

STUDY OF THERMAL AND LUMINOUS RADIATION



Experimental capabilities

- Study of thermal and luminous radiation.
- Demonstration of the laws of KIRCHOFF and LAMBERT and the inverse squares.
- Thermal and luminous energy according to the distance.
- Emission, absorption, reflection

Operating principle

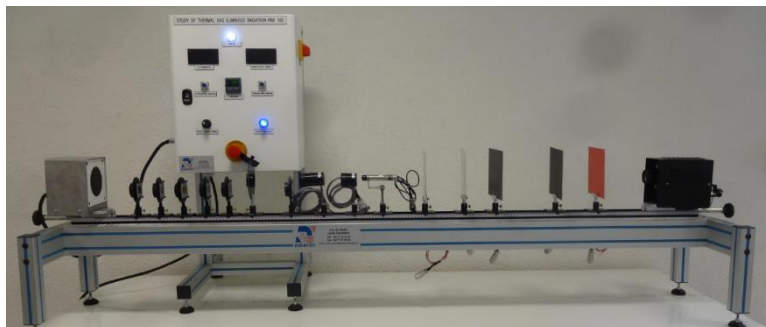
The PBR 100 bench is designed to study the thermal radiation on the right side of the bench (infrared radiation) and bright on the left side (visible radiation). The bench will study the laws relating to the transfer by radiation from a heat source and a light source.

The robust design of this equipment makes it perfectly suited for use in schools.

Its anodized aluminum frame with legs gives it great robustness as well as a great flexibility of integration into your premises. The manufacturing of this equipment meets the European machine directive.

Illustrations

- **Rail guides**
Profile anodized aluminum, graduated mounted on adjustable feet
- **Luminous source**
Mounted on graduated rotary support
100 watt lamps - adjustable diffusion
- **Colour filters**
- **Plate with variable orifice iris type**
- **Lux meter 0 – 100 000 lux**
With analog output 0-1 Vdc
- **Electrical box including :**
Voltage presence indicator, temperature indicator measured by IR thermometer with connector, temperature indicator of plates with connectors, PID temperature controller, M / A switches, emergency stop button ...



Technical details

- **Thermal source**
Mounted on graduated rotary support
Heating element 675 Watt
Extension black surface at high yield
SSR variable power
PID digital regulation
- **Different metallic plates equipped with probes Pt100 of surface**
Glossy black plate
Matt black plate
White plate
Aluminum Plate
Red plate
- **Radiometer 0 – 1000 mW/cm²**
Measure scale : 0,2-1000W/cm²
- **Instrumentation**
Indicator of surface temperature
Indicator of luminous intensity and of thermal energy
Portable device for measuring light intensity and thermal energy
Programmable temperature controller
- **Infrared thermometer**
Output 4-20 mA

Services required

- Electrical supply : 230 VAC – 50 Hz – 16 A
- Electrical supply Type : 1 phase + Neutral +Earth
- Rails guides dimensions : (LxWxH mm): 2000 x 500 x 900
- Rails guides weight (Kg): 30
- Electrical box dimensions : (LxWxH mm): 2000 x 500 x 900
- Electrical box weight (Kg): 30

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

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