Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-19933-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **19.04.2024**

Date of issue: 19.04.2024

Holder of accreditation certificate:

SphereOptics GmbH
Gewerbestr. 13, 82211 Herrsching am Ammersee

with the location

SphereOptics GmbH
Gewerbestr. 13, 82211 Herrsching am Ammersee

The calibration laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The calibration laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of calibration laboratories and they conform to the principles of DIN EN ISO 9001.

Calibration in the fields:

High Frequency & Radiation Quantities
Optical Quantities
- **radiometry**

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

Permanent Laboratory

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Radiometry Spectral Reflectance	(for wavelengths 250 nm to 320 nm):	optical spectroscopy		Geometric alignment as follows 8° / d respectively 8° / h d: diffuse h: hemispheric The expanded uncertainty of measurement correspond to absolute values.
	0.5 % to 20 %		1.01 %	
	> 20 % to 40 %		1.15 %	
	> 40 % to 60 %		1.32 %	
	> 60 % to 80 %		1.43 %	
	> 80 % to 100 %		1.56 %	
	(for wavelengths > 320 nm to 1250 nm):			
	0.5 % to 20 %		0.38 %	
	> 20 % to 40 %		0.42 %	
	> 40 % to 60 %		0.52 %	
	> 60 % to 80 %		0.48 %	
	> 80 % to 100 %		0.5 %	
	(for wavelengths > 1250 nm to 1750 nm):			
	0.5 % to 20 %		0.51 %	
	> 20 % to 40 %		0.55 %	
	> 40 % to 60 %		0.63 %	
	> 60 % to 80 %		0.59 %	
	> 80 % to 100 %		0.61 %	
	(for wavelengths > 1750 nm to 2300 nm):			
	0.5 % to 20 %		0.92 %	
	> 20 % to 40 %		1.04 %	
	> 40 % to 60 %		1.19 %	
	> 60 % to 80 %		1.28 %	
	> 80 % to 100 %		1.4 %	
	(for wavelengths > 2300 nm to 2450 nm):			
	0.5 % to 20 %		1.69 %	
	> 20 % to 40 %		1.95 %	
	> 40 % to 60 %		2.23 %	
	> 60 % to 80 %		2.48 %	
	> 80 % to 100 %		2.75 %	

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation