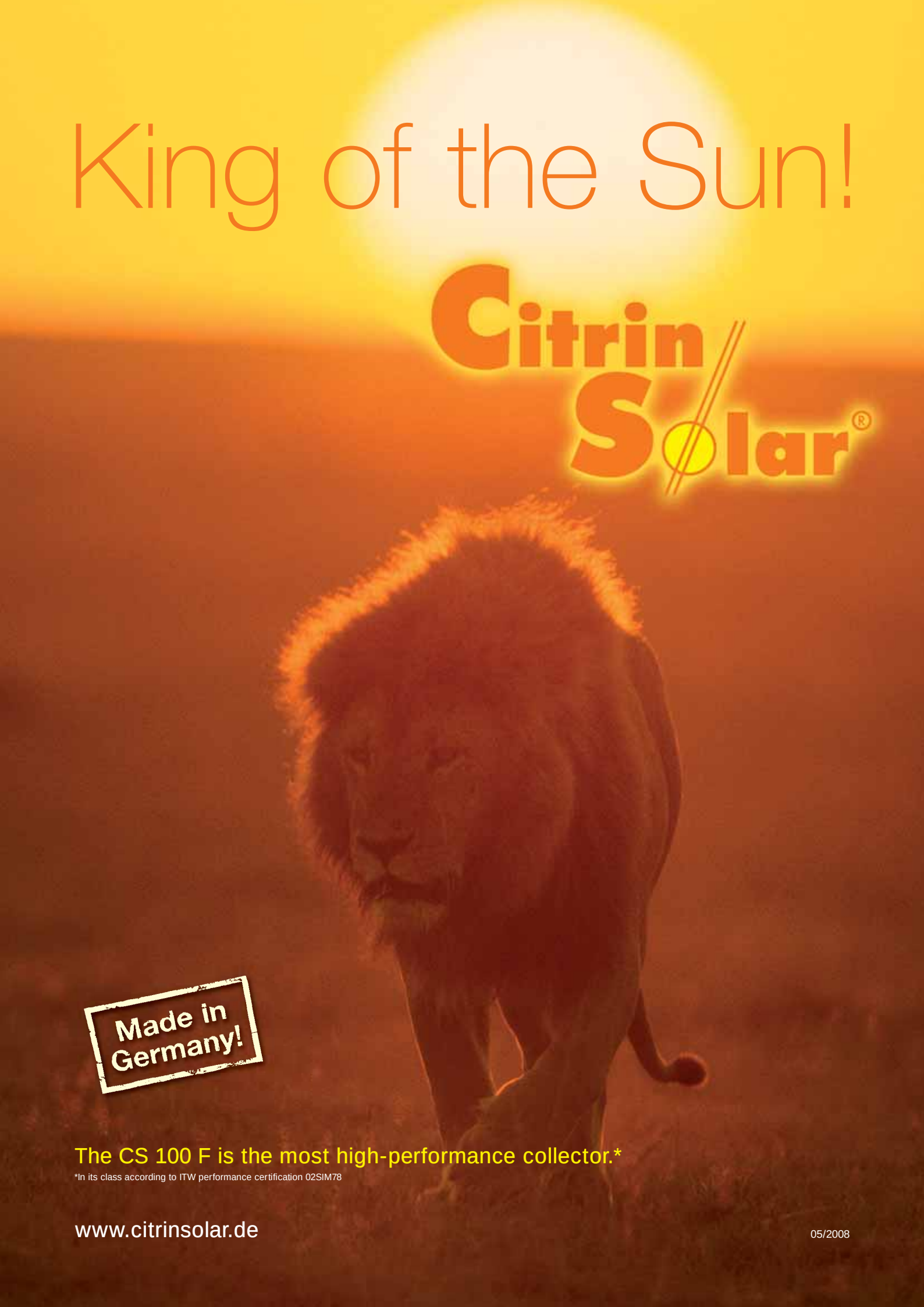

King of the Sun!
Citrin Solar®
Made in Germany!
The CS 100 F is the most high-performance collector.*
*In its class according to ITW performance certification 02SIM78
www.citrinsolar.de
05/2008

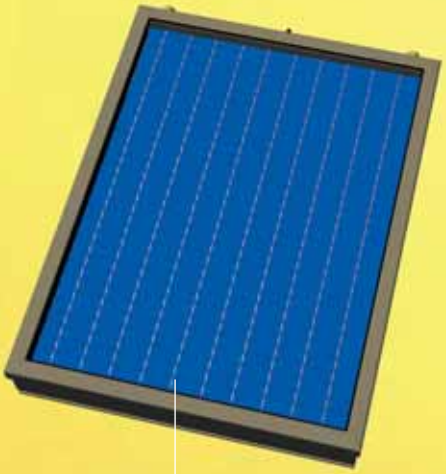
We hunt systematically in a team.

Of course, we could rest on our laurels as the “Highest Performance Collector” and leave the rest of the field to the competition.

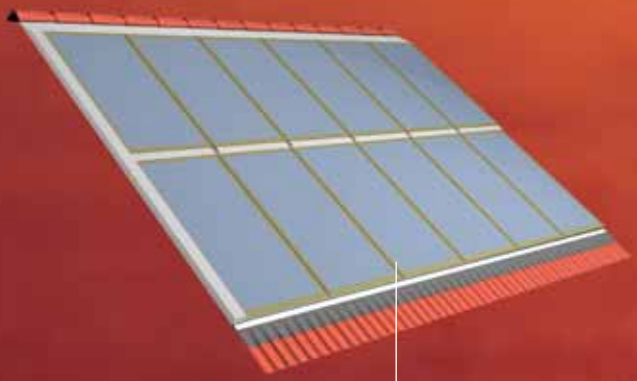
But as everyone knows, performance is defined as a whole from the sum of its individual parts. What use is a high-performance car engine if it doesn’t work well with the transmission and suspension? Even the best striker can’t win the World Cup on his own.

What would a Formula 1 driver be without a pit team that works like a well-oiled machine?

That’s why you get everything from us that you need for your solar system in support of your heating system or service water heating. When you get one of our solar systems, all of its components are perfectly calibrated with one another and adapted to your personal needs.



Flat plate collector



In-roof module collector

Drinking water storage unit

Buffer storage unit

Combination storage unit

Solar combination storage unit

Shift loading storage unit

ORION 1000

Service water module

Separation system

Citrin Solar®

Does it make economic sense for my home?

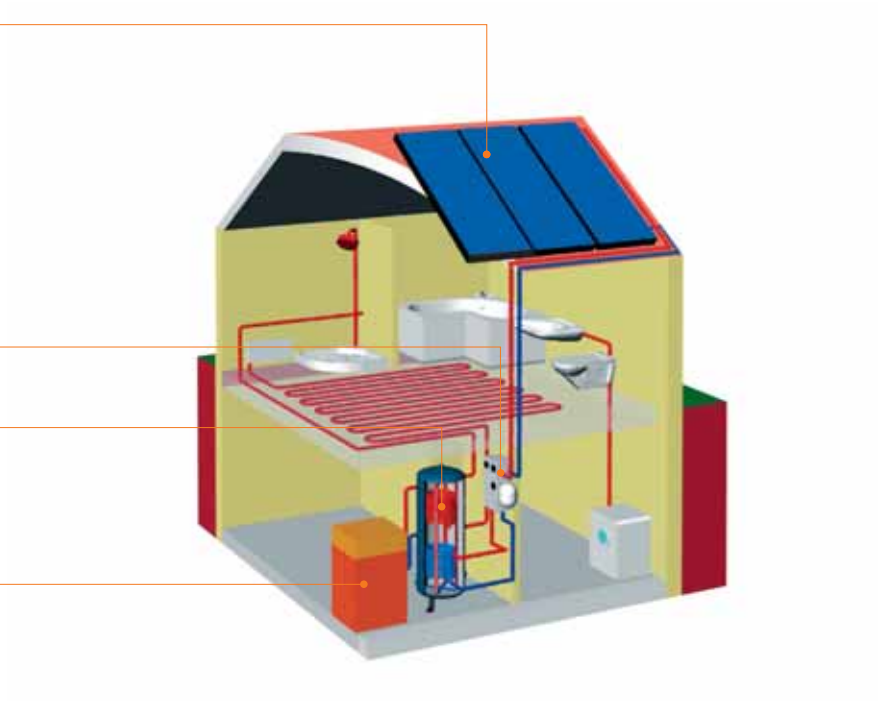
You want the best for your family. You want your children to enjoy an environment that's intact, now and in the future. So you don't want to miss out on the wonderful gift that nature has given us: The sun. Not only because it is the cleanest source of energy (1 ton fewer CO2 emissions annually for hot water heating with solar support for a family of 4), but also because this resource never runs out.

In the face of prices for oil and gas that are constantly on the rise, this solution will pay off in only a few years. So the more you get out of the sun, the more you are protecting both the global climate and your own finances. Don't settle for just 'any' collector. You want the best: The CS 100 F is the highest performance flat plate collector in its class, according to ITW performance certification 02SIM78.

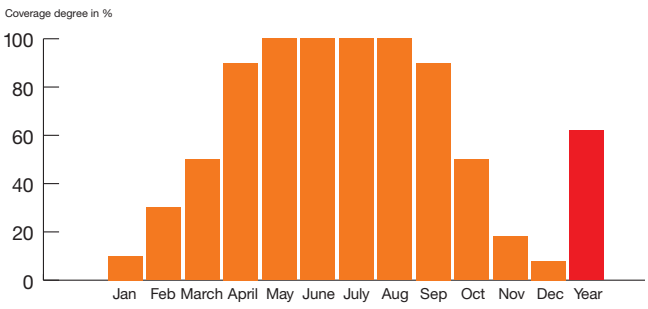
With our individual solutions tailored to your needs, you also get the highest degree of efficiency! With our variable components, from collectors to storage systems to intelligent controls, we have the optimum system for every demand.

How does a solar system work?

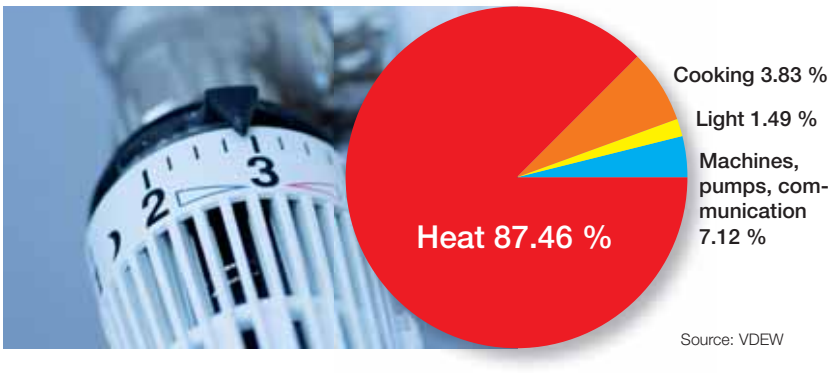
The collector converts sunlight into heat. This involves directing the sun's rays to the absorber with the help of the prism solar safety glass, where the solar fluid is then heated. The heated, frost-free solar fluid transports the generated heat with the assistance of a circulation pump from the collector to the solar storage unit's heat exchanger. After depositing its heat in the service water storage unit, the cooled fluid then flows back to the collector. Safety fixtures integrated in the solar station and a solar expansion tank safeguard the collector's circulation. The solar regulator is triggered via a temperature difference to activate the circulation pump where the temperatures of the collector and the storage unit are compared with one another. If the sun's energy is not fully adequate once in a while, then the conventional back-up heating system heats the upper area of the storage unit to the desired water temperature without any loss in comfort, ensuring that operational reliability of the system is guaranteed at all times.



Degree of coverage of solar energy water heating



How private household energy use breaks down:



Source: VDEW

Citrin Solar®

Solar energy at home...

Climate protection begins at home!
It's not just politicians and industry who have to step up to the plate on the issue of containing harmful CO_2 emissions. Everyone must do their part so that the overall impact of the threatening climate change can at least be softened. But this is also about our economic future: The assertion that "alternative energy is too expensive" has been put to bed once and for all. Not only because oil and gas prices are constantly on the increase, but also because the intensive use of these fuels is constantly increasing the CO_2 burden on the atmosphere. Nicholas Stern, former Chief Economist of the World Band (and by no means an environmental activist) impressively verified in his climate change report that it is more affordable to invest in alternative energies now than to pay the price in the future of the high costs of damage done to the climate: If we invest 1% of the global gross national product into climate protection today, we will save future damage costs totalling 20% of the global gross national product.

We can't stop climate change, but we can significantly reduce its consequences.

...and in commercial use!

Holidays with a positive eco-balance! Wellness in harmony with nature. At the Alpenhotel Karwendel, guests relax in a 300 square meter natural swimming pond that is temperature-controlled using solar energy. 70 high-performance collectors from Citrin Solar capture the sun's energy. 150 square meters of collector surface naturally mean that there is also enough heat for other areas of the hotel as well. This is how the 50 square meter indoor swimming pool and the newly designed fitness area featuring a sauna, steam bath and whirlpool are additionally supplied with comfortable heat.

Clean solar energy: Solar system for an automated carwash system

Solar sausage: Solar system for a butcher's shop and restaurant operation

Solar sport: Solar system for a sporting and leisure centres

Citrin Solar®

Made in Germany.

Even if the media all too often paints a negative portrait of our domestic business location status here in Germany, one thing is for sure: In Germany, we continue to possess a great engineering industry featuring excellently trained, highly motivated technicians, administrators and employees.

CitrinSolar constantly endeavours through regular quality inspections and modern production procedures to meet these high standards in practice. The illustration depicts our collector fastening and connection technology, patented throughout Europe.

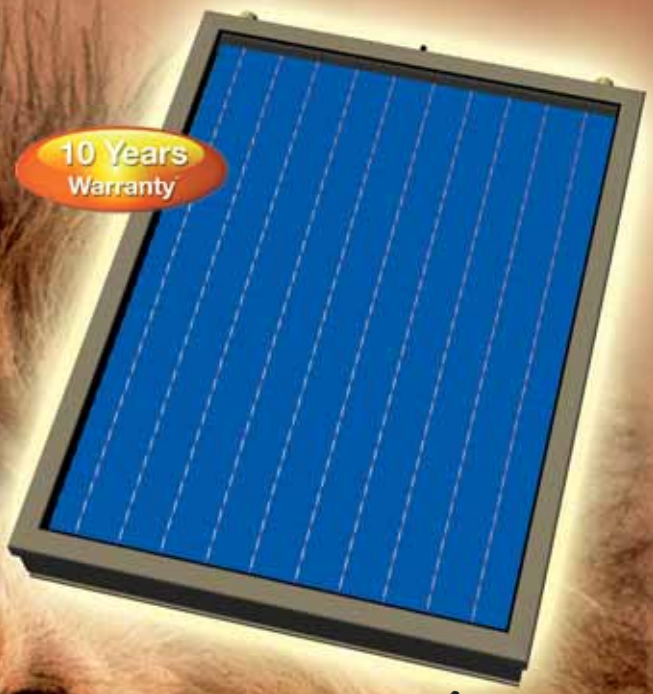
The metal cone with its coupling nut guarantees long-term pressure and temperature consistency. Our collaboration with universities and research institutes ensures a constant process of innovation.

For us today and in the future, there is no alternative to “Made in Germany”. With our fully automated production facility in the heart of Bavaria, we manufacture at the highest quality standards to your benefit and the benefit of the environment.

TÜV CERT
DIN EN ISO 9001:2000
Zertifikat: 01 100 061971

ISO 9001 zertifiziert www.iscert.de

King of the Collectors: The CS100F



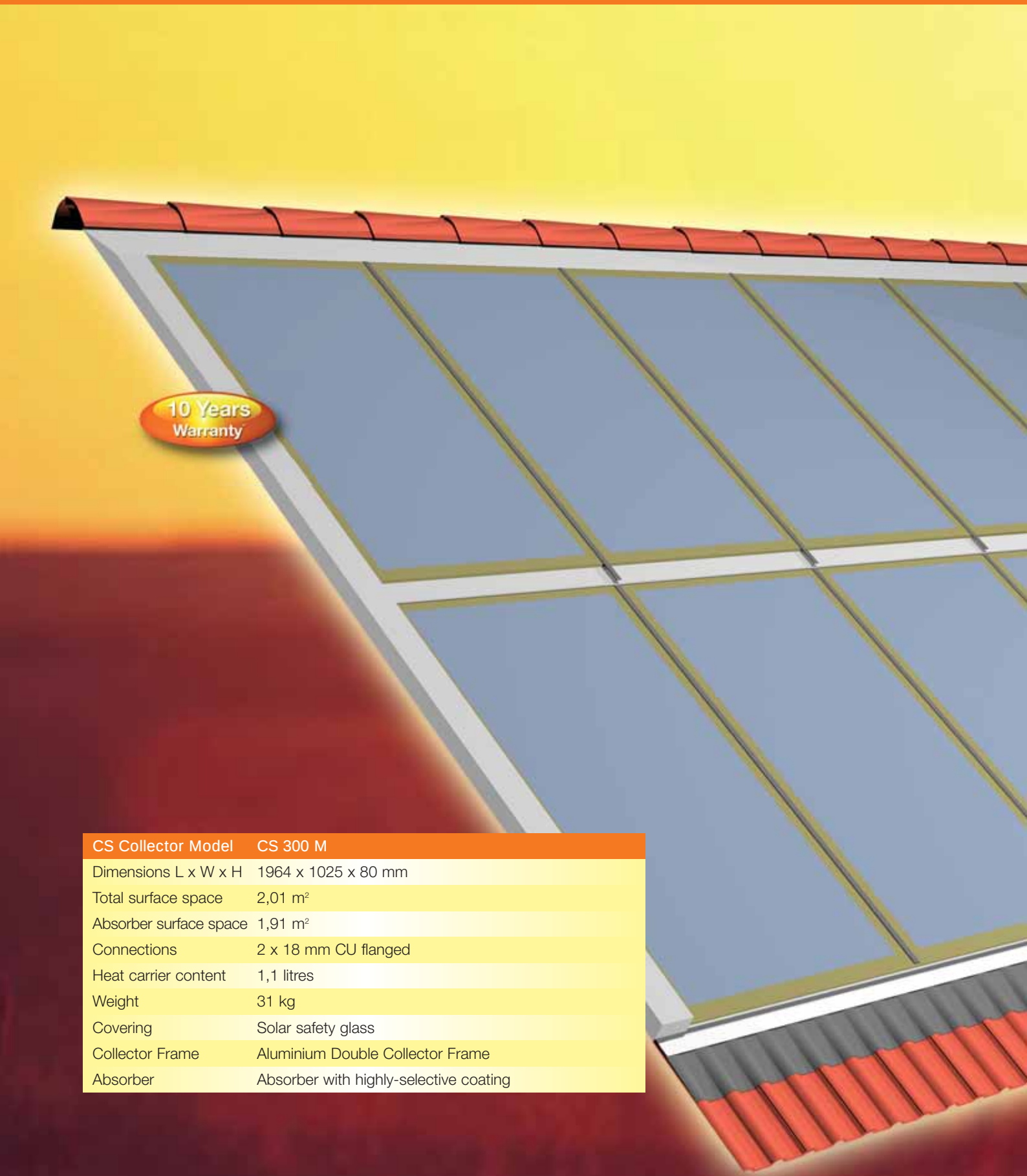
CS 100 F Flat Plate Collector

Our CS 100 F has been certified by leading test institutes as the best performing high-performance flat plate collector of its class. Along with greater energy efficiency, we also place the highest demands on the quality of our products. A careful selection of materials and sturdy anodization contribute to the long serviceable life of the collector. Robot-based production ensures that the highest quality is consistent at all times, with preassembled components, universal application possibilities, an attractive design and the shortest possible assembly times rounding out the entire collector system package to our customers' complete satisfaction.

*By compliance with our system guarantee terms

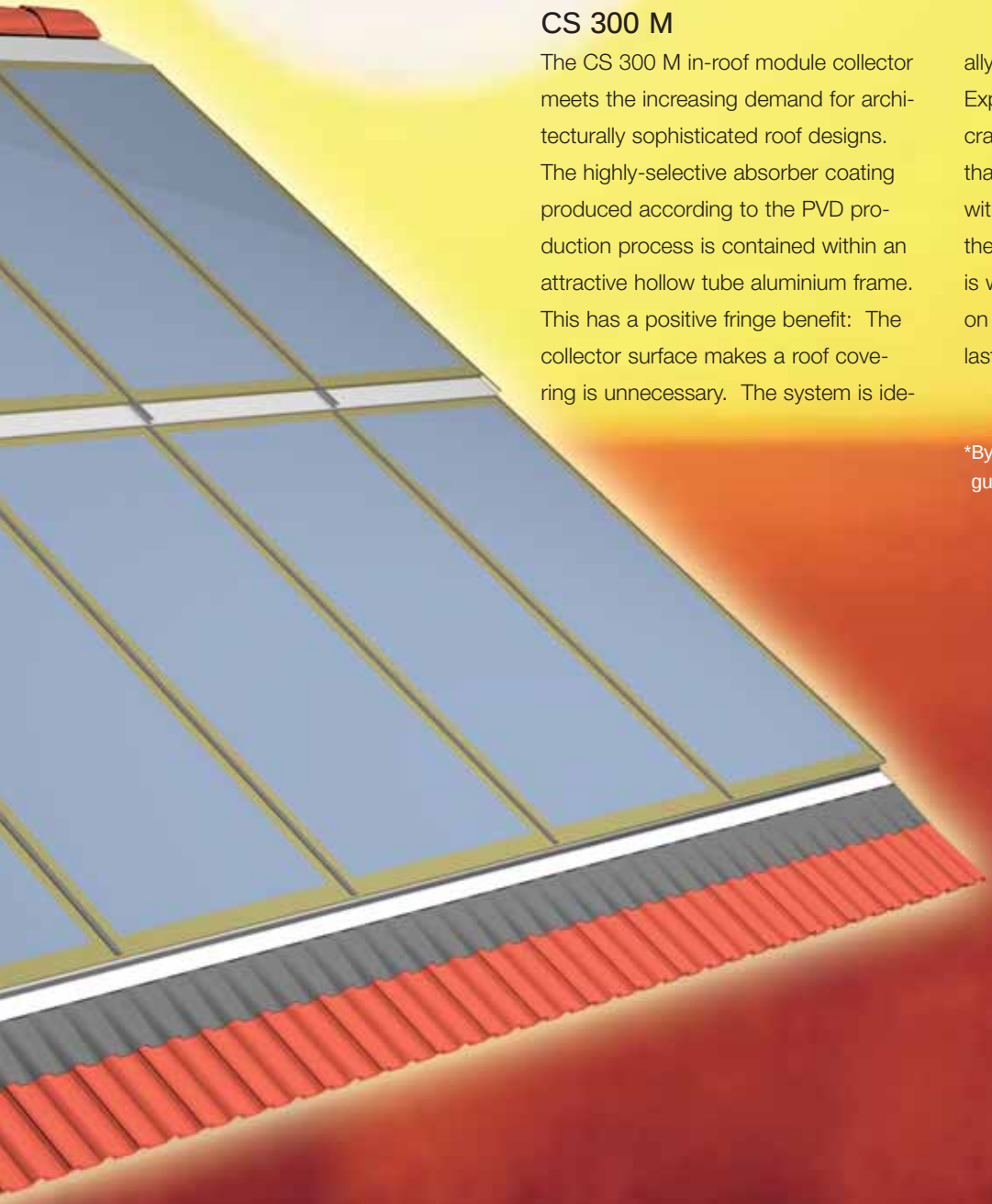
CS Collector Model	CS 100 F
Dimensions L x W x H	1985 x 1045 x 93 mm
Total surface space	2,08 m^2
Absorber surface space	1,91 m^2
Connections	2 x 18 mm CU; conical connection
Heat carrier content	1,3 litres
Weight	38 kg
Covering	Solar safety glass
Collector Frame	Aluminium Double Collector Frame
Absorber	Copper absorber with highly-selective TINOX coating

Citrin Solar®



CS Collector Model	CS 300 M
Dimensions L x W x H	1964 x 1025 x 80 mm
Total surface space	2,01 m^2
Absorber surface space	1,91 m^2
Connections	2 x 18 mm CU flanged
Heat carrier content	1,1 litres
Weight	31 kg
Covering	Solar safety glass
Collector Frame	Aluminium Double Collector Frame
Absorber	Absorber with highly-selective coating

Simply beautiful:
CS 300 In-Roof M Module Collector



In-roof module collector CS 300 M

The CS 300 M in-roof module collector meets the increasing demand for architecturally sophisticated roof designs. The highly-selective absorber coating produced according to the PVD production process is contained within an attractive hollow tube aluminium frame. This has a positive fringe benefit: The collector surface makes a roof covering is unnecessary. The system is ideally suitable for larger solar surfaces. Expensive assembly and mounting by crane is not absolutely necessary thanks to the module type series. As with all of our products, quality is of the highest priority here as well, which is why we provide a 10-year guarantee on these collectors with their long-lasting aluminium construction*.

*By compliance with our system guarantee terms

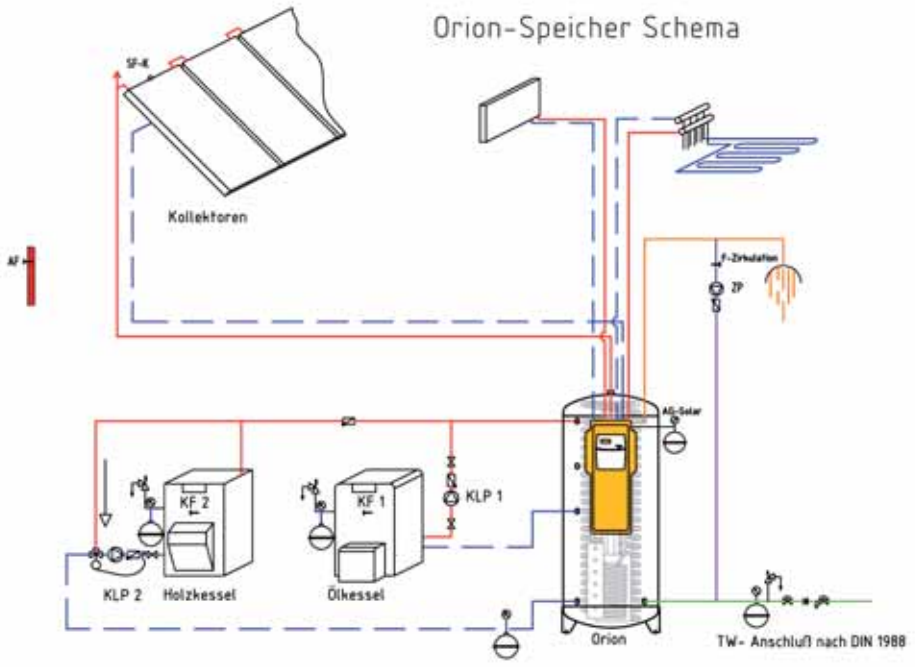
Citrin Solar®

Simply Brilliant!

Orion 1000 Energy Centre:

- Hygienic drinking water via DVGW-approved stainless steel piping in a continuous-flow principle
- Quick-assembly system using preassembled components for solar and heating (up to 2 HK)
- Greatest energy efficiency via thermo-hydraulic shift loading of solar and heating
- Programmed central regulator with pre-mounted storage unit sensors in a plug system
- High-quality heat insulation (100mm)
- Attractively shaped one-piece insulation jacket for attachment groups
- Space-saving storage system for EFH and ZFH
- Suitable for use with oil or gas tanks, wall-mounted water heaters, wooden tanks, pellets for use with oil/gas tanks, wall-mounted water heaters, wooden tanks, pellet, total energy units

Model	Orion 1000	
Without insulation	D	790
With insulation	D	990
Height without insulation	mm	2050
Height with insulation	mm	2120
Tilted height without insulation	mm	2090
Weight	kg	260



Drinking water storage unit

TWS-2 Drinking Water Storage Unit:

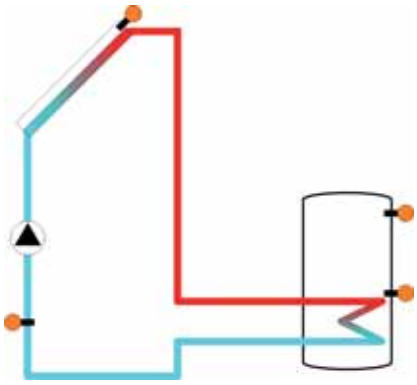
Standing solar storage unit made of steel RST 37-2 with two large sized plain-ended pipe heat exchangers for solar and tank loading, high-quality double-coated enamelling, magnesium protection anode, revision opening, adjustable feet and analogue thermometer incl. high-quality insulation.

Picture shows TWS-2

Model TWS-2		2-300	2-400	2-500	2-800	2-1000
Nominal contents	l	300	400	500	800	1000
ø with insulation	mm	610	680	760	1000	1000
Height	mm	1790	1839	1853	2000	2350
Tilted height	mm	1860	1930	1970	1960	2300≠

ES Electronic Solar Storage Unit:

Standing storage unit made of steel RST 37-2 with plain-ended pipe heat exchanger for solar loading and standard equipment electronic flange heater, high-quality double-coated enamelling, magnesium protection anode, adjustable feet and analogue thermometer incl. high-quality insulation.



Picture shows diagram TWS-2

Model ES			300	400	500
Nominal contents	ca.	l	300	400	500
Auxiliary volumes upwards	ca.	l	200	260	325
Ø with insulation		mm	760	760	760
Ø without insulation		mm	600	600	600
Height with insulation	ca.	mm	1435	1695	2020
Tilted height without insulation	ca.	mm	1360	1660	1980

WP-TWS Heat Pump Drinking Water Storage Unit:

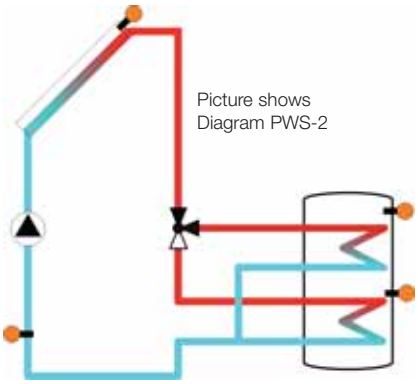
Standing storage unit especially for use with a heat pump with particularly large plain-ended pipe heat exchanger, high-quality double-coated enamelling, magnesium protection anode, revision opening, adjustable feet and analogue thermometer incl. high-quality insulation.

Model WP-TWS			300	400	500
Ø with insulation		mm	680	680	760
Height with insulation	ca.	mm	1435	1800	1806
Tilted height	ca.	mm	1595	1930	1965

Citrin Solar®

Buffer Storage Unit

PS/PS-R: Standing storage unit made of steel RST 37-2 for one-time heat storage, diverse connection and installation possibilities, connections arranged at a 90°angle, operational pressure 3 bar, max. temperature 95° C, base feet and analogue thermometer incl. high-quality insulation. Optional: Revision opening – special models available any time. Models: Model PS, PS-R model with integrated reflux layer pipe and current elbows.



Picture shows
Diagram PWS-2

Picture shows PSW-2/PSW-2-R

Model PS /PS-R		350	500	650	825	1000	1000	1200	1500	2000
Ø without insulation ca.	mm	650	650	750	750	850	790	1000	1000	1100
Ø with insulation ca.	mm	850	850	950	950	1050	990	1200	1200	1300
Height with insulation	mm	1425	1675	1725	1980	1995	2085	1885	2230	2350
Height without insulation	mm	1355	1605	1655	1910	1925	2015	1815	2160	2280
Tilted h. without insulation	mm	1405	1645	1710	1950	1975	2055	1890	2225	2355

PSW/PSW-R Buffer Storage Unit: Standing storage unit made of steel RST 37-2 for one-time heat storage, with one large integrated plain-ended pipe heat exchangers for solar loading, diverse connection and installation possibilities, operational pressure 3 bar, max. temperature 95° C, adjustable feet, incl. high-quality insulation. Optional: Revision opening – special models available at any time. Models: Model PSW, Model PSW-R with integrated reflux layer pipe and current elbows.

Model PSW /PSW-R		500	650	825	1000	1000/790	1200	1500
Ø without insulation	mm	650	750	750	850	790	1000	1000
Ø with insulation	mm	850	950	950	1050	990	1200	1200
Height without insulation	mm	1605	1655	1910	1920	2010	1760	2110
Height with insulation	mm	1675	1725	1980	1990	2080	1830	2180
Tilted height without insulation	mm	1645	1710	1950	1975	2055	1835	2175
Weight	kg	104	129	142	171	164	188	210
Heat exchanger	m^2	1,6	2,0	2,0	3,0	3,0	3,0	3,0

PSW-2/PSW-2-R Buffer Storage Unit:
Standing storage unit made of steel RST 37-2 for one-time heat storage, with two large integrated plain-ended pipe heat exchangers for solar zone loading, diverse connection and installation possibilities, operational pressure 3 bar, max. temperature 95° C, adjustable feet, incl. high-quality insulation. Optional: Revision opening – special models available at any time. Models: Model PSW-2, Model PSW-2-R with integrated reflux layer pipe and current elbows

Model PSW-2 /PSW-2-R		825	1000	1000/790	1500
Ø without insulation	mm	750	850	790	1000
Ø with insulation	mm	950	1050	990	1200
Height without insulation	mm	1910	1920	2010	2110
Height with insulation	mm	1980	1990	2080	2180
Tilted h. without insulation	mm	1950	1975	2055	2175
Weight	kg	175	203	196	255
Heat exchanger above/below	m^2	2,0/3,0	2,0/3,0	2,0/3,0	3,0/3,0

Combination storage unit

Combination storage unit KS/KS-R und WP-KS:

Standing storage unit made of steel RST 37-2 for intelligent heat storage and hygienic drinking water treatment, diverse usage and installation possibilities, operational pressure 3 bar, max. temperature 95° C, base feet, incl. high-quality insulation.
Optional: Revision opening – special models available at any time.
Models: Model KS, Model KS-R with integrated reflux layer pipe and current elbows and Model WP-KS for special usage with heat pump (only available in sizes 600, 825 and 1000/790).

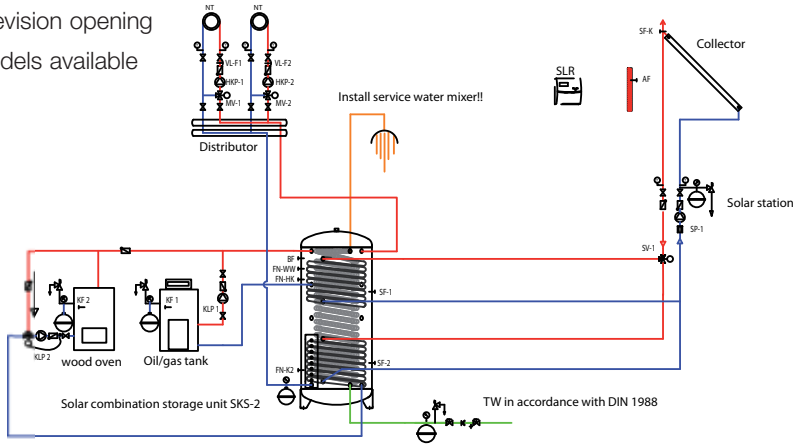
Picture shows KS-R

Model KS /KS-R + WP-KS		500	650	825	1000	1000	1200	1500	2000
ø without insulation	mm	650	750	750	850	790	1000	1000	1100
ø with insulation	mm	850	950	950	1050	990	1200	1200	1300
Height without insulation	mm	1605	1655	1910	1920	2010	1760	2110	2240
Height with insulation	mm	1675	1725	1980	1990	2080	1830	2180	2310
Tilted height without insulation	mm	1645	1710	1950	1975	2055	1835	2175	2315

Picture shows SKS-2-R

Solar-Combination storage unit SKS/SKS-R und WP-SKS:

Solar standing storage unit made of steel RST 37-2 for intelligent heat storage and hygienic drinking water treatment, diverse usage and installation possibilities, with one or two large plain-ended pipe heat exchangers for solar (zone) loading, operational pressure 3 bar, max. temperature 95° C, base feet, incl. high-quality insulation.
Optional: Revision opening – special models available at any time.



Model SKS /SKS-R u. WP-SKS		650	825	2-825	2-1000	2-1000	2-1500
ø without insulation	mm	750	750	750	850	790	1000
ø with insulation	mm	950	950	950	1050	990	1200
Height without insulation	mm	1655	1910	1910	1920	2010	2110
Height with insulation	mm	1725	1980	1980	1990	2080	2180
Tilted height without insulation	mm	1710	1950	1950	1975	2055	2175

Models: Model SKS, Model SKS-R with integrated reflux layer pipe and current elbows and Model WPSKS for special usage with heat pumps (only available in sizes 600, 825 and 1000/790).

Citrin Solar®

Royal Class Energy Management:

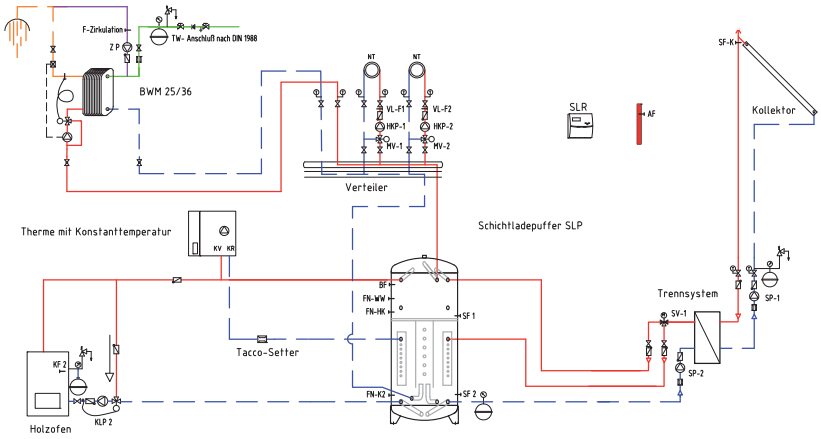
SLP Shift Loading Storage Unit

Standing storage unit made of steel RST 37-2 for the most intelligent energy management, hygienic drinking water treatment via the BWM service water module or via adjacent TWS-2 drinking water storage unit, most diverse usage and installation possibilities, operational pressure 3 bar, max. temperature 95° C, base feet, incl. high-quality insulation.

Model SLP		825	1000	1000	1500
ø without insulation	mm	750	850	790	1000
ø with insulation	mm	950	1050	990	1200
Height without insulation	mm	1890	1915	2050	2180
Height with insulation	mm	1960	1985	2120	2250
Tilted height without insulation	mm	1935	1970	2090	2240

BWM Service Water Module

Energy is provided with the service water module via a buffer storage unit or the SLP shift load storage unit. This is the most hygienic form of drinking water treatment; it is virtually calk-free and enables low supply losses. There is additionally the possibility of a circulation connection. The large plate heat exchangers allow high solar yields. Implementation of the BWM makes economic, hygienic drinking water heating of the most modern type possible.



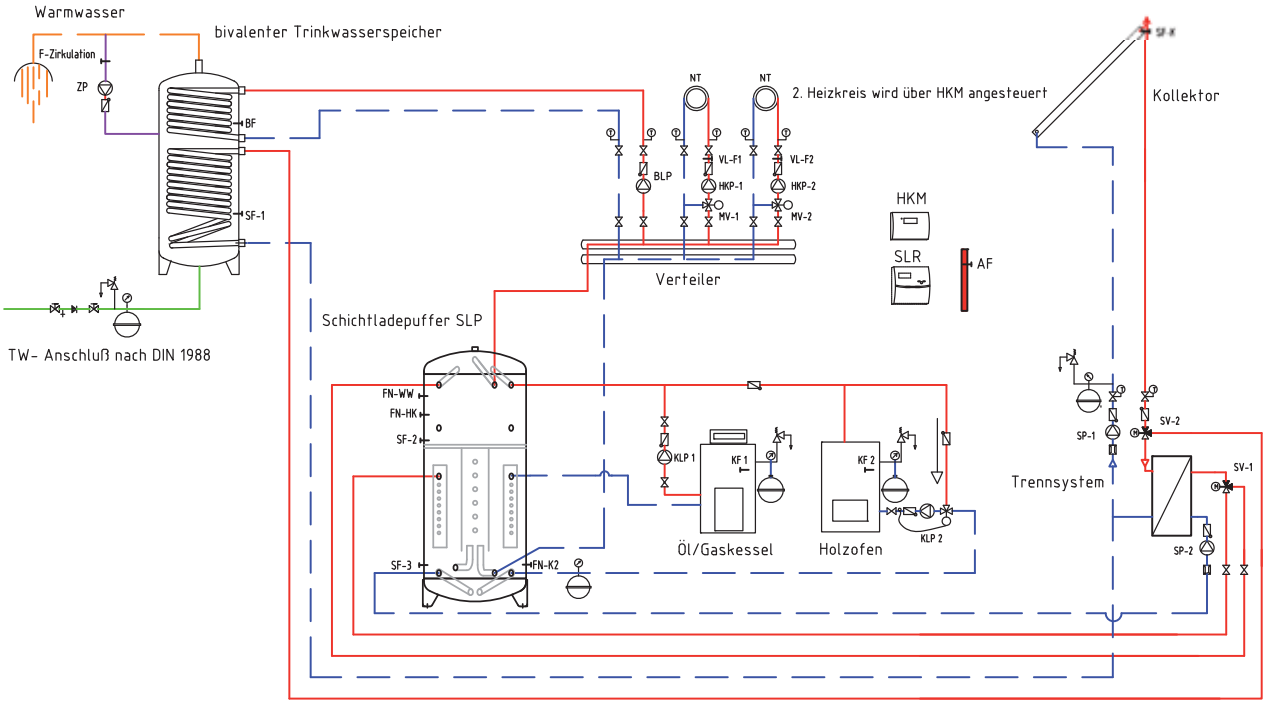
Picture shows diagram SLP

Model		BWM 25	BWM 36
Article No.		390227	390237
Drawing volume	l/min	25	36
Height	mm	660	660
Width	mm	550	550
Depth	mm	350	350
Output	KW	70	100
Primary temperature ca.	°C	60 25	60 25
Secondary temperature ca.	°C	10 50	10 50

Separation system

Solar separation system:

Solar separation system for very rapid, compact assembly via pre-assembled components. Special stainless steel plate heat exchanger for efficient transfer of solar energy; integrated solar station with flow meter and shut-off and safety organs; high-quality insulation jacket; large systems available upon request!



Model separation sys.	10 - 20m²	20 - 40m²	40 - 60m²
Article No.	**198215**	**198231**	**198233**
Collector surface	10 - 20m²	20 - 40m²	40 - 60m²
Height with insulation	ca. 860 mm		
Width with insulation	ca. 560 mm		
Depth with insulation	ca. 250 mm		
Axis-centre distance	180mm (Primär), 2 x 90 mm (Sekundär)		
Pipe connections	3/4" IG		1" IG

Citrin Solar®

Cooling with the sun?

…in Tuscany.
The demand for air-conditioning cooling is increasing significantly worldwide. In addition to higher comfort demands, modern architecture and the changing climatic conditions are responsible for this. In July of 2006 (the hottest July in Germany since records have been kept), many wished that they had this type of air conditioning unit. Imagine producing heat in the winter and cooling in the hot summer months with the same collectors. Collectors work best during the summer, i.e., when no heating support is required. Thermally driven cooling systems have great potential for converting the sun's rays into heat with great efficiency (with no delay between energy creation and energy consumption). At CitrinSolar, we want to take on the technical challenge of developing a "black box" for solar cooling at lower output levels as well. We are currently testing corresponding prototype systems in our main factory and we are anticipating market-readiness from 2008.

Here's how it works.
The energy created by the sun is stored in an SLP layer storage unit. Depending on the requirements and demand, this energy is provided for service water treatment, heating support or the cooling system. Central distribution is conducted via our SLR system regulator. The heat supplied by the layer storage unit is transferred with the help of the cooling aggregate into a water cooler which can be used by the greatest variety of consumers (ventilated ceiling, convector cooler, cooling battery,…).

How closed-circuit cooling can be conducted on a functional basis will be of decisive importance. We are striving for a cooling output range of around 6 KW in the system. For higher range outputs, we are looking to interconnect several aggregates with one another. To be continued soon…

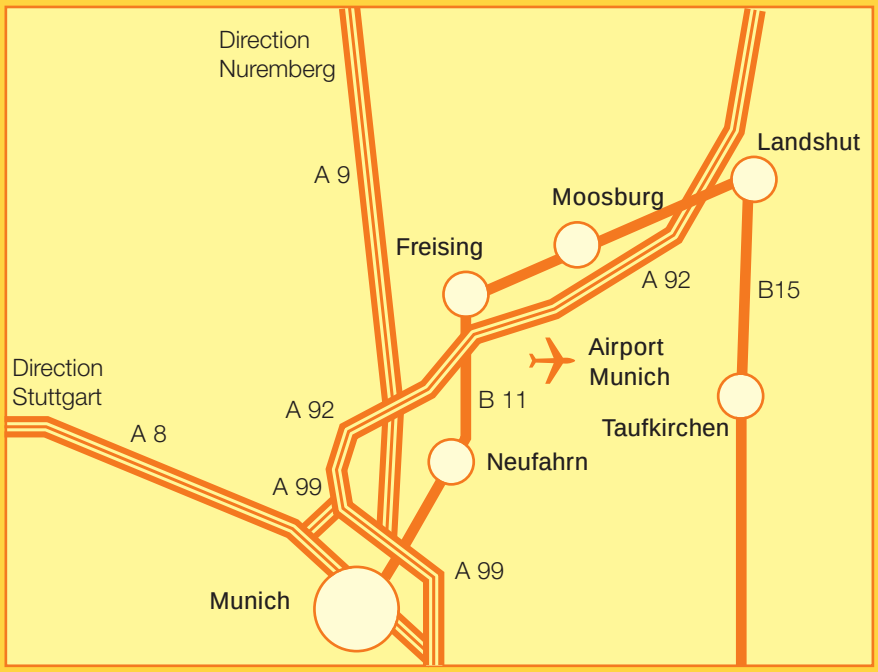
Do your part for a desirable future. Take advantage of the benefits of a solar thermal system:

- Reduction of energy costs
- Conservation of precious raw materials
- Reduction of the burden on the environment

and make yourself that bit more independent. Your system installer will be happy to advise you.

Citrin Solar®

Here's how to find us:



Your certified specialist:

Right to technical changes and inaccuracies reserved.

Citrin Solar®

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