SOLE CBL0 - CBL1 - CBL3 - CBL DN

SOLAR SYSTEMS MANUFACTURER

CBL

Hot Water Tanks For Professional Use

Storage tank for sanitary hot water production.
Optimal for the store of sanitary water, versatile for domestic and industrial use.
Up to 3 heat exchangers plus electrical back-up.

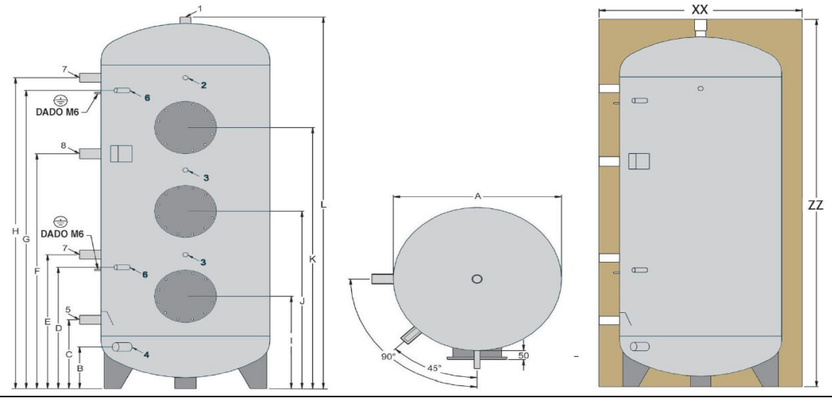
Compatible with all the sources of energy:

- To be integrated in all kind of installations
- Rapid heating, abundant and continuous hot water production
- High efficiency for low operating costs
- Absolute Hygiene
- Long durability without corrosion
- Simplicity of installation

CBL - HOT WATER TANKS SPECIFICATIONS

Tank Material:	EPOXY RESIN: water-heater made of high-quality steel, complete with anodic protection, with epoxy synthetic resins internal coating.
GLASS LINE:	Water-heater made of high-quality steel, complete with anodic protection, inside enameled treatment according to DIN 4753-3 and
	UNI 10025 (up to model 3000)
CBL0, CBL1, CBL2:	Water-heater made of high-quality steel with 0, 1 or 2 inspection flanges Ø290/220 mm for detachable copper spiral coils up to 6.3m².
CBL DN:	Water-heater made of high-quality steel with 1 inspection flange Ø480/400mm for detachable stainless-steel U-type heat exchanger.
Heat Exchanger:	Removable Spiral finned Copper coil-tinned complete with bored flange, upper cap for flange, nuts & Bolts.
Insulation:	Soft Polyurethane 100mm

- Each heat exchanger can be fitted in all the tanks. The price will change accordingly
- Aluminum Cladding is optional with additional cost
- External cover flexible PVC jacket (indoor use)
- Hot water tank with 3 flanges and heat exchangers (CBL-3) can be offered upon request



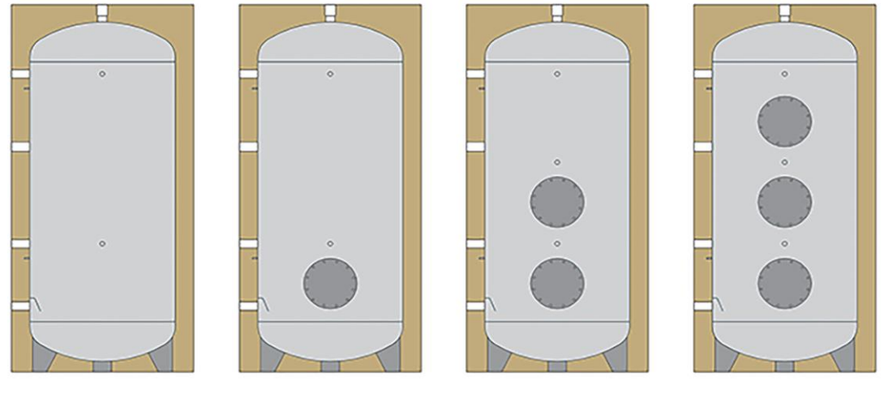
Model	A	B	C	D	E	F	G	H	I	J	K	L	M
ENAMELED													
200	500	140	245	415	485	725	895	965	345	765	-	1215	-
300	500	140	235	480	540	1010	1315	1375	345	810	1205	1615	-
500	650	165	285	525	595	1065	1325	1395	395	865	1265	1690	-
800	790	240	350	600	670	1130	1430	1500	470	940	1320	1810	560
1000	790	240	350	690	760	1295	1760	1830	470	1075	1610	2140	560
1500	1000	280	435	730	800	1300	1650	1720	545	1075	1505	2120	695
2000	1100	250	410	750	820	1345	1920	1990	555	1085	1670	2425	670
2500	1250	235	440	765	835	1295	1710	1780	550	1060	1515	2250	640
3000	1250	235	440	765	835	1425	2110	2180	550	1130	1800	2650	705
EPOXY RESIN													
1500	1000	180	395	710	780	1295	1680	1750	530	1000	1525	2105	600
2000	1100	180	410	750	820	1345	1920	1990	555	1085	1670	2425	615
2500	1250	190	425	770	840	1290	1690	1760	580	1065	1525	2200	640
3000	1250	190	475	795	865	1455	2195	2265	580	1165	1860	2700	640
4000	1500	260	470	855	925	1470	2070	2140	650	1195	1805	2600	695
5000	1600	250	460	855	925	1480	2160	2230	645	1200	1900	2690	715

TECHNICAL DATA

CBL TANKS CBL-0 - CBL-1 - CBL-3 - CBL-DN		GLASSLINE (ENAMELED)									EPOXY RESIN					
		200	300	500	800	1000	1500	2000	2500	3000	1500	2000	2500	3000	4000	5000
Storage volume	l	208	285	490	749	955	1430	1990	2346	2848	1430	1990	2346	2959	4043	4854
Energy class-Standing loss Polyester fiber (W) 100 mm		C 77	C 95	C 115	C 130	C 142	C 162	C 186	C 325	344	C 162	C 186	325	344	421	455
Total height with insulation	ZZ mm	1275	1675	1755	1875	2205	2185	2470	2470	2680	2155	2470	2230	2730	2650	2760
Diagonal size	mm	1275	1660	1760	1920	2200	2200	2520	2520	2725	2200	2520	2380	2810	2800	2950
Tank with 100 mm polyester fiber	XX ø mm	700	700	850	990	990	1200	1300	1300	1450	1200	1300	1450	1450	1700	1800
Flange	CBL0 CBL1 CBL3 ø mm	290/220 (no EPOXY RESIN)														
	CBL DN ø mm	-			480/400											
Weight empty	kg	70	91	135	190	207	321	405	490	587	298	351	435	587	546	696
Max. working pressure	bar	10					8				6					
Max. working-temperature boiler	°C	95									80 (EPOXY RESIN)					

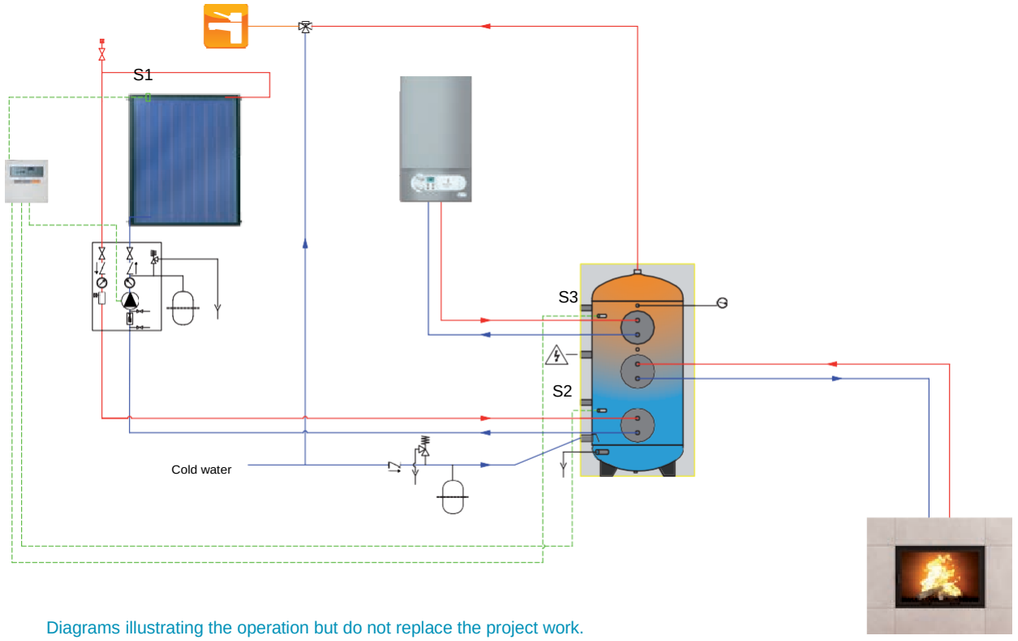
N°	CONNECTOR TYPE	200÷500	800÷1000	1500	2000	3000	4000-5000
1.	Domestic hot water inlet	1 1/4	1” 1/2	1” 1/2	2”	2”	3”
2.	Thermometer	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
3.	Feeler	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
4.	Drain coil	1”	1”	1” 1/4	1” 1/4	1” 1/4	1” 1/4
5.	Cold water inlet	1” 1/2	1” 1/2	1” 1/2	2”	2”	3”
6.	Electronic anode-feeler	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
7.	Anode	1” 1/4	1” 1/4	1” 1/4	1” 1/4	1” 1/4	1” 1/4
8.	Electric heater re-circulation	1” 1/2	1” 1/2	1” 1/2	1” 1/2	1” 1/2	1” 1/2
9.	VS DN Drain coil	-	1”	1” 1/4	1” 1/4	1”	1”

CBL-0 CBL-1 CBL-2 CBL-3



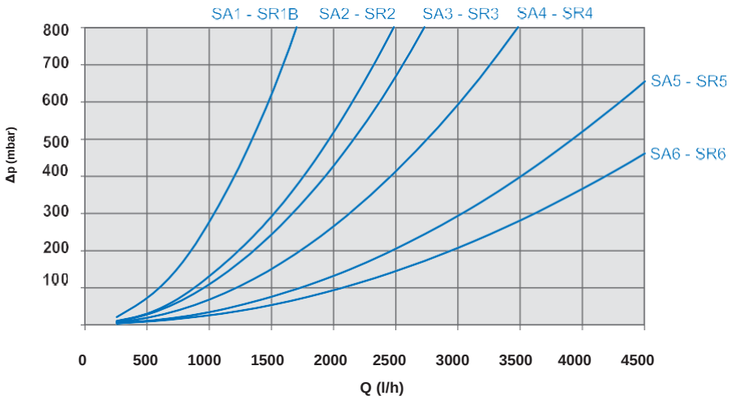
SOLE CBL0 - CBL1 - CBL3 - CBL DN

PLANT SCHEME SANITARY



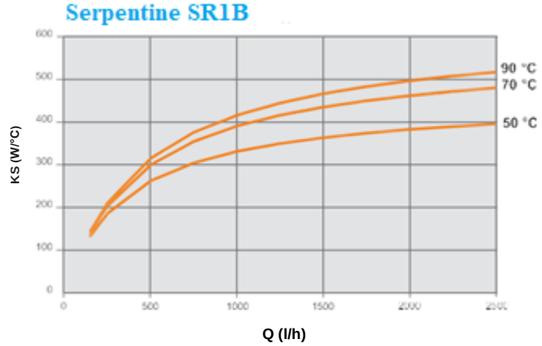
Diagrams illustrating the operation but do not replace the project work.

HEAT EXCHANGERS PRESSURE DROPS

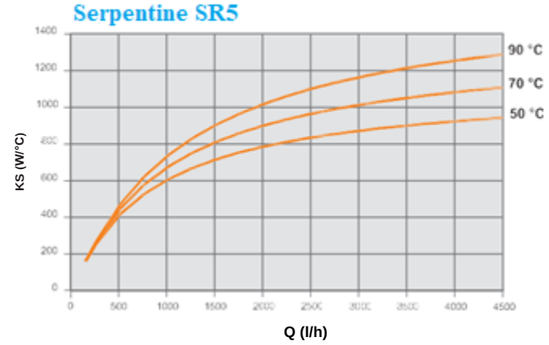


DIAGRAMS OF SPECIFIC POWER IN FUNCTION OF THE INLET TEMPERATURE OF THE EXCHANGER

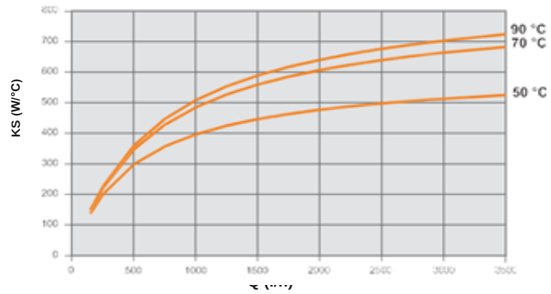
Serpentine SR1B



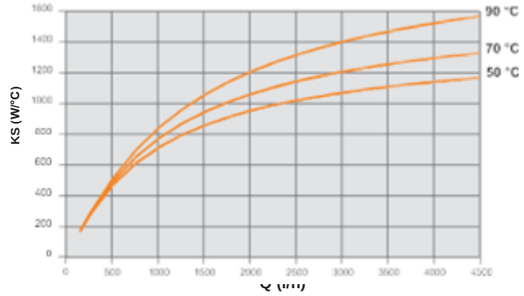
Serpentine SR5



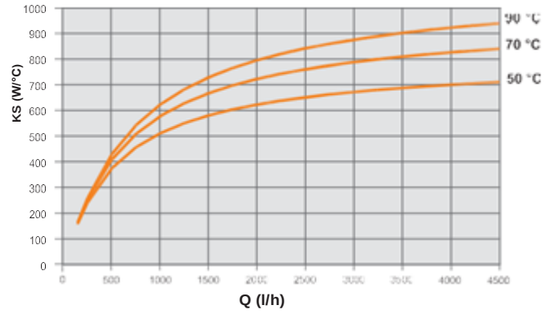
Serpentine SR2



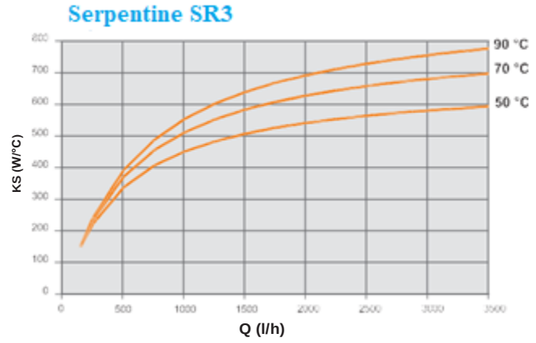
Serpentine SR6



Serpentine SR4

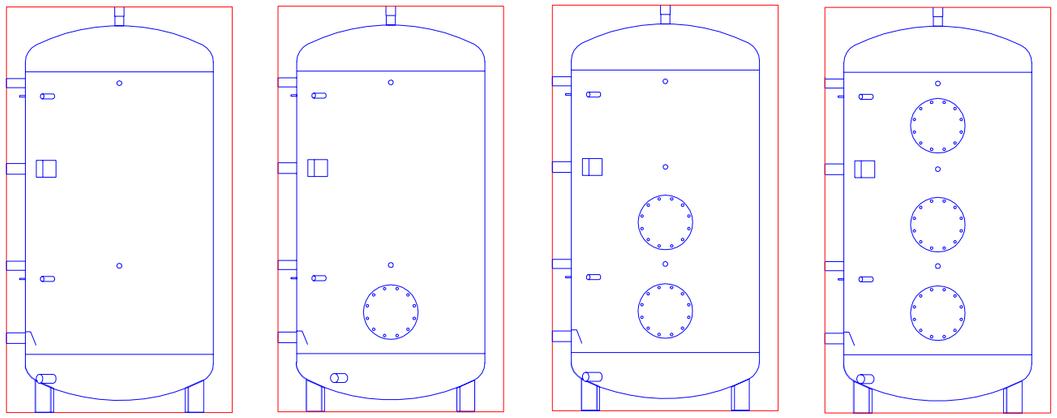


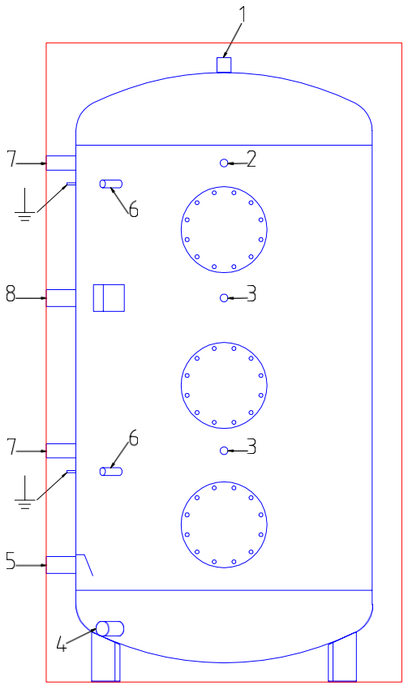
Serpentine SR3

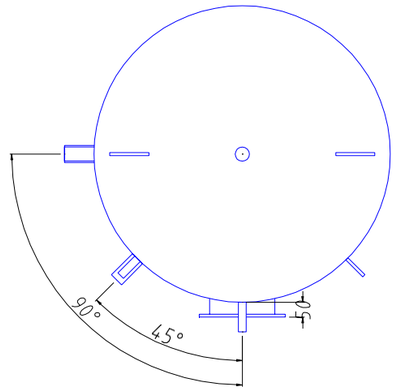


Calculation power transmitted to the tank (q): $q = KS \cdot (Ti - Ta)$ [W]

Ti = Temperature inlet exchanger - Ta = Medium temperature between T Cold water inlet and T top part Tank



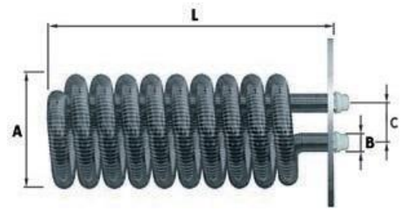




N°	CONNECTOR TYPE	200÷ 500	800÷ 1000	1500	2000	3000	4000- 5000
1.	Domestic hot water inlet	1” 1/4	1” 1/2	1” 1/2	2”	2”	3”
2.	Thermometer	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
3.	Feeler	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
4.	Drain coil	1”	1”	1” 1/4	1” 1/4	1” 1/4	1” 1/4
5.	Cold water inlet	1” 1/2	1” 1/2	1” 1/2	2”	2”	3”
6.	Electronic anode-feeler	1/2”	1/2”	1/2”	1/2”	1/2”	1/2”
7.	Anode	1” 1/4	1” 1/4	1” 1/4	1” 1/4	1” 1/4	1” 1/4
8.	Electric heater re-circulation	1” 1/2	1” 1/2	1” 1/2	1” 1/2	1” 1/2	1” 1/2
9.	VS DN Drain coil	-	1”	1” 1/4	1” 1/4	1”	1”

KIT SERPENTINE CBL 1 – CBL 3

EXTRACTABLE HEAT-EXCHANGER KIT FOR VERSION CBL1 - CBL3
- Complete with bored flange, copper heat exchanger, upper cap for flange and nuts and bolts
- SR: Spiral finned copper coil-tinned (tank for sanitary water)
- PREASSEMLED ON THE FLANGE

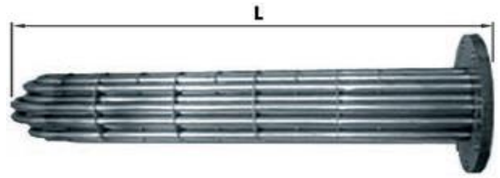


Art.	kW	m^2	A	B	C mm	L mm	kg
SR1B	36	1,21	DN 200	3/4”	80	420	10,0
SR2	43	1,80	DN 200	3/4”	80	470	11,7
SR3	62	2,63	DN 200	3/4”	80	580	14,9
SR4	75	3,20	DN 200	3/4”	80	660	17,0
SR5	108	4,54	DN 200	1”	80	750	21,1
SR6	150	6,34	DN 200	1”	80	980	29,0

The length of the coil must be at least 10 cm shorter than the diameter of the storage cylinder.

STAINLESS STEEL “U” BUNDLE EXCHANGER KIT FOR VERSION CBL1 - CBL3 - CBL DN

- Complete with galvanized head with connections, gaskets and bolts

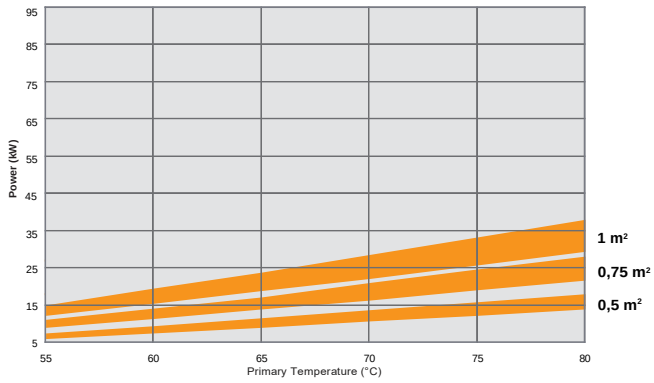


Exchanger surface m^2	Flange ø mm	Flange ø mm	Weight kg	Flange bores N0	Connections	Connections wheelbase mm	To install on model
0,5	290	450	10	12	1"	115	CBL1 -CBL3
0,75	290	440	12	12	1"	115	CBL1 -CBL3
1	290	475	14	12	1"	115	CBL1 -CBL3
1,5	290	635	17	12	1"	115	CBL1 -CBL3
2	290	755	19	12	1"	115	CBL1 -CBL3
2	480	600	38	26	2"	200	CBL DN
3	480	720	45	26	2"	200	CBL DN
4	480	735	53	26	2"	200	CBL DN
5	480	750	61	26	2"	200	CBL DN
6	480	700	69	26	2"	200	CBL DN
8	480	915	84	26	2"	200	CBL DN
10	480	1140	100	26	2"	200	CBL DN

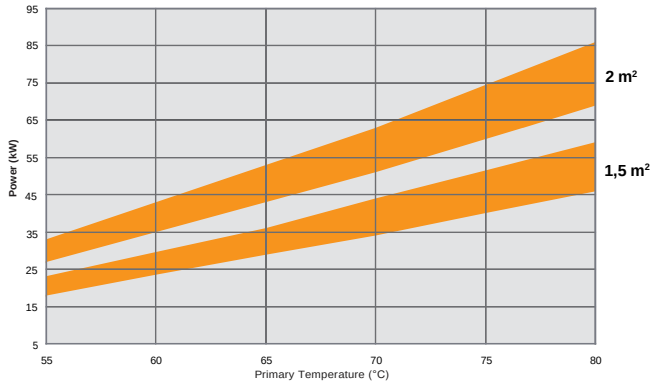
SOLAR SYSTEMS MANUFACTURER

"U" BUNDLE EXCHANGER OUTPUT POWER

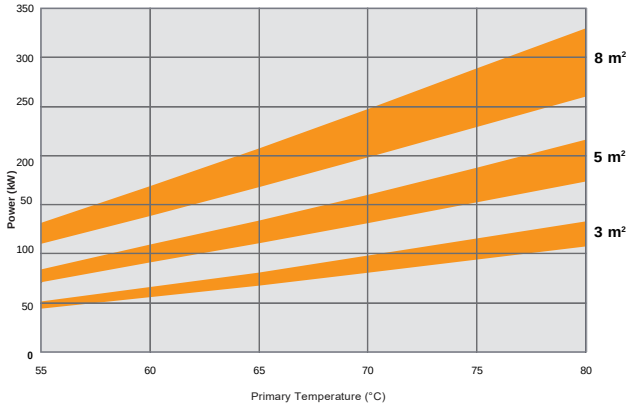
DIAGRAMS OF SPECIFIC POWER IN FUNCTION OF THE TEMPERATURE AND FLOW OF THE EXCHANGER INLET



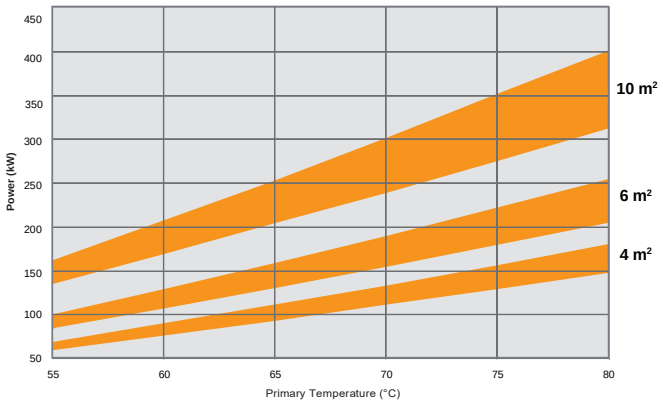
"U" bundle exchanger	0,5 m²		0,75 m²		1 m²	
Primary flow m³/h	< 1	> 2	< 1,5	> 3	< 2	> 4



"U" bundle exchanger	1,5 m²		2 m²	
Primary flow m³/h	< 3	> 6	< 5	> 10

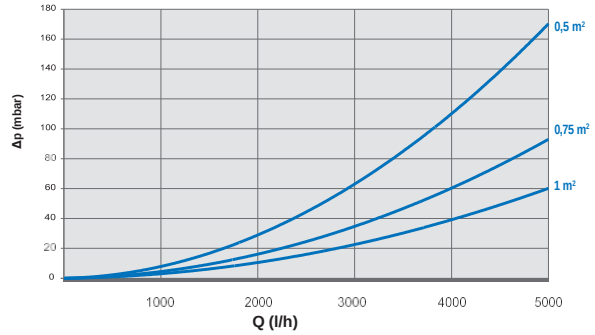


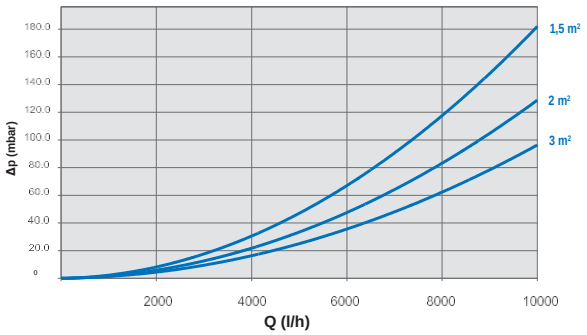
"U" bundle exchanger	3 m²		5 m²		8 m²	
Primary flow m³/h	< 7,5	> 15	< 10	> 20	< 10	> 20

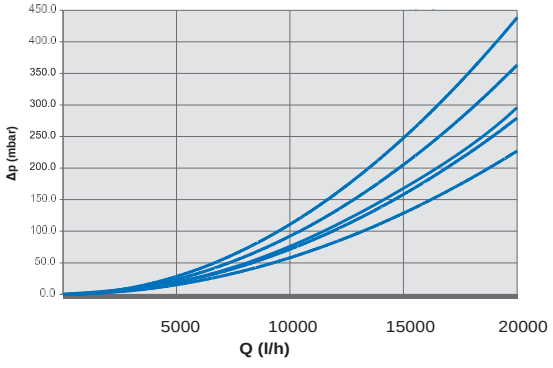


"U" bundle exchanger	4 m²		6 m²		10 m²	
Primary flow m³/h	< 10	> 20	< 10	> 20	< 10	> 20

"U" BUNDLE EXCHANGERS PRESSURE DROPS







SOLAR SYSTEMS MANUFACTURER

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

This manual is an integral part of the tank and must be delivered to the installer / user together with it. The manual must be kept in a safe place near the tank. In case of transfer or sale of the tank, this user and installation manual must be transferred together with it. The user and the installer are required to read this manual carefully in order to comply with the technical instructions for safety and correct operation of the tank. Failure to comply with the instructions below will invalidate all legal and contractual warranty rights. The installation, commissioning, maintenance and deactivation of the equipment must be performed by a qualified technician qualified for the profession. Correct installation and periodic maintenance interventions guarantee a long life for the storage tank.

INSTALLATION INSTRUCTIONS, COMMISSIONING AND MAINTENANCE

What follows is determinant for the warranty validity.

1. The installation and commissioning must:

   - Be executed by a qualified installer.
   - Be provided where necessary, with a pressure reducing valve in entrance.
   - Be provided with a safety valve according to the technical datasheet of the tank.
   - Provide expansion tanks connected at a maximum distance of one meter from the calorifier (see the measuring board of the expansion vessel). The expansion tank must be proportioned to the calorifier's dimensions (the size shall be checked by an expert).
   - Provide washing of any impurities before commissioning that may present in the hydraulic circuit. They can cause corrosion and permanently contaminate the tank.
   - Be provided with filters upstream of the tank to avoid the deposit of heavy particles or processing residues inside the tank.

2. Before starting, check the hydraulic seal of the connections and hatches. Apply a torque of 20 Nm for handhole hatches and 40 Nm for manhole to the hatch screws. If some leakage occurs check the assembly of the expansion vessels.

3. Install the calorifier in a technical room providing suitable drainage in case of possible liquid leaks from the tank.

4. Do not switch on any heat source connected to the tank until it is guaranteed to fill in completely.

5. In case of use on the system of materials other than those of the tank, provide for the dielectrical insulation of the different parts. The equipotential ground connection must be made both for the tank and for the pipes connected to it and must be suitably checked in compliance with the regulations in force.

6. For the purpose of preventing contamination of the domestic water and altering the anti-freezing mixture of the solar circuits, the pressure of the exchanger is always lower than the pressure of the accumulation. Also, through the automatic control of the differential pressure between the primary and secondary circuits.

7. In case of freezing danger, the tank and the exchanger must be heated or completely emptied. Even if the tank is not used for a long time, empty the tank. In fact the prolonged stagnation of water in the tank favors internal corrosion and the proliferation of bacteria and microorganisms.

8. The temperature of the boiler inside must always be under 95°C for GLASSLINE tanks (80°C for the EPOXY RESIN models).

9. In order to avoid corrosion, the anodes must be inspected after each 12 months. However, where the water is particularly aggressive, the inspections must be done each 6 months; if the anode diameter in any section is less than 22 mm, it must be replaced and if covered with limestone has to be cleaned.

10. The water Langelier Index at the operating temperature, must range from "-0.3" to "+0.3", hardness <110 mg/l (or within 10°F and 20°F), maximum concentration of chlorides 70 mg/l, minimum conductivity 150 microS/cm.

DIMENSIONING OF THE EXPANSION TANK:

An expansion tank must be installed with our CBL tanks. The expansion tank is commensurate with the size of the boiler and to the volume of water present in the pipes. It is advisable to divide the expansion volume in more tanks. The dimensioning of expansion tanks must be carried out by a qualified installer or designer.

Type	Min. size exp. tank	Max. size exp. tank
150	8	12
200	12	18
300	18	25
500	25	50
800	50	80
1000	50	100
1250	80	100
1500	80	140
2000	100	200
3000	150	300

The tanks are produced according to the basic EEC Directives 2014/68/UE (P.E.D.) for the pressure equipment's, as in the art. 4.3.

SOLAR SYSTEMS MANUFACTURER

SOLE CBL WARRANTY

The guarantee is subjected to the following conditions:

- Installation of CBL calorifiers must be made from a qualified firm/installer
- Furthermore, the tank has to be equipped with safety valve and suitable expansion tank.

Calorifiers by Glassline or Epoxy Resin are subjected to use and maintenance as normally required:

- Temperature and pressure working must be strictly observed
- Examination and replacement of magnesium anode (best every 6 months)
- Langelier water index between -0.3 and +0,3
- Total Hardness <110 mg/l
- Maximum concentration of chlorides 70 mg/l
- Minimum conductivity 150 microS / cm
- pH range 7 - 8.5

From the guarantee are excluded damages due through:

- Out of specification or improper use of the calorifier.

- Defects caused during transportation or installation.

- Damages caused from no closed gaskets.

- The carbon steel tanks are supplied externally painted for aesthetic purposes only. Any irregularities, cracks or detachment of parts of the paint are not to be attributed to processing defects but are caused by surface alterations due to the high temperature processing of the tanks themselves (enameling in the oven, pickling, welding, etc.). These superficial aspects in no way affect the duration and functionality of the tank which remains fully guaranteed by the manufacturer. Therefore, requests for replacement or compensation relating to this aspect are not accepted.

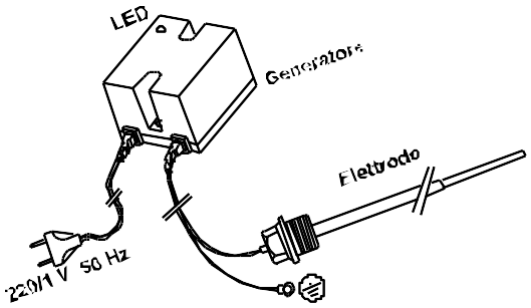
- Insulation damage detected after boiler installation.

- Rust or humidity on the threads of the connections are natural phenomena that do not affect the functionality of the tank. It is the installer's scope to clean the threads before making the joints.

We exercise the right to reject requires of guarantees if buyer doesn't respect the obligation of current payments. Further requires of compensation, in special way for direct and indirect damages to people or things, can't be acknowledged.

APPENDIX

ELECTRONIC ANODE: connection scheme



DIRECTIVE PARAMETERS 2009 / 125 / CE, Reg. UE 2017 - 1369 – EN 12897

S I Z E (INSULATION)	CAPACITY (L)	NON-SOLAR VOLUME (L)	STANDING LOSS (W)	SPECIFIC LOSS (W / K)	ENERGY CLASS
200 (100 mm Soft PU)	208	95	77	1,71	C
300 (100 mm Soft PU)	285	160	95	2,11	C
500 (100 mm Soft PU)	490	275	115	2,77	C
800 (100 mm Soft PU)	749	420	130	2,89	-
1000 (100 mm Soft PU)	880	490	142	3,16	-
1500 (100 mm Soft PU)	1430	790	162	3,60	-
2000 (100 mm Soft PU)	1950	840	186	4,13	-

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