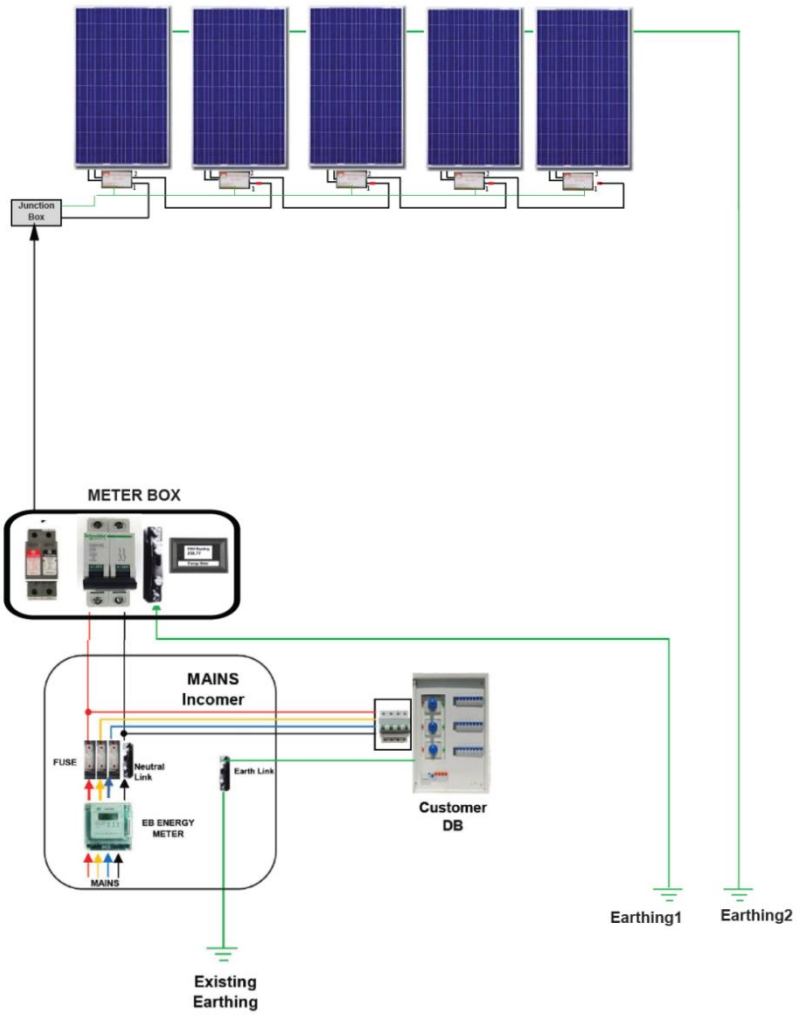
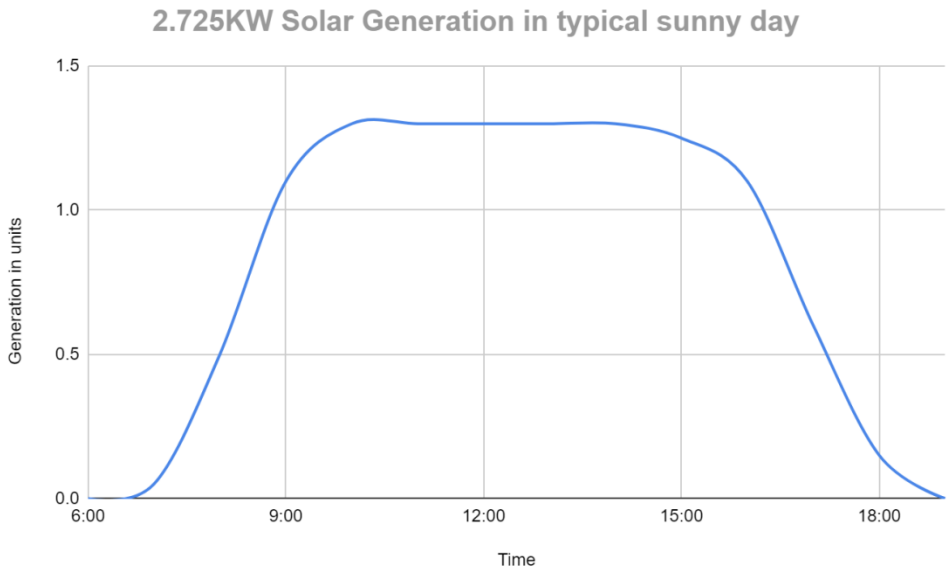
TYPICAL CONNECTION DIAGRAM:



SOLAR GENERATION CURVE IN A TYPICAL SUNNY DAY: 2.725KW



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ANNUAL GENERATION CHART - CHENNAI FOR 2.725KW##

PVsyst V7.2.11

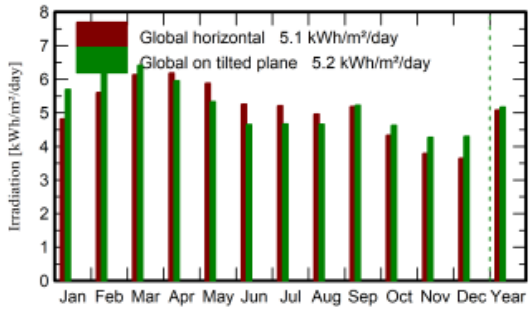
System summary

Nominal power	2.7 kWp	Total area	17 m²
Module type	Standard	Supports for modules	Flat roof
Technology	Monocrystalline cells	Ventilation property	Semi-integration

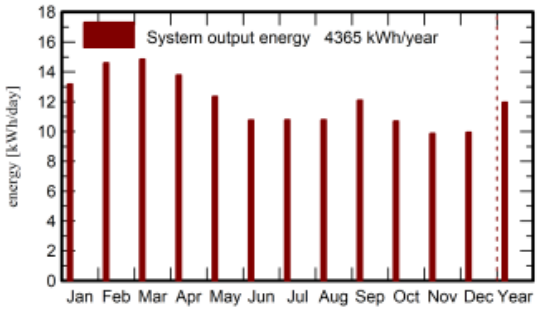
Grid system presizing

Annual yield	4.36 MWh
Specific prod.	1602 kWh/kWp

Meteo and incident energy



System output



	Horizontal global kWh/m²/day	Coll. plane kWh/m²/day	System output kWh/day	System output kWh
Jan.	4.82	5.70	13.18	409
Feb.	5.60	6.30	14.59	409
Mar.	6.14	6.42	14.85	460
Apr.	6.18	5.96	13.78	413
May	5.88	5.33	12.34	383
June	5.26	4.65	10.77	323
July	5.21	4.66	10.79	335
Aug.	4.96	4.66	10.78	334
Sep.	5.19	5.22	12.09	363
Oct.	4.33	4.63	10.70	332
Nov.	3.79	4.27	9.88	296
Dec.	3.65	4.30	9.95	308
Year	5.08	5.17	11.96	4365

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DCR SOLAR PV MODULE TECHNICAL SPECIFICATION

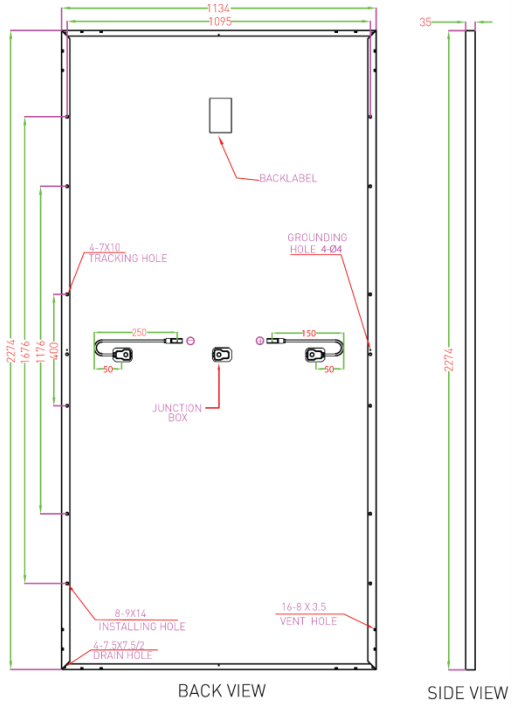
Electrical Data	
Peak Power Pmax	545 Wp
Maximum Voltage Vmpp	41.8 V
Maximum Current Impp	13.05 A
Open Circuit Voltage Voc	49.6 V
Short Circuit Current Isc	13.73 A
Module Efficiency	21.13%

STC:1000 W/m2 irradiance, 25°C cell temperature, AM1.5g spectrum according to EN 60904-3.
Power measurement uncertainty is within +/- 2%.

Electrical Parameters at NOCT	
Power	406.7 W
V @ Pmax	38.7 V
I @ Pmax	10.51 A
Voc	46.2 V
Isc	11.09 A

NOCT irradiance 800 W/m2, ambient temperature 20°C, wind speed 1 m/sec

Temperature Coefficients (Tc)	
Tc of Open Circuit Voltage	-0.27%/°C
Tc of Short Circuit Current	0.050%/°C
Tc of Power	-0.35%/°C
Maximum System Voltage	1500V
NOCT	45°C ± 2°C
Temperature Range	-40°C to + 85°C



Approvals and Certificates:

IEC 61215 : 2016, IEC 61730 : 2016, IEC 61701, IEC 62716, IEC 60068-2-68, IEC 62804, CE, CEC (California), UL 61215, UL 61730, CAN-CSA

**subject to change as per the Manufacturer / Brand*

Mechanical Data	
Length × Width × Height	2274 × 1134 × 35mm (89.53 × 44.65 × 1.38 inches)
Weight	28.2 Kg (62.17 lbs)
Junction Box	IP68, Split Junction Box with individual bypass diodes
Cable & Connectors	200 mm (+ve terminal) and 300 mm (-ve terminal) length cables,MC4 Compatible
Application Class	Class A (Safety class II)
Superstrate	3.2 mm (0.125 inches) high transmission low iron tempered glass, AR coated
Cells	72 Mono PERC (144 half-cells) P-Type solar cells
Back Sheet	Composite film
Frame	Anodized aluminum frame with twin wall profile
Mechanical Load Test	5400 Pa (Snow load), 2400 Pa (Wind load)
Maximum Series Fuse Rating	25A

Warranty and Certifications	
Product Warranty	12 years
Performance Warranty	Linear Power Warranty for 27 years with 2% for 1st year degradation and 0.55% from year 2 to year 27

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Micro Inverter / Utility interconnected Photovoltaic Inverter / SPG Specification

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TECHNICAL SPECIFICATION
UTILITY INTERCONNECTED PHOTOVOLTAIC INVERTERS / SOLAR POWER GENERATOR
Model : SPG

SUNSINE

INPUT DATA (DC)	
Recommended solar panel	330 to 540Wp
Maximum input DC voltage	≤50 V
MPPT voltage	28 to 38 V
Operating Range	24 V to 45 V
Min / Max start up voltage	36V / 45V
Maximum continuous input DC current	9A
Maximum DC short circuit current	11.5A
Maximum module Isc	10A
Over Voltage class DC port	II
DC port back-feed current	0 mA
PV array configuration	No additional DC side protection required, AC side protection requires max 20A per AC branch circuit
OUTPUT DATA (AC)	
Peak output power	270 W
Max. continuous output power	260 W
Nominal voltage / Range	240 V / 185-260V
Max continuous output current	1.08A @ 240V
Nominal frequency	50 Hz
Extended frequency range	49.5 – 50.5 Hz
AC short circuit fault current	1.5 A
Maximum units per 20 A branch circuit	8 (single phase)
Total Harmonic distortion	<5%
Over Voltage class AC port	III
Power factor	0.8ld - 0.8lg
Night time power consumption	0.5W
EFFICIENCY	
CEC Weighted Efficiency	>92%
Peak efficiency	>97%
MECHANICAL DATA	
Ambient temperature range	0°C to +65°C
Relative Humidity range	4% to 100%
DC Input connector type	MC4
Dimensions (WxHxD)	230 x 145 x 57 mm
Weight	2.2 ±0.05 Kgs
Cooling	Natural convection - no fans
Using in wet locations	Yes
Pollution degree	PD3
Enclosure	Class II, AL6063 Anodized Aluminum enclosure
Environmental category	Outdoor
OTHER FEATURES	
Module compatibility	72 cell / 120 half cell / 132 half cell/ 144 half cell Poly, Mono & Flexi PV Modules
Compliance	IEC60068, IEC61683, IEEE1547, IEC61000, IEC60255.5, IP67 BIS certified R-61004960 for IS16221/IEC62109-2, IS16169/IEC62116

IS 16221/IEC 62109
IS 16169/IEC 62116

R-61004960

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