

**electra**  
The solar energy expert

**We're your friends. Talk to us!**

**WE PUT THEM UP,  
THE SUN DOES THE REST!**



ELECTROTHERM SOLAR LTD.

414 /1, Phase II, GIDC Vatva, Ahmedabad- 382445, Gujarat (INDIA).  
Tel.: (079) 6618 6500 | E-mail: [electra@electrotherm.com](mailto:electra@electrotherm.com)  
[www.electrothermrenewables.com](http://www.electrothermrenewables.com)



# SOLAR ENERGY: UNLIMITED POSSIBILITIES

In a world, where costs of fossil fuels are rising, their reserves are fast depleting and the environment is at risk, the sun can be an ideal solution for our energy needs.

The sun, with its inexhaustible energy reserve, can cater to the entire world's energy needs for few millenniums and hence, presents us with unlimited possibilities! Moreover solar energy is clean energy which helps us breathe easy & pure.

Presenting eleCtra- a range of solar water heating solutions from the house of Electrotherm! Manufactured with premium quality material in our state-of-the-art plant, our solar water heaters work even in the toughest of climatic conditions and freezing temperatures. Solar water heaters and products under the 'eleCtra' brand are your best bet in terms of value for money, efficiency and longevity. Go green with eleCtra today!

## There is an eleCtra for everyone!

Electrotherm Solar Limited started its journey to serve clients with renewable solar energy solutions including Photovoltaic, Thermal & Solar Appliances. We are an MNRE (Ministry of New & Renewable Energy, Govt. Of India) approved and awarded manufacturer.

eleCtra, our range of solar water heaters, have capacities ranging from 100 liters per day (LPD) to several thousand LPDs. We have a manufacturing capacity of 7.2 million LPD systems per annum. Our water heaters can work in sub-zero climatic conditions say in Leh-Ladakh and in the hottest zones of India as well, say Rajasthan. So far

we have installed more than 6 million solar water heating systems across India.

At Electrotherm, our range of solar water heating solutions can cater to everyone, right from small domestic requirements to large scale industrial requirements. Switching to an eleCtra is one of the best things you can do to minimize your household energy consumption. Our design and engineering expertise makes eleCtra the most preferred choice in the market. There's a system to suit every home/industry, regardless of where you are based and what your budget is.



## What makes eleCtra perfect for you?

Because eleCtra is superior in performance, it can pay for itself over the life of the system. eleCtra protects you against rising energy prices. eleCtra is designed and manufactured in India to suit the country's varied and harsh climates and is backed by an extensive service network. We ensure that our customers get the best solar water heating experience.

### Happiness is a long hot bath with eleCtra!

## More reasons to choose eleCtra:



Hot water all day, all year



Negligible operating cost



High durability (lasts up to 15 years)



Major savings on your electricity bill



Negligible maintenance cost



Safe for homes & industries (Risk & hazard-free)



Reduces your carbon footprint



Modular design & easy installation



Customized according to your need

## The eleCtra range

### 1 eleCtra Evacuated Tube Collector Solar Water Heater

The most popular of all our Solar Water Heaters, this model boasts of premium quality with reliability owing to its excellent performance even in adverse weather conditions. Manufactured at our state-of-the-art facility with the best-in-class raw materials, it has helped numerous customers to substantially save on their electricity bills and fuel expenses like gas, diesel, etc. The use of high efficiency evacuated tubes ensure maximum absorption of solar energy. High quality tank insulation ensures negligible drop in the hot water temperatures at nights or even in cold climatic conditions.



#### Key Features:

- Modular design & easy installation
- High efficiency evacuated glass tubes with absorptivity > 92% & emissivity < 0.065
- 3 Layer absorber target coating –
  - (a) Cu for Infrared Reflection Layer
  - (b) SS-AlN for Bonding Agent cum Absorption Layer
  - (c) AlN–Absorption cum Antireflection Layer
- Tube OD, Length, Thickness: 58 mm, 1800-2100 mm, 1.6 mm
- Inner & Outer Sealing: High temperature silicon rubber, EPDM
- Structure: Hot-dip galvanized, powder coated
- Tank: SS, MS, GI
- Tank Insulation: PUF (38 kg/m<sup>3</sup> & 50 mm thick), Rockwool (100 kg/m<sup>3</sup> & 100 mm thick)

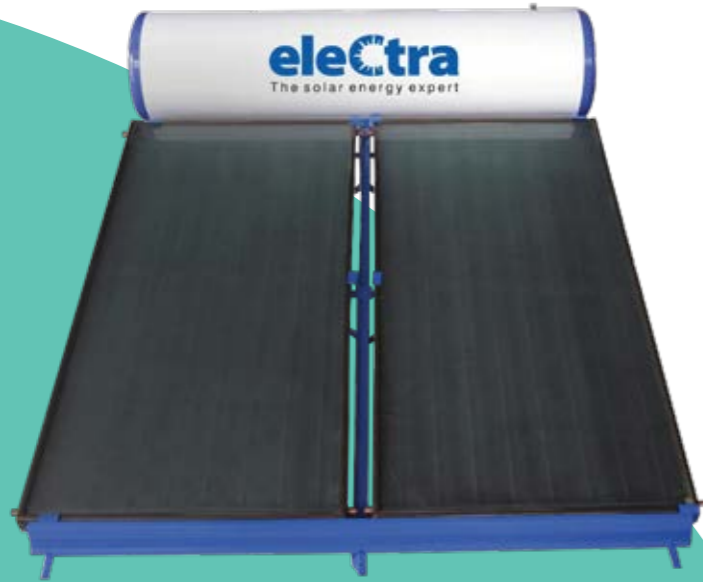
#### Technical Specs:

Tank Capacity	No. of Tubes	Tube Size (Length)	Tank MOC	Collector Area (m <sup>2</sup> )	Suitable for (No. of people)	Installation Space Required (NS X EW)
100	10	58 mm OD X 1800 mm	SS 304 L, SS 316 L, Galvanized Steel	1.5	3-4	2.5 m X 1.2 m
150	15			2.25	5-6	2.5 m X 1.7 m
200	20			3	7-8	2.5 m X 2.2 m
300	30			4.5	10-12	2.5 m X 3.4 m
500	34	58 mm OD X 2100 mm		6.5	16-20	3.0 m X 3.4 m

#### Savings on using an eleCtra 100 LPD System:

Parameters	Electricity	LPG (10500 kcal/kg)	Diesel (8500 kcal/ltr.)	PNG (8500 kcal/SCM)
Per day savings	3.5 units	0.34 kg	0.42 ltr.	0.42 SCM
Price per unit	Rs. 7/-	Rs. 70/-	Rs. 58/-	Rs. 35/-
Per day savings	Rs. 24.50/-	Rs. 23.80/-	Rs. 24.36/-	Rs. 14.70/-
Annual usable days	300 days	300 days	300 days	300 days
Annual savings	Rs. 7,350/-	Rs. 7,140/-	Rs. 7,308/-	Rs. 4,410/-

Note: Efficiency of oil & gas hot water generator is considered to be 85%



## 2 eleCtra Flat Plate Collector Solar Water Heater

It is a solar collector that has copper fins which are connected with a riser tube (copper) by ultrasonic welding. The tube & fins are coated with special solar selective coating to increase the heat absorption from the sun. A series of riser tubes are connected with both the bottom and the top hot water heater and hence water gains heat from the solar energy and flows upwards.

### Key Features:

- Hot water up to 70°C
- Collector area: 2.0 m<sup>2</sup>
- ISI & MNRE Approved
- Dimensions: 2025 mm x 1025 mm x 96 mm
- As per IS Standard (IS 12933 Part 1: 2003)
- Riser material: Copper (minimum 99% Cu)
- Fin: Ultrasonic welded copper
- Absorber coating: Solar selective coating
- Box material: Aluminum extrusion, anodized
- Collector insulation: Rockwool pads for side & bottom
- Top cover: IS 2553 (Part 1) toughened glass >82 % transitivity
- Reflector foil: Aluminum reflector
- Bottom plate: Aluminum
- Structure: Powder coated
- Tank: SS, MS, GI
- Tank insulation: PUF (38 kg/m<sup>3</sup> & 50 mm thick), Rockwool (100 kg/m<sup>3</sup> & 100 mm thick)

## 3 eleCtra Evacuated Tube Collector Manifolds

Evacuated Tube Manifolds are used for large-scale commercial and industrial projects where there are higher hot water requirements. A set of 50 tubes (25 on each side) is connected with a common header manifold in the center. Cold water enters the manifold and the tubes from the bottom, gain heat energy from the sun and flow upward. Based on the system design, many manifold collectors are connected in a combination of series and parallel connections. Flow and circulation of water is regulated through suitably designed pumping systems as per process requirement.



## 4 eleCtra Heat Pipe Solar Water Heater

The Heat Pipe Solar Water Heater works on the principle of Thermo-Siphon. The copper heat pipe is filled partially with special heat transfer liquid. An aluminum fin or plate is attached to the heat pipe to increase the absorption area. The entire arrangement is enclosed in an evacuated glass tube. The heat pipe has two portions – (1) Shaft & (2) Condenser bulb. The shaft is placed inside the evacuated tube collector and the bulb is connected to a header manifold. Once solar energy is gained by the shaft inside the evacuated tube, the heat transfer liquid is heated up and partially vaporises inside the heat pipe. The liquid and vapor mixture moves up & releases heat in the header manifold (bulb). Thus, the water inside the manifold gets heated up to 120°C.



### Technical Specs:

Tank Capacity	No. of Heat Pipes	Tube Size	Tank MOC	Collector Area (m <sup>2</sup> )
200	20	58 mm OD X 1800 mm (Length)	SS 304 L, SS 316 L, Galvanized Steel	3.0 m <sup>2</sup>
300	28			4.5 m <sup>2</sup>

# The eleCtra Advantage

There are many reasons why eleCtra is ahead of competition. Be it superior quality, Indian manufactured inner parts, extensive service network, products tested at 1.5 times the working pressure, automatic welding process for all joints or the galvanised iron structures for better strength and longevity, everything together ensures that the product pays for itself. And is a smarter investment than any other brand available in the market today!

## Typical Cost Comparison Chart:

Comparison for heating 100 litres/day	Electrical Geyser	Gas Heater	eleCtra (SWHS)
Capital cost	Rs. 5,000/-	Rs. 5,000/-	Rs. 16500/-
Life	5-7 Years	5-7 Years	10-12 years
Annual fuel cost	Rs. 7,350/-	Rs. 4,410/-	Nil
Total fuel consumption cost after 5 years	Rs. 36,750/-	Rs. 22,050/-	Nil
Total cost after 5 years	Rs. 41,750/-	Rs. 27,050/-	Rs. 16500/-

**WE DO NOT INHERIT  
THE EARTH  
FROM OUR PARENTS;  
WE BORROW IT  
FROM  
OUR CHILDREN.**



# Spreading the word about solar power



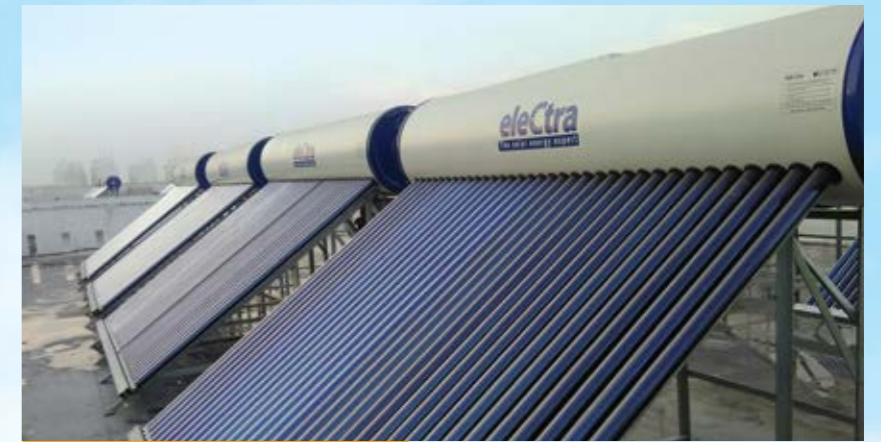
## Electrotherm, the parent company!

Founded in 1983, Electrotherm (India) Limited is a well-known global major with annual turnover of Rs. 2500 Cr. in the Metal & Heavy Engineering industry. Since its inception, Research & Development has been the core competency of Electrotherm. Today, Electrotherm is known globally for engineering and projects, steel and pipes, power transmission, transformers, electric vehicles and renewable energy. We are present in more than 35 countries in the Middle East, Africa, SAARC and Europe.

## We know our products because we build them.

We don't just put components together; we provide customized solutions to deliver maximum performance. We design and manufacture virtually all our products, including many of the components. From storage tanks to galvanized iron structures, everything is designed and manufactured specifically to work together.

Beautiful outside.  
**Powerful inside.**



GLA University, Mathura



Homeopathic Hospital, Siddhpur



Cipla, Goa

Hotel City Palace(HRH), Udaipur