



**CELSIUM 250**

**SOLAR BASED HEATING SYSTEMS:  
AN ECO-FRIENDLY WAY TO REDUCE FUEL  
COSTS!**

*Celsium250 is the most efficient solar thermal energy solution.*

*It uses state-of-the-art parabolic dish technology that can provide heating solutions with near-zero recurring costs.*

*Designed to maximize thermal absorption, Celsium250 efficiently converts incident solar radiation into thermal energy and delivers it with zero-convection losses.*

*Using heat transfer mediums like water, steam or thermic fluid, these technologies can be effectively used to reduce fuel consumption by boilers and various industrial processes – Resulting in savings that keep adding to your company's profits.*

- ✓ **The Celsium250 uses fixed point focus parabolic dish technology**
- ✓ **It provides medium temperature heating applications across industries with a temperature range of 100-160 degree centigrade and a high efficiency**
- ✓ **Solar based heating systems can reduce the carbon emissions by boilers and other industrial processes**
- ✓ **Investment cost can be easily recovered**



## **Application**

*The generation of heat constitutes a major portion of the energy consumption costs across industries & processes.*

Here are just a few of the industries and processes that are turning to Celsium250 for their heating requirements. The Celsium250 operates for 8-10 hours per day, thus reducing the dependence on the fossil fuel based heating systems.

| <b><u>Industry</u></b> | <b><u>Process</u></b>  |
|------------------------|--|
| All industries         | <b>Laundry, Furnace Oil Heating, Boiler feed water heating</b>             |
| Food & Beverages       | <b>Drying, washing, pasteurizing, boiling, sterilizing, Heat treatment</b> |
| Textile                | <b>Washing, bleaching, dyeing</b>  |
| Chemical               | <b>Boiling, distilling, various other processes</b>                        |
| Canteen                | <b>Centralized cooking</b>   |
| Water treatment        | <b>Desalination</b>  |
| Laundry                | <b>Washing, ironing</b>  |

## Technology

This powerful solar application uses parabolic concentrators of large surface areas (16M<sup>2</sup>) to focus solar energy on to receivers that convert thermal energy to heat.

The design is such that all mirrors on a concentrator reflect sunlight focused onto a receiver. Convection loss due to external conditions is reduced using an evacuated chamber which drastically reduces the convective losses due to wind and other atmospheric conditions.

These receivers maintain a high temperature which facilitates continuous heating during periods of clear solar radiation.

The Celsius250 uses a microcontroller based tracking system to track the movement of the sun from east to west.

## Technical specifications

|                                     |   |
|-------------------------------------|---|
| Reflective area/Dish                | 16m <sup>2</sup>  |
| Absorbed radiation/Dish/Hour*       | 5000 – 6700 Kcal/Hr   |
| Area required/Dish for installation | 6x6 Mts.  |
| Type of area required               | <ul style="list-style-type: none"><li>• Shadow free area</li><li>• RCC roof</li><li>• Shadow free ground location</li></ul> |
| Hours of operation of system/Day*   | 8-10 hours  |
| Maintenance                         | Minimal maintenance   |
| Water supply                        | RO water or Soft water  |
| Weight of one dish & receiver       | 450 Kg.   |

\*-Varying according to site location

\*\* - Steam Pressure is as per requirement of utility

## Government Incentives

### *Jawaharlal Nehru National Solar Mission towards Building SOLAR INDIA*

India is endowed with vast solar energy potential. About 5,000 trillion kWh per year energy is incident over India's land area with most parts receiving 4-7 kWh per sq. m per day. India has been a pioneer in using solar concentrating technologies for the purpose of steam generation for various applications. World's largest system for cooking in community kitchen has been installed at Shirdi in Maharashtra to cook food for 20,000 people per day and is saving around 60,000 kg of LPG every year. Ministry would like to cover at least 1000 large solar cooking systems by 2022. All institutions including large institutions with hostels, hospitals/medical colleges, military/para-military establishments, industrial organizations, wherever large number of meals is cooked, are the targets. Essentially, these will reduce the consumption of cooking gas.

**MNRE is providing Central financial assistance of ₹5400/Sq.mt of reflective surface.**

## About Airier Natura

[www.airier.com](http://www.airier.com)



Airier Natura Pvt. Ltd. is a front runner in the field of renewable energy in India. Distinguished by our reliability, infrastructure, operational expertise and work-ethic, we deliver quality energy solutions.

Established in 2002, the Airier Group is based in Bangalore and has a branch office at Gurgaon. At present our employee strength is around 200 and our annual turnover is over ₹500 million.

Our contributions to the renewable energy industry, in the form of our high quality solar water heaters and our reliable and robust wind turbine ventilators help save thousands of rupees across homes and industries throughout India.



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