

## **Specifications of the solar simulator**

### **(Ref # MEE/2014/SSG/Simulator)**

Quotations are invited for the design and development of a customized lab-scale solar simulator that can assist in analyzing optical performance of an absorber tube housed inside a compound parabolic concentrator (CPC). The solar simulator should have light sources that can mimic the spectral intensity of solar radiation. The distance between the light source and the target reflector/collector/absorber should be about 2000 mm.

The total power emitted on the absorber should be around 10 kW. The setup should have provisions for profiling incident radiation intensity over the aperture of the CPC and around the absorber tube. Suitable surface temperature measurement device must be provided to observe surface temperature of the receiver tube and CPC. Provisions for varying the inclination of target devices with the incident radiation should also be provided. Suitable data collection system must be provided to log the intensity profile and temperature.

A compound-parabolic concentrator made of low-iron glass, having an aperture of the order of 350 mm and width of the order of 300 mm should be provided with mirror reflective finish.

The required number of lamps and heat-flux sensors will be provided by IIT Madras. Vendor should provide water cooling provision for the heat flux sensor.

The price quoted should also include the cost for design, installation and commissioning of the above setup.

Sealed quotations, in two parts (with separate technical and financial details) have to be sent to:

Prof. T. Sundararajan  
Dept. of Mechanical Engineering,  
IIT Madras, Chennai-600036,  
Tamil Nadu, India.

=====