

Deutsche Akkreditierungsstelle GmbH German Accreditation Body

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 (German Accreditation Body) attests that the testing laboratory

**OSRAM Opto Semiconductors GmbH
Reliability Engineering Test & Analysis Laboratory
Leibnizstraße 4, 93055 Regensburg**


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

Measurement of LEDs, environmental simulation and analysis of optoelectronic semiconductor components

The accreditation certificate shall only apply in connection with the notice of accreditation of 11.05.2011 with the accreditation number D-PL-12130-01 and is valid until 14.01.2013. 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-PL-12130-01-01**

Frankfurt am Main, 11.05.2011



Dipl.-Ing. (FH) Ralf Egner
Head of Division 2

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

See notes overleaf.

Deutsche Akkreditierungsstelle GmbH German Accreditation Body

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The publication of extracts of the accreditation certificate is subject to the prior written approval by DAkS Deutsche Akkreditierungsstelle GmbH. 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 DAkS.

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). DAkS 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 Co-operation (ILAC). The signatories to these agreements recognise each others' accreditations.

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

EA: www.european-accreditation.org

ILAC: www.ilac.org

IAF: www.iaf.nu

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Annex to the Accreditation Certificate D-PL-12130-01-01
according to DIN EN ISO/IEC 17025:2005

Period of validity: 11.05.2011 to 14.01.2013

Holder of certificate:

OSRAM Opto Semiconductors GmbH
Reliability Engineering Test & Analysis Laboratory
Leibnizstraße 4, 93055 Regensburg

Tests in the fields:

Norm / Standard	Titel der Norm oder des Verfahrens / Title of standard or procedure
Reliability Engineering Test Laboratory	
CIE 127	Measurement of LEDs
JESD22-A101	Steady State Temperature Humidity Bias Life Test
JESD22-A102	Accelerated Moisture Resistance – Unbiased Autoclave
JESD22-A103	High Temperature Storage Life
JESD22-A104	Temperature Cycling
JESD22-A105	Power Temperature Cycling
JESD22-A106	Thermal Shock
JESD22-A108	Temperature, Bias and Operating Life
JESD22-A113	Preconditioning of Nonhermetic Surface Mount Devices Prior to Reliability Testing
JESD22-A114	Electrostatic Discharge (ESD) Sensitivity Testing Human Body Model (HBM)
JESD22-B102	Solderability
JESD22-B106	Resistance to Soldering Temperature for Through-Hole Mounted Devices

Annex to the accreditation certificate D-PL-12130-01-01

IEC 60068-2-2	Environmental testing - Part 1: Tests – Test B: Dry heat
IEC 60068-2-14	Environmental testing - Part 2: Tests – Test N: Change of temperature
IEC 60068-2-20	Environmental testing - Part 2: Tests – Test T: Soldering
IEC 60068-2-67	Environmental testing Part 2: Tests – Test Cy: Damp Heat, Steady State, Accelerated Test Primarily Intended for Components
IEC 60068-2-78	Environmental testing Part 2: Tests – Test Cab: Damp heat, steady state
IEC 61760-1	Surface mounting technology – Part 1: Standard method for the specification of surface mounting components (SMD)
IES LM-80-08	Measuring Lumen Maintenance of LED Light Sources
Analysis Laboratory	
PI A63501-Q0045-N001	Investigation with scanning electron microscope (SEM) for failure analysis / <i>Untersuchungen am Rasterelektronenmikroskop im Rahmen der Fehleranalyse</i>
PI A63501-Q0026-N001	Energy dispersive X-ray (EDX) investigation for failure analysis / <i>EDX Untersuchungen im Rahmen der Fehleranalyse</i>
PI A63501-Q0040-N001	Investigation with Dual Focused Ion Beam for failure analysis / <i>Untersuchungen am Dual Focused Ion Beam im Rahmen der Fehleranalyse</i>
PI A63501-M0001-N001	Embedded cross sectioning / <i>Eingebettete Schliffe anfertigen</i>
PI A63501-P0058-N001	Mesurement and characterization of LED with Kethley® equipment / <i>Messen von LED's, Charakterisierung von LED's am Kethley®</i>
PI A63501-Q0023-N001	X-ray analysis / <i>Röntgenanalyse</i>
PI A63501-V0012-N001	<i>Solderability test Dip & Look / Lötbarkeitsprüfung Dip & Look</i>
PI A63501-R0051-N001	Chemical decapsulation of components / <i>Chemisches Öffnen unterschiedlicher Bauteile</i>
PI A63501-R0052-N001	Lead quicktest for failure analysis / <i>Blei Schnelltest an SMT- und Radialbauteilen im Rahmen der Fehleranalyse</i>
PI A63501-R0050-N001	Chemical preparation / <i>Chemische Präparation</i>

Technical responsibility for the test reports:

Mr. Wolfgang Schmid / Reliability Engineering Test Laboratory
Mr. Hubert Hölzl / Analyst Laboratory