








OPC 10 OPC 15



- 1  The new standard
- 2  The best solar absorber tubes
- 3  The highest performance collector
- 4  Efficient modular assembly system
- 5  Intelligent OPC system technology



Request our info CD today!



The new
standard

OPC – the new standard in the utilization of thermal solar energy

AMK-SOLAC Systems AG

Pioneer of 360° absorber technology recognized 10 years ago the advantages yielded by spatially designed absorbers. That 360° absorber vacuum tube technology was awarded the gold medal in 1987 at the international inventor fair in Geneva was the logical consequence of an ingenious conversion.



OPC collectors distinguish themselves through maximum output at low structural mass. It has been proven that only 360° tube collectors achieve highest energy yields throughout the entire service life. With OPC collectors, loss of vacuum, i.e. power loss, is a thing of the past.

OPC collectors are developed and produced in Switzerland. Quality is oriented to the Euro quality standard (Euro Norm).

OPC 10 optimized parabolic collector 
OPC 15 optimized parabolic collector 



At the „International Fair of Installation Technology and Industry“ (March 28 – 31 2006) in Poznan (Poland) OPC15 Edition EU21 has won the **gold medal** for a technical innovative development

AMK SOLAC Systems AG provides optimized installation systems for any possible use (slanted roof, flat roof, facades, interlocked metal roofing, Eternit roofing, installation of the collectors in the open). In this way small as well as large facilities are able to be realized simply, without problem and cost-efficiently. Optimization also pertains to existing objects for which a solar facility is later installed or for which an existing facility is to be replaced or expanded.

As regards output, quality, ease of installation and flexibility, the OPC collectors represent a new standard. OPC collector technology is protected by patent.



 optimized parabolic collector

Application areas for AMK collectors include

- Standard preparation of hot water
- Heating support with high degrees of coverage
- Process heat generation
- Cold production for air-conditioning aided by absorption refrigeration technology
- For single occupancy houses, multifamily residences, hotels, industrial and commercial premises

Leading through experience



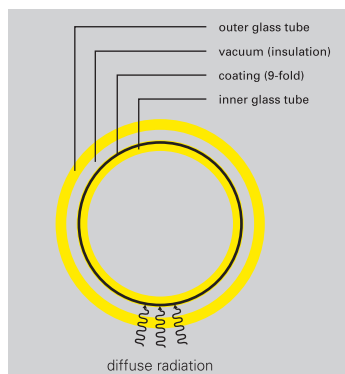
The best solar absorber tubes



The tubes for any weather the year round

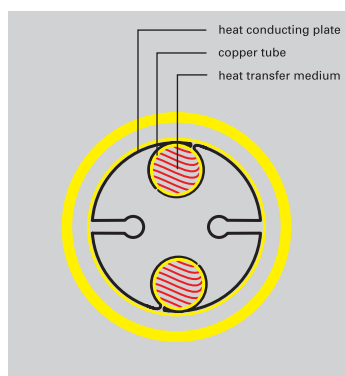
Our 360° absorber tube utilizes solar energy the year round in the most efficient way and provide the house with free energy even in gloomy weather. Compared with other collectors, the absorbers, thanks to the 360° technology, absorb direct and diffuse radiation in a much greater mass. In concert with the vacuum insulation, heretofore unknown rates of efficiency have been achieved with our 360° absorber tubes. Even at sub-zero temperatures this construction prevents heat loss.

The vacuum between the mutually fused glass tubes cannot be destroyed. The insulating effect remains unchanged. This enables the 360° absorber tubes to provide constantly high performance data for the entire life of the tube.



From the sun to the 360° absorber tube...

Solar radiation – direct and diffuse – permeates the outer glass tube and is captured on the outside of the inner glass tube by the 9-fold coated black absorber.



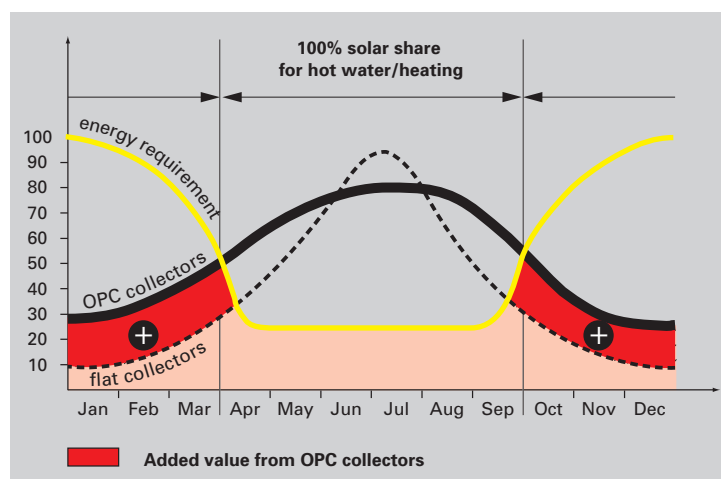
...and from the tube to the solar cycle

The 360° absorber tube is completely separate from the solar cycle. The captured energy is transmitted to the flush-contact aluminium shield and the copper lines filled with heat transfer medium. Very large contact surfaces assure the fastest transfer of energy.

Technical Data	OPC 10	OPC 15	
length:	1700	1700	mm
width:	850	1250	mm
height (incl. frame):	97	97	mm
gross surface:	1.45	2.13	m ²
active absorber surface 360°:	1.67	2.50	m ²
aperture surface:	1.15	1.72	m ²
weight:	32	45	kg
absorber/glass:	360°	360°	borosilicate 3.3
frame:	aluminium		
coating:	9-fold aluminium nitrite/alu/steel		
connections:	6 x 3/4"		
total capacity:	2.1	3.1	liter
allowed working pressure:	10	10	bar
flow rate recommended:	0.8	1.1	l/min/module

Double plus, higher yield of solar energy for the whole year

Vacuum insulation and the large 360° absorber surface take care of 100% solar energy coverage in the transition periods as well. Inefficient heating systems need not be run. When it gets down to it, this combination brings high-utility energy from the sun at sub-zero temperatures in winter and when overcast or raining.



- The absorber is a uniform body of glass. No metal-glass compounds.
- Top vacuum capacity is maintained for the whole service life.
- All round absorber for the greatest possible energy-collecting surface; utilizes up to 80% of the diffuse radiation.
- A consistently high rate of efficiency is maintained for the service life because the insulation and the absorber layer do not break down with time.
- The tube can only be damaged mechanically. Even a tube with vacuum loss which doesn't exhibit any visible glass breakage is immediately recognizable by the white, water vapor cloudiness. A gradual decrease in yield is impossible.
- 9-fold aluminium nitrite coating

Advanta

Minimum energy loss – with integrated hydraulic system and vacuum insulation

The patented, fully integrated 3/4" collector hydraulics minimize energy loss. No external lines, in- and outlet for the solar water cycle on one side. The 3/4" hydraulics make the largest possible facilities possible with the least loss of pressure. The fully integrated 3/4" collector hydraulics assures full flexibility in the hydraulic system. Easy connection under conditions of pressure equilibrium. Flow and backflow connection either on same side or on alternate sides. Line loss is minimized with the OPC because the lines are already integrated into the collector.



3/4" three-tube system

- for facilities large and small
- lowest pressure loss
- preinstalled sensor socket



Integrated collector hydraulics

- no external lines
- best possible insulation
- Tichelmann principle integrated



Shortest possible installation time

- one-sided connection
- one-sided in-/outlet
- only one roof penetration

Maximum energy recovery – with 360° absorber tube and parabolic reflector

OPC's optimized tube spacing and coordinated reflector enable the greatest exploitation of energy from direct and indirect solar radiation.

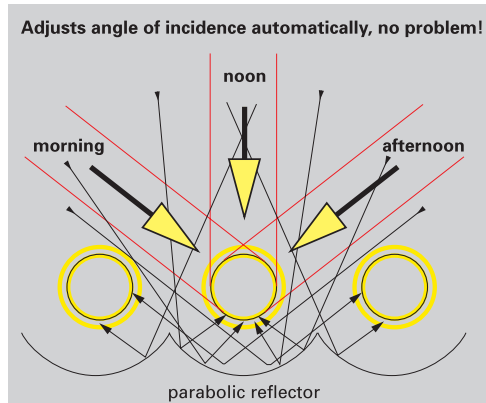
High output through optimization

Collectors	OPC 10	OPC 15							
max. output per collector*	1000 W	1500 W							
max. output per m2 aperture	870 W	882 W							
efficiency values (G= 800 W/m2/aperture)									
eta (x=0.00)	0.78,	(x=0.05) 0.69,							
	(x=0.10) 0.57								
angular correction factors									
	0°	10°	20°	30°	40°	50°	60°	70°	90°
K(0)trans	1.0	1.0	1.0	0.9	0.84	0.93	1.08	1.03	0.0
* at 1000 W/m2 solar irradiation									

**Rule of thumb for warm water facilities:
1 person = 10 tubes = 100 l reservoir**

No irradiation problem – long daily periods of energy use

The correct collector geometry of tube spacing and reflector makes it possible. From early morning to late afternoon the absorber is always optimally irradiated. And the optimized parabolic reflector enables the reflection of direct and indirect solar radiation to the back of the absorber tube.



- Maximum yield at small dimensions
- Certified in accordance with yield and quality
- High tube density and reflector technology
- No optical linear contraction due to oblique irradiation mornings and afternoons
- High year-round utilization ratio
- High daily utilization ratio
- High utilization ratio for the entire service life
- High material quality and workmanship: aluminium, borosilicate glass 3.3 / aluminium nitrite-coated, copper, steel EPDM/silicon, fibre glass reinforced plastic, glass wool

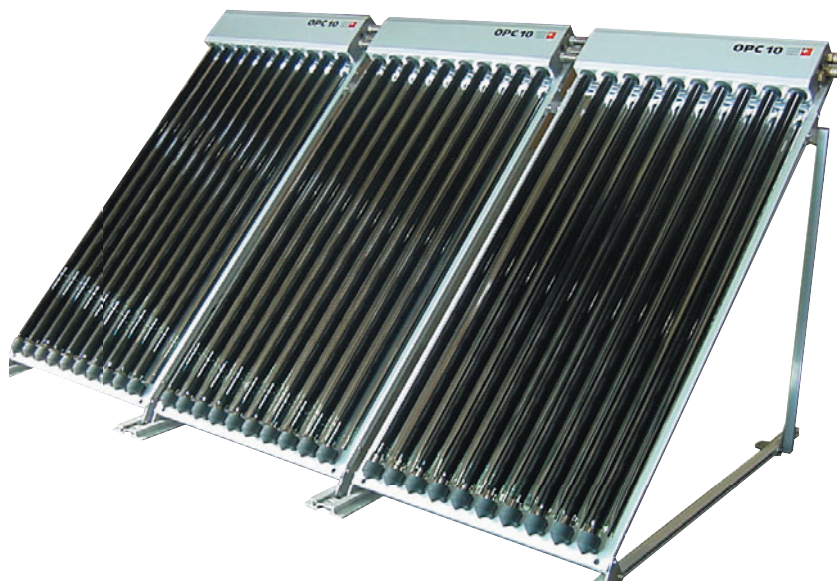
- Usable for water heating, heating support, process heat, cold production
- Collector connection with standard tools, no soldering, no welding
- Flexible system sizes, from small- to large-scale with guaranteed high performance
- All materials recyclable
- Suitable for new building, renovation or backup for existing facilities
- Solar calculation program: Polysun, T-Sol



OPC – the collector with the cost-saving, simple installation

A roof is a roof! That's why OPC collectors are not built into the roof but on it! OPC collectors don't win you over through top quality alone, but also through top design. With a height of only nine centimeters they look at the same time elegant

and functional on every roof. Even large OPC collector fields need only be installed on one side; in this way the roof surface only has to be penetrated at one single spot for the lines into the house. No external lines on the roof are normally necessary.

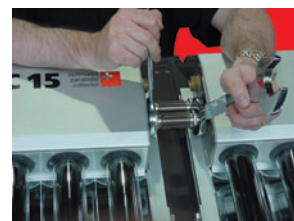
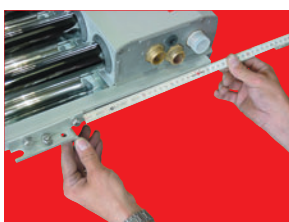
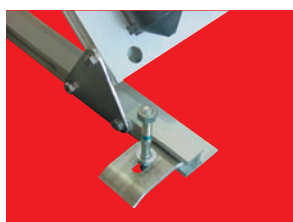


OPC naturally has a mounting system for flat roofs as well, and also for Eternit and wall mounting. For a flat roof, the OPC collector be-

comes a carrier channel with flexible angle adjustment possibilities; faster installation than for a tile roof is even possible.

Multifunctional gliding channel sections make installation of the OPC collectors extremely simple. At the same time the hydraulic connection to

screwed down with standard tools. No soldering, no welding, no special parts. All parts and procedures are self-explanatory, and the flexible



the collectors is also taken into account. Newly developed high-temperature and pressure-proof steel compensators are

installation technique practically makes the need for the installer to take measurements unnecessary.

- Mounting the collectors for water heating is possible in less than half-a-day
- Rule of thumb for warm water facilities:
1 person = 10 tubes = 100 l reservoir

- Shortest possible installation time
- No constructional changes necessary
- Removable at any time
- Self-explanatory installation technique
- Standard tools can be used
- Subsequent functionality already guaranteed at installation
- Light, very easy to handle materials
- Modular, flexible installation technique

Advantages

The OPC collector brings more advantages to the user

Our OPC collectors, when properly integrated into the house technology, provide energetic high efficiency. Burners and heating systems are relieved by the OPC collectors, they last longer, are less prone to disturbances and need less servicing, because the inefficient stop-and-go running of the burner is no more. More financial benefits on all levels: lower operating costs and higher energy savings, longer service life and therefore less investments.



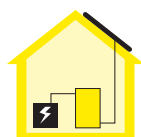
Oil/gas heating and OPC collectors

Switch off the oil/gas burner for half a year! In the transition periods and in winter the burner will then run much more efficiently. Service expenditures, investments and oil/gas consumption sink.



Wood heating and OPC collectors

The ideal system combination: With wood heating, a useful reservoir for solar energy is already on hand. Moreover, firewood consumption sinks sharply, which also simplifies operations.



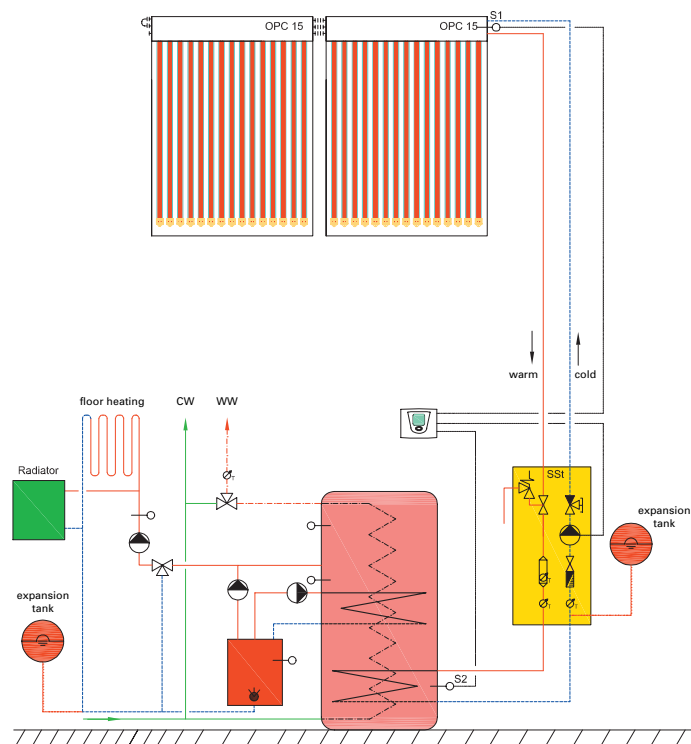
Heat pumps and OPC collectors

Solar facilities and heat pumps make even better use of the electrical energy. In summer the heat pump isn't necessary, and in winter it is reinforced by the solar facility. That pays doubly.



And your OPC combination?

OPC collectors optimize your household technology. They can be combined with all conventional and new regenerative energy systems, e.g. also with controlled ventilation systems. Take advantage of the benefits of OPC system combinations!



- High savings in fossil fuels by optimizing the solar facility
- Much lower maintenance costs for the burner through longer running times
- Optimized burner run times enable the burner to last longer
- OPC solar facilities are suitable for new buildings and energy systems redevelopment
- OPC solar facilities are becoming the main item in modern household technology
- OPC solar facilities can be combined with all new technologies into systems with more customer utility
- OPC solar systems take care of the solar energy supply the year round; higher facility utilization ratio thanks to the most advanced of technologies



AMK-SOLAC Systems AG

Bahnweg Nord 16
CH-9475 Sevelen / SG
Phone: +41 81 750 17 17
Fax: +41 81 750 17 18
www.amk-solac.com

The manufacturer reserves the right to make changes to the product at any time that serve technical progress.



MAXIMUS General Services
Maracineni DN2 / E85 Nr.134, Buzau, Romania
Tel: +4(0) 745 021 755, +4(0) 745 047 317
www.maximusenergy.ro