



## **PRESS RELEASE**

### **Improved handheld portable integrating sphere for reflectance/transmittance measurements.**

*Haverhill, MA – June 3, 2020* – SPECTRAL EVOLUTION now offers a portable, compact four inch reflectance/transmittance (R/T) integrating sphere for measuring the reflectance and transmittance of a wide variety of material types.

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 ¼-20 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 transmittance and reflectance modes at two varying light intensity levels.

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 RT 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 will provide an opportunity for researchers to limit destructive sampling and provide timely data acquisition of key material samples

Researchers can reach a better understanding of leaf characteristics, spectral red edge shift, and plant stress indicators. Healthy and stressed leaves tend to show only slightly different characteristics in the 400-500nm range as opposed to more prominent features between 695-725nm that can provide a very useful indication of leaf stress and therefore plant stress. An increase in reflectance and transmittance and a decrease in absorption can be a sign of chlorophyll reduction in the plant that could be due to insufficient water,

pests, over fertilization, flooding, herbicide misuse, elevated ozone and CO<sub>2</sub>, or other plant stressors.

The RT 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 at varying bulb intensity levels. 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. Like many other Spectral Evolution accessories, 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.

For more information on the RT sphere, visit:

<https://spectralevolution.com/products/hardware/field-portable-spectroradiometers-for-remote-sensing/remote-sensing-accessories/>

#### **About SPECTRAL EVOLUTION**

Established in 2004, SPECTRAL EVOLUTION is a leading manufacturer of laboratory and handheld portable spectrometers and spectroradiometers. SPECTRAL EVOLUTION instruments are used worldwide for many mission-critical lab and field applications in mining, remote sensing, vegetative studies, ground truthing, environmental and climate studies, developing satellite calibrations, and more, due to their reliable, robust, rugged design and user-friendly one-touch features.

SPECTRAL EVOLUTION maintains a facility in Haverhill, Massachusetts which houses design, prototyping, manufacturing and service facilities for the instruments that it markets and sells worldwide, either through direct sales or through distributor agents.

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