



PHOENIX SOLAR – PHX-210

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 long 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 investment security whilst optimising your return at the same time.



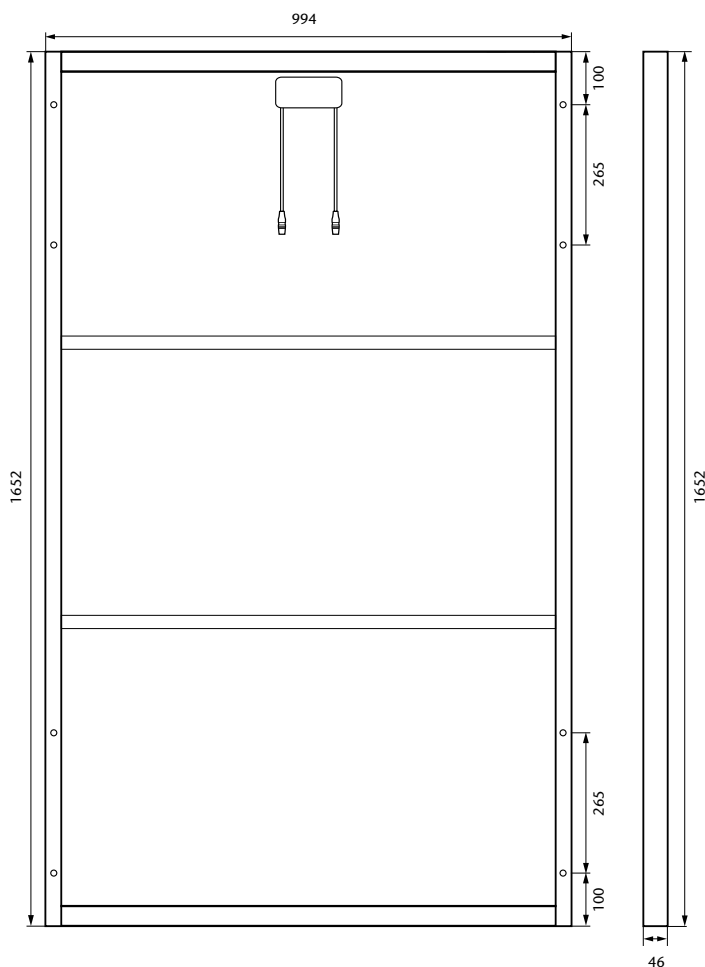
The advantages at a glance:

- 210 Wp power output
- Tested in a RAL certificated process, independent of the manufacturer
- High-performance modules consisting of polycrystalline cells with an efficiency of 12.8% and an anti-reflective coating
- Expansion joints in the conductor strands ensure high resistance in the event of extreme temperature fluctuations
- Highly robust, non-corroding, double-reinforced aluminium frame and tempered glass for extreme climate conditions
- 25-year performance guarantee* at 80% of the minimal rated power output
- 10-year performance guarantee* at 90% of the minimal rated power output

* Our 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.



Mechanical parameters

Length [mm]	1652
Width [mm]	994
Depth [mm]	46
Depth with connection socket [mm]	46
Weight [kg]	21
Connection socket (manufacturer/material/number of diodes)	PPE/PPO/3
Positive cable (manufacturer/length [mm]/cable cross-section [mm ²])	CE/900/4
Negative cable (manufacturer/length [mm]/cable cross-section [mm ²])	CE/900/4
Plug connector (manufacturer/type)	Multicontact/MC3
Front cover (material/thickness [mm])	Low-iron tempered glass
Cell type (quantity/technology)	60/polycrystalline
Cell embedding (material)	Ethylene Vinyl Acetate (EVA)
Rear cover (material/thickness [mm])	Icosolar/0.35
Frame (material/profile type)	Aluminium/hollow section

Statutory warranty and manufacturer's guarantee

Statutory warranty	2-year product limited warranty
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Performance guarantee 10 years at 90 % of the minimal rated power output*
25 years at 80 % the minimal rated power output*

* Our terms and conditions of guarantee apply

Qualifications and Certificates

IEC 61215 Ed. 2

IEC 61730 Class A



Located in Sulzemoos near Munich, Germany, Phoenix Solar AG is an international leading photovoltaic systems company. Many years of experience in planning, constructing and operating large-scale photovoltaic power plants in combination with a quality management system involving independent laboratories make the company's products and systems a secure capital investment.



Electrical parameters

Electrical parameters for STC (1000 W/m², 25 (+/- 2)°C, AM 1.5 according to EN 6090-4)

Article number	100298
Power output [P_{mpp}]	210
Power output tolerances [%]	+ 10 / - 5
Efficiency [%]	12.80
Max. voltage V_{mpp} [V]	28.80
Max. current I_{mpp} [A]	7.30
Open circuit voltage V_{oc} [V]	36.40
Short circuit current I_{sc} [A]	8.03

Electrical parameters for 800 W/m², NOCT, AM 1.5 NOCT = Nominal Operating Cell Temperature, cell temperature under nominal operating conditions

Max. power output P_{max} [Wp]	145.90
Max. voltage V_{max} [V]	25.10
Max. current I_{mpp} [A]	5.81
Open circuit voltage V_{oc} [V]	32.60
Short circuit current I_{sc} [A]	6.58
Reverse current loading capability I_R [A]	15
Max. permissible system voltage V_{max} [V]	1000

Parameters of the thermal characteristics

NOCT [° C]	47.5
Temperature coefficient of the short circuit current I_{sc} [%/K]	+ 0.053
Temperature coefficient of the open circuit voltage V_{oc} [%/K]	- 0.357
Temperature coefficient of the MPP power P_{mpp} [%/K]	- 0.485

Operating conditions

Max. operating temperature [° C]	- 40 to + 90
Max. snow load [Pa]	2400
Max. wind load [Pa]	according to IEC 61215 Ed. 2

PLANNING GUIDE

The module array displayed below applies specifically to Phoenix Solar PHX-210 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.

Number of modules	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Module array dimensions	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10	11.11	12.12	13.13	14.14	15.15
1															
1.65															
2															
3.30															
3															
4.95															
4															
6.60															
5															
8.25															
6															
9.90															
7															
11.55															

Width (m)

Length (m)

Subject to modifications and errors

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Making energy together