



Near-infrared Spectrophotometer Absorbance Qualification

Neutral Density Filters

Purpose

These references can be used to qualify the absorbance accuracy and linearity of near-infrared spectrophotometers with a spectral bandwidth of 6.5 nm or less, over the wavelength range 800 nm - 3200 nm.

Description and Discussion

Glass filters mounted 'stress free' in an anodised aluminium holder. The use of Schott NG-type glasses is well established for the validation of the absorbance scale and linearity of spectrophotometers in the near-infrared region.



The spectrum of these filters is relatively flat over most of the range of calibration, but with significant deviation above 2700nm

Calibration values (in % Transmission and Absorbance) are certified at 1100, 1700, 2210, 2500 and 2850 nm. Three filters are available, designated, R1 R3 and I1. Approximate values are:

Wavelength	1100nm		1700nm		2210 nm		2500 nm		2850 nm	
	%T	A	%T	A	%T	A	%T	A	%T	A
R1	20	0.70	40	0.40	47	0.32	49	0.31	2	1.83
R3	25	0.59	46	0.34	53	0.28	55	0.26	3	1.54
I1	33	0.48	53	0.28	59	0.23	60	0.22	6	1.25

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Certification and Documentation

A Certificate of Calibration and Traceability and full instructions for use are provided with each Reference Material. The certificate is supplied in electronic format, on a USB drive in the same box as the references, allowing hard copy to be produced on demand and giving easy interface to the user's own IT systems. Certification measurements are made on a reference spectrophotometer that has been qualified using Standard Reference Materials certified by the National Institute of Standards and Technology (NIST) in the USA, or against primary physical references such as elemental emission lines.

Warranty

STARNA offers a Lifetime Guarantee on all Starna Certified Reference Materials, unless otherwise stated, such that any reference material that moves outside its published uncertainty budget will be replaced free of charge. This guarantee is subject to the reference materials being re-certified at least every two years and that the references have not been physically, thermally or optically abused. The STARNA UKAS accredited calibration laboratory aims to re-certify and despatch references within five working days from receipt.

Accreditation

Starna Scientific is accredited to both ISO 17034 as a Reference Material producer, and ISO/IEC 17025 as a Calibration Laboratory for optical reference measurements. Starna Scientific's manufacturing facility is accredited to the ISO 9001 Quality Management System with BSI. For details see www.starna.com/accreditations.

How to Order

Calibration values (in % Transmission and Absorbance) are certified at 1100, 1700, 2210, 2500 and 2850 nm. Three filters are available, designated R1 R3 and I1. Nominal values are:

Nominal values at certified wavelengths										CATALOGUE NUMBER
1100nm		1700nm		2210 nm		2500 nm		2850 nm		
%T	A	%T	A	%T	A	%T	A	%T	A	
20	0.70	40	0.40	47	0.32	49	0.31	2	1.83	RM-R1
25	0.59	46	0.34	53	0.28	55	0.26	3	1.54	RM-R3
33	0.48	53	0.28	59	0.23	60	0.22	6	1.25	RM-I1
Set of all 3 filters as above										RM-R1R3I1



Starna scientific
'Setting the Standard'

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