

ExoSol

VACUUM TUBE SOLAR COLLECTOR
OPC-15 EDITION EU21 WITH PHOTOVOLTAIC CELLS

GreenEnergy



Awards

1st prize at Poznan International Fair, one of Europe's largest trade fairs

WORLD NOVELTY !

The first hybride vacuum tube solar collector - which produces both thermal energy and electricity for the pump operation

- Innovative technique
- High efficiency
- Simple installation
- Low installation cost
- Autonomous system
- Minimum environmental impact
- No operational costs

*Developed in cooperation with qualified partners:
AMK - www.amk-solac.com
TACONOVA - www.taconova.com
EU21 - www.eu.21.org*



Godkänd enligt
Solar Keymark

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WORLD NOVELTY !

OPC-15 edition EU21

Based on ExoSol OPC-15, see separate brochure

The first hybride solar collector with vacuum tubes which simultaneously produces both heat and electricity!

ExoSol OPC-15 edition EU21 is equipped with photovoltaic cells built from CIS-laminate. The design is result of a development project together with several of the leading solar energy research companies in Europe. The new concept is that the edition EU21 besides thermal heat production, as in ExoSol OPC-15, also produces electricity to power the pump circulation to the accumulator tank.

The solar radiation determines direct fluid flow and thereby the effect to the accumulator. The system needs no external control system and functions itself without external electricity. As the fluid flow in every situation is determined by solar radiation an optimal effect ratio is maintained during the whole year.

Advantages

- No external control system needed; the photovoltaic cells give a modulated voltage to the DC pump motor, which assumes exact revolutions.
- The 3-tube technique (Tichelmann) guarantes parallel flow in all collectors.
- The parallel flow gives a negligible pressure loss and thereby low power needs.
- The high quality CIS-laminate (photovoltaic cells) gives a high effect ratio, suitable temperature coefficient and a broad working area through the light spectrum.
- The well-tested pump unit is comprised of a maintenance-free DC pump and the necessary fittings for ventilation, flow control etc.
- A simple function control by direct flow reading at the pump.
- The pump unit's design, the separate pressurized circulation system with simple refill connections and connections to the expansion chamber guarantee a safe function and safety during stagnation.
- A simple and cost efficient installation, which in most cases needs only one installer.

Customer value

- High availability through using high quality and effectively combined components.
- Simple, cost effective installation.
- Easy to integrate in existing ExoSol OPC installations.
- Autonomous system - no operational costs.
- Minimum environmental impact - no external energy required
- No additional costs for solar control and electricity installation.
- Indiginous design.

Further information, see
ExoSol OPC-15



PV-module (solar elements)

Nominal output	16.0 W
Voltage, nominal	17.0 V
Current, nominal	0.92 A
Unloaded voltage	21.4 V
Short-cut current	1.1 A
Unloaded voltage at -10°	23.5 V
Nominal voltage at +70°	14.6 V
Cell type	CIS
Temperature coefficient with unloaded voltage	-0.29 %/°C
Temperature coefficient with module operation	-0.36 %/°C
Length	1200 mm
Width	150 mm
Thickness	17.75 mm
Weight	2.86 kg
Covering material	Glass/glass
Connection	Cable, 1 m

Pump unit Euronom-AMK EU21

Max. operational temperature	110 °C
Max. operational pressure	8 bar
Material, fittings	Brass
Material, other components	Stainless steel, brass, plastics/EPP
Glass type	Borosilicate
O-rings	EPDM
Flat gaskets	High temperature resistant special material
Insulation material	EPP
Thread standard	ISO 228
Measurent reliability	+/-10 %
Heating agent	Tyfocon® - polypropylene-glycol with inhibitors which can vaporize during stagnation

EXOSOL OPC 15

Length	1700 mm
Width	1250 mm
Height incl. frame	97 mm
Gross surface	2.13 m ²
Active absorbator surface, 360°	2.5 m ²
Aperture surface	1.72 m ²
Weight	48 kg
Absorbator glass, 360°	Borosilicate 3.3
Frame	Aluminium
Absorbator surface / selective	9-layer alu-nitrite/alu/steel
Connections	6 x 3/4"
Liquid volume	3.1 l
Permitted operational pressure	10 bar
Recommended flow	1.1 l/module/min.
Thermal prod./year (according to SP.se)	659 kWh/m ²

Impartial information see: www.sp.se ExoSol OPC-15 edition EU 21
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