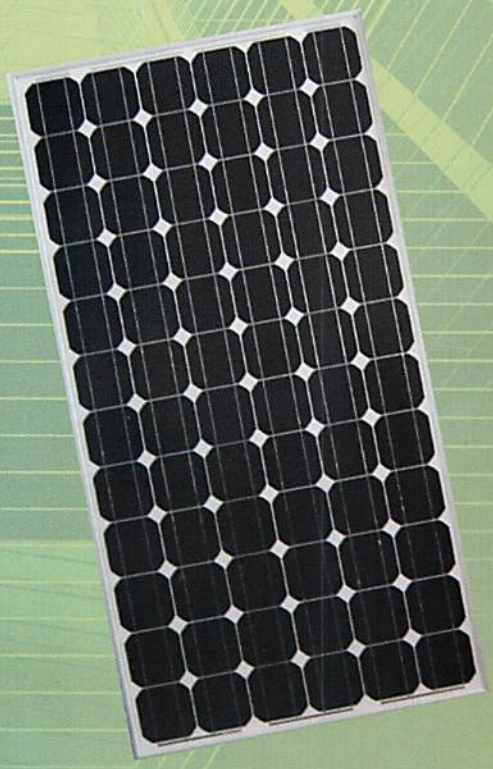
Renewable Energy

Len

Len 180 Wp - 24 V Monocrystalline

PHOTOVOLTAIC MODULES



Certified by B2TE BPPT Based on SNI:04-3850.2-1995
Corrosion Test Report Based on SNI:04-6298-2000

Len 180 Wp - 24V Monocrystalline dimanfaatkan dalam berbagai aplikasi sistem pembangkit tenaga surya baik yang berdiri sendiri (*Stand Alone System*) ataupun Sistem Komunal. Modul ini dirancang untuk memberikan daya dengan tegangan cukup untuk mengisi baterai. Tepat digunakan dalam berbagai aplikasi seperti peralatan instrumen, sensor keamanan, navigasi lampu lalu lintas dll.

Len 180 Wp - 24V Monocrystalline used in many variety solar power plant application either stand alone system or communal system. This modul designed to provide power with enough voltage to charge battery. Appropriately used in many application such as instrument equipment, security sensors, navigation and traffic light, etc.

Electrical Characteristics

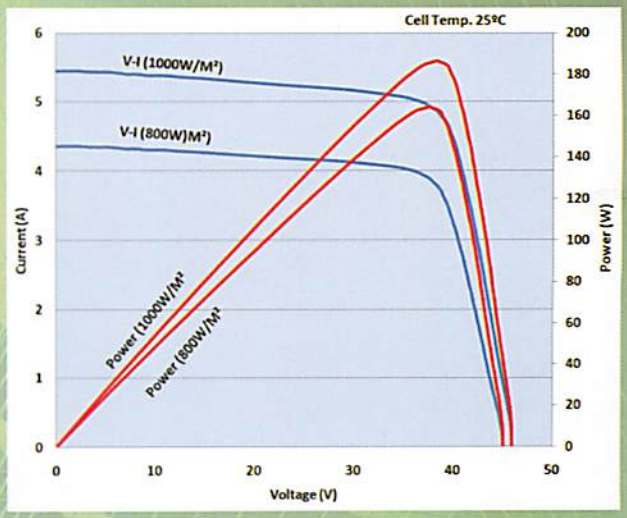
STC	Len 180 Wp - 24V Monocrystalline
Optimum Operating Voltage (Vmp)	35.6 V
Optimum Operating Current (Imp)	5.06 A
Open - Circuit Voltage (Voc)	44.1 V
Short - Circuit Current (Isc)	5.52 A
Maximum Power at STC (Pmax)	180 W
Modul Efficiency	14.5 %
Operating Module Temperature	-40 °C to +85°C
Maximum System Voltage	1000 V DC
Maximum Series Fuse Rating	20 A
Power Tolerance	+ 0 – 3 %

STC : Irradiance 1000 W/m², module temperature 25 °C, AM=1.5; Power measurement tolerance : ±3 %

NOCT	Len 180 Wp - 24V Monocrystalline
Maximum Power (W)	160 W
Maximum Power Voltage (V)	32.7 V
Maximum Power Current (A)	4.89 A
Open Circuit Voltage (Voc)	41.31 V
Short Circuit Current (Isc)	5.61 A

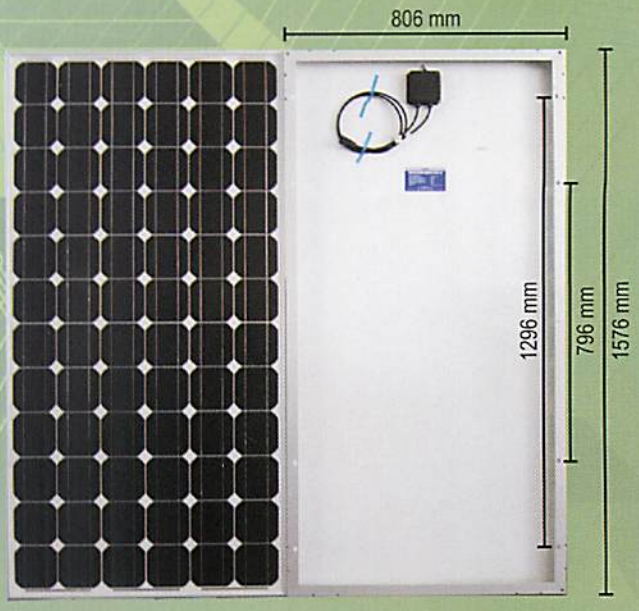
NOCT : Irradiance 800 W/m², module temperature 20 °C, wind speed 1 m/s; Power measurement tolerance : ±3 %

Current-Voltage & Power-Voltage Curve (Len 180 Wp - 24V Monocrystalline)



Mechanical Characteristics

Solar Cell	Monocrystalline 125 x 125 mm (5 inches)
No. of Cells	72 (6 X 12)
Dimensions	1576 X 806 X 50 mm
Weight	16.5 Kg
Front Glass	3.2 mm (0.13 inches) tempered glass
Frame	Anodized alumunium alloy
Junction Box	IP65
Output Cables	TUV (2Pfg1169:2007), UL 4703, UL 44 4 mm² (0.00375 inches²)
Connectors	RADOX® SOLAR integrated twist locking connectors



Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45 ± 3 °C
Temperature Coefficient of Power	-0.41 %/°C
Temperature Coefficient of Voc	-0.31 %/°C
Temperature Coefficient of Isc	0.047 %/°C

4.1.180-M.I-14

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ISO 9001 : 2008 OHSAS 18001 : 2007
ISO 14001 : 2005 SMK3

Len

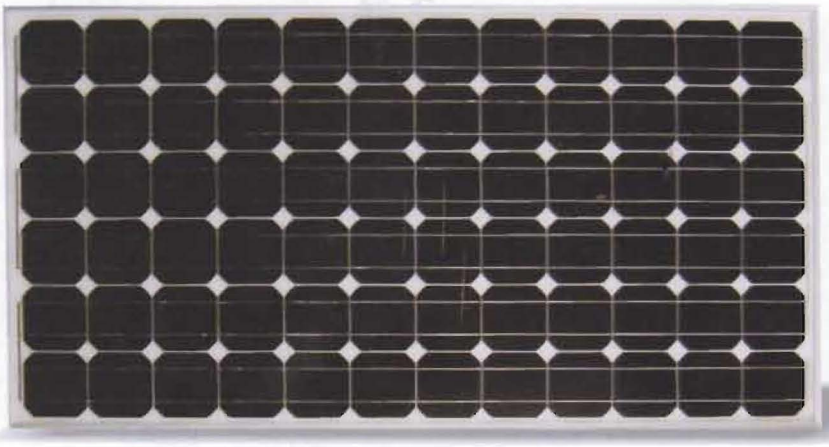
Len

Len 200 Wp - 24 V Monocrystalline
PHOTOVOLTAIC MODULES

Modul Surya Len 200 Wp - 24 V Monocrystalline ini dibuat dari *solar cell* dengan effisiensi tinggi sehingga mampu menghasilkan daya maksimal hingga lebih dari 200 Wp, untuk kerjanya pada intensitas pencahayaan rendah juga sangat bagus sehingga modul ini masih dapat bekerja pada kondisi berawan dan waktu hujan. Modul ini merupakan pilihan yang tepat digunakan dalam berbagai aplikasi seperti untuk daerah terpencil, peralatan instrumen, sensor keamanan navigasi, lampu lalu lintas, dll.

Solar module Len 200 Wp - 24 V Monocrystalline is made of high conversion efficiency cells, so the maximum power of the module can reach as high as 200 Wp or more. Excellent low light performance guarantees our modules work superiorly even under the weak light conditions such as cloudy, foggy and rainy days. They are ideal choice for any application such as remote habitation, instrumentation system, security sensors navigation, traffic light, etc.

Efficiency
16 %



Certified by B2TE BPPT Based on SNI:04-3850.2-1995
Corrosion Test Report Based on SNI:04-6298-2000
ISO 9001 : 2008
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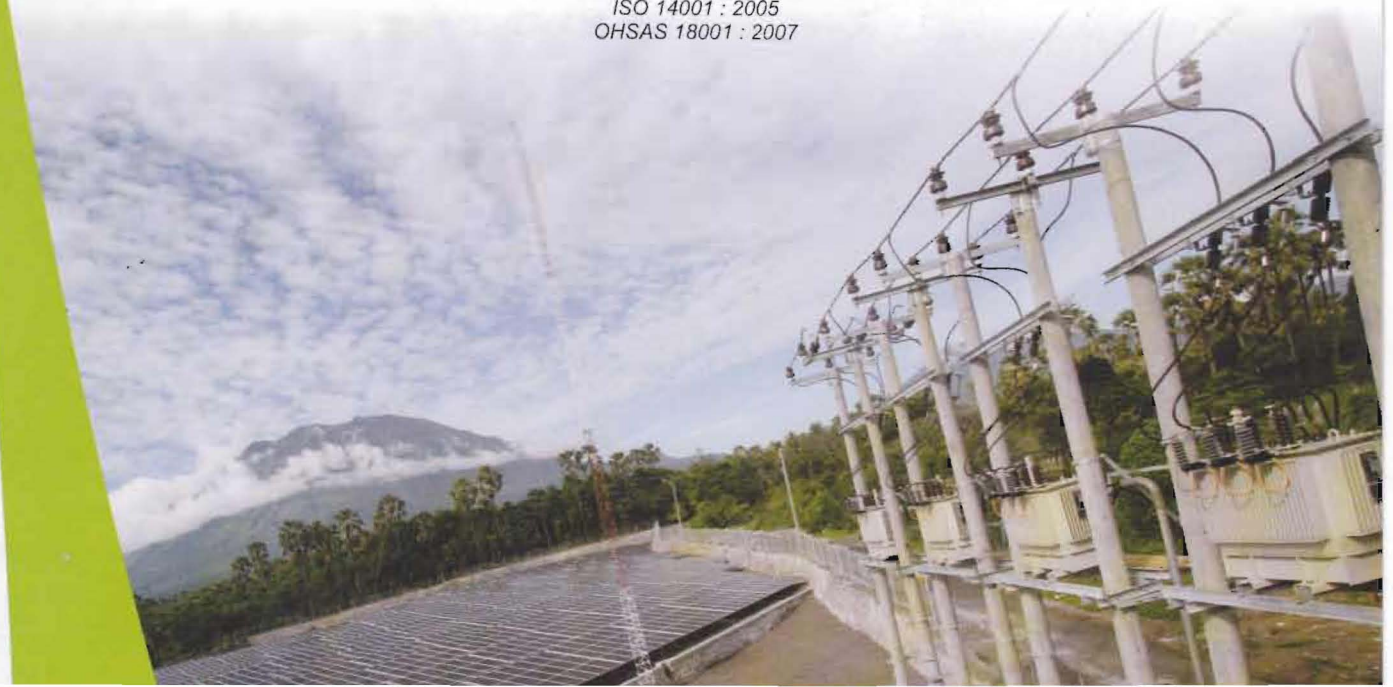
OHSAS 18001 : 2007



Electrical Characteristics

STC	Len 200 Wp - 24 V Monocrystalline
Optimum Operating Voltage (Vmp)	37.44 V
Optimum Operating Current (Imp)	5.35 A
Open - Circuit Voltage (Voc)	45.5 V
Short - Circuit Current (Isc)	5.80 A
Maximum Power at STC (Pmax)	200 W
Modul Efficiency	16 %
Operating Module Temperature	-40 °C to +85°C
Maximum System Voltage	1000 V DC
Maximum Series Fuse Rating	20 A
Power Tolerance	+ 0 – 3 %

STC : Irradiance 1000 W/m², module temperature 25 °C, AM=1.5;

Mechanical Characteristics

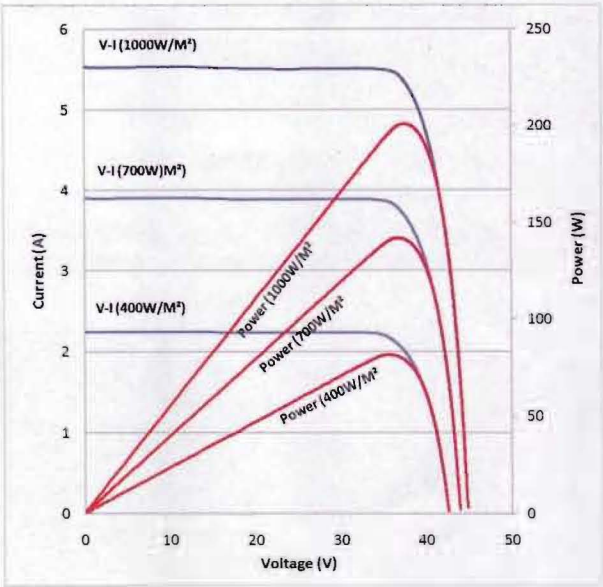
Solar Cell	Monocrystalline
No. Of Cells	72 (6 X 12)
Dimensions	1580 X 808 X 45 mm
Weight	16 Kg
Junction Box	IP65
Diodes	Schottky by-pass diodes
Output Cables	TUV (2Pfg 1169); PV1-F 1*4mm, Cable with polarized weather proof DC rated ZJRH connectors (MC3 or MC4 type) symmetrical length 1000mm (-) and 1000 mm (+)
Connectors	RADOX® SOLAR integrated twist locking connectors
Construction	Front : High-transmission low-iron,3,2 mm tempered glass; Back cover : Tedlar / TPE / TPT Encapsulant : EVA; Frame : Anodized aluminum alloy

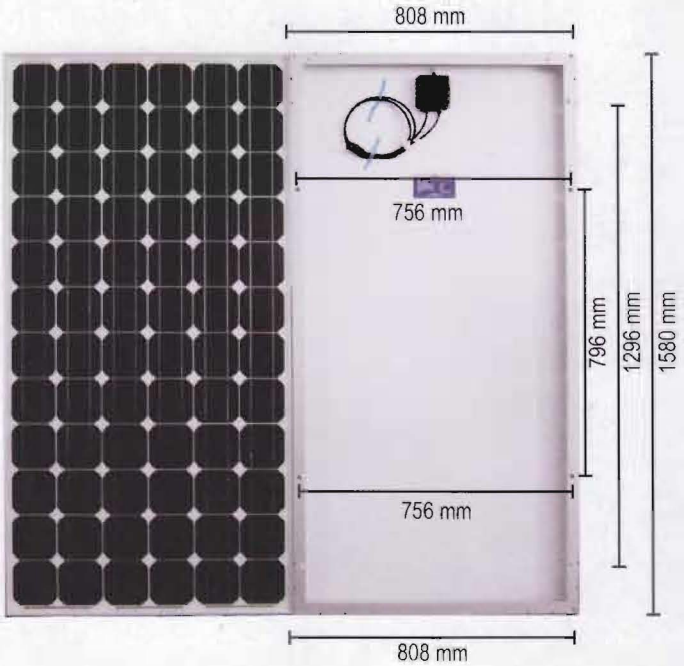
Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	50 ± 2 °C
Temperature Coefficient of Power	-0.44 %/°C
Temperature Coefficient of Voc	-0.32 %/°C
Temperature Coefficient of Isc	0.04 %/°C

Current-Voltage & Power-Voltage Curve (Len 200 Wp - 24 V Monocrystalline)

Cell Temp. 25°C





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Renewable Energy

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Len 260 Wp Monocrystalline

PHOTOVOLTAIC MODULES

Certified by B2TE BPPT Based on SNI:04-3850.2-1995
Corrosion Test Report Based on SNI:04-6298-2000

Modul Surya Len 260 Wp Monocrystalline ini dibuat dari solar cell dengan effisiensi tinggi sehingga mampu menghasilkan daya maksimal hingga lebih dari 260 Wp, unjuk kerjanya pada intensitas pencahayaan rendah juga dapat sangat bagus sehingga modul ini masih dapat bekerja pada kondisi berawan dan waktu hujan. Modul ini merupakan pilihan yang tepat digunakan dalam berbagai aplikasi seperti untuk daerah terpencil, peralatan instrumen, sensor keamanan navigasi, lampu lalu lintas, dll.

Solar module Len 260 Wp Monocrystalline is made of high conversion efficiency cells, so the maximum power of the module can reach as high as 260 Wp or more. Excellent low light performance guarantees our modules work superiorly even under the weak light conditions such as cloudy, foggy and rainy days. They are ideal choice for any application such as remote habitation, instrumentation system, security sensors navigation, traffic light, etc.

Electrical Characteristics

STC	Len 260 Wp Monocrystalline
Optimum Operating Voltage (Vmp)	30.60 V
Optimum Operating Current (Imp)	8.50 A
Open - Circuit Voltage (Voc)	37.70 V
Short - Circuit Current (Isc)	9.15 A
Maximum Power at STC (Pmax)	260 W
Modul Efficiency	16 %
Operating Module Temperature	-40 °C to +85°C
Maximum System Voltage	1000 V DC
Maximum Series Fuse Rating	15 A
Power Tolerance	+ 0 – 3 %

STC : Irradiance 1000 W/m², module temperature 25 °C, AM=1.5;

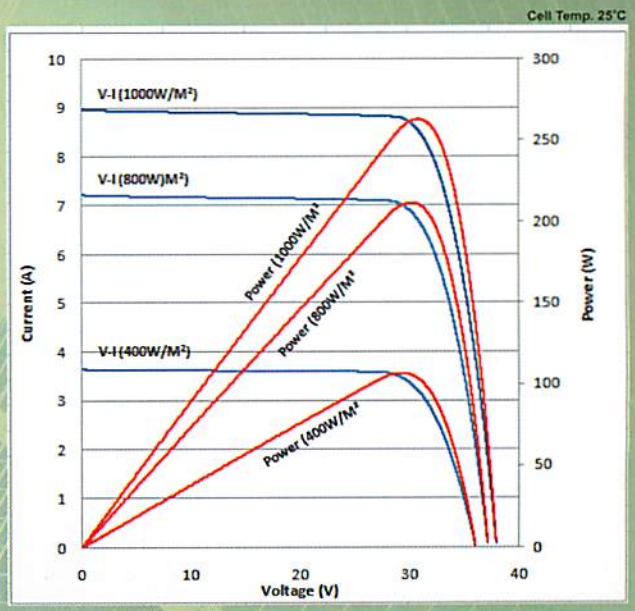
Mechanical Characteristics

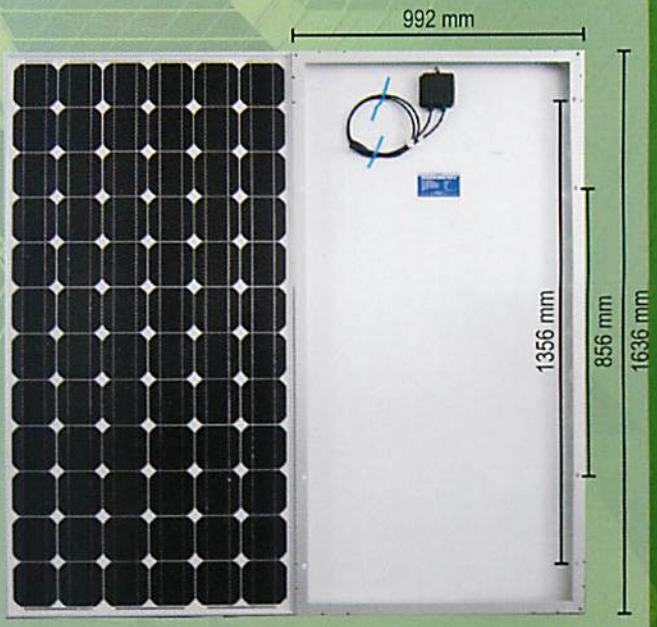
Solar Cell	Monocrystalline
No. Of Cells	60 (6 X 10)
Dimensions	1636 X 992 X 45 mm
Weight	19.5 Kg
Junction Box	IP65
Diodes	Schottky by-pass diodes
Output Cables	TUV (2Pfg 1169); PV1-F 1*4mm, Cable with polarized weather proof DC rated ZJRH connectors (MC3 or MC4 type) symmetrical length 1000mm (-) and 1000 mm (+)
Connectors	RADOX® SOLAR integrated twist locking connectors
Construction	Front : High-transmission low-iron,3,2 mm tempered glass; Back cover : Tedlar / TPE / TPT; Encapsulant : EVA; Frame : Anodized aluminum alloy

Temperature Characteristics

Nominal Operating Cell Temperature (NOCT)	45 ± 3 °C
Temperature Coefficient of Power	
Temperature Coefficient of Voc	-0.41 %/°C
Temperature Coefficient of Isc	-0.31 %/°C
	0.047 %/°C

Current-Voltage & Power-Voltage Curve (Len 260 Wp Monocrystalline)





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