Aqua TROLL 500/600 BGA-PC Sensor Overview

The In-Situ blue-green algae/phycocyanin sensor measures BGA-PC levels in natural water, surface water, groundwater, produced water and aquaculture applications.

Getting Started

1 Install sensor.

- Rinse sensor with clean water before use.
- Remove restrictor from the instrument.
- Remove sensor port plug if installed. Do not twist.
- Lubricate o-ring at bottom of sensor.
- Install sensor. Do not twist.
- Place restrictor in calibration mode.

2 Calibrate and deploy.

For detailed calibration instructions, see the instruction manual or quick start guide for your In-Situ instrument.

Connect to the instrument with VuSitu or Win-Situ software.
Select Calibrations from the menu.
Choose the BGA-PC option and follow the instructions.
Flip the restrictor into deployment mode after calibration.
Calibrating the Sensor

Calibrate the BGA-PC sensor using one of three methods:

1. **Deionized Water**: Reset the zero point by performing a calibration in deionized water.
2. **Rhodamine Standard**: Calibrate with a Rhodamine WT standard to adjust readings of higher concentrations based on known equivalence. Follow the instructions below to prepare a Rhodamine WT standard.
3. **Custom Standard or Reference**: Use a reference or a custom calibration standard.

### Preparing Rhodamine WT Calibration Standard

1. Start with a 2.5% Rhodamine WT solution. Pipette 1.0 mg/L of the solution into a 250 mL Class A volumetric flask.
2. Bring the flask to volume with deionized water. The resulting solution is 100 mg/L Rhodamine WT.
3. To obtain a 200 µg/L concentration, pipette 2.0 mL of the 100 mg/L solution into a 1000 mL flask.
4. Bring the flask to volume with deionized water.

Use caution when deploying in direct sunlight or environments with highly-reflective surfaces. Ambient light can interfere with sensor readings.

**Concentration Guide & Expected Calibration Values** (for reference only)

<table>
<thead>
<tr>
<th>Target Concentration</th>
<th>100 mg/L Rhodamine WT</th>
<th>Expected Calibration Value at 25° C</th>
<th>Expected RFU Value at 25° C</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 µg/L (deionized water)</td>
<td>none</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100 µg/L</td>
<td>1.0 mL</td>
<td>80 µg/L (ppb)</td>
<td>8</td>
</tr>
<tr>
<td>200 µg/L</td>
<td>2.0 mL</td>
<td>159 µg/L (ppb)</td>
<td>16</td>
</tr>
<tr>
<td>400 µg/L</td>
<td>4.0 mL</td>
<td>309 µg/L (ppb)</td>
<td>31</td>
</tr>
</tbody>
</table>

Prepare the 200 µg/L solution immediately before use and discard after calibration. If desired, use the procedure described above to make a different concentration of Rhodamine WT, such as 400 µg/L. Alter the volume in Step 3 according to the table below to achieve the target concentration.

Use an opaque container to store the 100 mg/L solution in a cool, dark place for up to six months.