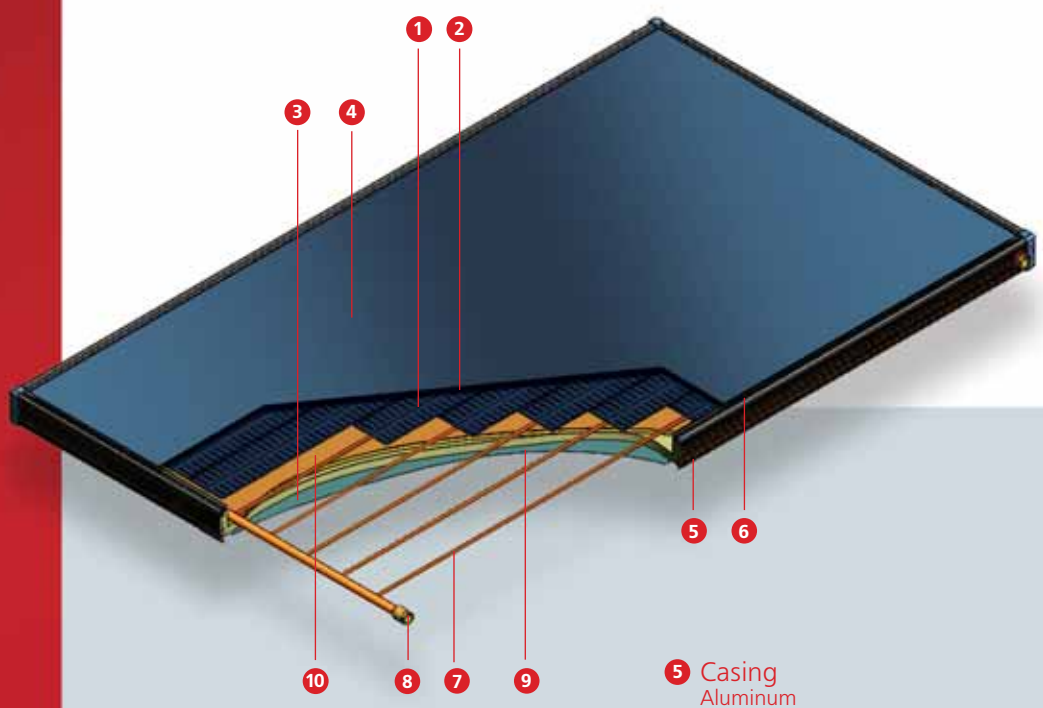


Solar Collectors

Chromagen has fine-tuned the design and manufacture of solar collectors to an art. Collectors are assembled using quality materials and advanced techniques, which result in highly efficient, durable products you can depend on for years to come.

The products are environmentally friendly, remarkably versatile and offer high performance even in extreme environments.

The wide range of solar collectors enables Chromagen to provide cost-effective solutions which comply with a variety of international standards, and fulfill different requirements.



1 Absorber Plate

The Absorber Plate consists of copper fins ultrasonically welded to copper risers, which provide excellent heat transfer between the fins and risers, ensuring high efficiency. Superlative selectivity offers a high absorption rate of 0.95 with extremely low emissivity.

2 Absorber Plate Coating

The absorber plate is coated either with a sputtering coating or with black chrome on nickel, or with a special selective solar paint. All provide a superior surface, highly efficient in solar energy applications. This also allows for excellent energy absorption even in cooler climates.

3 Insulation

The absorber plate is encased in 30mm rigid polyurethane foam that meets US and European standards. A 20mm layer of mineral wool protects the polyurethane while providing additional insulation to retain the heat in the collector.

4 Solar Glass Glazing

The single pane 3.2 mm solar glass is patterned to reduce reflection and tempered to maximize strength and durability. The low iron oxide content of 0.03% enables a high solar transmittance of 91%.

5 Casing
Aluminum

All the aluminum extrusion casing is fitted with integral slots for easy rooftop attachment with solid construction available in black or red. Its unique design bolts on and anchors to the roof (shingled, tiles, tar) or collector stand.

Stainless Steel

Stainless steel casing provides maximum protection against corrosion, particularly important for coastal locations with a high salt content.

Galvanized Steel

Inexpensive yet durable, galvanized steel casings are available in black or white polyester finishes.

6 Gasket

The all-around EPDM gasket is highly resistant to temperature variations and UV radiation. Absorbing the differential expansion of frames and glazing.

7 Tubing Grid

5/8" or 8 mm copper risers brazed to 1 1/8" or 7/8" copper manifolds with optimal flow distribution.

8 Piping Connection

Four BSP female brass connections.

9 Back Plate

Made of Black Polypropylene sheet.

10 Aluminum Foil

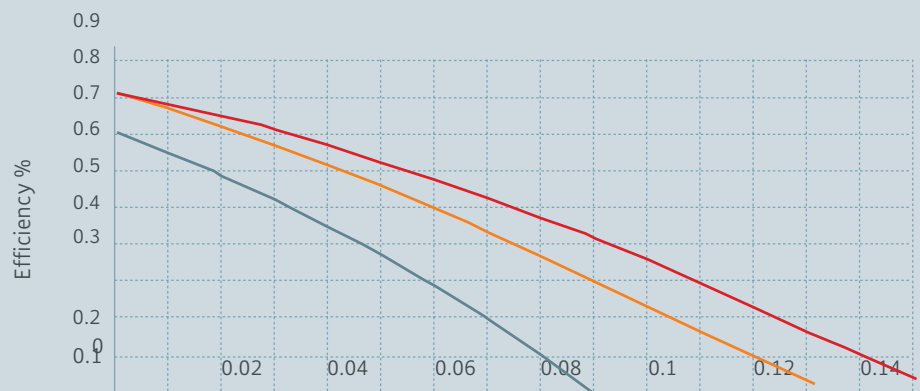
Attached to the insulation. The aluminum foil acts as a barrier against out-gassing.

Specifications

Model	CR-90	CR-100	CR-110	CR-120
Gross area (m ²)	1.70	2.10	2.40	2.80
Net aperture area (m ²)	1.50	1.90	2.20	2.60
Ratio net/gross area	0.88	0.90	0.91	0.92
Length (cm)	182	190	219	219
Width (cm)	93	109	109	129
Thickness (cm)	9	9	9	9
Weight (kg)	32	39	44	51
Fluid capacity (liter)	2.70	3.20	3.50	4.10
Test pressure (bar)	14	14	14	14
Operating pressure (bar)	10	10	10	10
Thermal efficiency (x = 0.050) (%)	61	62	62	63
Heat output				
Summer (850 W/m ²) (kW)	0.92	1.2	1.3	1.6
Winter (450 W/m ²) (kW)	0.43	0.52	0.57	0.71

Due to on-going development specifications are subject to change, without notice

Efficiency Curve



$$x = \frac{T^m - T^a}{G}$$

- Selective Paint ———
- Black Chrome ———
- Sputtering ———

T^m = Water temp; $\frac{T_{out} + T_{in}}{2}$

T^a = Ambient temp

G = instantaneous solar radiation

