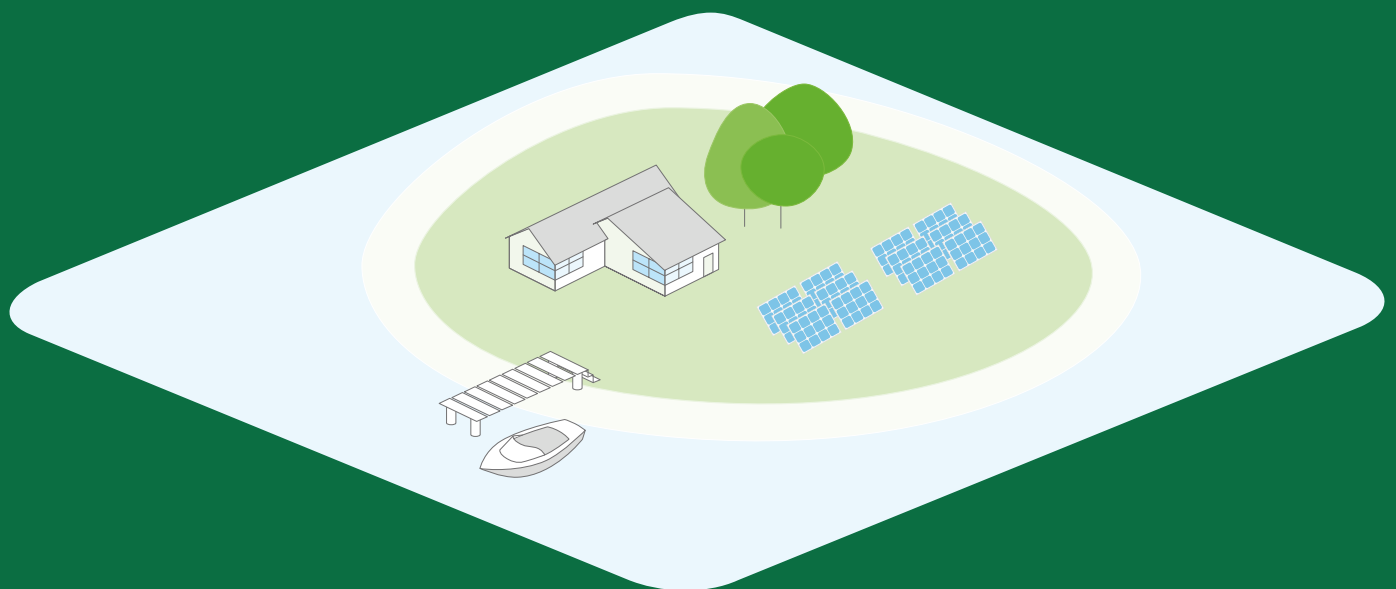


COMPLETE SOLAR POWER SYSTEM

COMMERCIAL OFF GRID
PHOTOVOLTAIC SOLAR SYSTEM



COMMERCIAL OFF GRID

10/20/30/40/60/80/100/120 KW



Product Description

Total electrical independence starts here. Sunpal Power has carefully designed and engineered all of our off-grid solar power systems to be faster and easier to install. Our off-grid solar power systems produce zero emissions, are noiseless, and easy for installation.

Standard Grid-tie systems will not provide electricity directly to your house during a power outage due to safety regulations (anti-islanding) even if the solar modules are producing DC current. Off-grid systems are independent of the standard utility grid, and can typically deliver the equivalent expectations of the traditional grid.

Whether you will be using an off-grid solar system for your remote cabin, your place of business, or your full-time residence, Sunpal Power has an off-grid solution that can fit almost any installation requirement.

Product Benefits

- Become completely energy independent
- Reduce the burning of fossil fuels for a healthier environment
- Eliminate the problems of grid blackouts

Common Application

- Installation sites where bringing in the electricity from the grid is too expensive or difficult
- Locations where liquid fuel costs are too high or difficult to maintain
- Those looking to be completely independent from the grid
- Those who cannot afford to lose power or have power outages

COMMERCIAL OFF-GRID

PV System

Include

- Solar modules
- Off-Grid inverter/charger
- Battery bank
- PV combiner box
- PV mounting system
- Battery bank rack
- PV, battery bank & ground wiring harnesses
- Wire management kits



PRODUCT MODEL

| | | | | | | | | |
|---|----|----|----|----|----|----|-----|-----|
| PV System Size Nominal (Inverter Power) (kVA) | 10 | 20 | 30 | 40 | 60 | 80 | 100 | 120 |
|---|----|----|----|----|----|----|-----|-----|

PV MODULE SPECIFICATIONS (*Mono)

| | | | | | | | | |
|-----------------------------|---|--|--|--|--|--|--|--|
| Power (W) | 410 | | | | | | | |
| Vmp (V) | 41.4 | | | | | | | |
| Voc (V) | 49.3 | | | | | | | |
| Isc (A) | 10.41 | | | | | | | |
| Imp (A) | 9.91 | | | | | | | |
| Dimensions (L x W x H) (mm) | 2024*1004*35 | | | | | | | |
| PV Module weight (kg) | 22.8 | | | | | | | |
| Certifications | CE / TUV (IEC 61215 & IEC 61730) / UL (UL61730) | | | | | | | |

*Polycrystalline PV modules also available upon request

INVERTER/CHARGER SPECIFICATIONS

| | | | | | | | | |
|-------------------------------|---|---------|--------------|-----------|-----------|--------------|-----------|-----------|
| Rated Output Power (kVA / kW) | 10 / 9 | 20 / 18 | 30 / 27 | 40 / 36 | 60 / 54 | 80 / 72 | 100 / 90 | 120 / 108 |
| Peak Power (kVA / kW) | 30 / 27 | 60 / 54 | 90 / 81 | 120 / 108 | 180 / 162 | 240 / 216 | 300 / 270 | 360 / 324 |
| Over Load Capacity | 105% - 110% for 1 h; 110% - 125% for 10 mins; 125% - 150% for 1 min; 150% shut down in 10 s; 200% shut down immediately | | | | | | | |
| AC Voltage | 3/N/PE, 380 / 400 / 415Vac ±2% | | | | | | | |
| AC Frequency (Hz) | 50 / 60 ±5% | | | | | | | |
| Battery Voltage (V) | | | | | | | | |
| MPPT Charge Current (A) | 60 | 60 | 120 | 120 | 180 | 240 | 300 | 360 |
| PV Input Power (kW) | 25 | 5 | 2*25 | 2*25 | 3*25 | 4*25 | 5*25 | 6*25 |
| PV Voltage Range (V) | | | | | | | | |
| Protections | Input over/under voltage, output over/under voltage, overload, short circuit over temperature, reverse polarity, lightning surge protection | | | | | | | |
| Wave Form | Pure Sine Wave | | | | | | | |
| Display | LCD + LED | | | | | | | |
| Dimensions (W x D x H) (mm) | 450*840*1100 | | 600*700*1750 | | | 960*800*1700 | | |
| Inverter Weight (kg) | 230 | 245 | 380 | 430 | 515 | 780 | 800 | 860 |

BATTERY BANK SPECIFICATIONS

| | | | | | | | | |
|---|-----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Battery Type | Lead-acid gel | | | | | | | |
| Battery Voltage (V) | 2 | | | | | | | |
| Battery Bank Voltage (V) | 360 | | | | | | | |
| Battery Current (Ah) | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 |
| Battery Bank Current (Ah) | 200 | 300 | 400 | 500 | 600 | 800 | 1000 | 1200 |
| Battery Bank Power - Total (Wh) | 72000 | 108000 | 144000 | 180000 | 216000 | 288000 | 360000 | 432000 |
| Battery Bank Power - 50% DOD (Wh) | 36000 | 54000 | 72000 | 90000 | 108000 | 144000 | 180000 | 216000 |
| Battery Dimensions (L x W x H) (mm) | 172.5*110*351 | 171*150*353 | 211*176*353 | 242*172*353 | 302*175*353 | 409*175*353 | 475*174*351 | 475*174*351 |
| Battery Weight (kg) | 14 | 17.5 | 26 | 30.5 | 37.0 | 50.0 | 62.0 | 74.0 |
| Full Cycles (50% DOD) | 1800 | | | | | | | |
| Total Batteries - *storage can be increased | 180 | | | | | | | |
| Connection | Series | | | | | | | |
| Certifications | CE / RU / ISO 14001 / OHSAS 18001 | | | | | | | |

BOS

| | | | | | | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| PV Combiner Box (Type / #) | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 | 3 to 1 / 1 |
| *PV Wire Harness - 4mm² (m) | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| *DC Wire (Combiner Box to Inverter) - 10mm² (m) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| *Ground Wire - 4mm² (m) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| PV Mounting System | Customized | | | | | | | |
| Battery Bank Rack | Customized | | | | | | | |

*Extra wire is available upon request

SYSTEM LAYOUT

| | | | | | | | | |
|----------------------------|----------------------------|--------|--------|--------|--------|--------|------|--------|
| Number of Modules | 26 | 52 | 78 | 104 | 156 | 208 | 260 | 312 |
| Number of Inverters | 1 | | | | | | | |
| PV Array Surface Area (m²) | 52.8 | 105.6 | 158.4 | 211.2 | 316.8 | 422.4 | 528 | 633.6 |
| PV Array Weight (kg) | 592.8 | 1185.6 | 1778.4 | 2371.2 | 3556.8 | 4742.4 | 5928 | 7113.6 |
| PV Module | No. of PV Modules / String | 13 | | | | | | |
| | Total Strings | 2 | 4 | 6 | 8 | 12 | 16 | 20 |
| String | String Voc (V) | 640.9 | | | | | | |
| Configuration | String Vmp (V) | 538.2 | | | | | | |
| | String Imp (A) | 9.91 | | | | | | |

PRODUCTION ESTIMATES (kWh AC)

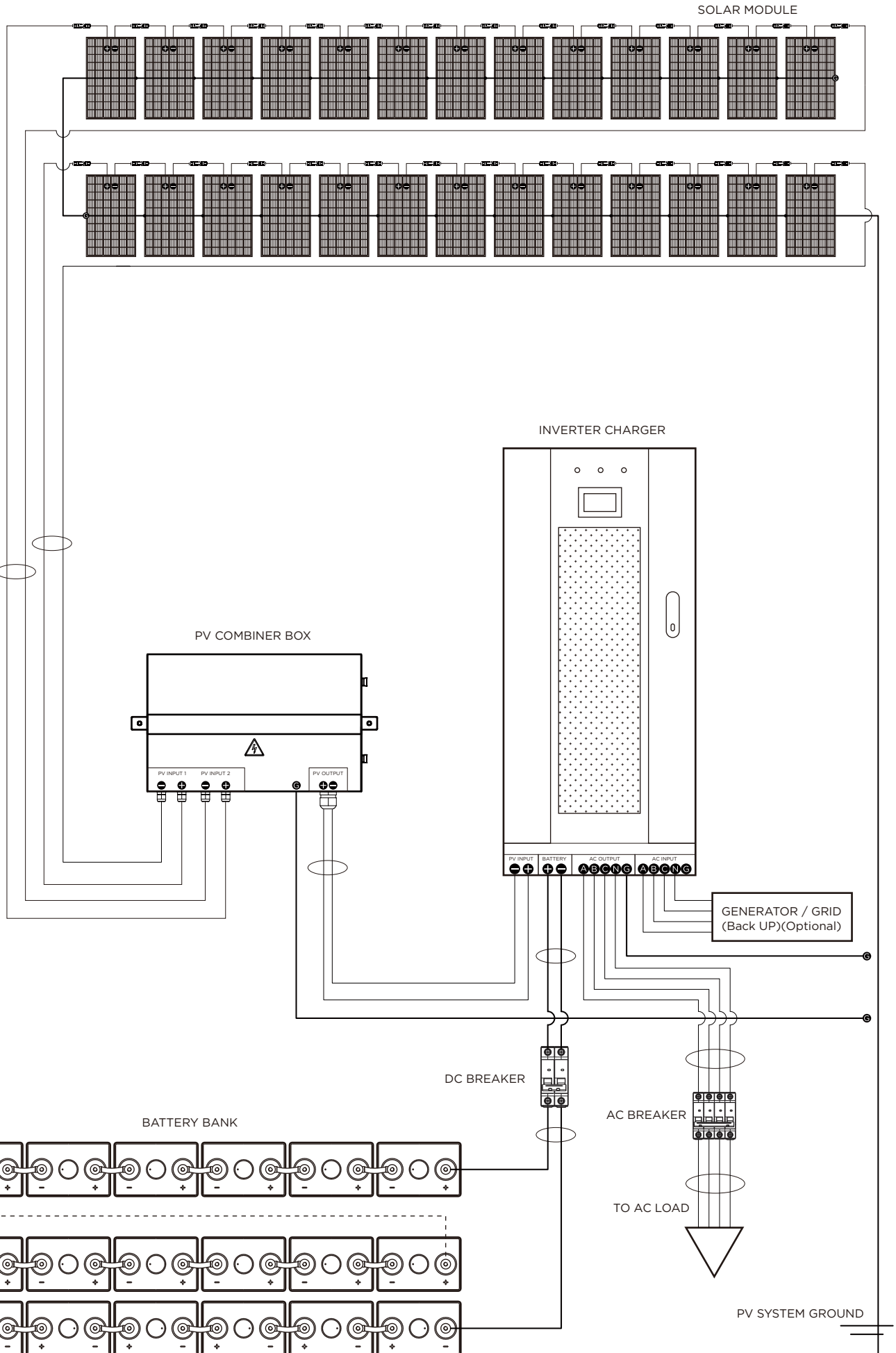
| | | | | | | | | |
|--|------|-------|-------|-------|-------|-------|-------|-------|
| *Projectd Yearly Output at 4 PSH / Day | 36.2 | 72.5 | 108.7 | 145.0 | 217.5 | 290.0 | 362.4 | 434.9 |
| *Projectd Yearly Output at 5 PSH / Day | 45.3 | 90.6 | 135.9 | 181.2 | 271.8 | 362.4 | 453.1 | 543.7 |
| *Projectd Yearly Output at 6 PSH / Day | 54.4 | 108.7 | 163.1 | 217.5 | 326.2 | 434.9 | 543.7 | 652.4 |

*Based on 85% system efficiency (formula = DC Power x Peak Sunshine Hours / Day x System Efficiency) (PSH = Peak Sunshine Hours)

SYSTEM OPTIONS

| | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|
| Monitoring Device | RS485 / WiFi | | | | | | | |
| PV Module Type | Monocrystalline(Poly also available upon request) | | | | | | | |
| Mounting System Types | Metal Roof,Asphalt Shingel,Tile Roof,Tin Roof,Flat Concrete,Ground | | | | | | | |
| AC Back Up Input | Power Generator / Utility Grid | | | | | | | |
| Battery | 12V Gel / 2V Gel / Tubular Gel (OPzV) / Lithium Ion | | | | | | | |

SP10KW3-OFF





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