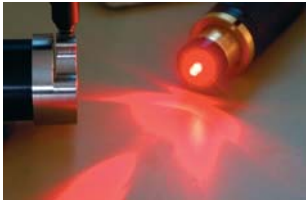
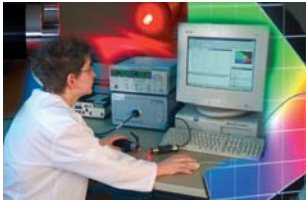


- ▶ Engineering
- ▶ Test/Programming
- ▶ Supply Chain Service
- ▶ Qualification
- ▶ Failure analysis
- ▶ Consultancy

## Electrical and optical parameters



## Lab accredited according ISO/IEC 17025



# SERVICE FOR OPTOELECTRONICS

**RoodMicrotec** is an independent and certified test lab with 40 years experience in quality assurance of electronic and optoelectronic products. **RoodMicrotec's** core competence consists of a comprehensive set of test solutions, with a focus on optoelectronics.

**RoodMicrotec** offers know-how from wafer level via packaged components and PBAs to complete electronic and optoelectronic systems.

Our services and expertise primarily support you in the following fields:

- **Test & Engineering** – component test, test engineering for ASICs and optic ASSPs
- **Supply Chain Service** for ASICs, Opto-ASICs and Opto-ASSPs from wafer to final product and worldwide shipment
- **Qualification** of LEDs on chip carrier (COC) and in different packages, laser diodes and VCSELs according to international standards or customer requirements
- **Failure Analysis** – functional, optoelectrical and physical examinations
- **Technical consultancy** – independent expert reports and case studies; MTBF calculation, calculation of FIT rates, WEIBULL, component engineering

### **RoodMicrotec service for optoelectronics**

Service for devices, modules and optic systems expand from engineering & test, failure analysis up to qualification.

**RoodMicrotec** measures electrical and optical parameters and performs physical analysis on

- Fiber optic devices and modules
- LEDs, LED systems and displays
- Laser diodes and VCSELs
- image sensors and other sensors
- Opto-ASICs and ASSPs

### **RoodMicrotec labs – accredited**

**RoodMicrotec** received approval for ISO/IEC 17025 from DAR (German accreditation body) for all examinations performed in the labs. Thus, a high quality standard for examinations is fulfilled.

### **RoodMicrotec service for LEDs and laser diodes/VCSELs**

Offered electro-optical tests and physical examinations are

- **Selection of LEDs** regarding colour and luminous intensity: e.g. determination of chromaticity coordinate (XY-coordinate), dominant & peak wavelength, spectral curve, radiation characteristics
- **Life test/Burn-In** for LEDs and laser diodes/VCSELs with online measurement

### **Failure analysis on LEDs**

- On chip, packaged device and interconnection technology
- Determination of application specific failures
- Decapsulation of device/chip uncover
- Risk analysis for new LED and packaging technology

### **Eye safety measurement**

LEDs as well as laser diodes present a hazard to human eyes due to their high power. Therefore we perform

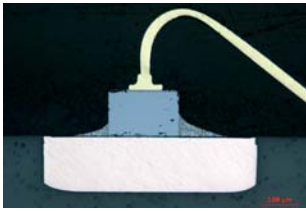
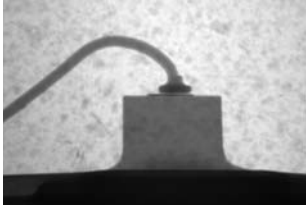
- classification for laser diodes according DIN EN 60825-1
- classification for LEDs according CEI IEC 62471

- ▶ Engineering
- ▶ Test/Programming
- ▶ Supply Chain Service
- ▶ Qualification
- ▶ Failure analysis
- ▶ Consultancy

# SERVICE FOR OPTOELECTRONICS



## DAR accredited labs



### Our extensive equipment:

- Precise illumination module for image sensor test
- Clean room facilities (class 1000)
- Scanning & Straightening systems
- Climate and temperature cycle chambers
- Shock and vibration facilities, centrifuge
- Focused Ion Beam (FIB) for modification on wafer level and bare dies
- Life test racks for LEDs, laser diodes and VCSELs
- Extensive microscopy equipment for failure localisation, e.g. scanning acoustic/X-ray microscopy
- Infrared camera

### Acknowledged expertise

As an independent and certified laboratory we get consulted as a third party or to confirm existing test results. Our customers rely on the competence of **RoodMicrotec** to ensure quality and reliability of their products.

We analyze according to standards like JEDEC, MIL, ESCC, AEC-Q,

TELCORDIA, DIN, IEC, MOST and customer specific requirements.

### Performed service:

- Development of test software for production test and selection
- Development of test hardware
- Electrical qualification
- Measurement of optical and electrical parameters
- Temperature stress and mechanical shock tests
- Constant acceleration
- Life test and Burn-In
- Failure and technology analysis
- Mounting and material analysis
- Risk analysis

**RoodMicrotec** holds references in technically challenging industries:

- automotive
- aerospace
- industrial
- general lighting
- communications
- medical

## Competence through experience

DIN EN ISO/IEC 17025  
ISO TS 16949  
DIN EN ISO 9001  
DIN EN ISO 14001

### Reliability by quality assurance

Quality is our key competence. Our services are based on professional measurements including process definition and documentation.

**RoodMicrotec** is an acknowledged service provider in the industry for quality assurance of electronics and optoelectronics.

We stand for certified and independent results in test, qualification and failure analysis and therefore provide reliable technical consulting.

### Rely on our experience

**RoodMicrotec** performed a large number of successful national and international projects and plays an active role in various standardization committees.

Our mission is to provide our customers with one-stop quality service.

### Challenge us!

We look forward to your inquiry.

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powerful solutions  
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