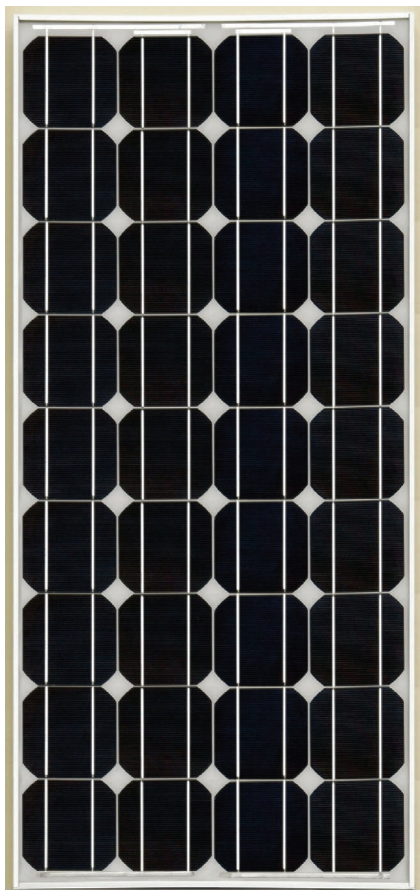


# ES2-90M5

EdgeTech  
**SOLAR**  
INTERNATIONAL Ltd.



## Features

Bypass diode minimizes the power drop by shade.

High conversion efficiency of solar cell.

White tempered glass, EVA resin, weather proof film and anodized aluminum frame provide efficient protection from the severest environmental conditions.

Waterproof (UL94,V-O) connector.

Perfect for grid applications.

Product guarantee 5 years.

EdgeTech Solar photovoltaic modules are produced in a ISO9001 qualified factory using the highest quality materials and excellent quality control. Each module must undergo an extensive series of performance tests putting the module under extreme electrical and mechanical conditions to assure each module meets or exceeds specifications for many years of reliable performance even in the most challenging of environments.

## QUALITY COMPONENTS

## HIGH PERFORMANCE

## RELIABLE

## DURABLE

## 25 YEAR WARRANTY

On the Edge of Today's  
Energy Technology



# ES2-90M5

## ELECTRICAL CHARACTERISTICS

Type of Module	Mono crystalline
Maximum Power Rating (Pmax)	90 Watts
Maximum Power Tolerance ±	5 %
Open-Circuit Voltage (Voc)	22.03 Volts
Short-Circuit Current (Isc)	5.31 Amps
Maximum Power Voltage (Vmp)	18.36 Volts
Maximum Power Current (Imp)	4.90 Amps
Module Efficiency	13.52 %
Solar Cell Efficiency	16.87 %
Series Fuse Rating	10 Amps
Terminal Box	IP65
Maximum System Voltage	1000 Volts DC
Temperature Range	-40 to 85 °C
Nominal Voltage	12 Volts

## TEMPERATURE COEFFICIENTS

Short-Circuit Current Temp Coefficient	+2.500 mA/°C
Open-Circuit Voltage Temp Coefficient	-0.1470 V/°C
Maximum Power Temp Coefficient	-0.4000 %/°C

## MECHANICAL CHARACTERISTICS

Dimensions	1206x552x35 mm
Weight	8.5 kg
Packing	14pcs/1 carton
Loading Capacity Container	672/20ft 1512/40ft

## WARRANTY

Workmanship & Product Warranty	5 years
Power Output Warranty 12 years	90% Power
Power Output Warranty 25 years	80% Power

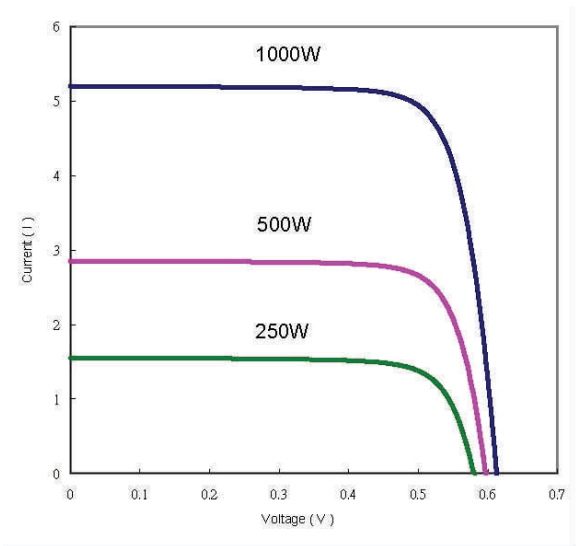
## CERTIFICATIONS

ISO TUV

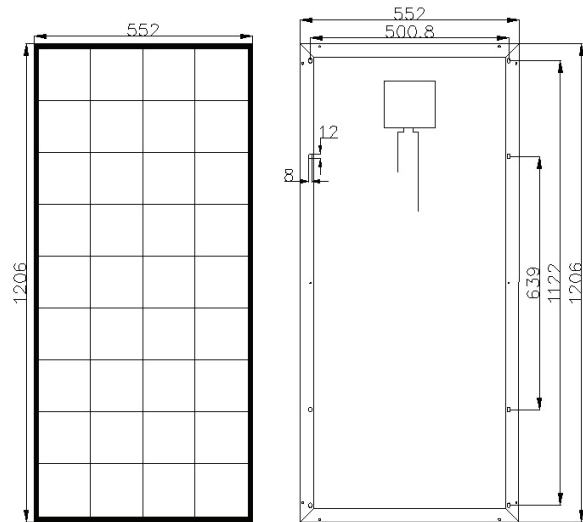


## IV CURVES

Current-Voltage characteristics of cells at various irradiance levels



## DIMENSIONS



## QUALITY ASSURANCE TESTS

- Electrical Insulation
- Outdoor Exposure
- Hot-Spot Endurance
- UV-Exposure
- Thermal Cycling
- Humidity Freeze
- Damp Heat
- Robustness of Terminations
- Wet Leakage Current
- Mechanical Load
- Hail Impact
- Bypass Diode Thermal



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