

## ET SOLAR – ET-P654200 / ET-P654205 / ET-P660225

Solar modules are the key element of every solar power system as they convert sunlight into electricity. Their quality, reliability and performance are therefore critical for the yield and profit of your system. Polycrystalline solar modules provide reliable performance based on more than 40 years of use and have a track record of delivering excellent yields.

Phoenix Solar selects the best solar modules from leading international manufacturers based on strict quality criteria. They are tested by our own technical experts as well as independent institutes. This provides you with the investment security whilst optimising your return at the same time.



Sample picture – housing can vary depending on device type

### The advantages at a glance:

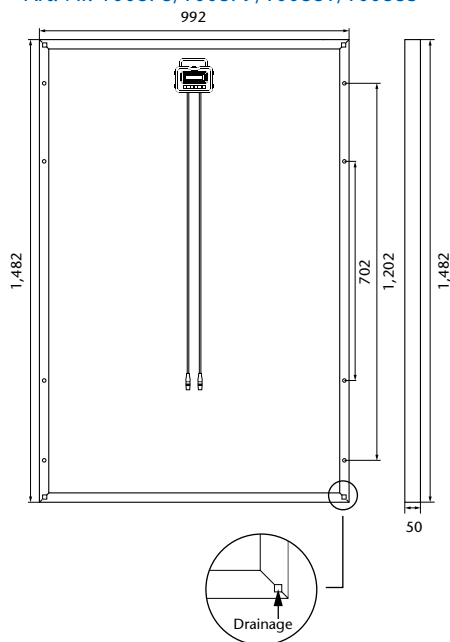
- 200, 205 and 225 Wp output
- Tested in a RAL certificated process, independent of the manufacturer
- Modules with polycrystalline cells and an efficiency of up to 13.83 %
- Performance guarantee\*: 25 years at 80 %, 12 years at 90 % of the minimal rated power output
- Anodized aluminium frame which resists even extreme climate conditions
- Drainage holes on all four sides to ensure reliable water drain
- Low negative power output tolerance

\* The manufacturer's terms and conditions of guarantee apply

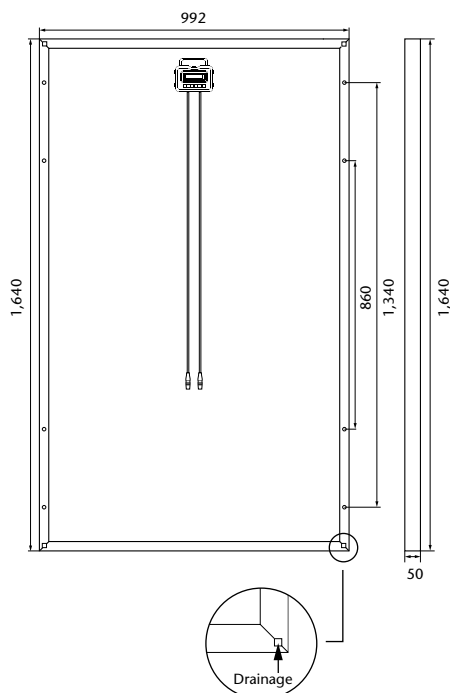
## Experience that pays

Phoenix Solar or your local Phoenix Solar partner individually match the solar modules and all additional system components to ensure that you get the ideal system to meet your requirements. All of our sales partners have a considerable amount of expertise and many years of experience in solar technology and have been personally chosen by us according to the strictest quality criteria.

ET-P654200/ET-P654205 –  
Art. Nr. 100878/100879/100881/100883



ET-P660225 – Art. Nr. 100876



The ET Solar Group with headquarters in Nanjing (China) is a vertically integrated solar energy equipment manufacturer. The products are used in a large number of residential and utility scaled solar PV projects around the world. ET Solar is a member of PV-Cycle.

## Mechanical parameters

Article number	100878/100879/ 100881/100883	100876
Length [mm]	1,482 +/- 1	1,640 +/- 1
Width [mm]	992 +/- 1	992 +/- 1
Depth [mm]	50 +/- 1	50 +/- 1
Depth with connection socket [mm]	50	50
Weight [kg]	18.30	19.93
Connection socket (manufacturer/ number of diodes)	ZJRH/3 x 2	
Positive cable (manufacturer/length [mm]/ cable cross-section [mm <sup>2</sup> ])	Nanyang/900/4	
Negative cable (manufacturer/length [mm]/ cable cross-section [mm <sup>2</sup> ])	Nanyang/900/4	
Plug connector (manufacturer/type)	Multicontact/MC3 or MC4	
Front cover (material/thickness [mm])	Glass/3.2	
Cell type (quantity/technology)	54/polycrystalline 60/polycrystalline	
Cell embedding (material)	Ethyl Vinyl Acetate (EVA)	
Rear cover (material)	Toyo	
Frame (material/profile type)	Aluminium/hollow profile	

## Manufacturer's guarantee

Product guarantee	5-year product guarantee*
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Performance guarantee 12 years at 90 % of the minimal rated power output\*  
25 years at 80 % the minimal rated power output\*

\* The manufacturer's terms and conditions of guarantee apply

## Qualifications and Certificates

IEC 61215

IEC 61730 Class A



## Electrical parameters

Electrical parameters for STC (1,000 W/m<sup>2</sup>, T<sub>Module</sub> = 25 (+/- 2) °C, AM 1.5, according to EN/IEC 60904-1 to 60904-3)

Article number	100883	100878	100881	100879	100876
Plug connector	MC3	MC4	MC3	MC4	MC4
Power output [P <sub>mpp</sub> ]	200		205		225
Power output tolerances [%]	- 1 / + 3		- 1 / + 3		- 1 / + 3
Efficiency [%]	13.60		13.94		13.83
Max. voltage V <sub>mpp</sub> [V]	27.21		27.30		29.90
Max. current I <sub>mpp</sub> [A]	7.36		7.50		7.75
Open circuit voltage V <sub>oc</sub> [V]	32.72		32.80		36.30
Short circuit current I <sub>sc</sub> [A]	7.86		8.10		8.10

Electrical parameters for 800 W/m<sup>2</sup>, T<sub>Module</sub> = NOCT, AM 1.5, according to EN/IEC 60904-1 to 60904-3  
NOCT = Nominal Operating Cell Temperature, cell temperature under nominal operating conditions

Max. power output P <sub>mpp</sub> [Wp]	157.90	161.80	180.10
Max. voltage V <sub>mpp</sub> [V]	27.10	27.20	29.00
Max. current I <sub>mpp</sub> [A]	5.94	6.03	6.08
Open circuit voltage V <sub>oc</sub> [V]	32.20	32.30	35.10
Short circuit current I <sub>sc</sub> [A]	6.36	6.55	6.40

Electrical parameters for 200 W/m<sup>2</sup>, T<sub>Module</sub> = 25 (+/- 2) °C, AM 1.5, EN/IEC 60904-1 to 60904-3

Max. power output P <sub>mpp</sub> [Wp]	34.40	35.26	38.70
Max. voltage V <sub>mpp</sub> [V]	24.90	24.90	26.30
Max. current I <sub>mpp</sub> [A]	1.38	1.40	1.50
Open circuit voltage V <sub>oc</sub> [V]	29.80	29.87	33.10
Short circuit current I <sub>sc</sub> [A]	1.57	1.61	1.60

Reverse current loading capability I <sub>R</sub> [A]	16.20
Max. permissible system voltage V <sub>sys</sub> [V]	1.000

### Parameters of the thermal characteristics

NOCT [°C]	45
Temperature coefficient of the short circuit current I <sub>sc</sub> [%/K]	0.065
Temperature coefficient of the open circuit voltage V <sub>oc</sub> [%/K]	- 0.35
Temperature coefficient of the MPP power P <sub>mpp</sub> [%/K]	- 0.46

## Operating conditions

Max. operating temperature [°C]	- 40 to + 85
Max. snow load [Pa]	5,400
Max. wind load [Pa]	5,400

Subject to modifications and errors

## PLANNING GUIDE

The module array displayed below applies specifically to ET Solar ET-P654200/P654205/P660225 modules, including the distances for connecting them together (using the Tecto-Sun mounting system, scale: 1:100).

**Notes on use:** Draw a scale diagram of the roof (1:100) with all the details (windows, dormer windows, chimneys, etc.) on transparent paper and place it over this module

array. Copy the intersecting points of the grid on the roof diagram and connect them with a line. If the roof diagram is larger than the grid, it can be moved as required. Doing this allows you to determine the maximum allocation of modules while taking shading and objects on the roof into account.

### ET-P654200/ET-P654205 – Art. No. 100878/100879/100881/100883

Number of modules	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Module array dimensions	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00
1																
1.50																
2																
3.00																
3																

Length (m)

Width (m)

### ET-P660225 – Art. No. 100876

Number of modules	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Module array dimensions	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00
1																
1.66																
2																
3.32																
3																
4.98																

Length (m)

Width (m)

Subject to modifications and errors