

## DESCRIPTION

The Thermo Fisher Scientific Evo220 Calibration Verification Carousel (CVC) is a contained and motorized carousel that seats into the sample compartment of the Evolution 200 spectrophotometer. The CVC works in conjunction with the Thermo Insight software, and an accompanying electronic Calibration Certificate to allow a convenient method for conducting performance verification of the instrument.

## SPECIFICATIONS

### Physical Specifications:

Product Dimensions	Packaging Dimensions	Product Weight
18cm (L) x 14cm (W) x 16.5cm (H)	14.0" x 12.0" x 19.5" / 45.7 x 35.5 x 41.9 cm	12.0 lbs. or 5.44 kg

### Included Components:

- Serialized circular carousel with fixed references/standards
- Black plastic storage case with molded foam insert
- Black plastic motorized base
- USB drive with electronic Calibration Certificate
- Calibration Certificate (hard copy)
- Air bladder (for removing particulate from optical surfaces)

### Packaging:

Pelican brand, latching plastic case with foam protection for holding each standard, with a label under the lid that summarizes the data on the calibration certificate for quick reference. Each standard is labeled with an ID. The accompanying Calibration Certificate references all standards by their labeled ID number.

### Re-certification/Calibration:

The recommended interval for re-certification of the CVC is every two (2) years, when the product is used on a frequency as described in this document. Users may order the service through GEX Customer Service using GEX Part # S4500, or order the service from Thermo Fisher Scientific directly. Re-certification is equivalent to 'calibration'. See 'Precautions' section below for details regarding shipping.

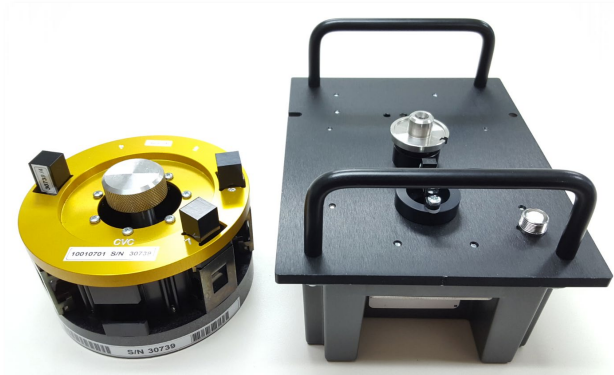
### Unboxing:

After allowing equilibration to ambient temperature for at least 24 hours, open the shipping box and remove the documentation packet, motorized base, and USB thumb drive. Remove the instrument from its shipping box.

### Storage:

Store the set in a cool and dry location.

## PRODUCT PHOTO



## USAGE

### 1. Frequency

#### 1.1. Every 90 days ( $\pm 15$ days).

1.1.1. This frequency is based on the expectation that the user will perform daily verification of the instrument using the Performance Verification module included with the GEX DoseControl software.

#### 1.2. After any of the following events:

- Installation;
- Location change;
- After instrument servicing from Thermo;
- Instrument is jarred or dropped;
- Before and after lamp replacement.

### 2. Materials

- CVC
- Motorized base unit
- USB drive with electronic Calibration Certificate

### 3. Installation

3.1. Turn off the instrument.

3.2. Remove all GEX dosimeter holder system hardware from the sample compartment.

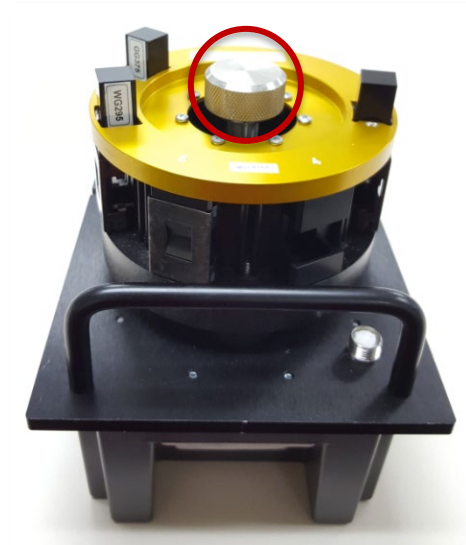
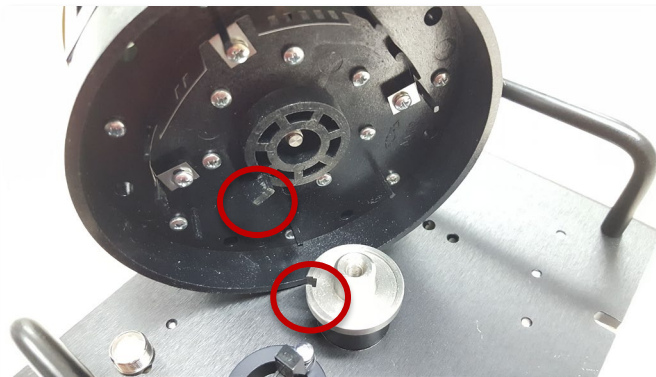
3.3. Assemble the CVC and install into the Evolution 220 sample compartment.

**NOTE:** Handle the carousel by the knurled knob or sides only. Do not touch the glass filters.

3.3.1. Both items must be assembled together before inserting into the Evo, otherwise the CVC filters will not be properly located in the Evo signal path.

3.3.2. The bottom of the carousel has an indexing tab that must be inserted into a slot in the motorized base.

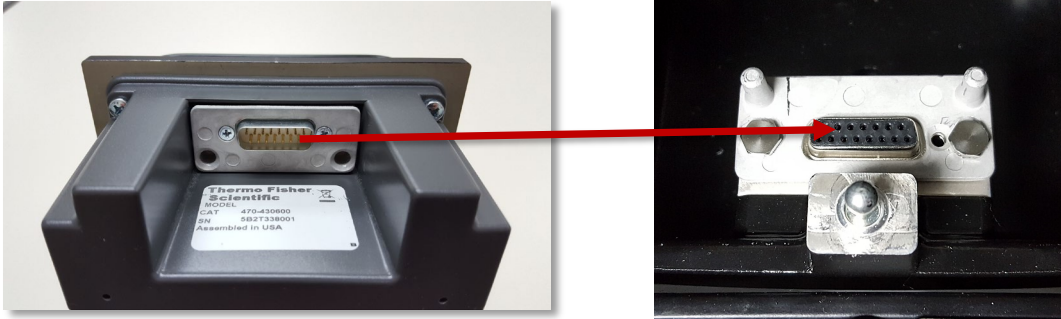
3.3.3. Rotate the carousel until the tab lines up with the slot and the carousel drops down onto the drive hub. Tighten the knob on top of the carousel to secure both components together. See images below.



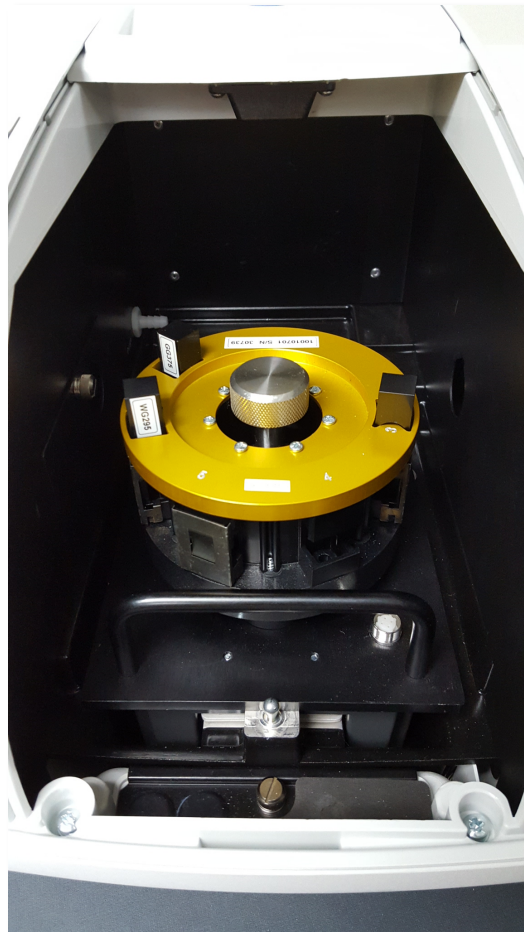
3.3.4. Open the Evo sample compartment and remove the front cover plate.

**Evo220 Calibration Verification Carousel (CVC)**

3.3.5. Insert the CVC assembly into the Evo, being careful to line up the connector pins when pressing the assembly into place. See images below.



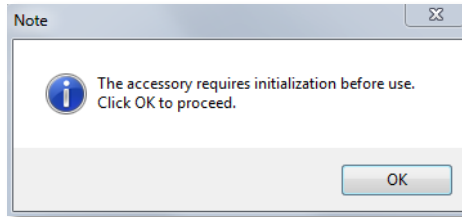
3.3.6. Ensure the CVC is fully seated on the sample chamber posts and that the front connector is engaged. See image below.



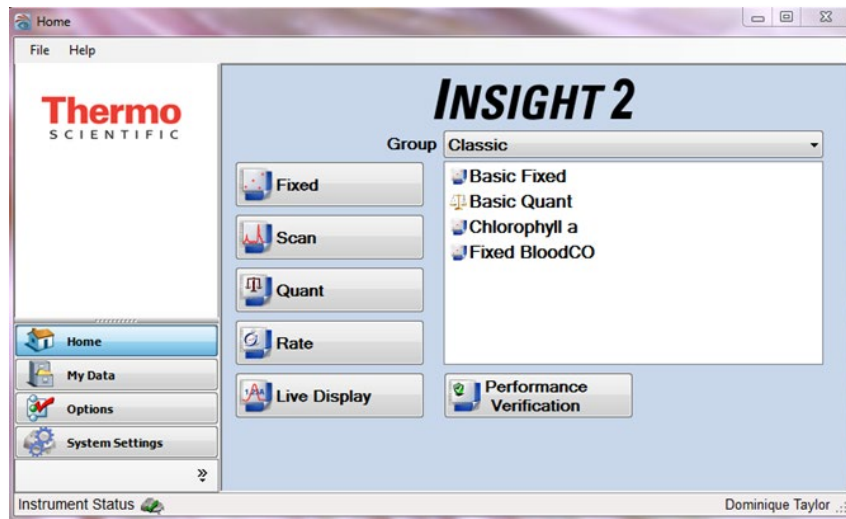
3.3.7. Replace the Evo front cover and close the lid.

3.3.8. Open the Thermo Insight software on the PC.

3.3.9. If the CVC is installed correctly, a message prompts that the accessory must be initialized. See image below.

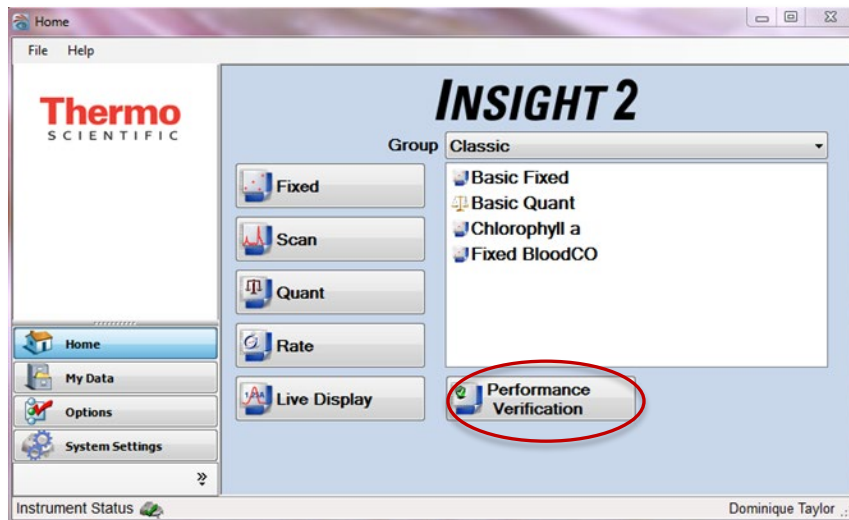


3.3.10. When the initialization process is complete (about 10 seconds), the screen of Thermo Insight will appear ready. See image below.

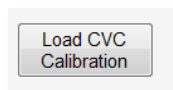


**4. Method**

4.1. Select the "Performance Verification" button to set up and run tests to verify performance of the instrument.

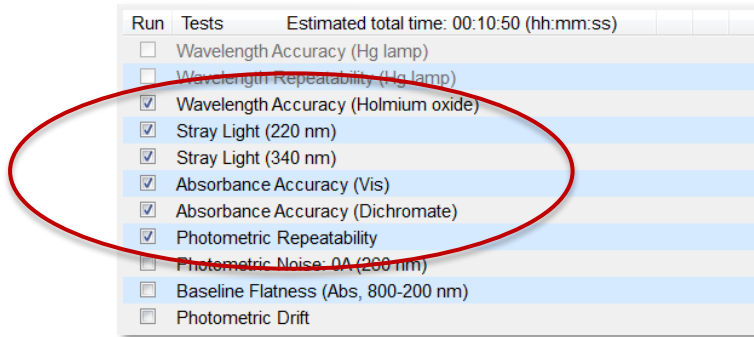


4.2. Insert the USB drive included with the CVC carousel, and select the 'Load CVC Calibration' button in the upper-left of the screen. See image below.

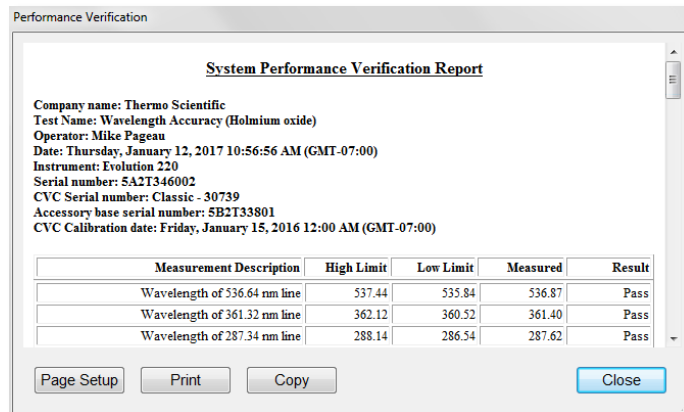


- 4.3. Navigate to the USB drive and select the calibration file.
- 4.4. The list of verification tests to be performed will populate automatically.

**NOTE:** GEX recommends running the default tests listed below. Photometric noise, baseline flatness, and photometric drift may be performed if desired but are not necessary.



- 4.5. Verify the Evo220’s lid is closed. Run the Performance Verification by pressing the “Run” button. Keep the sample compartment closed throughout the duration of the test.
- 4.6. A Performance Verification Report will generate when complete. Print the report, sign and date. See image below.



**CARE & MAINTENANCE**

When not in use, store the accessory in the case provided in accordance with the storage recommendations above. Use the provided air bladder to keep the exposed surfaces free of dust and particulate.

**ACCESSORIES**

None.

**PRECAUTIONS**

The holmium oxide standard in the CVC is a liquid solution and **must not freeze** during transport. It also is affected by excessive heat. Therefore, the unit must be returned for recertification at an authorized facility shipped in the original packaging (insulated box with optional cooling packs) or equivalent to protect the solution during transport.

**WARRANTY/GUARANTEEE**

**Warranty:**

Please refer to the information provided with the device for warranty information.

## Evo220 Calibration Verification Carousel (CVC)

**Guarantee:**

1 year GEX satisfaction guarantee. Product may be returned within one year from the date of delivery for any customer dissatisfaction.

**RELATED DOCUMENTS**

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- GEX Doc #100-156 Evolution 220 Spectrophotometer – Product Specifications and Usage (PSU)
- Thermo Scientific Evolution 220 Spectrophotometer User Guide (*Performance Verification section*)
- Thermo Scientific Calibration Verification Carousel (CVC) User Guide

**REVISION HISTORY**

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DATE	CHANGE DESCRIPTION	REVISION
05/23/19	Initial release – content taken from 100-156 Rev. B then improved clarity and organization.	A

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