

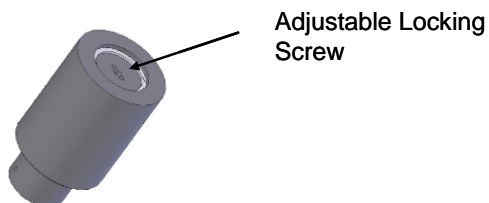
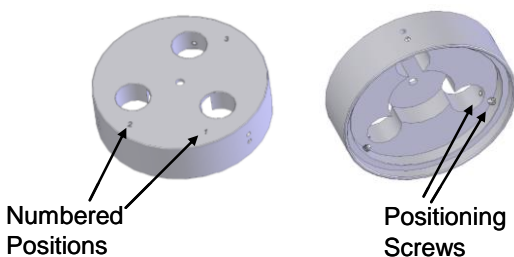
## Introduction

The following information describes how to use the Solid Secondary Standard Cap and Solid Secondary Standard inserts for the C3 and C6P Submersible Fluorometers:

P/N 2300-905	C3 Solid Secondary Standard Cap
P/N 2360-905	C6P Solid Secondary Standard Cap
P/N 2300-901	Solid Secondary Standard insert for <i>In Vivo</i> Chlorophyll, Rhodamine WT, Fluorescein, Phycocyanin, and Phycoerythrin
P/N 2300-902	Solid Secondary Standard insert for CDOM, Crude Oil, Refined Fuels, and Optical Brighteners

## Features

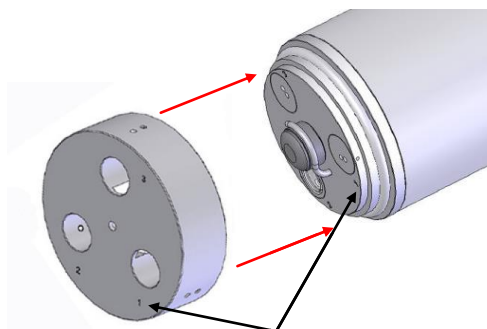
- Can be used in place of a primary liquid standard once a correlation between a primary standard and the solid standard is established.
- Can be used to check fluorometer stability and/or check for loss in sensitivity.
- Provides a broad range of very stable fluorescent responses.
- Has an adjustment screw allowing users to set to a desired signal.



## Installation

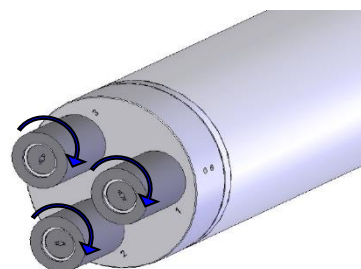
**Caution:** You must remove the wiper from the fluorometer before installing the solid secondary standard cap. Please refer to the instructions on page 2.

- 1) Align Solid Secondary Standard Cap numbers with the numbers located on the optical head and snap on the Solid Secondary Standard Cap.



Solid Secondary Standard Cap numbers

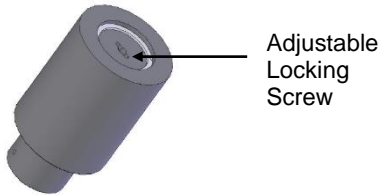
- 2) Slightly rotate cap until it is set into position. *Note: You will feel/hear a click when cap is positioned.*
- 3) Insert Solid Standards into the desired optical ports on the Solid Standard Cap.



- 4) Rotate the Solid Standard(s) until set into position. *Note: You will feel/hear a click when the Solid Standard is positioned*

## Solid Standard Adjustment

To adjust each solid standard, use a screwdriver to unscrew the locking nut as far as it will go.



To change the signal level, insert the green screwdriver through the hole in the locking nut. Rotate it until it engages with the adjustment screw that is beneath the locking nut.

The signal can be adjusted to the desired reading by turning the screw. Turning clockwise increases the signal and counterclockwise decreases the signal.

Once the desired reading has been obtained, the locking nut should be screwed down so that the adjustment screw is held firmly in place.

*Note: The response of every Solid Standard is unique. A new correlation must be determined for every sensor.*

## Use of the Solid Secondary Standard for *in vivo* Chlorophyll Applications:

1. Using your Submersible Fluorometer, measure a sample containing algae and record the response values for that measurement.
2. Dry off the optical end of the C3 or C6P, attach the Solid Secondary Standard Cap and Insert P/N 2300-901 to the fluorometer, and adjust the Solid Secondary Standard Insert to produce the same response as in step 1.
3. Perform a chlorophyll extraction to determine the actual chlorophyll concentration of the sample.

**NOTE:** EPA Method 445.0 (*in vitro* determination of chlorophyll in algae) can be found on Turner Designs' website.

4. The Solid Secondary Standard's signal is now equivalent to the concentration value determined from step 3 and can be used in place of a liquid primary standard for future calibration of that specific Submersible Fluorometer.

## Use of the Solid Secondary Standard for Dye Tracing Applications:

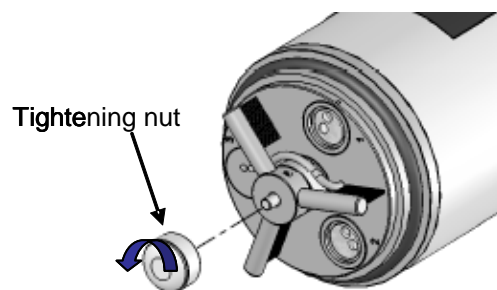
The Solid Secondary Standard can also be used to check fluorometer stability when making dye concentration measurements. If necessary, the Solid Secondary Standard can be used to establish a new correlation voltage without using a calibration solution each time.

1. Using your Submersible Fluorometer, measure a dye solution with known concentration and record the response values for that measurement.
2. Dry off the optical end of the C3 or C6P, attach the Solid Secondary Standard Cap and Insert to the fluorometer, and adjust the Solid Secondary Standard to produce the same response as in step 1.
3. The Solid Secondary Standard's signal is now equivalent to the concentration value of the dye solution used in step 1 and can be used in place of a liquid primary standard for future calibration of that specific fluorometer.

**Note:** Comprehensive information on dye trace measurements can be found at the following Turner Designs website:  
<http://www.turnerdesigns.com/fluorescent-dye-tracing>

## Installation (with Wiper)

Remove the tightening nut and wiper arm from the C3 or C6P.



Now follow steps 1-4 for the installation of the Solid Standard and instructions on Solid Standard adjustment.

## Care and Storage:

Solid Secondary Standards should be stored at room temperature (~20 degree C) in their case when not in use and kept free of dust and moisture.

**Special care must be taken with the UV Solid Secondary Standard P/N 2300-902 to ensure that it is not exposed to UV light for prolonged periods of time. This can result in degradation of the standard.**

## Ordering Information

Product	Part Number
C3 Solid Secondary Standard Cap	2300-905
C6P Solid Secondary Standard Cap	2360-905
Visible Solid Secondary Standard	2300-901
UV Solid Secondary Standard	2300-902
Solid Secondary Standard Cap & Visible Solid Secondary Standard	<b>OBSOLETE</b> 2300-900
<b><i>Solid Secondary Standards are not available for Turbidity sensors</i></b>	

## Specifications

Solid Secondary Standard insert P/N 2300-901 and 2300-902	
Material	Delrin
Weight	45 g (0.099 lbs.)
Length	5.7 cm (2.25 inches)
Base Diameter	3.3 cm (1.3 inches)
C3 Solid Secondary Standard Cap P/N 2300-905	
Material	Delrin
Weight	168 g (0.37 lbs.)
Height	3.04 cm (1.2 inches)
Base Diameter	10.6 cm (4.0 inches)
C6P Solid Secondary Standard Cap P/N 2360-905	
Material	Delrin
Weight	317 g (0.70 lbs.)
Height	3.04 cm (1.2 inches)
Base Diameter	13.3 cm (5.24 inches)