



PRESS RELEASE

Identifying algal blooms with a field spectroradiometer

Haverhill, MA – August 8, 2019 Algal blooms can have a detrimental effect on fishing, water supplies, tourism and other water related activities. Blooms are occurring more frequently due to agricultural and urban runoff as well as climate change. These factors introduce more nutrients into the water which leads to accelerated eutrophication. Monitoring and identifying harmful algal blooms can be accomplished using NIR spectroscopy for monitoring Case I (open ocean waters with a high concentration of phytoplankton in comparison with other particles) and Case II (lakes, coastal waters, streams, rivers with high turbid water with an abundant occurrence of dissolved organic matter and suspended solids, etc.) bodies of water.

Key to detecting algal blooms is the ability to identify chlorophyll a and phycocyanin absorption features in NIR reflectance spectra. Chlorophyll a has an absorption feature at 670nm and a peak at 724nm. Phycocyanin has an absorption feature at 620nm. Data captured by an NIR field spectroradiometer can be used with a variety of algorithms and chemometrics methods to identify and measure algal bloom concentrations. The data can also be used to verify satellite measurements made with MODIS, MERIS, SeaWiFS or similar satellites.

Spectral Evolution provides a range of spectroradiometers that can be used in algal bloom studies from the PSR-1100^f covering a 320-1100nm spectral range to full range (350-2500nm) spectroradiometers such as the SR-6500, RS-8800, RS-5400, PSR+ and RS-3500. The SR-6500 delivers the highest resolution available in a field instrument:

- 1.5nm @ 700nm
- 3.0nm @ 1500nm

- 3.8nm @ 2100nm

These spectroradiometers are rugged and reliable instruments with no moving optical components for *in situ* measurements. They offer high resolution/high sensitivity for accurate and precise spectra.

All Spectral Evolution instruments include DARWin SP Data Acquisition software that captures all spectra and metadata and stores it in an ASCII file for use with other analysis software programs. DARWin software also includes pull-down menu access to 19 vegetation indices including NDVI.

For more information:

<https://spectralevolution.com/applications/remote-sensing/identifying-algal-blooms/>

About SPECTRAL EVOLUTION

Established in 2004, SPECTRAL EVOLUTION is a leading manufacturer of laboratory and handheld portable spectrometers, spectroradiometers and spectrophotometers. SPECTRAL EVOLUTION spectrometers 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.

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