

Calibration Certificate

Sample: Zenith Polymer® Diffuse Reflectance Standard – 99%R
Type: SG3051
Serial-No.: ...
Report-No.: 23121301
PO-No.: ...
Customer: ...
...
...
...

Test and Test Method

The 8°/hemispherical spectral reflectance was measured for the sample listed above. The calibration was performed with a PerkinElmer Lambda 950 UV-VIS-NIR spectrometer (serial number 950L1211082) equipped with a 150 mm integrating sphere. The reflectance was determined by using a standard from SphereOptics GmbH, part number SG 3051, which has been calibrated by the National Metrology Institute of the Federal Republic of Germany (PTB).

Measuring Equipment

Reference:	Lambda 950 Spectrometer	PTB Reference Standard
Reference No.:	WO-02222533	PTB 44373/23
Last maintenance:	February 27, 2023	October 16, 2023
Next maintenance:	February 2024	October 2024

Total Calibration Uncertainty

The total uncertainty for this measurement is:

Wavelength Range	Total Uncertainty (95 % confidence)
250-300 nm	1.11 %
>300-1750 nm	0.42 %
>1750-2200 nm	0.57 %
>2200-2400 nm	1.71 %
>2400-2450 nm	2.51 %

Laboratory Environment

Temperature: 23 °C ± 2 °C
Humidity: 45 % ± 15 %

Calibration Documentary

This calibration certificate includes the printed spectral reflectance curve of the sample from 250-2450 nm reported in 50 nm intervals, together with the electronic calibration data delivered on a portable data storage device.

Calibration Interval

If the product is handled with care, recalibration is recommended one year after the date of this certificate, at the discretion of the user.

Date: December 13, 2023

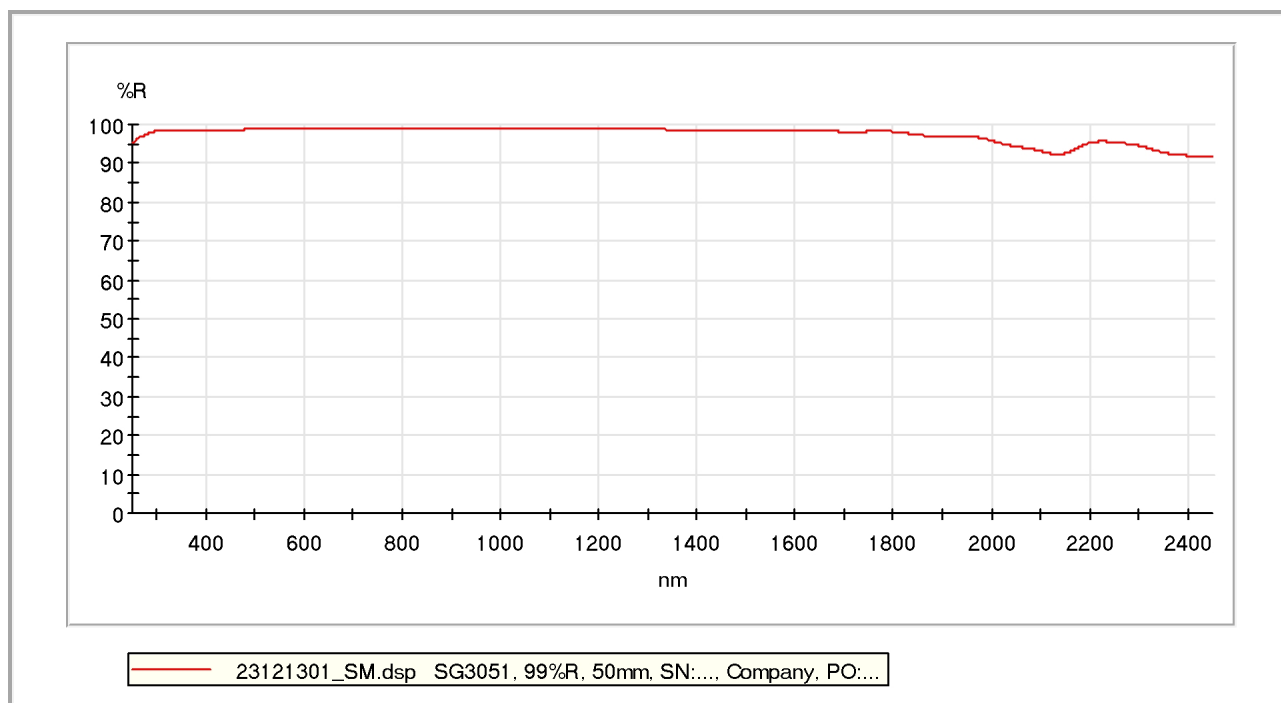
Norbert Flath
Measurement Operator

Daniel Schwefel
Head of Laboratory

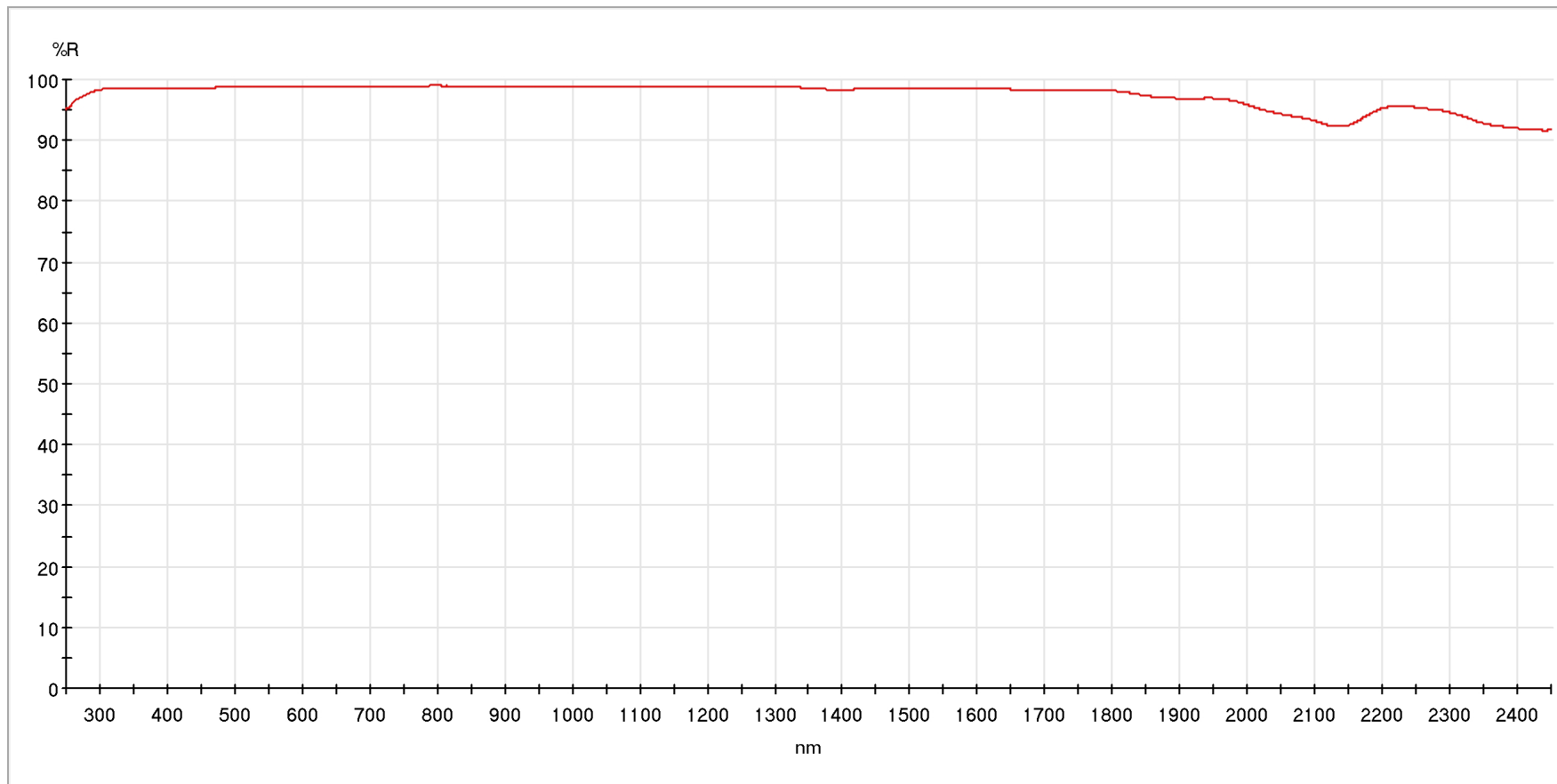
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Diffuse Reflectance Measurement

Report-No.: 23121301_SM



Abscissa [nm]	Ordinate [%R]	Abscissa [nm]	Ordinate [%R]	Abscissa [nm]	Ordinate [%R]
250	95,153	1.000	98,892	1.750	98,216
300	98,316	1.050	98,861	1.800	98,162
350	98,442	1.100	98,853	1.850	97,347
400	98,493	1.150	98,848	1.900	96,906
450	98,632	1.200	98,841	1.950	96,924
500	98,771	1.250	98,817	2.000	95,838
550	98,849	1.300	98,796	2.050	94,319
600	98,924	1.350	98,593	2.100	93,182
650	98,949	1.400	98,357	2.150	92,529
700	98,930	1.450	98,453	2.200	95,262
750	98,889	1.500	98,526	2.250	95,427
800	98,982	1.550	98,541	2.300	94,605
850	98,925	1.600	98,562	2.350	92,790
900	98,902	1.650	98,389	2.400	91,972
950	98,863	1.700	98,144	2.450	91,956



23121301_SM.dsp SG3051, 99%R, 50mm, SN:..., Company, PO:...

Slit: 4 nm

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