

**For a Free Quote:**

**Web: [EnergyPal.com/solar](http://EnergyPal.com/solar)**

**Call: 1-800-990-3725**

**Email: [contact@energypal.com](mailto:contact@energypal.com)**

# **EnergyPal**

## **Solar Panel Guide Specification Data Sheet**

**Invensun Environmental Corporation  
Sundragon i5P-i100P Premium  
Sundragon i30P**

Also available on the web at

[EnergyPal.com/invensun-environmental-corporation-solar-panels/sundragon-i30p](http://EnergyPal.com/invensun-environmental-corporation-solar-panels/sundragon-i30p)



**invensun**  
change the world

**sundragon™ Specifications Matrix**  

**Premium Grade**  
 Poly-crystalline Solar Modules

Model Name	Sundragon i5P	Sundragon i10P	Sundragon i20P	Sundragon i30P	Sundragon i40P	Sundragon i55LP	Sundragon i55SP	Sundragon i80P	Sundragon i100P
<b>Electrical Characteristics</b>									
Maximum Power at STC (Pmax)	5W	10W	20W	30W	40W	55W	55W	80W	100W
Optimum Operating Voltage (Vmp)	17.6V	17.6V	17.4V	17.4V	17.4V	17.4V	17.4V	17.74V	17.5
Optimum Operating Current (Imp)	0.284A	0.57A	1.41A	1.71A	2.48A	3.16A	3.16A	4.51A	5.71
Open Circuit Voltage (Voc)	20.8V	21.6V	21.6V	21.5V	21.7V	21.7V	21.7V	21.92V	20.5
Short Circuit Current (Isc)	0.306A	0.61A	1.15A	1.94A	2.56A	3.4A	3.4A	4.82A	6.26
Maximum System Voltage	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC
Maximum Series Fuse Rating	10A	10A	10A	10A	10A	10A	10A	10A	10A
Power Tolerance	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±5%
<b>Mechanical Characteristics</b>									
Solar Cell Type	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon	Polycrystalline silicon
Solar Cell Size	156 x 65 mm	156 x 14 mm	156 x 24 mm	156 x 34 mm	156 x 48 mm	156 x 65 mm	156 x 65 mm	156 x 93 mm	156 x 120 mm
Number of Solar Cells	36	36	36	36	36	36	36	36	36
Front Glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass
Frame	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy
Dimensions L x W x D	318 x 183 x 28 mm	360 x 304 x 28 mm	530 x 340 x 28 mm	594 x 502 x 35 mm	651 x 526 x 35 mm	1293 x 350 x 35 mm	859 x 537 x 35 mm	1200 x 527 x 40 mm	1476 x 670 x 40 mm
Weight	1.0kg	1.5kg	2.5kg	7.0kg	5.5kg	7.0kg	7.0kg	10.0kg	12.0kg
<b>Junction Box</b>									
Dimensions L x W x D	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm
Cables	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG
Connectors	MC4	MC4	MC4	MC4	MC4	MC4	MC4	MC4	MC4
Diode	0 bypass diode	0 bypass diode	0 bypass diode	0 bypass diode	0 bypass diode	1 bypass diode	1 bypass diode	2 bypass diode	2 bypass diode
Protection	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA
<b>Environmental Characteristics</b>									
Mechanical Load	2400 Pa	2400 Pa	2400 Pa	2400 Pa	2400 Pa	2400 Pa	2400 Pa	2400 Pa	2400 Pa
Fire Rating	Class C	Class C	Class C	Class C	Class C	Class C	Class C	Class C	Class C
Operating Temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
<b>Warranty</b>									
Product Workmanship	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years
10 Years	90% output	90% output	90% output	90% output	90% output	90% output	90% output	90% output	90% output
25 Years	80% output	80% output	80% output	80% output	80% output	80% output	80% output	80% output	80% output
<b>Standard Test Conditions (STC)</b>									
STC = 1000 W/M2 irradiance, 25oC module temperature, AM 1.5 spectrum (Subject to simulator measurement uncertainty of ±3%)									



**invensun**  
change the world

**sundragon**™ Specifications Matrix  
 **Premium Grade**  
 Poly-crystalline Solar Modules

Model Name	Sundragon i125-36P	Sundragon i135-36P	Sundragon i145-36P	Sundragon i170-48P	Sundragon i190-48P	Sundragon i210-54P	Sundragon i220-54P	Sundragon i230-60P	Sundragon i250-60P	Sundragon i300-72P
<b>Electrical Characteristics</b>										
Maximum Power at STC (Pmax)	125W	135W	145W	170W	190W	210W	220W	230W	250W	300W
Optimum Operating Voltage (Vmp)	17.78V	18.14V	18.50V	23.81V	24.53V	27.43V	27.76V	30.36V	31.14V	37.50V
Optimum Operating Current (Imp)	7.03A	7.44A	7.84A	7.14A	7.75A	7.66A	7.93A	7.58A	8.03A	7.99A
Open Circuit Voltage (Voc)	21.56V	21.74V	22.18V	28.80V	29.47V	32.94A	33.26V	36.42V	37.32V	45.70V
Short Circuit Current (Isc)	7.60A	8.04A	8.39A	7.72A	8.32A	8.17A	8.39	8.10A	8.50A	8.55A
Maximum System Voltage	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC	600VDC
Maximum Series Fuse Rating	15A	15A	15A	15A	15A	15A	15A	15A	15A	15A
Power Tolerance	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±5%	±5%
<b>Mechanical Characteristics</b>										
Solar Cell Type	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline Silicon	Polycrystalline silicon
Solar Cell Size	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm	156 x 156 mm
Number of Solar Cells	36	36	36	48	48	54	54	60	60	72
Front Glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass	3.2 mm tempered glass
Frame	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy	Anodized Aluminum Alloy
Dimensions L x W x D	1474 x 660 x 40 mm	1474 x 660 x 40 mm	1474 x 660 x 40 mm	1316 x 995 x 40 mm	1316 x 995 x 40 mm	1474 x 995 x 40 mm	1474 x 995 x 40 mm	1632 x 995 x 40 mm	1632 x 995 x 40 mm	1956 x 992 x 50 mm
Weight	12.0kg	12.0kg	12.0kg	17.0kg	17.0kg	18.0kg	18.0kg	20.0kg	20.0kg	23.0kg
<b>Junction Box</b>										
Dimensions L x W x D	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm	148.0 x 131.6 x 27.2 mm
Cables	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG	12 AWG
Connectors	MC4	MC4	MC4	MC4	MC4	MC4	MC4	MC4	MC4	MC4
Diode	2 bypass diodes	2 bypass diodes	2 bypass diodes	3 bypass diodes	3 bypass diodes	3 bypass diodes	3 bypass diodes	3 bypass diodes	3 bypass diodes	3 bypass diodes
Protection	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA	IP-65, UL94-5VA
<b>Environmental Characteristics</b>										
Mechanical Load	2400 Pa	2400 Pa	2400 Pa	5400 Pa	5400 Pa	5400 Pa	5400 Pa	5400 Pa	5400 Pa	5400 Pa
Fire Rating	Class C	Class C	Class C	Class C	Class C	Class C	Class C	Class C	Class C	Class C
Operating Temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
<b>Temperature Coefficients</b>										
Nominal Operating Cell Temperature	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C	46°C, ±2°C
Maximum Power (Pmax) Coefficient	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05	-0.45%/°C, ±0.05
Short Circuit Current (Isc) Coefficient	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015	-0.06%/°C, ±0.015
Open Circuit Voltage (Voc) Coefficient	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05	-0.35%/°C, ±0.05
<b>Certification</b>										
CSA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Certified to UL 1703	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Warranty</b>										
Product Workmanship	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years
10 Years	90% output	90% output	90% output	90% output	90% output	90% output	90% output	90% output	90% output	90% output
25 Years	80% output	80% output	80% output	80% output	80% output	80% output	80% output	80% output	80% output	80% output
<b>Standard Test Conditions (STC)</b>										
STC = 1000 W/M <sup>2</sup> irradiance, 25°C module temperature, AM 1.5 spectrum (Subject to simulator measurement uncertainty of ±3%)										