

WET Labs offers the *Environmental Characterization Optics (ECO)* series, a modular suite of meters that incorporate a common set of options with a single basic design to make the sensors ideal for a wide variety of deployments.

The angular distribution of scattered radiation in the backward hemisphere is important in the interpretation of remote sensing measurements, investigations of particle shape, and models of visibility in seawater. The **ECO VSF 3** measures the optical scattering at three distinct angles: 100, 125, and 150 degrees, and at wavelengths of 470, 530, and 660 nm, thus providing the shape of the Volume Scattering Function (**VSF**) throughout the backscattering region.



Motivated by the need to better understand the relationship of water leaving radiance with the backscattering into the same direction, the three-angle measurement allows determination of specific angles of backscattering through interpolation and extrapolation.

Conversely, it also can provide the total backscattering coefficient by integration and extrapolation from 90 to 180 degrees. The sensor employs three transmitters coupled to a single receiver to obtain its measurements.

Specifications

Mechanical		Optical	
<i>Diameter</i>	14.6 cm	<i>Wavelengths</i>	470, 532, 660
<i>Length</i>	30.5 cm	<i>Sensitivity</i>	1.24×10^{-5}
<i>Weight in air</i>	3.1 kg	<i>Range, typical</i>	$\sim 0.0024\text{--}5 \text{ m}^{-1}$
<i>Weight in water</i>	1.8 kg buoyant	<i>Linearity</i>	$\geq 99\% R^2$
<i>Pressure housing</i>	Acetal copolymer		
Electrical		Environmental	
<i>Input</i>	7–15 VDC	<i>Temperature range</i>	0–30 deg C
<i>Current draw</i>	300 mA @12 volts	<i>Depth rating</i>	600 m
<i>Serial output</i>	RS-232 or 485		
<i>Connector</i>	MCBH6M		
<i>Sample rate</i>	1 Hz		

Specifications are subject to change without notice.