

## Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection 1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV

Signatory to the Multilateral Agreements of EA, ILAC and IAF for Mutual Recognition

# Accreditation



The Deutsche Akkreditierungsstelle GmbH attests that the calibration laboratory

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

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out calibrations in the following fields:

**Optical quantities**  
– Radiometry

The accreditation certificate shall only apply in connection with the notice of accreditation of 21.09.2017 with the accreditation number D-K-20284-01 and is valid until 20.09.2022. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 2 pages.

Registration number of the certificate: **D-K-20284-01-00**

Braunschweig,  
21.09.2017

*by proxy*  
  
Dr. Michael Wolf  
Head of Division

Translation issued:  
09.01.2019

Head of Division

# Deutsche Akkreditierungsstelle GmbH

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10117 Berlin

Office Frankfurt am Main  
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Office Braunschweig  
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The publication of extracts of the accreditation certificate is subject to the prior written approval by Deutsche Akkreditierungsstelle GmbH (DAkKS). Exempted is the unchanged form of separate disseminations of the cover sheet by the conformity assessment body mentioned overleaf.

No impression shall be made that the accreditation also extends to fields beyond the scope of accreditation attested by DAkKS.

The accreditation was granted pursuant to the Act on the Accreditation Body (AkkStelleG) of 31 July 2009 (Federal Law Gazette I p. 2625) and the Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products (Official Journal of the European Union L 218 of 9 July 2008, p. 30). DAkKS is a signatory to the Multilateral Agreements for Mutual Recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Cooperation (ILAC). The signatories to these agreements recognise each other's accreditations.

The up-to-date state of membership can be retrieved from the following websites:

EA: [www.european-accreditation.org](http://www.european-accreditation.org)

ILAC: [www.ilac.org](http://www.ilac.org)

IAF: [www.iaf.nu](http://www.iaf.nu)

## Deutsche Akkreditierungsstelle GmbH

### Annex to the Accreditation Certificate D-K-20284-01-00 according to DIN EN ISO/IEC 17025:2005

Period of validity: 21.09.2017 to 20.09.2022

Date of issue: 21.09.2017

Holder of certificate:

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

Head:

Dr. Ing. Mark Paravia

Deputy head:

Dr. Ing. Stefan Pieke

Accredited as calibration laboratory since:

21.09.2017

Calibration in the fields:

**Optical quantities**  
– **Radiometry**

Abbreviations used: see last page

**Permanent Laboratory**

Measurement quantity / Calibration item	Range	Measurement conditions / procedure	Best measurement capability <sup>1)</sup>	Remarks
Irradiance / broad-band radiometer with display	200 nm to 240 nm 100 $\mu\text{W}/\text{cm}^2$ to 1 $\text{W}/\text{cm}^2$	ASTM G130-12, ASTM E824-10	7.5 %	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). When deviations from the calibration conditions occur, the measurement uncertainty must be increased.
	240 nm to 280 nm 100 $\mu\text{W}/\text{cm}^2$ to 5 $\text{W}/\text{cm}^2$		5.4 %	
	280 nm to 400 nm 100 $\mu\text{W}/\text{cm}^2$ to 10 $\text{W}/\text{cm}^2$		4.6 %	
	400 nm to 1000 nm 100 $\mu\text{W}/\text{cm}^2$ to 10 $\text{W}/\text{cm}^2$		4.5 %	

**ASTM G130-12:** Standard Test Method for Calibration of Narrow- and Broad-Band Ultraviolet Radiometers Using a Spectroradiometer

**ASTM E824-10:** Standard Test Method for Transfer of Calibration from Reference to Field Radiometers

<sup>1)</sup> The best measurement capabilities are stated according to EA-4/02. These are expanded uncertainties of measurement with a coverage probability of 95% and have a coverage factor of  $k = 2$  unless stated otherwise. Uncertainties without unit are relative uncertainties referring to the measurement value unless stated otherwise.