

## **SERAG** UTILITY MODULE

Glass-Glass Module  
295-P / 300-P / 305-P

Higher Energy Yield with  
lower system, operations  
and maintenance cost

### **NO POWER INDUCED DEGRADATION**

Unique Design to avoid PID:  
Hydrophobic encapsulant  
No frame Glass-Glass Laminate  
Edge Seal Barrier

### **POSITIVE POWER TOLERANCE**

Up to 4.9 W positive binning allows a higher  
Energy Yield for our customers

### **ENCAPSULANT MATERIAL**

The use of hydrophobic encapsulant foile reduces  
yellowing

### **ROBUST DESIGN**

Module withstands very high Wind and Snow loads  
due to use of two 3.2 mm tempered glass

### **OPTIMIZED EDGE BOXES**

Fully automated mounting and 100% filling of Edge  
Box promises extremely long lifetime through IP67

### **INSTALLATION ADVANTAGES**

Edge Boxes in the corners of the module simplify the  
installation and reduce cable losses due to short cable  
lengths

No fixation of the wires necessary

### **LAMINATE CONSTRUCTION**

Frameless design eliminates unwanted dirt  
accumulation at the edges

### **INTEGRATED BYPASS DIODES**

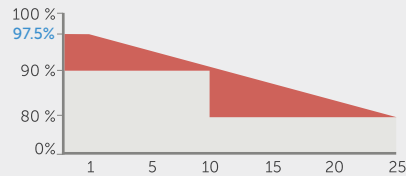
12 cells per Bypass Diode reduce losses due to  
Shadowing

6 diodes guarantee better reliability

## PERFORMANCE

Product Warranty<sup>1</sup> 10 years on materials and workmanship

Performance Warranty<sup>1</sup>

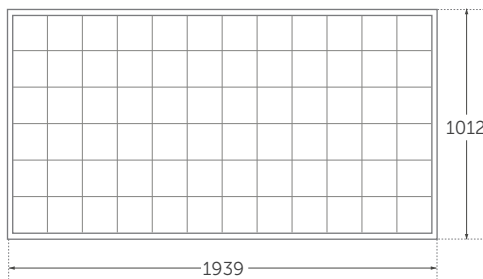


## MECHANICAL PROPERTIES

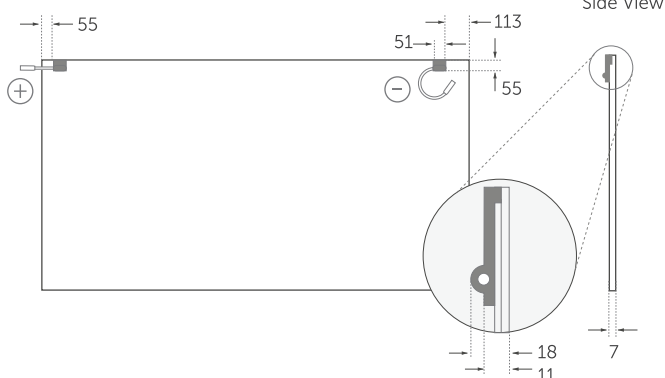
Dimensions	1939 mm x 1012 mm x 7 mm
Weight	33.8 Kg
Construction	Frameless Glass—Glass
Glass	2 x 3.2 mm tempered Glass
Cell Type	Polycrystalline 156 x 156 mm (6")
Cell orientation	72 cells (6 x 12)
Bypass Diodes	6
Cable	80 mm (+), 300 mm (-), 4 mm <sup>2</sup>
Connector	MC4-EVO 3
Mechanical Load	Snow 2400 Pa, Wind 5400 Pa <sup>4</sup>

## MECHANICAL DRAWINGS

Front side



Back side



## ELECTRICAL CHARACTERISTICS AT STC<sup>2</sup>

Model Type	295-P	300-P	305-P
Rated Power ( $P_{MPP}$ )	295 Wp	300 Wp	305 Wp
Module Efficiency	15.1 %	15.3 %	15.5 %
Open Circuit Voltage ( $U_{OC}$ )	45.1 V	45.1 V	45.2 V
Short Circuit Current ( $I_{SC}$ )	8.6 A	8.6 A	8.7 A
Max Power Voltage $P_{MPP}$ ( $U_{MPP}$ )	36.9 V	37.2 V	37.5 V
Max Power Current $P_{MPP}$ ( $I_{MPP}$ )	8.0 A	8.1 A	8.2 A
System Voltage	1000 V (IEC)		
Series Fuse Rating	15 A		
Operating Temperature	-40°C - +85°C		
Power Tolerance	0 / +5 Wp		

## ELECTRICAL CHARACTERISTICS AT NOCT<sup>3</sup>

Model Type	295-P	300-P	305-P
Rated Power ( $P_{MPP}$ )	218.2 Wp	223.6 Wp	227.7 Wp
Open Circuit Voltage ( $U_{OC}$ )	41.8 V	42.2 V	42.6 V
Short Circuit Current ( $I_{SC}$ )	6.9 A	7.0 A	7.1 A
Max Power Voltage $P_{MPP}$ ( $U_{MPP}$ )	34.1 V	34.4 V	34.5 V
Max Power Current $P_{MPP}$ ( $I_{MPP}$ )	6.4 A	6.5 A	6.6 A

## TEMPERATURE RATINGS

Temperature Coefficient of $P_{MAX}$	-0.437 %/°C
Temperature Coefficient of $U_{OC}$	-0.331 %/°C
Temperature Coefficient of $I_{SC}$	0.054 %/°C
Nominal Operating Cell Temperature	47.6 °C ± 2°C

## SHIPPING QUANTITIES OF MODULES

Container	20"	40"
Per Pallet	40	40
Per Container	400	600

## QUALITY AND SAFETY

IEC 61215 & IEC 61730

Application Class A (According IEC 61730)

Fire Safety Class A

Safety Class II up 1000 VDC

1 Contact Smartenergy Renewables Deutschland GmbH for full Warranty Terms

2 Standard Test Conditions (STC): 1000 W/m<sup>2</sup>, 25°C, AM 1.5G Power Measurement Tolerance: ±2.5%

3 Nominal Operating Cell Temperature (NOCT), at 800 W/m<sup>2</sup>, AM 1.5, Ambient Temperatur 20°C

4 See Installation Guide for further details