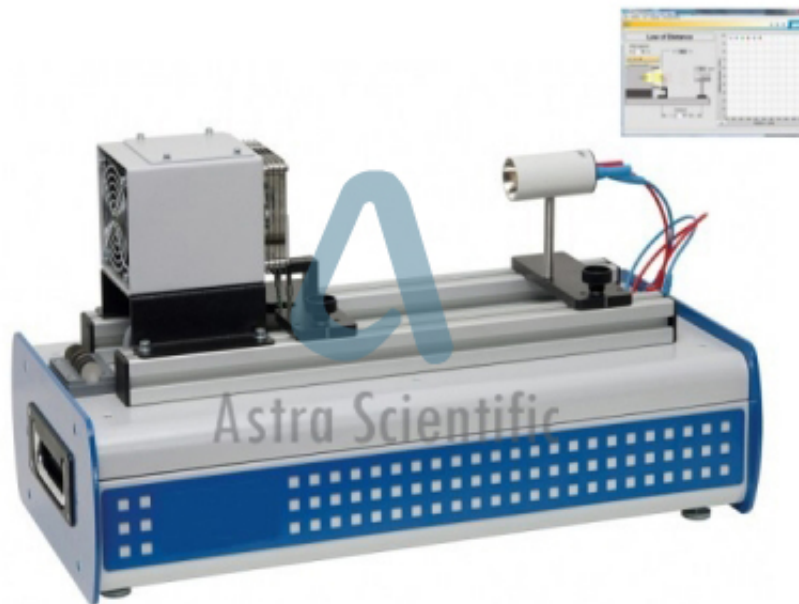


**Product Name :**  
Astra Scientific Computerized Emissivity Measurement Apparatus

**Product Code :**  
HeatMassLab0003



**Description :**

Astra Scientific Computerized Emissivity Measurement Apparatus

**Technical Specification :**

The Computerized Emissivity Measurement Apparatus offers basic experiments for targeted teaching on the topic of heat transfer by radiation. At the heart of the experimental unit is a metallic sample heated by a concentrated light beam. The light beam is generated by a continuously adjustable halogen lamp and a parabolic reflector. The reflector concentrates the radiation to a focal point. A sample is placed on a thermocouple located at the focal point. The thermal radiation emitted by the sample is measured by a thermopile. In order to be able to measure the radiation at different distances, the thermopile is mounted on a moveable carriage.

Heat radiation is one of the three basic forms of heat transfer. In radiation the heat transfer takes place via electromagnetic waves. Unlike heat conduction and convection, heat radiation can also propagate in a vacuum. Heat radiation is not bound to a material.

The microprocessor-based instrumentation is well protected in the housing. The software for system operation and for data acquisition and educational software. With explanatory texts and illustrations the educational software significantly aids the understanding of the

theoretical principles. The unit is connected to the PC via USB.

#### FEATURES:

- Effect of different surfaces on heat transfer by radiation
- Functions educational software, data acquisition, system operation
- Fundamentals of heat transfer
- Verify Lambert's inverse-square law
- Verify Stefan-Boltzmann law
- Verify Kirchhoff's law
- Study transient behavior  
Create power balances

#### SPECIFICATION:

- Halogen lamp

Electrical power 150W

Max. Temperature: approx. 560°C

- Aluminum samples, Ø 20mm

1x matt anodized on both sides

1x painted on both sides (high-temperature paint)

1x matt anodized with one painted side

- Copper samples, Ø 20mm

1x nickel-plated

1x heavily oxidized

- Steel sample, Ø 20mm

1x heavily oxidized

- Measuring ranges

temperature: 0...780°C

Radiation intensity: 0...1250W/m<sup>2</sup>

- Required for Operation

230V, 50Hz, 1 phase

230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase



## **Astra Scientific**

www.astrascientific.com, **Email:** info@astrascientific.com

**Address:** K-88, 20th Street, Annanagar, Chennai, India – 600040 **Phone:** +91-8860605265