

USB-ISS-UV/VIS Integrated Sampling System

The USB-ISS-UV/VIS Integrated Sampling System is a direct-attach 1 cm cuvette holder and UV/VIS/NIR light source (200-1100 nm) combination created specifically for use with the USB2000 Spectrometer. The deuterium tungsten light source receives control instructions via the 10-pin Accessory Connector on the USB2000 Spectrometer.

The USB-ISS-UV/VIS also contains a built-in cooling fan. Thus, due to the increased power requirements of the light source, the USB-ISS-UV/VIS requires a separate 5-volt power supply (included with the USB-ISS-UV/VIS).

Follow the instructions below to properly configure and use your USB-ISS-UV/VIS Integrated Sampling System.



Parts Included

The USB-ISS-UV/VIS Integrated Sampling System ships with the following components:

- USB-ISS-UV/VIS miniature deuterium tungsten light source
- 5-volt DC power supply
- SMA Collimator (Part # 74-DA) for USB2000 SMA coupling

Warnings



Warnings

- The light beam emitted from the USB-ISS-UV/VIS contains ultraviolet radiation and can cause eye damage. Always use safety goggles when working with this product.
- Dangerous voltage levels are present, and there are no user-serviceable parts. Do not open the unit.
- The USB-ISS-UV/VIS has an internal high voltage power source. Thus, you should not adjust the unit while power is connected to the unit.
- Contact Ocean Optics for bulb replacement.
- Do not use this instrument for any clinical or diagnostic measurements.
- Dropping the unit can cause permanent damage. Handle with care.

Using the USB-ISS-UV/VIS

Do not connect the USB-ISS-UV/VIS to the USB2000 Spectrometer without following the configuration instructions on the next page. Furthermore, ensure that the OOIBase32 software is installed on your PC and that the USB2000 Spectrometer is obtaining data before connecting the USB-ISS-UV/VIS.

Follow the instructions on the next page to configure and use the USB-ISS-UV/VIS:

USB-ISS-UV/VIS Integrated Sampling System

Configuration

Adjust the Cuvette

1. Locate the ball plunger screws (accessed on the front face of the unit and through the hole opposite the power jack on the side of the unit).
2. Use a small flathead screwdriver to loosen the ball plunger screws until the end is visible in the holder.
3. Insert a cuvette into the cuvette holder.
4. Tighten the ball plunger screws until the cuvette is stationary in the cuvette holder. Do not over-tighten.
5. Remove the cuvette from the cuvette holder.

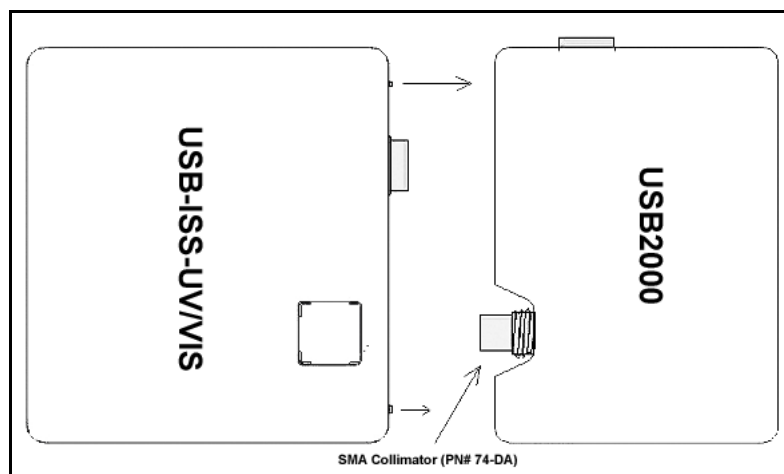
Connect to USB2000

1. Remove the power from the USB2000 by disconnecting it from the PC or detaching the power cord.
2. Attach the SMA Collimator to the SMA 905 connector of the USB2000. This should be connected so that the outer threaded half of the collimator is pointing towards the USB2000. The USB-ISS-UV/VIS will not connect correctly if this piece is not properly oriented (see diagram below).
3. Screw the USB-ISS-UV/VIS to the front of the USB2000 Spectrometer using a standard flathead screwdriver. The connection screws are accessed from the front of the USB-ISS-UV/VIS (the white lined holes on the front of the unit).
4. Connect the power supply to a standard power outlet, and then connect the 5-volt power connector to the USB-ISS-UV/VIS. This will activate the unit, and the fan should begin to spin.
5. Connect the USB cable to the USB2000 Spectrometer and to the PC.

The USB-ISS-UV/VIS turns both the UV and VIS lamps on by default when power is connected to the unit. However, the UV lamp may take up to two minutes to start, depending on how long it has been inactive.

Using the USB-ISS-UV/VIS

1. Start OOIBase32.
2. Select Strobe Enable from the OOIBase32 Acquisition Parameters menu bar to open the internal shutter on the USB-ISS-UV/VIS.



USB-ISS-UV/VIS and USB2000 Assembly

USB-ISS-UV/VIS Integrated Sampling System

Specifications

Dimensions (mm):	198 x 105.1 x 40.6
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

For Technical Support, contact: techsupport@oceanoptics.com

For support by phone, call: (727) 733-2447

Operation Notes

If your USB-ISS-UV/VIS was preassembled with a USB2000 Spectrometer, it has been specifically aligned with that particular spectrometer.

If your USB-ISS-UV/VIS was not preassembled with a USB2000 Spectrometer, ensure that you perform the following tasks:

The USB2000 Spectrometer that you are using has an L2 Collection Lens on the internal CCD detector. This lens enhances the signal for lower integration times and is typically included on all CHEM model spectrometers. Consult the calibration sheet that accompanied the USB2000 to verify the spectrometer configuration, which is also stored in your spectrometer's memory.

Install the SMA Collimator (Step 2 of the *Connect to USB2000* section, previous page).

Tighten the screws on the cuvette holder to fasten the cuvette in place (*Adjust the Cuvette* section, previous page).

Artifact Measurements

On older USB2000 Spectrometers, the SMA 905 connector may be slightly off the central optical axis. While this has no effect on fiber optic coupling, it will affect the lens type coupling of the USB-ISS-UV/VIS. Visible light may be clipped early (750-800 nm) in some cases. In transmission and absorption experiments, this may cause an artifact in this region (when measuring a cuvette of liquid) after taking an open-air reference. This artifact is also seen with unparallel cuvettes.

You can remove this artifact when performing a transmission or absorption measurement. Ideally, you should use a standard reference (a water-filled cuvette, for example) and take a dark and light reference to remove the artifact. When measuring between matched cuvettes (reference and sample), the artifact is typically eliminated.

If you are unable to correct this situation and would like your system aligned, please contact Ocean Optics Technical Support.