

## Calibration Light Source

CAL-2000



## Installation and Operation Manual

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Protective Eye Wear Must Be Worn  
When Using This Instrument -  
Intense Ultraviolet Radiation Present  
See Important Safety Notices inside.

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# Important Safety Notices

1. Do not remove or modify any installed safety device on this equipment. Doing so will void your warranty and create an unsafe operating environment.
2. Dangerous voltages are present in this device. There are NO user serviceable parts inside.
3. Only allow qualified personnel to service this unit.
4. Do not use the unit if it is damaged in any way. Contact your dealer for repair or replacement information.
5. Always screw in the fiber optic cables before starting the instrument.



**WARNING**

Protective eyewear must be worn when using this equipment - Intense ultraviolet radiation present.

**Never look directly into the light beam**, as this can cause eye damage.

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# About This Manual

## Document Purpose and Intended Audience

This document provides you with an installation section to get your system up and running.

## What's New in this Document

This version of the *Calibration Light Source CAL2000 Installation and Operation Manual* adds our partnership agreement.

## Document Summary

Chapter	Description
Chapter 1: <a href="#">Setup</a>	Contains a list of package contents and unpacking instructions.
Chapter 2: <a href="#">CAL-2000 Specifications</a>	Contains operating environment specifications, as well as other physical details of the product.
Appendix A: <a href="#">Bulb Replacement</a>	Provides instructions for changing the bulb.

## Product-Related Documentation

You can access documentation for Ocean Optics products by visiting our website at <http://www.oceanoptics.com>. Select *Technical* → *Operating Instructions*, then choose the appropriate document from the available drop-down lists. Or, use the **Search by Model Number** field at the bottom of the web page.

You can also access operating instructions for Ocean Optics products on the *Software and Technical Resources* CD included with the system.

Engineering-level documentation is located on our website at *Technical* → *Engineering Docs*.

## Upgrades

Occasionally, you may find that you need Ocean Optics to make a change or an upgrade to your system. To facilitate these changes, you must first contact Customer Support and obtain a Return Merchandise Authorization (RMA) number. Please contact an Ocean Optics Application Scientist for specific instructions when returning a product.





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# Chapter 1

# Setup

## Overview

The following sections provide instructions on unpacking and setting up your CAL-2000 Calibration Light Source.

Before using the CAL-2000 for the first time check for transport damage. Be sure to adhere to all warnings on the unit and in this manual.



## Unpacking the CAL-2000

### ► **Procedure**

1. Unpack your lamp assembly carefully. Although the lamp is rigidly mounted, dropping this instrument can cause permanent damage.
2. Inspect the outside of the instrument and make sure that there is no damage. Do not use the instrument if damage is present.
3. Use this instrument in a clean laboratory environment.

## Contents

Your CAL-2000 package should contain the following:

- CAL-2000

Additionally, you will need a 12 volt DC power supply, such as the Mikropack PS220.

# CAL-2000 Specifications

This section provides information on the operating environment, physical controls, and dimensions of the CAL-2000. It also provides a graph of spectral lines.

## Operating Environment

The following table provides information on optimizing the operating environment of your CAL-2000.

Operating Environment	The Cal-2000 Unit . . .
Moisture	Is designed for operation in dry rooms only.
Ventilation	Should be situated so that its location or position does not interfere with proper ventilation.
Heat	Should be situated away from any device that emits excessive heat.
Object and Liquid Entry	Should be positioned so that objects do not fall on top of the unit. Additionally, ensure that no liquids are spilled into the enclosure through openings.
Power Sources	Should be connected to a power supply with the following specifications:  12 VDC 1000mA analog regulated (e.g. Mikropack PS 220)

## 2: Cal-2000 Specifications

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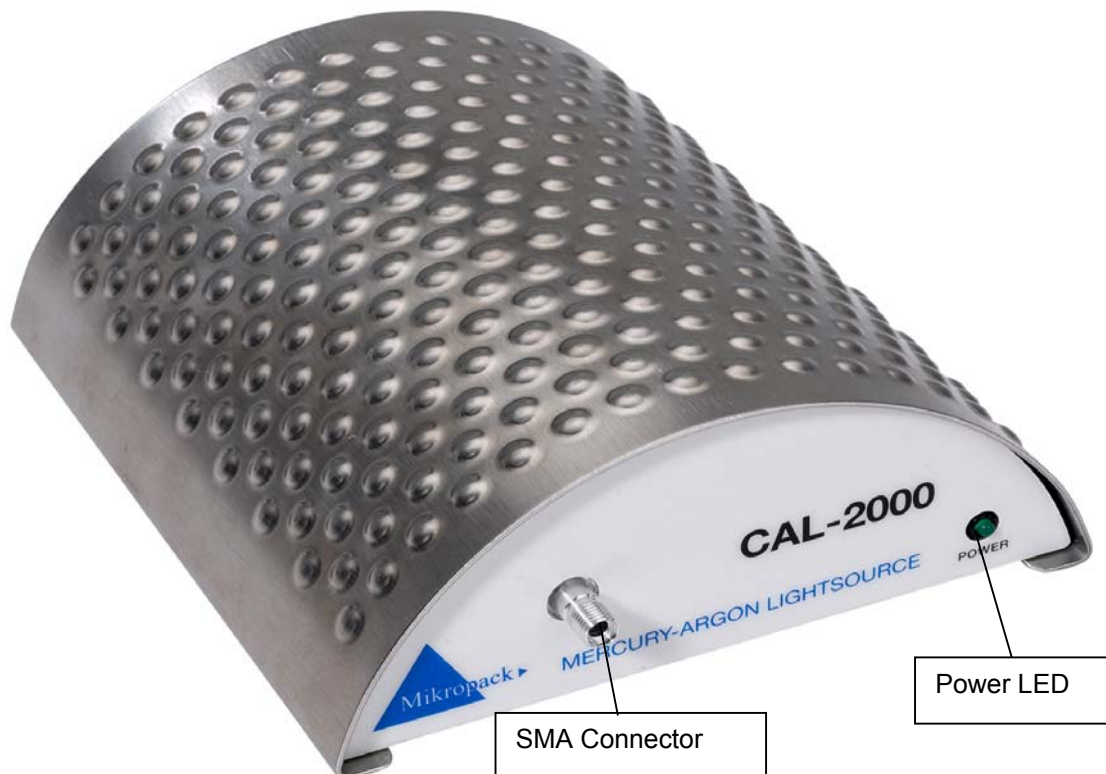
**Front of Unit:** Fiber optic SMA 905 compatible connector.

LED – Indicates power status of the CAL-2000

**Back of Unit:** Power Input -12VDC ON/OFF-Switch

**Battery Compartment:** Use only 9V E-Block Battery VARTA Type 4022 Alkaline

**Housing Dimensions:** 141 mm x 124 mm x 53 mm



# Spectral Lines

253.652	—————		
296.728	—————	<b>Mercury (Hg)</b>	
302.150	—————		
313.155	—————		
334.148	—————		
365.015	—————		
404.656	—————		
407.783	—————		
435.833	—————		
546.074	—————		
576.960	—————		
579.066	—————		
696.543	—————	<b>Argon (Ar)</b>	
706.722	—————		
710.748	—————		
727.294	—————		
738.393	—————		
750.387	—————		
763.511	—————		
772.376	—————		
794.818	—————		
800.616	—————		
811.531	—————		
826.452	—————		
842.465	—————		
852.144	—————		
866.794	—————		
912.297	—————		
922.450	—————		



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## Appendix A

# Bulb Replacement

To order replacement bulbs for the CAL-2000, order item number: CAL-2000B

## Replacing the Bulb

► **Procedure**

1. Remove the four screws that secure the curved top of the CAL-2000.
2. Remove the bulb from the CAL-2000 by gently pulling the lamp out of the internal lamp socket.
3. Insert the new CAL-2000B firmly into the internal lamp socket.
4. Resecure the curved top onto the CAL-2000 with the four mounting screws.





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