



LUMETRON RT-500 Reflectance/Transmittance Test Set



An Integrating Sphere is a hollow sphere which has its interior coated with a paint that is nearly perfectly diffuse or Lambertian and which has extremely high reflectance. Light energy introduced in an integrating sphere is reflected from the wall and distributed uniformly around the interior. A detector which is placed at a hole or 'Port' in the sphere wall sees an output which is completely independent of the angular properties of the input light. The independence of the output of a sphere from the angular properties of the input and the uniform internal distribution of light make integrating spheres ideal for many uses.

The LUMETRON RT-500 test system is designed for the measurement of reflectance and diffuse reflectance at directional light incidence, for measurement of reflectance of mirrors, for measurement of transmittance and diffuse transmittance at directed light transmittance.

The system for measurement of reflectance and transmittance characteristics of materials consists of:

- * Integrating Sphere, 0.500 m diameter.
- * Illuminant Source.
- * Measuring Console, Transmittance / Reflectance Meter & Power Supply for Illuminant source.
- * Photometer Head, color corrected (refer LUMETRON PM-3 Digital Lux Meter data sheet for sensor details).
- * Reflectance Standards for specular and diffuse reflectance.

Features

- * For evaluation of reflectance, diffuse reflectance, transmittance and diffuse transmittance.
- * Useful for photometric research laboratories and lamp/luminaire manufacturers.
- * Perfectly spherical 0.5 m diameter fibreglass sphere.
- * Constructed of fibreglass reinforced plastic with embedded tubular steel frame for rigidity.
- * Coated with special base coat paint and finished with LUMETRON SP-80 Water Removable White Matt Coat.
- * Window openings (ports) for Test sample, Photometer head (sensor), and four additional ports for various reflectance and transmittance measurement geometries.
- * Baffle between sensor window and test sample port for blocking direct light on photometer head.
- * Measuring console consisting of stabilized DC variable Power supply with multi turn output control, indicating meters for illuminant source voltage and current, precision amplification and display circuit for photometer head with multi turn ZERO and SET % controls.

ILLUMINANT SOURCE:

The Illuminant source for measurement contains a halogen incandescent lamp. The electric power source and the control circuits are integrated in the meter measuring console. The Illuminant source has a six pin shell connector at the end of its cable. The Illuminant source has focussing optics which can be adjusted to obtain a sharp spot on the sample. The halogen lamp is cooled with the help of a miniature cooling fan and an integrated heatsink housing. The Illuminant source is fixed with two knurled screws to the base of the integrating sphere in front of the related ports.

