LAMPIRAN

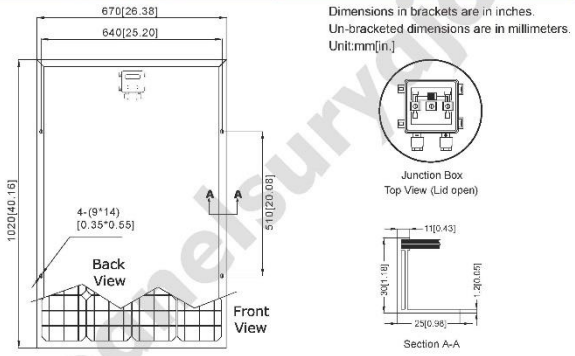
MSP-100W High Efficiency, High Quality PV Module

GREENTEK®

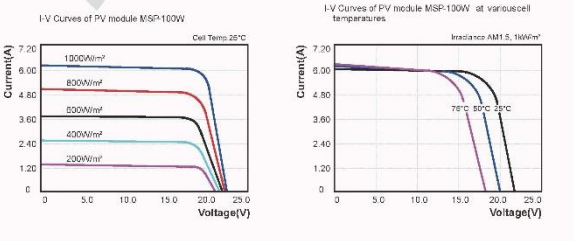
Electrical Characteristics	MSP-100W
Maximum power (Pmax)	100W
Voltage at Pmax (Vmp)	18.1V
Current at Pmax (Imp)	5.54A
Open-circuit voltage (Voc)	22.2V
Short-circuit current (Isc)	6.00A
Temperature coefficient of Voc	-(0.40 ± 0.05)%/ °C
Temperature coefficient of Isc	(0.065 ±0.01)% /°C
Temperature coefficient of power	-(0.5±0.05)%/ °C
NOCT (Air 20°C; Sun 0.8kW/m² wind 1m/s)	47±2°C
Operating temperature	-40°C to 85°C
Maximum system voltage	600V DC
Power tolerance	+ 3%
Cells	monocrystalline silicon solar cell
No. of cells and connections	72(4X18)
Module Dimension	670mm[26.38in.]x1020mm[40.16in.]x30mm[1.18in.]
Weight	7.70kg[16.94lbs]

** STC:Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C*
** Specifications are subject to change without notice at any time.*

Module Diagram



I-V Curves



Key Features:

- High module efficiency and stable power output
- Based on leading process technology
- Outstanding electrical performance under high temperature conditions or low irradiance conditions
- Easy of installation and all-weather applications
- 5 years product warranty(materials and workmanship)
- 20 years module power output warranty
- Peak power of single module is guaranteed in +3% power tolerance
- Strong framed module,passing loaded test of 5400 Pa (IEC61215 2nd)
- *The manufacture is certified for ISO 9001:2000*

Product's Guarantee

- 10 years products life warranty
- 15 years module power output no less 90%
- 20 years module power output no less 80%

Applications

- Off grid residential roof-tops
- Off grid commercial/industrial roof-tops
- Rural area applications
- Solar power system
- Other off-grid applications

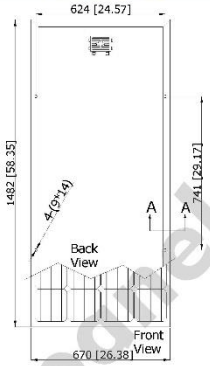
MSP-150W — High Efficiency, High Quality PV Module

GREENTEK®

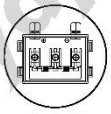
Electrical Characteristics	MSP-150W
Maximum power (Pmax)	150W
Voltage at Pmax (Vmp)	18.3V
Current at Pmax (Imp)	8.21A
Open-circuit voltage (Voc)	22.5V
Short-circuit current (Isc)	8.59A
Temperature coefficient of Voc	-(0.40 ± 0.05)%/ °C
Temperature coefficient of Isc	(0.065 ±0.01)% /°C
Temperature coefficient of power	-(0.5±0.05)%/ °C
NOCT (Air 20°C; Sun 0.8kW/m² wind 1m/s)	47±2°C
Operating temperature	-40°C to 85°C
Maximum system voltage	1000V DC
Power tolerance	+ 3%
Cells	monocrystalline silicon solar cell
No. of cells and connections	36(4X9)
Module Dimension	1482mm[58.35in.]x670mm[26.38in.]x35mm[1.18in.]
Weight	11.1kg[24.42lbs]

** STC:Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C*
** Specifications are subject to change without notice at any time.*

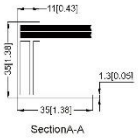
Module Diagram



Dimensions in brackets are in inches.
Un-bracketed dimensions are in millimeters.
Unit:mm[in.]

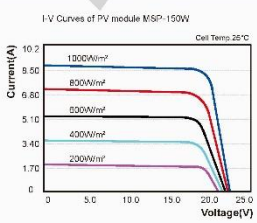


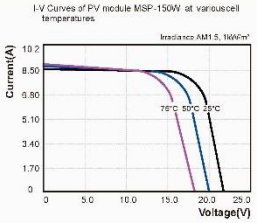
Junction Box
Top View (Lid open)



SectionA-A

I-V Curves





Key Features:

- High module efficiency and stable power output
- Based on leading process technology
- Outstanding electrical performance under high temperature conditions or low irradiance conditions
- Easy of installation and all-weather applications
- 5 years product warranty(materials and workmanship)
- 20 years module power output warranty
- Peak power of single module is guaranteed in +3% power tolerance
- Strong framed module,passing loaded test of 5400 Pa (IEC61215 2nd)
- *The manufacture is certified for ISO 9001:2008*

Product's Guarantee

- 10 years products life warranty
- 15 years module power output no less 90%
- 20 years module power output no less 80%

Applications

- Off grid residential roof-tops
- Off grid commercial/industrial roof-tops
- Rural area applications
- Solar power system
- Other off-grid applications

PSP -150W — High Efficiency, High Quality PV Module

GREENTEK

Electrical Characteristics	PSP -150W
Maximum power (Pmax)	150W
Voltage at Pmax (Vmp)	18.1V
Current at Pmax (Imp)	8.29A
Open-circuit voltage (Voc)	22.2V
Short-circuit current (Isc)	8.89A
Temperature coefficient of Voc	-(0.40 ± 0.05)%/ °C
Temperature coefficient of Isc	(0.065 ±0.01)% /°C
Temperature coefficient of power	-(0.5±0.05)%/ °C
NOCT (Air 20°C; Sun 0.8kW/m² wind 1m/s)	47±2°C
Operating temperature	-40°C to 85°C
Maximum system voltage	1000V DC
Power tolerance	+ 3%
Cells	polycrystalline silicon solar cell
No. of cells and connections	36(4X9)
Module Dimension	1482mm[58.35in.]x670mm[26.38in.]x35mm[1.18in.]
Weight	11.1kg[24.42lbs]

** STC:Irradiance 1000W/m², AM1.5 spectrum, module temperature 25°C*
** Specifications are subject to change without notice at any time.*

Module Diagram

Dimensions in brackets are in inches.
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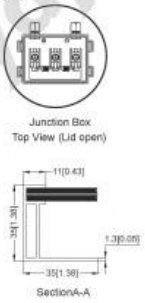
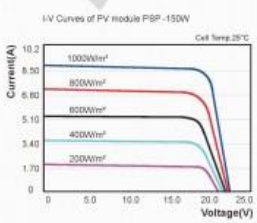
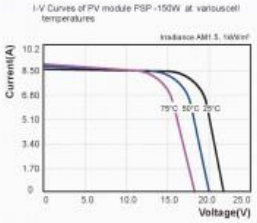
Unit:mm[in.]



I-V Curves





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Applications

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- Off grid commercial\Industrial roof-tops
- Rural area applications
- Solar power system
- Other off-grid applications

BMKG

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STASIUN KLIMATOLOGI SEMARANG
Jl. Siliwangi No. 291 Semarang 50145 | Telp. 024-7609016 | FAX. : 024-7612394
Email : staklim.semarang@bmkg.go.id

INFORMASI INTENSITAS, LAMA PENYINARAN MATAHARI DAN SUHU UDARA RATA-RATA WILAYAH SEMARANG TAHUN 2017-2018

KALIBANTENG (KOORDINAT = 110.38 BT ; -6.985 LS)
TAHUN 2017

Unsur	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agust	Sep	Okt	Nop	Des
Intensitas Matahari (kWh/m²/hari)	3.47	3.37	4.29	3.53	3.75	4.11	4.71	5.04	4.69	4.93	3.56	3.7
Lama Penyinaran (Jam)	3	4.2	5	5.5	6	6	6	7	7.4	6.8	3.5	3.7
Suhu Udara (°C)	27.3	26.8	27.6	28	28.9	28	28.1	28.1	28.9	28.9	27.7	27.6

KALIBANTENG (KOORDINAT = 110.38 BT ; -6.985 LS)
TAHUN 2018

Unsur	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agust	Sep	Okt	Nop	Des
Intensitas Matahari (kWh/m²/hari)	4.25	4.09	4.48	4.89	4.84	4.48	4.87	5	4.79	5.1	4.67	4
Lama Penyinaran (Jam)	3.3	4.2	4.6	6.5	6.6	6.8	7.5	7	7	7.6	5.5	4
Suhu Udara (°C)	27.2	26.7	27.5	28.9	29.2	28.6	27.6	27.6	28.5	29.2	28.7	28

Semarang, 05 April 2019
A.n. Kepala Stasiun Klimatologi Semarang
Kepala Seksi Data dan Informasi

IIS WIDYA HARMOKO, M.Kom
NIP. 19780122 199803 1 001

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Semarang 50112 http://www.unissula.a

LEMBAR REVISI dan TUGAS UJIAN SARJANA

Berdasarkan Rapat Tim Penguji Ujian Sarjana

Hari	:	Kamis
Tanggal	:	19 September 2019
Tempat	:	R. Sidang

Memutuskan bahwa mahasiswa :

Nama	:	Achmad Arie Prativi
NIM	:	30601501693
Judul TA	:	Simulasi Perbandingan Unjuk Kerja Panel Surya Monocrystalline dengan Polycrystalline Terhadap Perubahan Temperatur Panel Surya dan Radiasi Matahari dengan Menggunakan Simulink Matlab

wajib melakukan perbaikan dan membuat tugas seperti tercantum dibawah ini:

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2.	Daftar Isi	
3.	Diagram alir	

NO	TUGAS

Semarang, 19 September 2019
Penguji, I

Dr. Ir. H. Muhammad Haddin, MT
NIDN. 0618066301

Mengetahui,
Ketua Tim Penguji

Dr. Ir. H. Muhammad Haddin, MT
NIDN. 0618066301

FAKULTAS TEKNOLOGI INDUST
Universitas Islam Sultan Agung (UNISSUL
Jl. Raya Kaligawe Km.4 Telp. 024-6583584 Psw. 340 Faks. 024-6582
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Berdasarkan Rapat Tim Penguji Ujian Sarjana

Hari	:	Kamis
Tanggal	:	19 September 2019
Tempat	:	R. Sidang

Memutuskan bahwa mahasiswa :

Nama	:	Achmad Arie Prativi
NIM	:	30601501693
Judul TA	:	Simulasi Perbandingan Unjuk Kerja Panel Surya Monocrystalline dengan Polycrystalline Terhadap Perubahan Temperatur Panel Surya dan Radiasi Matahari dengan Menggunakan Simulink Matlab

wajib melakukan perbaikan dan membuat tugas seperti tercantum dibawah ini:

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NO	TUGAS

Mengetahui,
Ketua Tim Penguji

Dr. Ir. H. Muhammad Haddin, MT
NIDN. 0618066301

Semarang, 19 September 2019
Penguji, II

Ir. Agus Adhi Nugroho, MT
NIDN. 0628086501

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Berdasarkan Rapat Tim Penguji Ujian Sarjana

Hari	:	Kamis
Tanggal	:	19 September 2019
Tempat	:	R. Sidang

Memutuskan bahwa mahasiswa :

Nama	:	Achmad Arie Prativi
NIM	:	30601501693
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wajib melakukan perbaikan dan membuat tugas seperti tercantum dibawah ini:

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	- Abstrak - Bab 2 revisi titik! - flow chart! -	2/19.

NO	TUGAS
	Bab 2 → Tujuan Pustaka! Mendelay.

Semarang, 19 September 2019
Penguji, III

Mengetahui,
Ketua Tim Penguji

Dr. Ir. H. Muhammad Haddin, MT
NIDN. 0618066301

Muhammad Khosyi'in,ST,MT
NIDN. 0625077901

SIMULASI PERBANDINGAN UNJUK KERJA PANEL SURYA MONOCRYSTALLINE DENGAN POLYCRYSTALLINE TERHADAP PERUBAHAN TEMPERATUR PANEL SURYA DAN RADIASI MATAHARI DENGAN MENGGUNAKAN SIMULINK MATLAB

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