

## Flat solar collector

### SOL 200 and SOL 200 H

Flat solar collectors for thermal solar collection facilities. Sol 200 vertical mounting, Sol 200 H horizontal mounting.

#### Features

- Aluminum absorber plate highly selective surface treatment, hydraulic circuit connected to the coil of copper tube by laser welding.
- Textured glass cover of 3.2 mm, tempered low iron content.
- Insulation glass wool 40 mm thick, which is supported by the aluminum plate back.
- Aluminum housing painted gray RAL 7016.
- Four connections for the connection between manifolds through easy mounting accessories.
- Tested by CENER
- 10 YEAR WARRANTY.

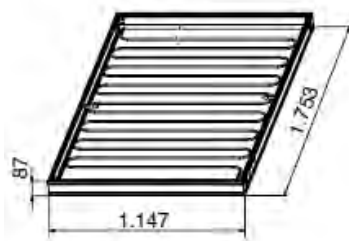
#### Type of delivery

a package type:  
SOL 200 Solar Collector  
Code 720 364 001  
- Collector SOL 200 H  
Code 720364301

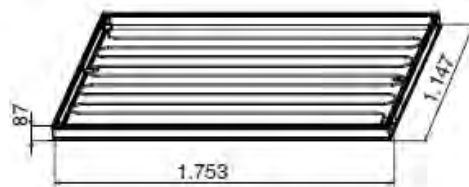


#### Dimensions and Technical Data

##### SOL 200



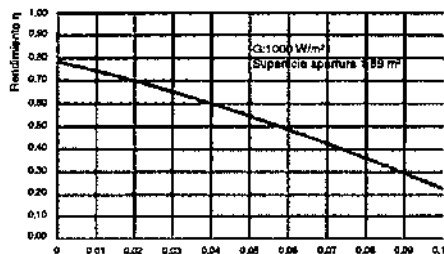
##### SOL 200 H



	SOL 200	SOL 200 H
Total Surface	2,01 m <sup>2</sup>	2,01 m <sup>2</sup>
Opening surface	1.89m <sup>2</sup>	1.89 m <sup>2</sup>
Capacity:	1,9 liters	2.2 liters
Weight empty	34,3 kg	35 kg
Maximum working pressure	10 bar	10 bar
Temperature	213 °C	211 °C

#### Yield Curve

##### SOL 200



$$\eta = \frac{T_m - T_a}{G} \left( \frac{^\circ\text{C m}^2}{\text{W}} \right)$$

Manifold characteristic equation

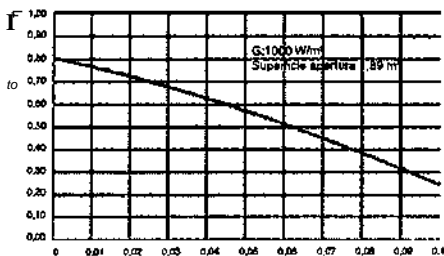
$$\eta = 0.785 - 4.046 T^* - 0.018 G T^{*2}$$

$T_m$  - Average temperature of the collector, Room temperature Solar

$T_a$  - irradiance

Test performed by CENER

##### SOL 200 H



$$\eta = \frac{T_m - T_a}{G} \left( \frac{^\circ\text{C m}^2}{\text{W}} \right)$$

Manifold characteristic equation

$$\eta = 0.801 - 3.810 T^* - 0.018 G T^{*2}$$

$T_m$  - Average temperature of the collector, Room temperature,

$T_a$  - Solar irradiance

Test performed by CENER

#### Detail collector section



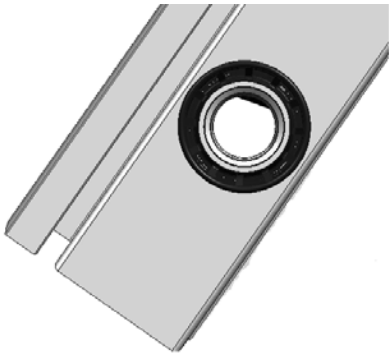
1. Tempered glass.
2. Painted aluminum housing.
3. Selective coating absorber plate.
4. 40mm insulation fiberglass back.
5. Hydraulic circuit coil type.

Flat solar collector

Sun joints for solar collectors

Solar collectors SOL are designed to be installed in a manner in a box with all the components easily and safely. The design of terminal pipes allow use Links SOL solar collectors quick connect couplings. Couplings are suited to all SOL collector models.

Set of couplings of two manifolds  
Code 720297801  
Coupling inter-game collectors set  
Code 720239901



Position	Description	Two collectors Amount	Inter-manifolds Qty
1	Outlet connection collector probe sheath and manual air vent incorporated		
2	Bottle cap	2	
	Collector inlet connection elbow		
4	Link intercollector union	2	2
...5	Mounting clip for output connection, connection plugs and inlet elbow	4	



Joints para Mediterranean solar collectors

The couplings of solar collectors Links solar collectors Mediterranean are based on Mediterranean

compression links conical pipe couplings  
diam.: mm

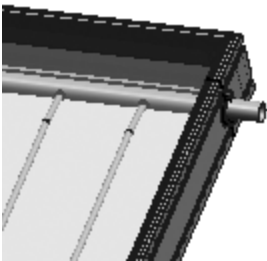
set of two manifolds

Code 144940007

Coupling inter-game collectors Form of

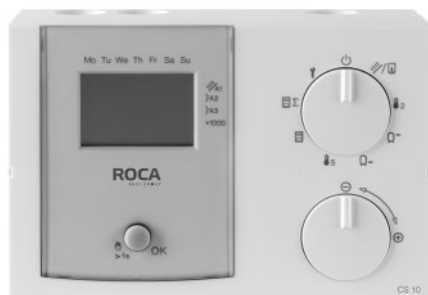
their minister Code 144940008  
In a box with all the components

Position	Description	Two collectors Amount	Inter-manifolds Qty
1	Outlet connection collector probe sheath and manual air vent incorporated	1	
2	Plugs compression link 22 mm diam	2	
3	Collector inlet elbow connection with compression link 22 mm diam	1	
4	Clickable Link intercollector compression bonding diam 22 mm	2	2
5	Flexible 1m steel flat seam welding buttress 3/4 "x diam		



## Electronic control

Controllers for hot-water systems with solar collectors



### Solar Controller CS-10

It controls production of Domestic Hot Water of the solar energy system.

By means of a correct programming, this unit can guarantee maximum use of the solar energy received, can also monitor the back-up boiler selected.

#### Main features

- Solar collector temperature control.
- DHW storage cylinder temperature control.
- Solar pump operation control according to the solar collector and DHW cylinder temperature.
- Anti-legionella protection feature (with back-up boiler).
- Possibility of connecting a pulse counter.
- Bus connection capability.

#### Delivery

In a box containing 4 sensors mod. PT 1000 of 1 KOhm

#### Technical data

Supply voltage.	230V AC $\pm$ 10%. 50Hz
Power input.	5VA
Relay switching capacity	250 V, 2 (2) A
Max. current at L1 terminal supplying L'	6,3 A
Electrical protection to DIN EN 60 529	IP 40
Protection class to DIN 60730	II
Timer battery back-up (only CS 10)	10 horas
Allowable room temp.	0 ° hasta 50 °C
Sensor resistors:	PT 1000, 1KOhm + / - 0,2% to 0 °C

Base for wall-mounting through rawlplugs and screws or making use of the guides attached to the lid for vertical fixing.

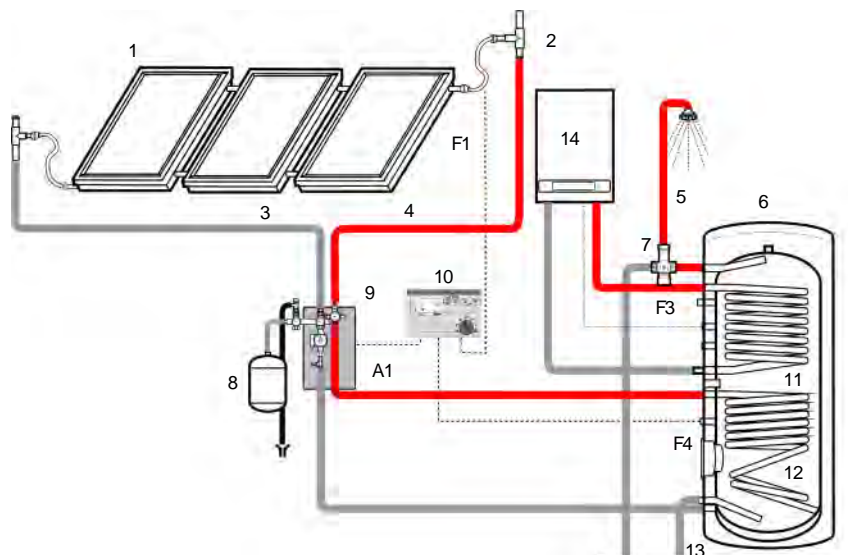
Roughing-in measurements

143 mm long; 96 mm high and 59 mm deep

#### Diagram and basic circuit

Solar energy system schematic for Domestic Hot Water with a wall-mounted back-up boiler.

- 1 Solar collectors
  - 2 Air vent
  - 3 Solar collector flow
  - 4 Solar collector return
  - 5 Domestic Hot Water
  - 6 Storage cylinder
  - 7 Thermostatic mixing valve
  - 8 Expansion vessel
  - 9 Hydraulic kit KHS
  - 10 Solar Controller
  - 11 Back-up boiler heat exchanger
  - 12 Solar collectors heat exchanger
  - 13 Cold water inlet
  - 14 Back-up heat generator (Wall-mounted gas boiler for Central Heating only)
- F1 Solar collector sensor  
F4 Cylinder sensor for interconnecting solar collectors  
F3 Cylinder sensor for interconnecting back-up boiler  
A1 Pump control



# Complements for Solar Energy Systems

**BAXIROCA**

## AS Storage Cylinders

For Domestic Hot Water systems with solar collectors.

Storage cylinders AS 80, 110, 150, 1000, 2000 and 3000-1E include a coil heat exchanger fed by the heat-carrying fluid from solar collectors.

Smaller capacity models AS 80, 110 and 150-1E have been designed to be installed in series with wall-mounted boilers featuring instantaneous Domestic Hot Water production.

Models AS 200, 300, 400, 500, 800 and 1000-2E include a twin-coil heat exchanger - the lower one is connected to the solar collector circuit, while the upper one is used for additional back-up heating.

In models AS 1000, 2000 and 3000-IN E with no heating coil, water heating takes place through external heat exchangers.

An optional electric heater can be supplied with all models.

The cylinders and heating coils are made from enamelled stainless steel and are protected by magnesium anodes.

They are insulated with 50 to 100 mm-thick polyurethane foam, depending on the model, and enveloped by a PVC jacket finished in white RAL 9010.

Storage cylinders AS 300, 400 and 500-2E incorporate a control panel with thermostat. 5-year guarantee.

Maximum working pressure:

8 bar in models AS 80, 110 and 150-1E

10 bar in all other models

Maximum working temperature:

90 °C in models AS 80, 110 and 150-1E and AS 300, 400 and 500-2E

95 °C in all other models.

### Delivery

In a single package.

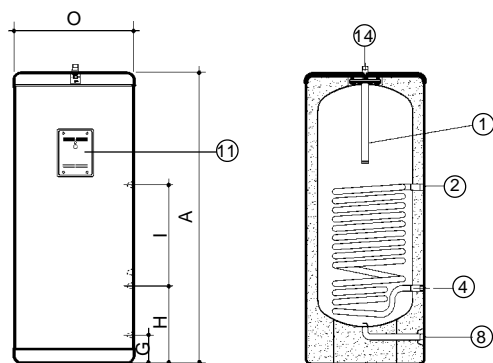
### Optional supply

1 back-up heater.

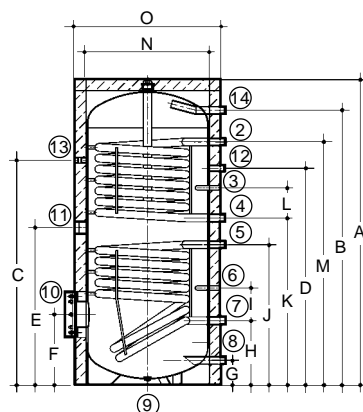


## Dimensions and Technical Data

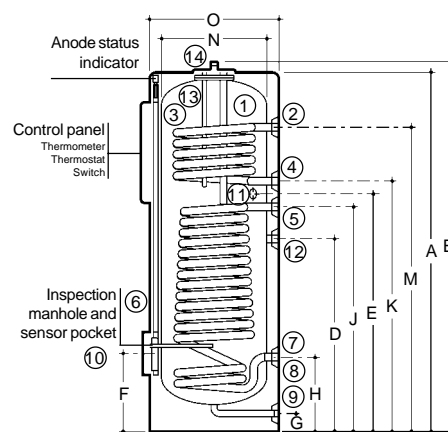
**AS 80-1E, 110-1E and 150-1E**  
(1 coil)



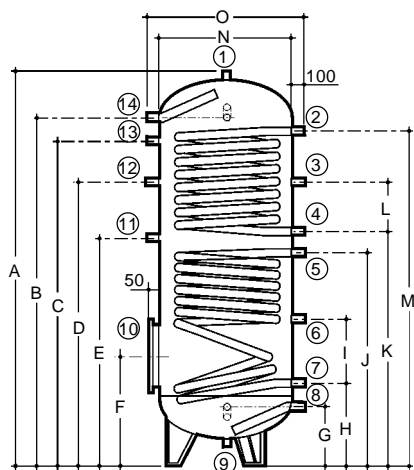
**AS 200-2 E**  
(dual coil)



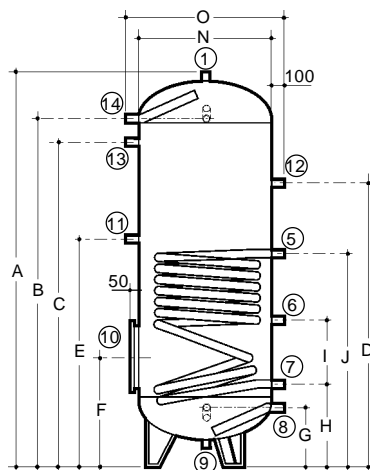
**AS 300-2 E, 400-2 E and 500-2 E**  
(dual coil)



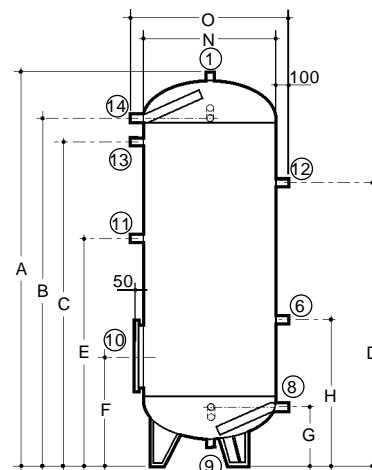
**AS 800-2 E, 1000-2 E**  
(dual coil)



**AS 1000-1 E, 2000-1 E and 3000-1E**  
(1 coil)



**AS 1000-IN E, 2000-IN E and 3000-IN E**  
(no coil)



## Dimensions and Technical Data

Position	Description	Tappings					
		AS 80/110/150-1 E	AS 200-2 E	AS 300/400/500-2 E	AS 800/1000-2 E	AS 1000/2000/3000-1 E	AS 1000/2000/3000-IN E
1	Sacrificial anode	-	1 1/4"	-	1 1/4"	1 1/4"	1 1/4"
2	Auxiliary boiler flow	1/2"	1"	1"	1 1/4"	-	-
3	Boiler temp. senso	-	Ø 18 mm ext.	Ø 10 mm int.	1/2"	-	-
4	Boiler return	1/2"	1"	1"	1 1/4"	-	-
5	Solar collector flow	-	1"	1"	1 1/4"	1 1/4"	-
6	Solar collector temp. sensor	-	Ø 18 mm ext.	Ø 6 mm int.	1/2"	1/2"	1/2"
7	Solar collector return	-	1"	1"	1 1/4"	1 1/4"	-
8	Cold water inle	3/4"	1"	1"	1 1/4"	1 1/4"	1 1/4"
9	Draw-off	-	M16 x 1,5	1"	1 1/4"	1 1/4"	1 1/4"
10	Flange	-	Ø 105 mm	Ø 90 mm	Ø 480 mm	Ø 480 mm	Ø 480 mm
11	Electric heater	-	1 1/2"	2"	1 1/2"	1 1/2"	1 1/2"
12	Recirculation	-	3/4"	1"	1"	1"	1"
13	Thermometer	-	1/2"	Ø 10 mm int.	1/2"	1/2"	1/2"
14	Hot water outle	3/4"	1"	1"	1 1/4"	1 1/4"	1 1/4"

Models	Dimensions in mm															Cylind useful capacity in l	Weight in kg		Surface area m2		Capacity l.	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		Empty	Full	Upper	Lower	Upper	Lower
AS 80-1E	935	-	-	-	-	-	117	330	280	-	-	-	-	-	480	80	40	129	0,31	-	-	-
AS 110-1E	1.155	-	-	-	-	-	117	330	400	-	-	-	-	-	480	106	49	155	0,47	-	-	-
AS 150-1E	1.260	-	-	-	-	-	117	350	440	-	-	-	-	-	560	146	61	207	0,63	-	-	-
AS 200-2 E	1.243	1.136	929	895	650	290	100	264	136	579	690	125	1.005	500	600	200	90	290	0,8	0,8	4,92	4,92
AS 300-2 E	1.685	1.730	-	910	1.120	370	83	350	-	1.060	1.180	-	1.430	520	620	279	120	399	0,66	1,76	5,00	13,00
AS 400-2 E	1.473	1.518	-	690	905	410	83	390	-	840	970	-	1.220	670	770	399	150	549	0,66	1,68	4,83	12,26
AS 500-2 E	1.690	1.735	-	790	1.000	410	83	390	-	940	1.060	-	1.410	670	770	461	175	636	1,2	1,98	9,00	15,00
AS 800-2 E	1.905	1.625	1.490	1.325	1.130	606	255	359	341	1.079	1.190	140	1.526	790	990	760	228	988	1,5	2,4	9,00	14,50
AS 1000-2 E	2.155	1.875	1.749	1.545	1.235	606	255	385	405	1.105	1.345	200	1.745	790	990	950	254	1.204	1,8	2,4	11,00	14,50
AS 1000-1 E	2.155	1.875	1.749	1.545	1.235	606	255	385	405	1.105	-	-	-	790	990	950	230	1.180	-	2,4	-	14,50
AS 2000-1 E	2.550	2.210	2.090	1.835	1.485	696	340	500	370	1.400	-	-	-	1.100	1.300	1.900	465	2.365	-	4,5	-	28,50
AS 3000-1 E	2.950	2.520	2.400	2.080	1.550	756	400	560	470	1.460	-	-	-	1.200	1.400	2.850	646	3.502	-	5,2	-	33,00
AS 1000-IN E	2.155	1.875	1.749	1.545	1.235	606	255	790	-	-	-	-	-	790	990	950	198	1.148	-	-	-	-
AS 2000-IN E	2.550	2.210	2.090	1.835	1.485	696	340	870	-	-	-	-	-	1.100	1.300	1.900	405	2.305	-	-	-	-
AS 3000-IN E	2.950	2.520	2.400	2.080	1.550	756	400	1.030	-	-	-	-	-	1.200	1.400	2.850	576	3.426	-	-	-	-

### Back-up electric heater For AS 80-1E, 110-1E and 150-1E



### Back-up heater For AS 300 E, AS 400 E and AS 500 E

- Stainless steel heater element
- Watertight aluminium junction box
- Power supply 230V, single-phase



### Back-up heater For AS 800 E and AS 1000 E

- Stainless steel heater
- Fitted thermostat, 3-pole, with control range from 10 to 60 °C and manual reset 80 °C overheating safety feature. Single-phase or 3-phase 230V power supply. 3-phase 400V + Neutral



### Heating elements for AS storage cylinders:

Model	Electric heater kW
300	2,5
400	2,5
500	2,5
800	6 / 9
1000	6 / 9

### Models RC heating elements:

Model	Electric heater kW
RC-26/25	2,5 kW
RC-21/60	6 kW
RC-23/90	9 kW

## Central heating circulation pumps

### SCR 40 - SCR 60 - SCR 80

#### Technical data

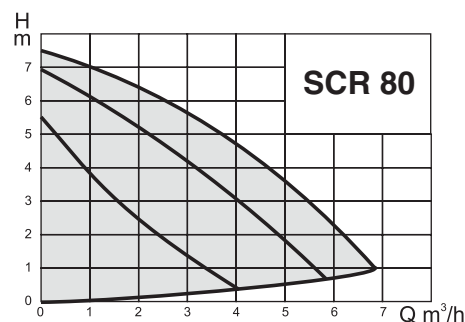
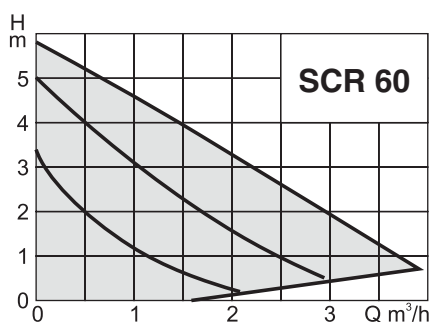
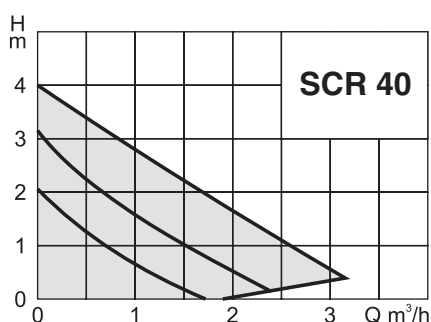
- single-phase motor with a wet rotor
- three rotational speeds
- operating voltage: 1 x 230 V~50 Hz
- max. operating pressure: 10 bar
- media temperature: 5°C to 110°C max.
- ambient temperature: 40°C max.
- protection type: IP 44
- connection: external thread GZ 1", 1 1/4", 1 1/2" (standard), 2"
- length: 180 mm (standard), 130 mm, 110 mm (brass)



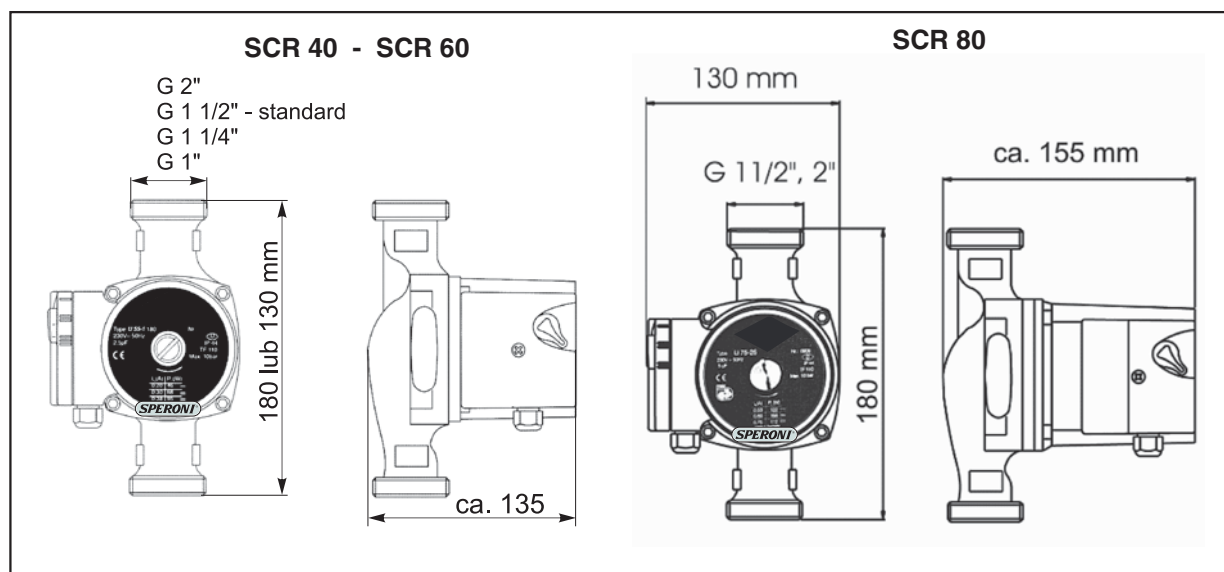
The pump has been created to pump warm water in central heating systems, however it can be used to pump liquid media in industrial and commercial usage. The pump may also be a part of a solar heating installation.

The articles are manufactured from the highest quality cast iron and chrome-nickel steel, which guarantees that the products are of high quality. The product has a ceramic bearing ring and a rotor disk made of technical polymer.

#### Pumps' characteristics



## Dimension illustration



### SCR 40

Article	Pump body	Length (mm)	DN	External thread	H(m)	Power consumption (W)
SCR 25/40-180	Cast iron	180	25	G 1 1/2"	4	28-63
SCR 15/40-130	Cast iron	130	15	G 1"	4	28-63
SCR 20/40-130	Cast iron	130	20	G 1 1/4"	4	28-63
SCR 25/40-130	Cast iron	130	25	G 1 1/2"	4	28-63
SCR 20/40-180	Cast iron	180	20	G 1 1/4"	4	28-63
SCR 32/40-180	Cast iron	180	32	G 2"	4	28-63

### SCR 60

Article	Pump body	Length (mm)	DN	External thread	H(m)	Power consumption (W)
SCR 25/60-180	Cast iron	180	25	G 1 1/2"	6	39-80
SCR 15/60-130	Cast iron	130	15	G 1"	6	39-80
SCR 20/60-130	Cast iron	130	20	G 1 1/4"	6	39-80
SCR 25/60-130	Cast iron	130	25	G 1 1/2"	6	39-80
SCR 20/60-180	Cast iron	180	20	G 1 1/4"	6	39-80
SCR 32/60-180	Cast iron	180	32	G 2"	6	39-80

### SCR 80

Article	Pump body	Length (mm)	DN	External thread	H(m)	Power consumption (W)
SCR 25/80-130	Cast iron	130	25	G 1 1/2"	8	122-170
SCR 32/80-130	Cast iron	130	32	G 2"	8	122-170
SCR 25/80-180	Cast iron	180	25	G 1 1/2"	8	122-170
SCR 32/80-180	Cast iron	180	32	G 2"	8	122-170

## FLAMCOVENT Air Separator

### Main features

Absorption Air Separator

The FLAMCOVENT Air Separator affords the ultimate solution to problems with in solar collector systems. The removal of air from solar collector systems is an all too familiar problem. Although automatic air vents are effective in the removal of larger air bubbles accumulating in the system, they are unable to eliminate micro-bubbles, normally invisible to the naked eye, which remain suspended in the water because they lack upward lift. These micro-bubbles stay in the circuit, causing:

- Noise.
- Accumulation in spots within the radiators and pipes where air venting becomes difficult.
- Difficulties in water circulation.
- Poor pump performance caused by cavitation.
- Damage to the impellers.
- Poor performance of boilers and heat exchangers.
- Corrosion.



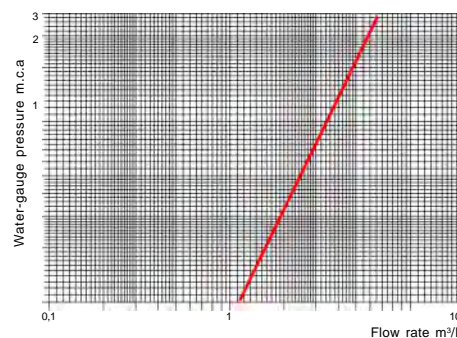
### Models of 22 mm Ø

- Max. working pressure: 10 bar.
- Maximum temperature: 120 °C.
- Max. efficiency at water flow velocities up to 0.7 m/sec.
- In solar energy systems with a mixture of up 50% water/glycol.
- Delivered in individual cardboard boxes.

### Working Principles

In addition to acting as a high-capacity automatic vent, the FLAMCOVENT air separator also eliminates the micro-bubbles suspended in the water. Its internal arrangement absorbs these micro-bubbles, bringing them together and enabling them to rise into the upper chamber, where they are expelled. This leaves the water unsaturated and ready to absorb more air from sections that are awkward to drain, taking that air to the FLAMCOVENT as well for elimination. **The FLAMCOVENT assures totally air-free water.**

### Pressure Drop Graph

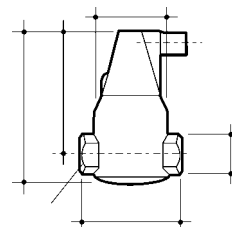


### Installation

The FLAMCOVENT air separators provide their best performance when fitted at the point with the highest temperature and the lowest pressure in the system, which is where the water's air-absorption is lowest and thus where bubbles will appear.

### Dimensions

Model	Dimensions in mm						Weight Kg
	A	B	Ø C	Ø D	E	F	
22 mm	151	116	68	22	121	36	1,4



## Automatic Air Vent FLEXVENT SUPER 1/2"

### Main features

Air vent including a float and a valve that acts automatically when the level of water drops and entrains air with it.

Screwed brass body in two halves. The air that has been separated accumulates at the top and is expelled through an outlet hole. The float is located between both halves and allows the air to be expelled to pass through. The tappings are 1/2".

- Max. working pressure: 10 bar.
- Maximum temperature: 120 °C.
- In solar energy systems with a mixture of up 50% water/glycol.

### Delivery presentation

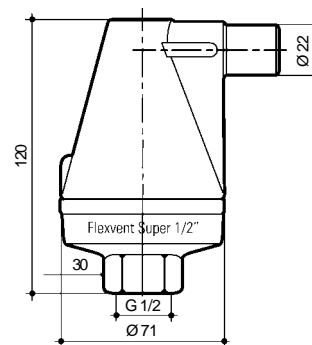
Delivered in individual boxes.

As an option, an isolating valve can be supplied to enable repairing or replacing the FLEXVENT SUPER air vent without draining the system.

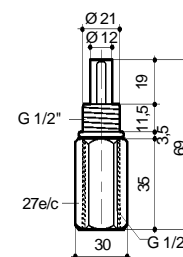


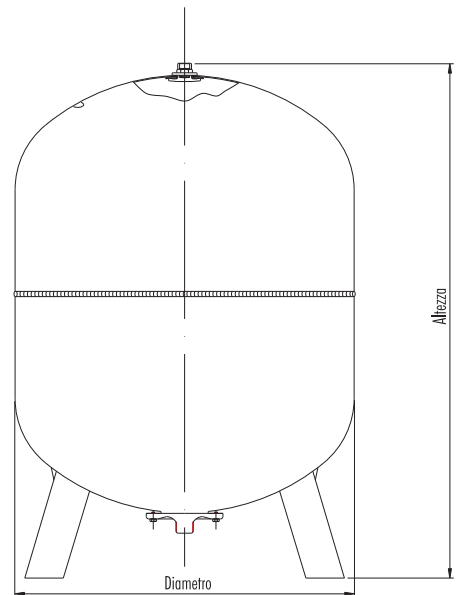
### Dimensions

FLEXVENT SUPER 1/2



### Isolating valve





Utilizzo: circuiti acqua calda, autoclave di pressurizzazione acqua calda  
 Use: hot water circuits, pressurizing surge tanks  
 Utilisation: circuits eau chaude, vase de pressurisation eau chaude

Temperatura d'esercizio - 10° C  
 Working temperature  
 Température d'exercice + 100° C

Finitura esterna colore  
 External finish colour  
 Peinture externe **RAL 3000**

Membrana in gomma  
 Rubber membrane  
 Vessie en gomme **EPDM**

Modello Model Modèle	Codice Code Code	Altezza Height Hauteur (mm)	Diametro Diameter Diamètre (mm)	Lunghezza Length Longueur (mm)	Pressione massima d'esercizio Maximum working pressure Pression maximale d'exercice (bar)	Pressione di precarica standard Standard pre-loading pressure Pression de precharge standard (bar)	Imballo Packing Emballage L X H X P (mm)	Attacco Connection Raccordement (inch)
<b>VRV35</b>	AAJRE01R01DA1	450	365	-	8	1,5	(Pz1) 380X400X460	3/4 "
<b>VRV50</b>	AAKRE01R01DA1	564	365	-	8	1,5	(Pz1) 380X400X570	3/4 "
<b>VRV60</b>	AALRE01R01DA1	668	365	-	8	1,5	(Pz1) 380X400X700	3/4 "
<b>VRV80</b>	AAMRE01R01EA1	687	410	-	8	1,5	(Pz1) 430X450X700	1 "
<b>VRV100</b>	AANRE01R01EA1	663	495	-	8	1,5	(Pz1) 510X540X700	1 "
<b>VRV120</b>	AAORE01R01EA1	733	495	-	8	1,5	(Pz1) 570X610X850	1 "
<b>VRV150</b>	AAPRE01R01EA1	795	550	-	8	1,5	(Pz1) 570X610X850	1 "
<b>VRV200</b>	AAQRE01R11EA1	1020	600	-	8	1,5	(Pz1) 620X630X1030	1 "
<b>VRV250</b>	AAARE01R21EA1	986	650	-	8	1,5	(Pz1) 670X680X1290	1 "
<b>VRV300</b>	AASRE01R11EA1	1168	650	-	8	1,5	(Pz1) 670X680X1290	1 "
<b>VRV400</b>	AATRE01R21FA1	1093	750	-	8	1,5	(Pz1) 750X770X1510	1 1/4 "
<b>VRV500</b>	AAURE01R21FA1	1347	750	-	8	1,5	(Pz1) 750X770X1510	1 1/4 "
<b>VRV600</b>	AAVRE01R11FA1	1610	750	-	8	1,5	(Pz1) 750X800X1650	1 1/4 "

**Vasi d'espansione a membrana intercambiabile**  
**Expansion vessels with replaceable bladder**  
**Vases d'expansion à vessie replaceable**

Marcati CE secondo la Direttiva - CE marked according to Directive - Avec le marque CE selon la Directive  
 PED 97/23/CE

### APPLICAZIONI

Elettropompe centrifughe monogiranti adatte a coprire richieste di piccole, medie e grandi portate.

Utilizzo in impianti domestici, agricoli e industriali, distribuzione automatica dell'acqua per mezzo di piccoli serbatoi (auto-clave), per irrigazione a pioggia e a scorrimento in giardino e agricoltura, per aumentare, in derivazione la pressione di rete degli acquedotti.

### APPLICATION

Single impeller centrifugal pumps suitable to cover any small, medium or large capacity request; for domestic, agricultural and industrial purposes; with automatic water distribution through small and medium sized tanks; for sprinkler and flood irrigation systems in gardening and agriculture; to increase in derivation system pressure in aqueducts.

### LIMITI D'IMPIEGO

- Temperatura liquido fino a 60°C
- Temperatura ambiente fino a 40°C
- Altezza d'aspirazione manometrica fino a 7 mt.
- Servizio continuo

### MOTORE

- Motore elettrico ad induzione a 2 poli ( $n = 2850 \text{ min}^{-1}$ )
- Isolamento Classe F
- Protezione IP 44

### MATERIALI

- |                     |                       |
|---------------------|-----------------------|
| - Corpo pompa       | Ghisa                 |
| - Supporto motore   | Ghisa                 |
| - Girante (22-27)   | Noryl                 |
| - Girante (32)      | Acciaio Inox AISI 304 |
| - Albero motore     | Acciaio Inox AISI 304 |
| - Tenute meccaniche | Ceramica/Grafite/NBR  |



CM 22

### OPERATING CONDITIONS

- Liquid temperature up to 60°C
- Ambient temperature up to 40°C
- Total suction lift up to 7 mt.
- Continuous duty

### MOTOR

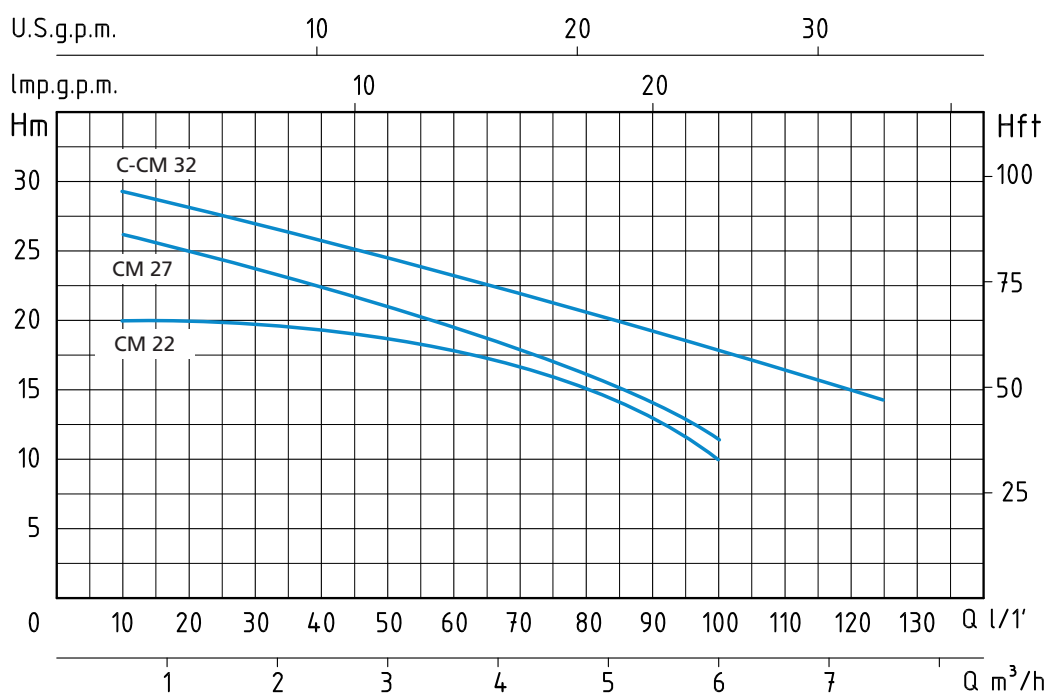
- Two-Pole induction motor ( $n = 2850 \text{ min}^{-1}$ )
- Insulation Class F
- Protection IP 44

### MATERIALS

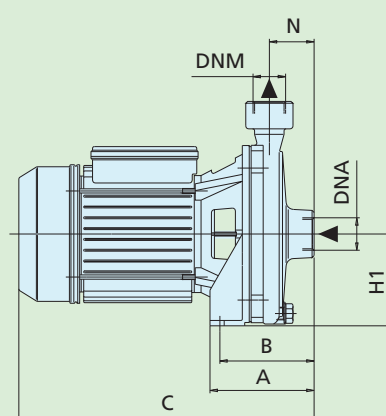
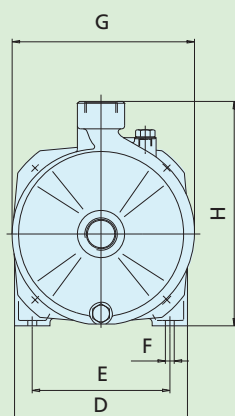
- |                    |                          |
|--------------------|--------------------------|
| - Pump body        | Cast Iron                |
| - Motor Support    | Cast Iron                |
| - Impeller (22-27) | Noryl                    |
| - Impeller (32)    | Stainless Steel AISI 304 |
| - Shaft with rotor | Stainless Steel AISI 304 |
| - Mechanical seal  | Ceramic/Graphite/NBR     |



CM 32



TIPO TYPE		POTENZA NOMINALE NOMINAL POWER		POTENZA ASSORBITA INPUT POWER	AMPERE		Q = PORTATA - CAPACITY							
Monofase Single-phase	Trifase Three-phase	P2		P1	Monofase Single-phase	Trifase Three-phase	m³/h	0,6	1,2	2,7	3,6	5,4	6	7,5
		HP	kW	kW	1 x 230V	3 x 400V	lt/1'	10	20	45	60	90	100	125
230V-50Hz	230/400V-50Hz						Prevalenza manometrica totale in m.C.A. - Total head in meters w.c.							
CM 22		0,5	0,37	0,65	2,8	1,2	H (m)	20	18	17	16	12	10	
CM 27		0,75	0,55	0,9	4	1,7		27	25	20	18	14	12,5	
CM 32	C 32	1	0,75	1,2	5,5	2,3		29	28	26	23	20	18	14



TIPO TYPE		DIMENSIONI mm - DIMENSIONS mm												DIMENSIONI DIMENSIONS mm			PESO WEIGHT
Monofase Single-phase	Trifase Three-phase	A	B	C	D	E	F	G	H	H1	N	DNA	DNM	P	L	H	Kg
CM 22		100	90	260	162	126	9	164	205	83	47	1"	1"	180	300	250	8
CM 27		108	98	300	176	140	9	186	229	94	50	1"	1"	195	340	250	9,2
CM 32	C 32	108	98	300	176	140	9	186	229	94	50	1"	1"	195	340	250	11,8