Copper Sun Solar Collector Model No. **CS-450S**

**Connection method:** Side  
**Capacity:** 50 gallons  
**Aperture area:** 29.93 square feet  
**Gross Weight - Empty:** 327.9 lbs (148.7 kg)  
**Gross Weight - Filled:** 745.15 lbs (338 kg)  
**Foot Print Area:** 33.43 square ft  
**Aperture Length:** 95.25 inches (2.42 m)  
**Aperture Width:** 35.25 inches (.9 m)  
**Frame Width:** 48.75 inches (1.238 m)  
**Frame Length:** 98.75 inches (2.508 m)  
**Connection:**  
1) **Center to center dimension:** 37.12 inches (.9 m)  
2) **Center to edge of frame:** 5.12 inches (.013 m)  
3) **Center to bottom of frame:** 3.25 inches (.083 m)  
4) **Solder joint:** 3/4 inch, 2-3/4 inch Nom. Type K copper tube 7.8” O.D.  
**Collector Height:** 6.437 inches (.164 m)  
**Working fluid:** potable/domestic tap water  
**Absorber tube:** a) Material: 4 inch nominal diameter DWV copper tubing, 0.058 inch wall thickness, with selective coating.  
  b) Tubing shall not be a rolled seam welded tube.  
  c) End of absorber tube shall be machine spun to form a perfect bullet nose round end.  
  d) Absorber shall be TIG welded in a progressive serpentine configuration that allows for a maximum efficiency with minimum of water mixing.  
**Selective coating:** Solkote  
  a) Minimum absorptivity: 95 percent  
  b) Maximum emissivity: 56%  
**Header Tube:** 3/4 inch nominal type “K” copper formed copper tube .062 inch wall.  
**Glazing:** 1/8 inch thick, low-iron tempered glass with minimum transmissibility of 91%  
**Gasket material:** EPDM  
**Frame material:** 6063 T-5 aluminum.  
**Frame Finish:** Powder coated paint  
**Insulation:** polysocyanurate, minimum one inch thickness conforming to ICBO Research report #3223 with 0.012 inch thick laminated aluminum sheet.  
**Flashing:** CopperSun segmented roof flashing pan.  
  a) Length: 110 inches.  
  b) Width: 48 inches for CS330B and CS340B/60 inches for CS440B and CS450B.  
  c) Material 24 gauge galvanized sheet metal.  
  d) Flashing pan only weight: 43.2 lbs. For CS340B and CS440B: 43.2 lbs. For CS440B and CS 450B: 52.7 lbs  
  e) Flashing pan assembled weight: 48.5 lbs.  
  f) Flashing pan upright height: 3.5 inches.

**Certification:** This solar hot water heating system is certified by the Solar Rating Certification Corporation (SRCC) under system standard OG-300.