



# Datasheet for OWB™

## Model 213

### Portable Oil-in-Water and Oil-in-Soil Analyzer

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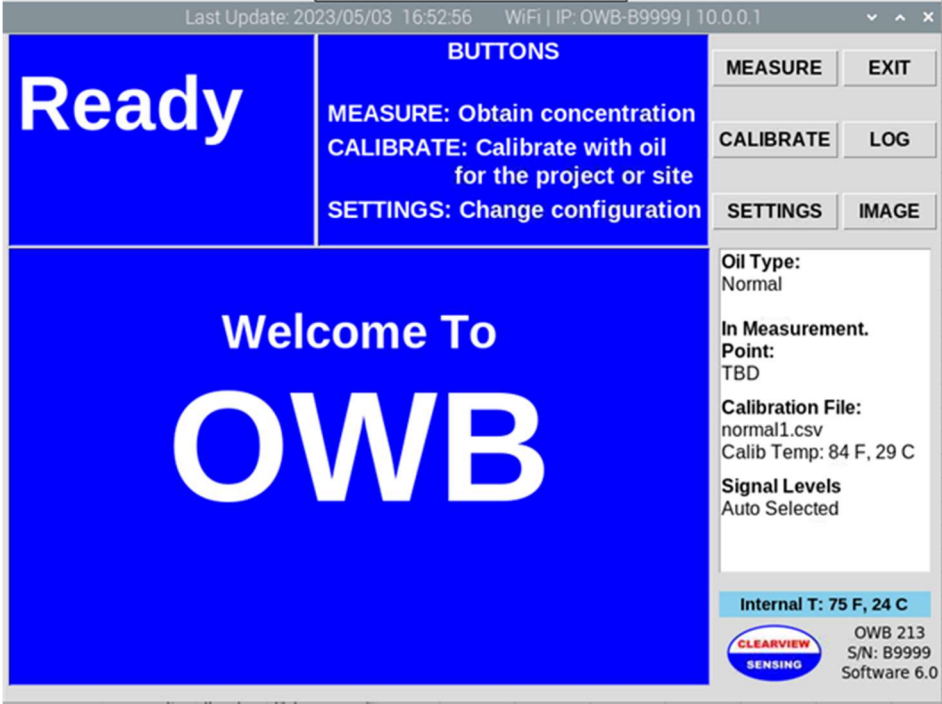
The OilWatcher Benchtop Model (OWB) is a portable sensor that utilizes extraction with hexane or other solvents to measure oil concentration in samples of water or soil. The analyzer uses UV fluorescence combined with light absorption to measure a very wide range of oil or BTEX concentrations.

OWB provides step-by-step instructions on a user-friendly graphical user interface (GUI), which also displays the results and relevant key information.

Calibration of OWB is performed using oil (or BTEX, PAH as applicable) in hexane (or other suitable solvent) with site-specific oil to build a calibration curve correlating to the expected range of oil concentrations in the produced water. Fluorescence is used to detect low oil concentrations, and light absorption is used for higher concentrations. OWB will automatically select the measurement principle to be used.

The analyzer has excellent stability across temperature changes. To further assure the measurement accuracy, OWB automatically detects a temperature change determined to be too drastic from that of calibration (typically larger than 30°F), and which may lead to lower accuracy. The user will receive a prompt recommending actions to restore measurement accuracy.





OWB Graphical User Interface



<p><b>Technical Specifications</b></p> <p>Measurement Principles:</p> <p>Accuracy:</p> <p>Ranges:</p>	<p>Automatic selection between fluorescence and light absorption.</p> <p><b>Model 213</b>  Average Error: +/-2% of actual concentration.  Individual Reading Error: +/- 5% of actual concentration with 95% confidence level.  Within 1 ppm concentration below 20 ppm.</p> <p>1 – 25% oil in solvent for crude oils (0.1 ppm – 2.5% oil in water with 1:10 solvent to water ratio).</p> <p>1 – 90% oil in solvent for light crude oils and refined oils (0.1 ppm – 9% oil in water with 1:10 solvent to water ratio).</p> <p>Concentration of BTEX in water: minimum 0.005 ppm (5 ppb) using the n-Hexane to sample volume ratio of 1:10.</p> <p>Concentration of BTEX in soil: minimum 0.1 mg/Kg soil using 10 ml solvent (n-Hexane, methanol or ethanol) for 5 g soil.</p>
<p><b>Maintenance &amp; Service</b></p> <p>Major Maintenance:</p> <p>Calibration:</p> <p>Service Life:</p>	<p>None</p> <p>Once for each new oil type. Recalibration every 6 months or 1000 measurement cycles.</p> <p>20 years</p>
<p><b>Operating Conditions</b></p> <p>Sample Temperature:</p> <p>Ambient Temperature:</p>	<p>14 °F to 160°F (-10 to 70°C). Recommending to be lower than 120°F to prevent excessive vaporization of hexane during extraction operation</p> <p>-40 to 140°F (-40 to 60°C) for operation  -40 to 185°F (-40 to 85°C) for storage</p>
<p><b>Power, Weight, Dimensions</b></p> <p>Power Supply:</p> <p>Weight and Dimensions:</p>	<p>Lithium Ion Battery – Rechargeable. For battery charging: 110-220 VAC power supply. Chargers are included.</p> <p>20 lbs. (9.1 kg), 11 W x 10 D x 7 H in. (279 x 254 x 178 mm)</p>
<p><b>Communication</b></p> <p>Tablet</p> <p>Tablet Access via Wi-Fi</p>	<p>8" tablet</p> <p>Standard</p>
<p><b>Locations of Use</b></p>	<p>Non-hazardous Location</p>

<b>Calibration Procedure</b>	<ol style="list-style-type: none"><li>1. Prepare standards: Add oil to solvent (hexane or other) to make standards with concentrations covering the required range. OWB can be used later to measure up to 50% beyond the highest concentration provided during calibration</li><li>2. Fill a cuvette with 3.5-4 ml of clean solvent so that the liquid level is 75-90% of the cuvette height.</li><li>3. Place the cuvette in the cuvette cell of OWB. Cover the cuvette cell.</li><li>4. Tap “Calibrate” on the User Interface and follow the prompts.</li><li>5. Continue calibration by repeating Steps 2-5 with each standard.</li></ol>
<b>Measurement Procedure</b>	<ol style="list-style-type: none"><li>1. Add solvent to water or soil sample. Use solvent volume of 10 ml (or more, 20 ml recommended) for each 100 ml of water sample. For soil, use the solvent to volume ratio per applicable procedures.</li><li>2. Transfer 3.5-4 ml solvent extraction to a cuvette so that the liquid level is 75-90% of the cuvette height.</li><li>3. Place the cuvette in the cuvette cell of OWB. Cover the cuvette cell.</li><li>4. Tap “Measure” on the User Interface</li></ol>