

Technical Information

Multi optic calibration and verification kit



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Function and system design

Multi optic calibration and verification kit contents

The multi optic calibration and verification kit includes all the necessary hardware for calibrating and verifying the calibration of the bio multi optic and Raman optic system for single use.

Kit contents:

Hardware	Description
Multi optic calibration accessory	Accessory used to calibrate the optic
Multi optic verification accessory	Accessory used to verify the system performance to the calibration
Temperature display	Plugs into the multi optic calibration accessory to provide device temperature reading
Flash drive with calibration files	Flash drive containing the calibration files
Syringe	Used when the multi optic verification accessory requires servicing
Syringe tips (2)	Used when the multi optic verification accessory requires servicing

Multi optic calibration accessory The multi optic calibration accessory is used for standardizing Raman instruments and analyzers to give precise spectral intensity measurements. When used with the recommended calibration protocol, the calibration accessory ensures different instruments generate similar spectra when measuring a given sample. The multi optic calibration accessory was created specifically for use with Raman instruments and analyzers manufactured by Endress+Hauser.

The multi optic calibration accessory contains a calibration reference standard (CRS) housed in a robust enclosure.

Multi optic verification accessory The multi optic verification accessory is used to verify the calibration results using a standard reference sample. The verification sample initially provided and required for use with the multi optic verification accessory is 70 % isopropyl alcohol (IPA).

NOTICE

Only 70 % IPA should be used for optical verification.

- ▶ Only 70 percent by volume (%v/v) will work. Endress+Hauser recommends using CiDehol 70 by Decon Laboratories.
- ▶ Use of any other liquid for verification will result in a failed verification and may result in damage to both the verification accessory and the Raman probe.

The multi optic verification accessory was created specifically for use with Raman instruments and analyzers manufactured by Endress+Hauser.

Temperature display

A temperature display with the recommended precision and accuracy is provided with the kit and connects to the temperature measurement sensor contained within the multi optic calibration accessory. The device temperature is entered into the Raman RunTime software of the Raman analyzer during calibration. This requires a Raman analyzer with Raman RunTime 6.2.2+ embedded software.

Syringe and tips

A syringe with leur lock tips (2) is included in the kit for servicing the multi optic verification accessory. Refer to the *Multi optic calibration and verification kit Operating Instructions* for maintenance instructions.

Layout

The external and internal views of the multi optic calibration and verification kit are shown below.



Figure 1. External view of the multi optic calibration and verification kit

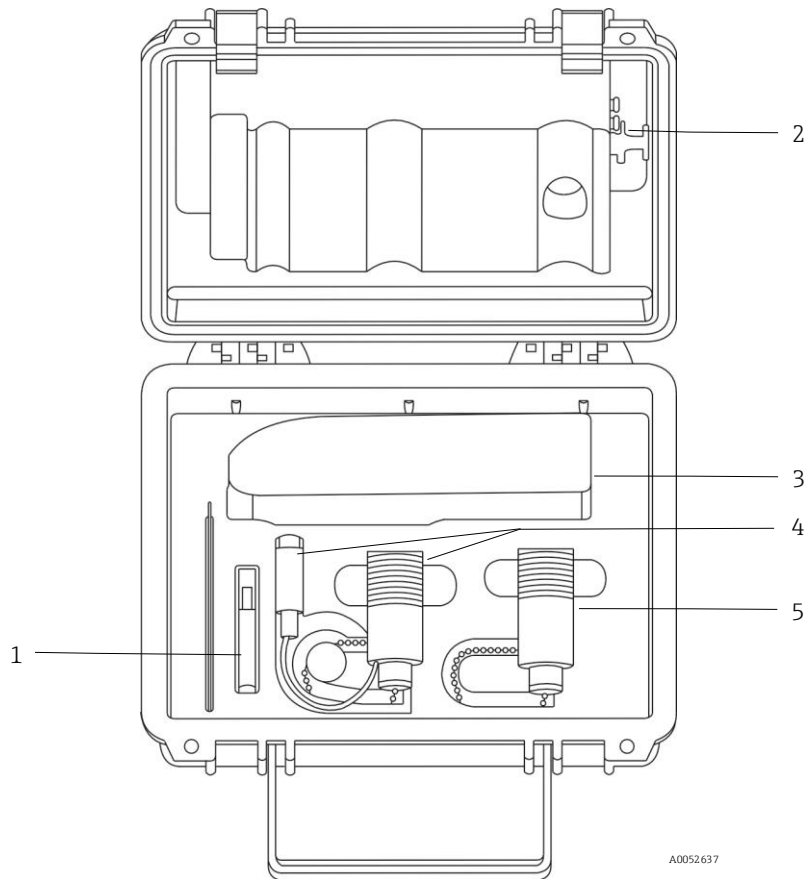


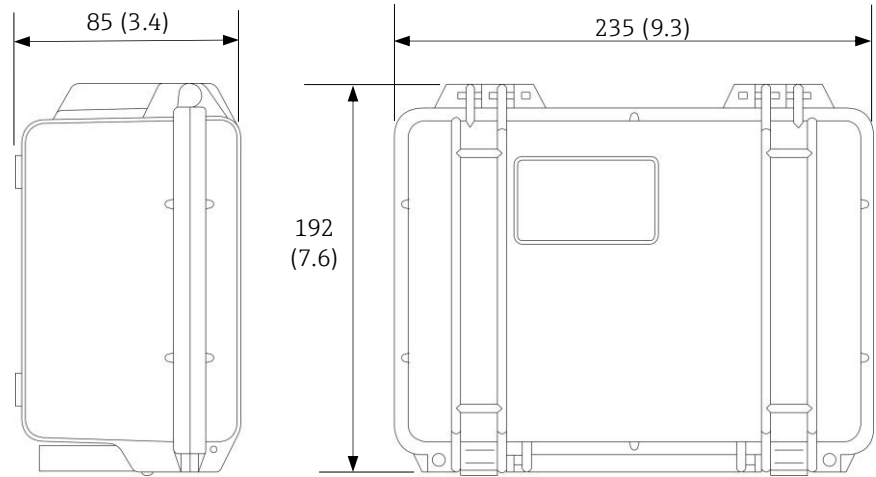
Figure 2. Internal view of the multi optic calibration and verification kit

#	Description
1	Flash drive
2	Syringe and tips
3	Temperature display
4	Multi optic calibration accessory and temperature sensor connector
5	Multi optic verification accessory

Specifications

Dimensions: multi optic calibration and verification kit

The dimensions of the multi optic calibration and verification kit are shown below.

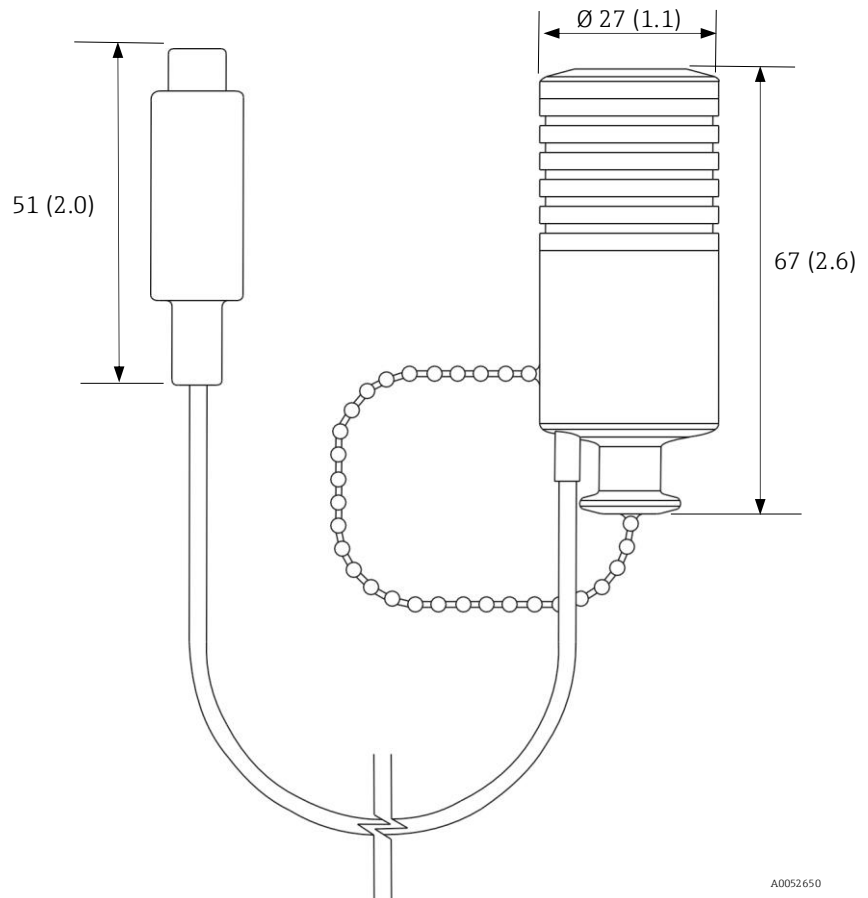


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Figure 3. Multi optic calibration and verification kit. Dimensions: mm (in)

Dimensions: multi optic calibration accessory

The dimensions of the multi optic calibration accessory are shown below.

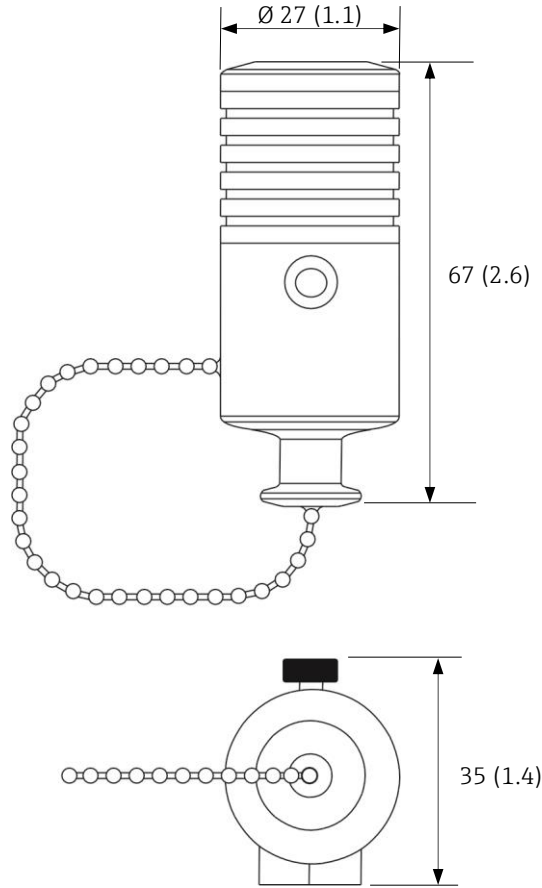


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Figure 4. Multi optic calibration accessory. Dimensions: mm (in)

Dimensions: multi optic verification accessory

The dimensions of the multi optic verification accessory are shown below.



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Figure 5. Multi optic verification accessory. Dimensions: mm (in)

General specifications

Additional multi optic calibration and verification kit specifications are listed below.

Item	Description
Spectral intensity reference	calibration reference standard (CRS)
Data file spectral range	CRS-785: 790.7 to 1074.5 nm
Spectral intensity output	< $\pm 2 \%$
Total long term spectral uncertainty (at any wavelength)	CRS-785: $\pm 6.05 \%$
Calibration kit weight	1.5 kg (3.3 lbs)
IP rating	IP20
Operating conditions	0 to 40 °C (32 to 104 °F) < 80 % humidity, non-condensing
Recommended storage conditions	-15 to 50 °C (5 to 122 °F) < 80 % humidity, non-condensing

Table 1. Specifications