

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-K-20284-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 04.10.2023

Date of issue: 04.10.2023

Holder of accreditation certificate:

**Opsytec Dr. Gröbel GmbH
Am Hardtwald 6 - 8, 76275 Ettlingen**

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 general principles of DIN EN ISO 9001.

Calibration in the fields:

Optical quantities
– Radiometry

The calibration laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use calibration standards or equivalent calibration procedures listed here with different issue dates.

The calibration laboratory maintains a current list of all calibration standards / equivalent calibration procedures within the flexible scope of accreditation.

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>.

Abbreviations used: see last page

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

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Permanentes Laboratorium
Calibration and Measurement Capabilities (CMC)

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Expanded uncertainty of measurement	Remarks
Irradiance / broad-band radiometer with display	200 nm to 230 nm 2 mW/m ² to 2 · 10 ⁵ W/m ²	ASTM G130-12(2020)	6.0 %	The calibration of radiometers is limited to the specific application of the customer and is valid only for the geometric and radiometric conditions during the calibration (e.g. the linearity, the cosine correction and the spectral mismatch to the corresponding actinic action spectrum of the detector).
	230 nm to 280 nm 2 mW/m ² to 1 · 10 ⁵ W/m ²		3.7 %	
	280 nm to 315 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		3.5 %	
	315 nm to 400 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		3.3 %	
	400 nm to 850 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		2.8 %	
	850 nm to 1000 nm 1 mW/m ² to 1 · 10 ⁵ W/m ²		4.0 %	
	200 nm to 230 nm 2 mW/m ² to 2 · 10 ⁵ W/m ²	ASTM E824-18	7.0 %	
	230 nm to 280 nm 2 mW/m ² to 1 · 10 ⁵ W/m ²		5.0 %	
	280 nm to 315 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		4.5 %	
	315 nm to 400 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		4.5 %	
	400 nm to 850 nm 1 mW/m ² to 1.8 · 10 ⁵ W/m ²		3.8 %	
	850 nm to 1000 nm 1 mW/m ² to 1 · 10 ⁵ W/m ²		5.0 %	

Abbreviations used:

ASTM	ASTM American Standard for Testing and Materials
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ASTM G130-12(2020):	Standard Test Method for Calibration of Narrow- and Broad-Band Ultraviolet Radiometers using a Spectroradiometer
ASTM E824-18:	Standard Test Method for Transfer of Calibration from Reference to Field Radiometers
DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission

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