



Biospherical Instruments Inc (BSI) has released the newest member of the Expandable Technology for Radiometric Applications (XTRA) class of high performance field instruments called the [XTRA Reflectance Radiometers \(XRR \)](#) . The XRR is an economically priced multiwavelength radiometer for determining [apparent](#)

[optical properties](#)

in aquatic systems. B

elonging to the instrument class that also includes the Compact Optical Profiling system (C-OPS), among other microradiometer-based instruments, the XRR is designed to fill the niche that was occupied by the PRR-600 and PRR-2600 as well as the PRR-800; they are very similar in shape to the PRR-600/PRR-2600 instruments, but are smaller in diameter, weigh less, and have greatly improved performance.

XRRs are available in two measurement geometries: XRL and XRE. The XRL, the most common configuration, features 10 optical-filter [microradiometer](#) wavebands (selected from 29 different optical filter [wavelengths](#)) of in-water downward [irradiance](#) (E_d) and 10 wavebands of in-water upwelling [radiance](#) (L_u). The XRE nominally uses 10 wavebands of downward irradiance (E_d) and 10 wavebands of upward irradiance (E_u). XRRs also take advantage of a new free-fall flotation collar called the “X-SLOWS,” which affords excellent near-surface sampling in an instrument with a traditional “rocket-shaped” design. XRRs use the same microradiometer detector technology as C-OPS, and thus has the same outstanding radiometric performance specifications as C-OPS. Microradiometers also mean that the XRR can use all of the same software, surface solar reference, and all of the C-OPS cables and accessories such as the BioSHADE and BioGPS.