Ocean Optics Inc.
First in Photonics™

A HALMA GROUP COMPANY

USB-DT
Direct-attach Light Source
Installation and Operation Instructions

Description

The USB-DT is a direct-attach UV light source (in the 200–1100 nm range) for Ocean Optics' USB2000 or HR4000 Spectrometer. The USB-DT connects to an Ocean Optics spectrometer in the following ways:

- Stacked underneath the USB2000 Spectrometer and connected with the DB15 accessory cable (HR4-CBL-DB15) or the USB2000/DT Adapter (USB-ADP-DT2)

- Connected to a HR4000 or HR2000+ Spectrometer with the DB15 accessory cable (HR4-CBL-DB15) or the Breakout Box (HR4-BREAKOUT)

Parts Included

The USB-DT ships with the following items:

- ❑ USB-DT Light Source
- ❑ 5VDC power supply
- ❑ DB15 accessory cable (HR4-CBL-DB15)

Additional Accessories

The following are additional accessories available from Ocean Optics that you may need, depending on your system set-up:

- Fiber optic cable for connection to the spectrometer

- Breakout Box (HR4-BREAKOUT)

- USB2000/DT adapter (USB-ADP-DT2)

- Replacement bulb (USB-DT-B)

Using the USB-DT

The following sections provide instructions on setting up and using the USB-DT.

Connecting the USB-DT

The set-up procedure differs, depending on whether you are connecting the USB-DT to a USB2000 or an HR4000 Spectrometer.

Connecting to a USB2000 Spectrometer

► *Procedure*

Follow the steps below to connect the USB-DT to a USB2000 Spectrometer:

1. Remove the USB-DT from the product packaging.

2. Connect the spectrometer's 10-pin accessory connector to the USB/DT Adapter

   OR

3. Connect the spectrometer to the DB15 cable assembly and connect the other end to the USB-DT's 15-pin connector.

You have now connected the USB-DT for operation with the USB2000 Spectrometer.

Connecting to an HR4000 or HR2000+ Spectrometer

► *Procedure*

Follow the steps below to connect the USB-DT to an HR4000 Spectrometer:

1. Remove the USB-DT from the product packaging.

2. Connect the spectrometer's 30-pin accessory connector to the Breakout Box using the Breakout Box Accessory cable.

   OR

3. Connect the spectrometer to the DB15 cable assembly and the other end to the USB-DT's 15-pin connector.

You have now connected the USB-DT for operation with the HR4000 or HR2000+ Spectrometer.

USB-DT Specifications

Specification	Value
Dimensions (mm)	88.9 x 94.6 x 39.7
Weight	200 g
Power consumption	1.5 A @ 5 VDC
Wavelength range (source)	200-1100 nm
Path length	1 cm
Cuvette shape	Square
Light source	Deuterium tungsten
Bulb life (hours)	800 (deuterium); 2,000 (tungsten)
Time to stabilized output	~30 minutes
Spectrometers	USB2000, HR4000

USB-DT Pinout Information

The following section contains information on the 10-pin output connector on the USB-DT.

10	8	6	4	2
9	7	5	3	1

Pinout Diagram of the 10-Pin Output Connector on the USB-DT

Pinouts

Pin	Function
1	Unused
2	Unused
3	Unused
4	Lamp Enable
5	Continuous Strobe
6	Ground
7	External Trigger In
8	Single Strobe
9	I^2C SCL
10	I^2C SDA

The following section contains information on the DB15 output connector on the USB-DT.

Pinout Diagram of the DB15 Output Connector on the USB-DT

Pinouts

Pin	Function
1	Single Strobe
2	Continuous Strobe
3	RS232 Rx
4	External Trigger In
5	Unused
6	Unused
7	Unused
8	External Trigger In
9	Unused
10	Ground
11	I^2C SDA
12	I^2C SCL
13	Lamp Enable
14	Unused
15	Unused