

# SOLAR WATER WATERS

For domestic use



## Consol™ Non-Pressurised series (Thermosiphon)

KMX-D189-18, KMX-D210-20, KMX-D252-25, KMX-D310-30

- ✓ Simple & direct solar water heating technology
- ✓ Operates in cloudy weather too
- ✓ Stainless steel tank and durable aluminium frame.
- ✓ Reliable and trouble-free operation
- ✓ Suitable for flat roof and sloped roofs
- ✓ Higher energy yield than some flat-plate collectors
- ✓ Pays back the cost of itself, generating free hot water for many years to come!

### How does it work?

A solar vacuum tube consists of two glass tubes made from extremely strong borosilicate glass. Both tubes are sealed together with a vacuum in the space between them. The inner coated tube acts like a black body and absorbs most of the incident solar radiation and is heated up in the process. The vacuum in between the two glass tubes will prevent the heat energy entrapped from being dissipated. The absorbed heat energy is then passed on to the cold water flowing into the glass tube and thereby heating it up.

Consol vacuum tubes use design features of a thermos flask with a vacuum between two glass tubes. This results in a higher energy yield than some flat-plate collectors. They have an additional feature which shows even the smallest leak.



## FEATURES

**Features:** Long life, beautiful shining finish and low cost

**Inner tank:** SUS304 2B Food Grade quality stainless steel, superior water quality.

**Outer shell:** Galvanised sheet, with aluminum-zinc-fluorine carbon silvering, 0.4mm thick

**Colour:** Mirror surface finish and elegant silver colour appearance.

**Insulation layer:** 50-60 mm polyurethane foam for superior heat preservation.

**Cold Water Feeding:** Automatic, Mechanical Flow Control

**Bracket:** SUS304 stainless steel, excellent stability.

**Support Frame:** Corrosion resistant reinforcing aluminium alloy, lightweight and sturdy.

**Vacuum tube:** Made from the hard borosilicate glass and 25mm hail resistant.

SPECS/ MODEL	KMX-D189-18	KMX-D210-20	KMX-D252-24	KMX-D310-30
<b>Size of Tank (L)</b>	189	210	252	310
<b>Size of Tubes (dia. x length)</b>	Ø58 x 1800mm	Ø 58 x 1800mm	Ø 58 x 1800mm	Ø 58 x 1800mm
<b>No. of Tubes</b>	18	20	24	30
<b>Area covered (m<sup>2</sup>)</b>	2.24 (1700*1320mm)	2.52 (1700*1480mm)	2.88 (1700*1690mm)	3.33 (1700*1960mm)
<b>Full tank weight (kg)</b>	230	260	300	380
<b>Hot Water Yield (kg/day)</b>	130 - 350	160 - 450	200 - 500	260 – 580
<b>Water Temperature (°C)</b>	45 - 95	45 - 95	45 - 95	45 – 95
<b>Bathing Number (Person)</b>	4 - 9	5 - 11	6 - 13	7 - 16

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Brackets for sloped roofs



Brackets for flat roofs

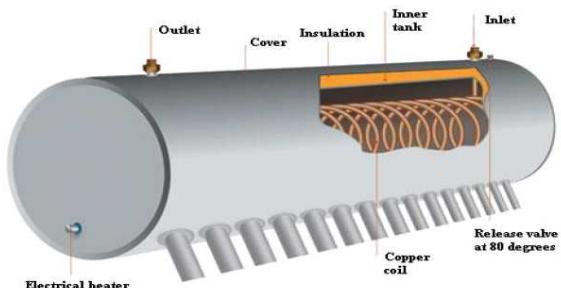
## Consol™ Pressurised series (Coiled)

KMX-C210-20, KMX-C252-24, KMX-C310-30

- ✓ Latest solar water heating technology
- ✓ Operates in cloudy weather too
- ✓ Stainless steel tank and durable aluminium frame.
- ✓ Maintains same pressure as your mains supply
- ✓ Separated heat source and usable water
- ✓ Automatic electronic flow controls
- ✓ Reliable and trouble-free operation
- ✓ Suitable for flat roof and sloped roofs
- ✓ Pays back the cost of itself, generating free hot water for many years to come!

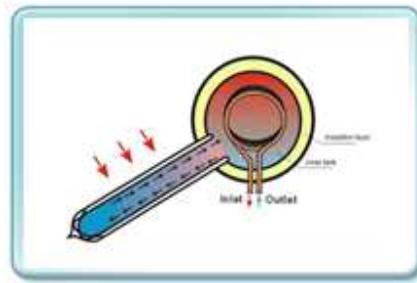
### How does it work?

Mains Pressure Solar Water Heaters improve performance of solar water heaters using an internal copper coil exchange. By doing so, it overcomes the disadvantages of traditional solar water heater such as limited hot water, small water output, taking time to heat and worsen water quality. The "secondary heat exchange" technology makes high temperature, high efficiency and fast circulation of hot water a reality.



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## FEATURES

**Features:** Long life, beautiful shining finish and low cost

**Inner tank:** SUS304 2B Food Grade quality stainless steel, superior water quality.

**Outer shell:** Galvanised sheet, with aluminum-zinc-fluorine carbon silvering, 0.4mm thick

**Colour:** Mirror surface finish and elegant silver colour appearance.

**Insulation layer:** 50-60 mm polyurethane foam for superior heat preservation.

**Cold Water Feeding:** Automatic, Electro-Solenoid Flow Control

**Bracket:** SUS304 stainless steel, excellent stability.

**Support Frame:** Corrosion resistant reinforcing aluminium alloy, lightweight and sturdy.

**Vacuum tube:** Made from the hard 3.3 borosilicate glass and 25mm hail resistant.

**Copper Coil:** 30 - 40 meter;

**Internal Working Pressure:** 0.6-0.8 Mpa

**Copper Coil Working Pressure:** Same as mains pressure

**Controls:** Automatic electronic solar controller w/ level sensors

**Options:** Built-in electric heating element backup (optional)

SPECS/ MODEL	KMX-C210-20	KMX-C252-24	KMX-C310-30
<b>Size of Tank (L)</b>	210	252	310
<b>Size of Tubes (dia. x length)</b>	Ø58 x 1800mm	Ø 58 x 1800mm	Ø 58 x 1800mm
<b>No. of Tubes</b>	20	24	30
<b>Tank diameter (mm)</b>	470	470	470
<b>Area covered (m<sup>2</sup>)</b>	2.88 (1700*1690mm)	3.33 (1700*1960mm)	4.15 (1700*2440mm)
<b>Full tank weight (kg)</b>	270	310	390
<b>Hot Water Yield (kg/day)</b>	160 – 450	200 - 500	260 - 580
<b>Water Temperature (°C)</b>	45 - 95	45 - 95	45 - 95
<b>Bathing Number (Person)</b>	5 - 11	6 – 14	6 - 18

Values are subjected to change without prior notice.

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## Vacuum Tube Specifications:

Degree of vacuum	$\geq 5 \times 10^{-3}$ Pa
Coating:	Al -N- Al
Absorption coefficient:	$\geq 0.93$
Emissivity:	$\leq 0.08$
Starting temperature	$\leq 25^\circ\text{C}$
Max. temperature:	$\geq 250^\circ\text{C}$
Freezing resistance	-18 °C
Service life:	$\geq 15$ years
Wind resistance:	30m/s (grade 11)
Hail proof:	25mm
Glass material:	Concentrated borosilicate glass 3.3
Heating-up coefficient:	>95%
Size of single tube:	$\varnothing 58 \times 1800$ mm

Values are subjected to change without prior notice.



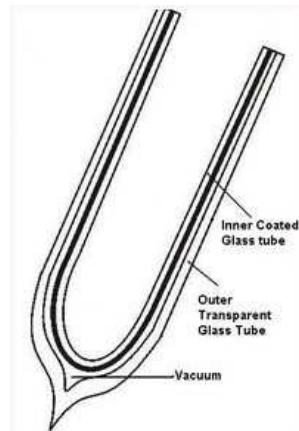
## Description

A solar tube consists of two glass tubes made from extremely strong borosilicate glass. The outer tube is transparent allowing light rays to pass through with minimum reflection.

The inner tube is coated with special selective coating (AL—Ni—Al) which has excellent solar radiation absorption and minimal reflection properties.

The top of the tubes are fused together and the air contained in the space between the two layers of glass is pumped out while exposing the tube to high temperatures. This evacuation of the space between the two glasses forms a vacuum which is an important factor in the performance of the solar tube.

In order to maintain the vacuum between the two glass layers a Barium Getter is used. During manufacture of the solar tube this getter is exposed to high temperatures which cause the bottom of the vacuum tube to be coated with a pure layer of Barium. This Barium layer actively absorbs any CO, CO<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>O and H<sub>2</sub> Out-gassed from the Solar Tube during storage and operation thus helping to maintain the vacuum.



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