VACUUM TUBE COLLECTORS CVT

EN 12975-2

Technical data

Max P.	10 bar
Max T.	280° C
Gaskets	EPDM - Silicone

Applications:
Forced circulation thermal systems.

Characteristics:
Lateral connections, universal collector for forced circulation systems.

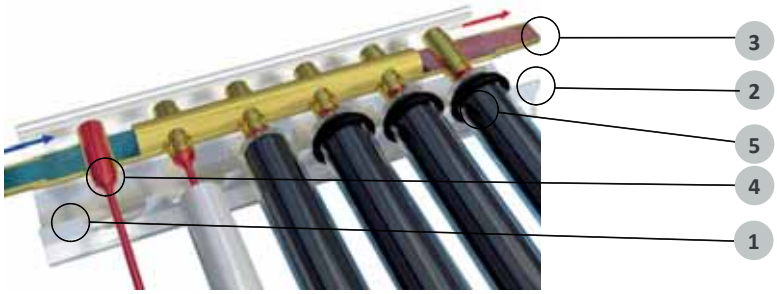
Solar Keymark

Cordivari CVT solar collectors are composed of a series of vacuum tubes Sydney type, that captures the incidence of solar energy. Thanks to the vacuum technology, this kind of collector can reach high performances even in colder seasons.

The collectors CVT are designed with heat pipe technology that allows a better maintenance and protection against stagnation.

HEAT PIPE TECHNOLOGY

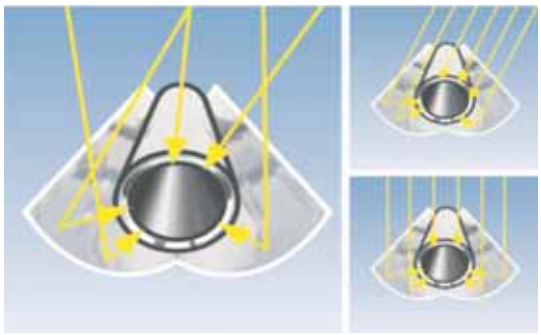
The pipe heats up with the heat coming from the absorber and vaporizes the small quantity of fluid that naturally raises to the top, then it condenses and transfers heat to the heat-transfer fluid of the primary circuit and comes back to liquid state.
Heat pipes are placed inside the double concentric tubes made in borosilicate glass (Sydney type). Thanks to its insulating properties (thermos effect), the vacuum between the glass pipes drastically reduces the heat loss, increasing the available energy captured from the sun.

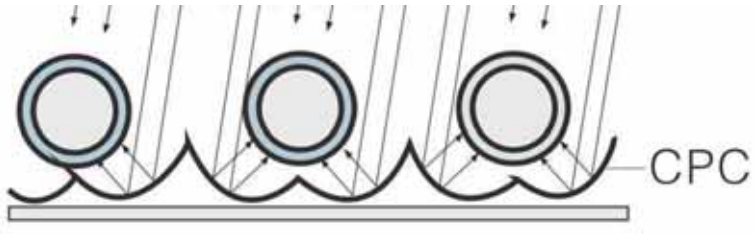


DESCRIPTION	
1	Insulation in mineral wool
2	Anodized aluminum structure
3	Connection Ø 22 mm
4	Heat pipe
5	Vacuum glass tube Sydney type Ø 58 mm

COMPOUND PARABOLIC CONCENTRATOR (CPC)

A special CPC behind the tubes leads the sunlight, even from different angles, exactly to the absorber. This system allows Cordivari vacuum tube collectors CVT to reach high performances with small dimensions and maximum energy absorption, direct or indirect.





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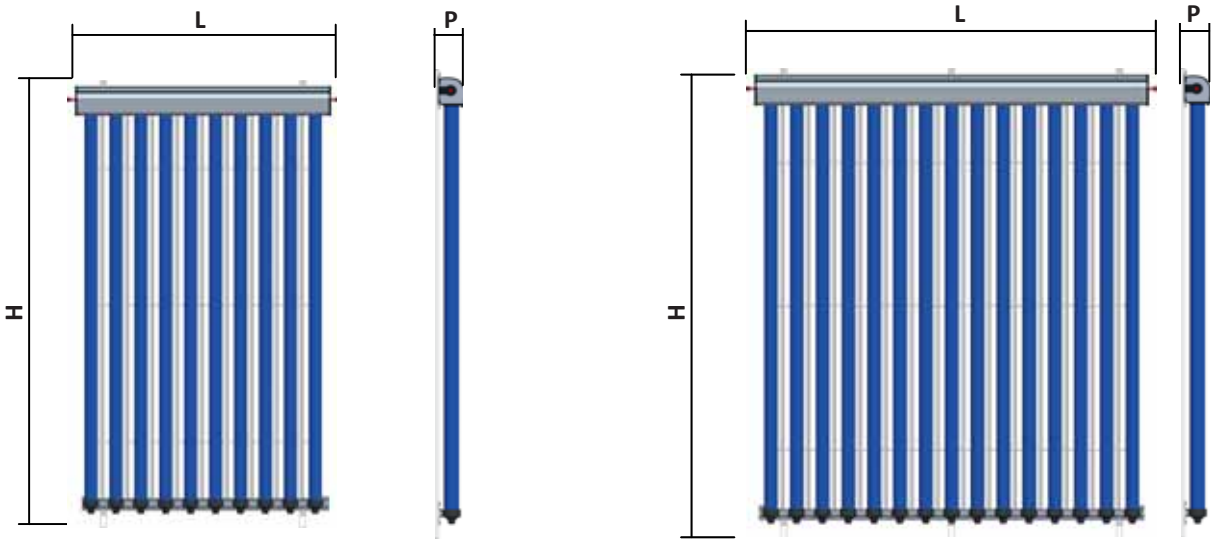
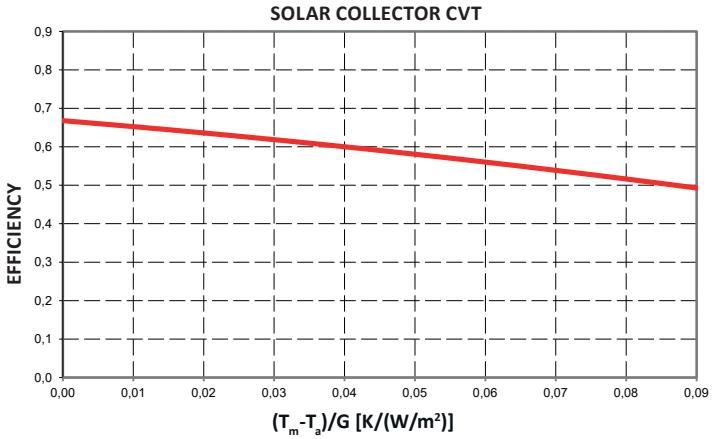


ART. NR.	VERSION	GROSS DIMENSIONS				OPENING SURFACE	WEIGHT	CAPACITY	CONNECTIONS	
		L	H	P	SURFACE					
			[mm]		[m²]	[m²]	[kg]	[lt]	N°	[mm]
3400306500201	10 TUBES	1130	1917	133	2,17*	1,78	28,5	0,94	2	ø 22
3400306500202	15 TUBES	1680	1917	133	3,22*	2,72	39	1,41	2	ø 22

* For the detailed calculation please always refer to the product certification and to test reports.

Fixing kit for pitched roofs is included with vacuum tube collectors CVT.

EFFICIENCY CURVES (Solar radiation values G dir = 850 W/m² G dif = 150 W/m²)



VACUUM TUBE COLLECTORS EFFICIENCY CURVES

The immediate efficiency curve of a solar collector represents its performances "ID" , that allows to quantify the collector capacity to turn solar energy into thermal energy.
Efficiency is defined as the relationship between the thermal power captured by the heat transfer fluid and the solar radiation that affects the collector. For the sake of convenience, the ratio is always applied to a square meter (1 m²) of surface.
So on the vertical axis, the efficiency η (eta) is the relationship between the power absorbed by the heat transfer fluid circulating in one square meter of the solar collector (W/m²) and the solar radiation on the collector surface.
It is clear that the efficiency so defined is an instantaneous value depending on test conditions as well as on the collector type.
On the horizontal axis we find the relationship between the difference in temperature Δt and the power of the solar radiation affecting the collector.
Δt is the difference between the average temperature of the heat transfer fluid inside the solar collector and the environment temperature.