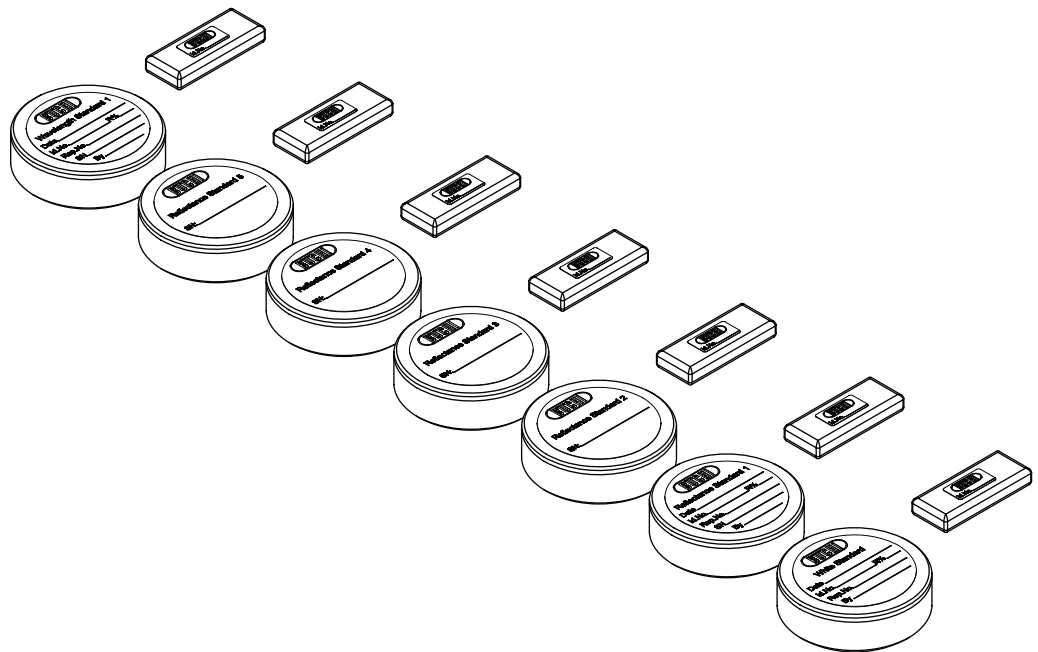




Performance test standards kit (11067545)

Technical data sheet

The ProxiMate™ Performance test standards kit is used to check wavelength and photometric accuracy of the BUCHI ProxiMate™ NIR spectrometer.



Description of the Performance test standards kit

The kit consists of 7 reflectance standards, each supplied with a USB stick with reflectivity data, saved on it.

The reflectance standard material is mounted in a durable Delrin holder and is supplied with a protective cover. The USB stick and standard are supplied in a plastic box. A label stating the unique serial number of the standard is glued onto the backside of the holder.

One of the seven standards is a white standard with 99% reflectivity.

Five of the seven standard are reflectance standards. Each of these has a predefined level of reflectivity and are used to check photometric accuracy.

One of the standards is a wavelength standard. The NIR spectra of this standard has sharply defined absorption features. These are used to determine wavelength accuracy of the instrument.

For reflectivity standards, Spectralon is used as the diffuse reflective material. This material is durable and chemically inert. Spectralon used in the standard kits is tested to be optically flat +/- 4% over the wavelength range 250 to 2450 nm (VIS to NIR).

For the wavelength standard, Spectralon with holmium-, erbium and dysprosium oxide added is used as the standard material. This material is durable, chemically inert and has a highly reproducible and characteristic NIR spectra with well-defined NIR absorptions. The NIR spectra is measured over the wavelength range 250 to 2450 nm (VIS to NIR).

The physical specifications of the standards are summarised in the table below:

Physical Specification

BUCHI Order Number	Description	Diameter (mm)
11067406	80 % reflectivity	50
11067407	50 % reflectivity	50
11067408	25 % reflectivity	50
11067409	10 % reflectivity	50
11067410	5 % reflectivity	50
11067405	99 % reflectivity	50
11067411	Wavelength standard	50

Ambient conditions

Operating and storage temperature range	- 50 °C to 250 °C
Operating and Storage Humidity Range	5 % to 95 %
UV Resistant	

Optical Specification

Characteristic	Value
Measured Wavelength Range	250 - 2450 nm
Measurement Sampling Interval	1 nm
Photometric Accuracy	Better than 1%
Nominal Values of spectral reflectance at a wavelength of 1250nm (Reflectance Standards)	11067406 (80% reflectivity) = 0.85 +/- 0.03 11067407 (50% reflectivity) = 0.5 +/- 0.03 11067408 (25% reflectivity) = 0.27 +/- 0.02 11067409 (10% reflectivity) = 0.12 +/- 0.01 11067410 (5% reflectivity) = 0.06 +/- 0.005
Peak positions of Wavelength Standard. Reflectance value (R) of peak shown in brackets. Reflectance may not deviate by more than +/- 3% R (absolute)	449 nm (55% R) 523 nm (60% R) 654 nm (76.9% R) 971 nm (85.7% R) 1119 nm (85.5% R) 1261 nm (63.7% R) 1299 nm (58.7% R) 1535 nm (69.5% R)
Reference Measurement Device	Perkin Elmer 950 Spectrometer
Reference measurement geometry and procedure	8 Degree hemispherical reflectance measured using 150mm integrating sphere

The average service life of each standard > 10 years.

Recertification of the set of standards is recommended every two years.

This laboratory is accredited under ISO 17025 standards. All standards are directly traceable to the National Institute of Standards and Technology (NIST).

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