

Community Solar Cooker for Indoor Cooking

The unique feature of this cooker is that it is possible to cook using solar energy within the kitchen itself. The 7 m. sq. large reflector standing outside the kitchen reflects the solar rays into the kitchen through an opening in its North wall while a secondary reflector further concentrates the rays on to the bottom of the pot / frying pan painted black. The temperature attained is so high (400 C) that the food could be cooked in a shorter time unlike box solar cooker. It therefore acts like a conventional cooking device with the difference that instead of conventional cooking fuel like gas, electricity or firewood, the food is cooked with the help of solar energy.



Cooker installed in a hostel at Gujarat; outside view (above) & inside view (below)

The salient features of the cooker are as below:

Community cooking: Cooking for about 40 to 50 persons is possible with 7 sq. m., size dish cooker. Same is not possible with other types of solar cookers. One dish may take around 1 to 2 hours depending on the type of dish and solar insolation available. The cooker, however, works nicely in areas where solar insolation is good during most part of the year. It is possible to cook two meals with the cooker in those areas.

Indoor Cooking : Since the solar rays are directed into the kitchen, it enables cooking indoors. The cook, therefore, does not have to go outside in the sun to load and unload the cooking pots as being done in Box Solar Cooker.

Fast cooking : Due to high temperature and power at focal point, the cooking rate is significantly higher compared to other solar cookers.

Cooking of traditional food : Due to high temperature it is possible to cook almost all traditional dishes including making chapatis, purees, dhosa etc. as well as doing 'Vaghar'/'Tadka' before adding the vegetables, dal etc. With box-type cookers many of these traditional dishes which requires frying are not possible.

Automatic tracking : There is a mechanical clockwork arrangement which rotates the outside primary reflector to track the sun automatically. The cook has to set this

reflector in focus only once a day in the morning and thereafter for rest of the time the clockwork keeps on rotating the reflector automatically.

Seasonal adjustment : With shifting of two arms provided in the reflector frame it is possible to change the curvature of the parabolic reflector for seasonal adjustment; thus keeping it fully tracked with the sun during all seasons.

Multiple Use : During the period when cooker is not in use for cooking, it can be used for hot water production.

The cooker could be useful to residential schools, institutional kitchens such as industrial and administrative canteens, religious ashrams, hotels, hospitals, police and armed forces kitchens, etc. One cooker can serve for 50 people. For larger number of people, more cookers could be installed. It can save around 35 to 40 LPG cylinders/year on full use in community kitchens.

Bigger sizes for cooking food up to 100 people are also available.
