

Title: **Fabrication and Irradiance Mapping of a Low Cost Solar Simulator for Indoor Testing of Solar Collector**

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### **Abstract**

The fabrication and testing of a solar simulator for indoor testing of solar collector are described. Consisting of Philips 500 W halogen lamps with built-in reflector, which are arranged at 30 cm apart, the system covers a test area suitable for a solar collector of size 120 cm by 53 cm. The height of the lamps above the solar collector under test is set to 160 cm. Measurement of the uniformity of the irradiance over the test area has been made. Four sets of irradiance mapping were performed at 466, 580, 686, and 804 W/m<sup>2</sup>, yielding at each point the irradiance uniformity percentage of 8.9, 7.6, 6.9, and 7.8%, respectively. The infrared radiation produced by the lamps was filtered by air flowing over the test area.