



CELSIUM 250

**COOKING USING SOLAR ENERGY:
AN ECO-FRIENDLY WAY TO REDUCE FUEL
COSTS!**

- ✓ **The Celsius250 uses parabolic dish technology to generate steam**
- ✓ **It is an eco friendly substitution to an existing cooking system using fossil fuel**
- ✓ **Solar generated steam can replace the boiler used in kitchens, thus saving fuel used for cooking in large kitchens**
- ✓ **Investment cost can be easily recovered**



Application

Steam cooking using fossil fuel boilers is currently being used extensively across the country.

The Celsius250 operates for 8-10 hours per day, thus reducing the dependence on the conventional steam generation systems.

Steam generation time – Anytime after 8/8.30 AM

Items that can be prepared using steam

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|--|---------------------------------|
| ⊗ Rice preparations | ⊗ Boiling Vegetables |
| ⊗ Sambhar | ⊗ Steam cooked items like Idlis |
| ⊗ Dal Preparations | ⊗ Rasam |
| ⊗ Noodles, Pasta, Semiya, Pulav, Biryani and many others | |

Salient features

- ✓ **Uses solar power to generate steam for cooking, saving thousands of rupees on fuel costs**
- ✓ **No additional infrastructure is required: The system will be connected to the existing steam generation system**
- ✓ **Minimal recurring costs**
- ✓ **Fully automated micro-controller based sun tracking system**
- ✓ **Makes great business sense with quick return on investment and government subsidy**

Technology

This powerful solar application uses parabolic concentrators of large surface areas (16M²) to focus solar energy on to receivers that convert water to steam.

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 convectonal losses due to wind and other atmospheric conditions.

These receivers maintain a high temperature which facilitates continuous steam generation 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 details

Reflective area/Dish	16m ²
Steam generated/Dish/Hour*	6-9 Kgs
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"> • Shadow free area • RCC roof • Shadow free ground location
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



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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