



# Quality is our expertise

## Competence Center

## Herbrechtingen

Quality is our first priority.

Competence in the fields of environmental simulation according to DIN EN ISO/IEC 17025:2005.

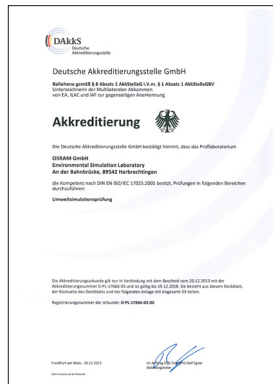
Light is OSRAM



# Welcome to the Environmental Simulation Laboratory

In our accredited laboratory we test the reliability of your products even under extreme environmental conditions. The quality of our services always gets first priority.

**Environmental simulation definitely shows the reliability of your product!**



# Services at a glance

In order that the product runs failure-free during its whole product life cycle, we are here to support you with help and advice.



## Our portfolio

- Climate
- IP protection classes
- Solar radiation
- Corrosion
- Vibration
- Transport
- Portable measurement data
- High-speed recording
- Microscopy



# Climate

We test your products at different environmental conditions such as temperature change in combination with humidity ranges. Your are given the certainty for a worldwide use of your products.



## Our service range

- Implementation of combined temperature and humidity tests, as stand-alone tests or in combination with vibration
- Control, operation and monitoring of test objects, e.g. for service life tests or for the verification of function with climate impact
- Support with the creation of (time-accelerated) test programs
- CAD-Construction and manufacturing of necessary equipment for operation and monitoring of test samples

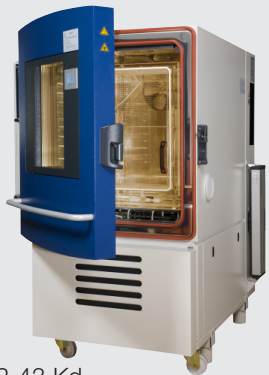
# Corrosion

We test industrial materials, components or systems in terms of corrosion resistance in atmospheres containing salt mist. We also offer corrosive gas tests with sulphur dioxide in combination with condensation water and various dry-gas-methods.



## Our service range

- Salt mist according to ISO 9227 NSS
- $\text{SO}_2$ :  
according to DIN 50018  
according to ISO 6988
- Corrosive gas:  
according to DIN EN 60068-2-43 Kd  
according to DIN EN 60068-2-60 Ke



# Vibration

Systems and components are exposed to various mechanical loads during its product life cycle and during transport. With different vibration tests we guarantee the mechanical stability of your products.



## Our service range

- Vibration test (sine, noise, shock)
- Vibration test with temperature influence (Thermo-vibration)
- Resonance analysis

# Transport

Our experts do not only execute packaging tests or rather transport simulations. They are also consultative with their know-how to develop a suitable packaging for your product and for defining corresponding transport tests.

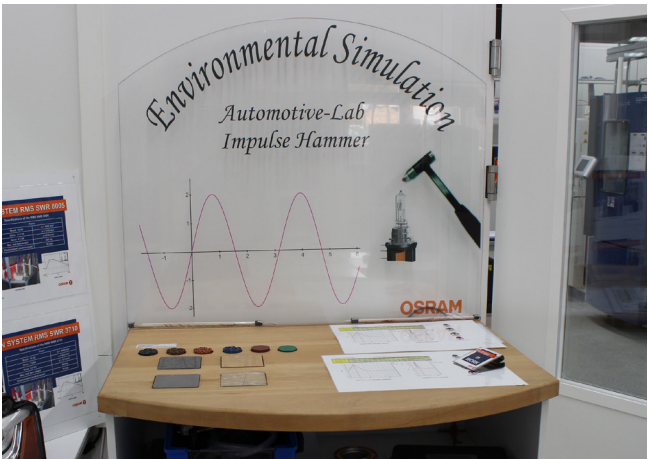


## Our service range

- Drop tests
- Repetitive Shocks
- Single Shock

# Portable measurement data recording

To develop reliable products, it is important to have precise knowledge of the load profiles occurring in later use. Relevant environmental and operating loads are measured and analysed on-site and during real application of products.



## Portable measurement data recording

- PCI and PCI Express receiver card supports problem-free connection to PCs and servers
- X,Y,Z Triaxial accelerometer
- Acceleration to 100,000 g

## Our service range

- Implementation of vibration measurements, e.g. with test objects or with circumferentially rotating machines
- Analysis and evaluation of vibration loads



## High-speed recording

Our MotionPro X system features a wide spectrum of dynamic recording options. Rapid production processes will be visualized and thereby apparent for the human eye.



Highspeed camera Motion Pro X4



Ignition of a discharge lamp

## Microscopy



We determine and document even the smallest modifications of your test objects with our modern microscopy equipment.

# Solar radiation

With our solar radiation test chamber we replicate the natural spectrum of the sunlight. We combine solar radiation with temperature and humidity. Thus we are able to simulate the aging of products and components.

## Technical specifications

Testing dimensions

(w x d x h): (800 x 800 x 975)mm

Irradiance:

800 to 1200 W/m<sup>2</sup>

Irradiance type:

1 piece 2,5 kW

Metal halide emitters

## Temperature test with irradiation

Temperature range: -20 °C to +100 °C

## Climate testing with irradiation

Temperature range: +15 °C to +80 °C

Moisture range: 10 % rH to 80 % rH

## Temperature test without irradiation

Temperature range: -30 °C to +100 °C

## Climate testing without irradiation

Temperature range: +10 °C to +90 °C

Moisture range: 10 % rH to 90 % rH



Solar Climatic  
test chamber SC<sup>3</sup> 600 MHG

# IP protection classes

The IP code describes the protection of a casing or enclosure against penetration of solid foreign bodies and against the contact with dangerous parts and intrusion of water. The different types of influences are classified into individual IP classes.



Dust test chamber ST 1000-U



Spray and shower test chamber  
SWT 600/800

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## Our service range

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### Protection class tests according to EN 60529 and ISO 20653

IP0X to IP6X classes for protection of hard frames (dust) and dangerous parts.

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IPX0 to IPX8 protection class against water. Also combinations are possible (e.g. IP65).

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### Special protection class tests according to DIN 40050 T9, ISO 20653

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Tests for analysis of the degree of protection IPX4K (splash water with increased pressure) and IPX9K (High-pressure/steam jet) especially for automotive products or food industry.

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