

# SPECTRAL EVOLUTION

## Reflectance and Transmittance Sphere



### Spectral Evolution four inch portable reflectance/ transmittance sphere is ideal for measuring vegetation physiological states

SPECTRAL EVOLUTION offers a portable, compact four inch reflectance/transmittance (R/T) integrating sphere for measuring the reflectance and transmittance of vegetation.

The 4 inch R/T sphere is lightweight and portable so you can take it into the field for *in situ* measurements, delivered with a stand as well as a 1/4-20 mount for use with tripods. When used with a SPECTRAL EVOLUTION spectrometer or spectroradiometer such as the PSR+, RS-3500, RS-5400, SR-6500 or RS-8800, it delivers detailed information for measurements of transmittance and reflectance modes. Two varying light intensity levels (High and Low) allow for a broader range of samples to be measured.

Light reflected or transmitted from a sample in a sphere is integrated over a full hemisphere, with measurements insensitive to sample anisotropic directional reflectance (transmittance). This provides repeatable measurements of a variety of samples. The 4 inch portable R/T sphere can be used in vegetation studies such as, deriving absorbance characteristics, and estimating the leaf area index (LAI) from radiation reflected from a canopy surface. The sphere allows researchers to limit destructive sampling and provides timely data acquisition of key material samples.

The R/T sphere allows you to collect all diffuse light reflected from a sample – measuring total hemispherical reflectance. You can measure reflectance and transmittance, and calculate absorption. You can select the bulb intensity level that suits your sample. A white reference is provided for both reflectance and transmittance measurements.

The RT sphere, similar to other field accessories, is connected to SPECTRAL EVOLUTION spectrometers and spectroradiometers via an industry standard SMA-905 connector. The RT sphere can be operated via a one click triggering mechanism, allowing for rapid data acquisition. It is powered by the universal accessory power supply cable for seamless integration into existing SPECTRAL EVOLUTION equipment.



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### Specifications

#### Performance:

Light sources:  
4.85W gas filled reflector tungsten bulb  
Source lifetime  
10,000 hours  
Source color temperature  
2900K  
Stability  
<0.1%/hour

#### Physical:

Power  
7.5v, 5W  
Size:  
14 x 9 x 4 inches  
(35.56 x 22.86 x 10.16 cm)  
Weight  
<3 pounds (1.36 kg)  
Mounting  
1/4-20 mount boss  
Material  
Spectralon

#### Environmental:

#### Operation:

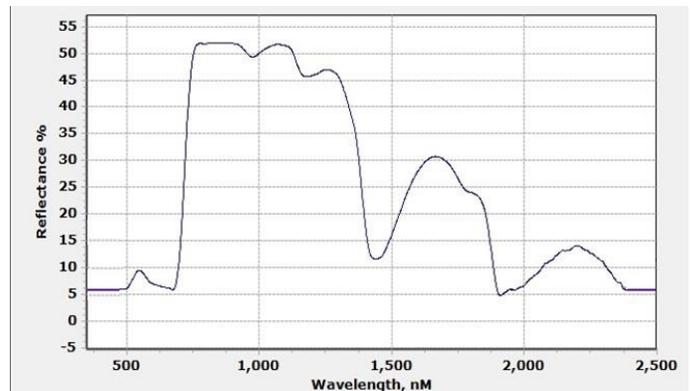
Temperature:  
10-40° C  
Humidity:  
10-90% non-condensing

#### Storage:

Temperature:  
0-70° C  
Humidity:  
15-90% non-condensing



The RT Sphere is ideal for *in situ* reflectance/transmittance measurements.



Reflectance scan with PSR+ and RT sphere of hydrangea leaf



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