# Integrating sphere

DESCRIPTION

Design and manufacture of a uniform integrating sphere (INS600) for calibration of imaging payloads has been carried out. Lambert's cosine law is a fundamental principle in the field of photometry. The law states that the apparent brightness of a Lambertian surface, is directly proportional to the cosine of the angle between the surface normal and the direction of the light source. Lamberts cosine law is also applicable to Lambertian surfaces, that scatters incident light equally in all directions. It means that the surface has the same apparent brightness regardless of the observer's angle of view.The function of an integrating sphere is to spatially integrate radiant flux. Light scattered by the interior of the integrating sphere is evenly distributed over all angles. The efficiency of an integrating sphere is determined by a number of factors, including the size and number of ports, the size and location of baffles or screens and most importantly, the reflectance and diffuse nature of the sphere coating that has to be Lambertian.

KEY HIGHLIGHT

>> uniformity percentage   99%
>> average error   less than 3%
>> Laser power measurement
>> LED spectral and flux measurement
>> Reflectance of either specular or scattering samples
>> Total or diffuse only transmittance measurement
>> Cosine receptors

Lambertian Surface
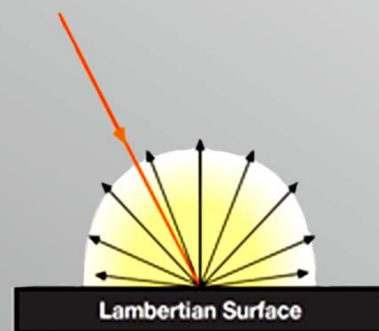
TECHNICAL SPECIFICATION

Environmental and Mechanical Characteristic	
Material	Aluminum
Diameter of sphere	600mm
Overall dimensions with base	77 cm in 158 cm
Weight (without base)	approximately 5 kg
Spectometer	2000 HR+High-Speed miniature optic
Sensivity	200 to 1100 nm
Light sources	4 Quartz Tungsten Lamp
Sphere Coating	special photometer paint

EAST
SPACE