

LABCO

We Shape the Future of Testing



LABCO Group



- Two locations: Germany (Loxstedt) and China (Cixi, Ningbo)
- Total area: 14.000 m² (LABCO + CVL)

- Consulting
- Testing during development phase / validation
- Release tests

Our services

- Type approval tests / Homologation for Federal Motor Transport Authority (KBA)



CVL - Keyfacts



- Joint Venture of **CGC**, **VDE** and **LABCO**
- Location in Cixi, Ningbo (China)
- Operating since 2025
- CMA and CNAS accredited



Three industrial sectors:

- **Household appliances:** Microwave oven, electric fan, refrigerator etc.
- **Automotive parts:** Terminals, fuses, connector systems etc.
- **EV power supply:** DC- and AC-charging etc.



LABCO - Keyfacts



- Location: Loxstedt-Stotel, Germany
- Origins in 1978
- LABCO since 2003
- **Independent labs** – rarity, worldwide trust, no OEM re-testing needed
- Active member: **standardisation committees**
- Cooperation: STÖBICH technology (**abuse tests**)
- Cooperation: ALEE (**technical service provider for KBA approvals**)

History

Lab of origin in Brake:
As a development
lab for cables
and wires.



First Accreditation by
"DAkkS"



Founding
of LABCO



Expansion of the lab
by moving to Loxstedt



Opening of the LABCO
Battery Test Centre



Opening of the
Joint Venture CVL



Business sectors



Loxstedt-Stotel
Germany



Cixi, Ningbo
China



Our accreditation

DIN EN ISO/IEC 17025



- Received in July 2000
- Includes >500 specifications
- Flexible accreditation for many tests
- Tests without accreditation / specification also possible



OEM recognition

OEMs worldwide appreciate our service as

Independent

Trustful

High-qualitative

Re-testing in OEM internal laboratories is not necessary. We have direct contact with many OEM development departments.



Our core test samples



Wires and cables

- High and low voltage single and multicore cables
- RF cables e. g. coaxial, LVDS, CAN Ethernet, Flexray
- Twisted cables

Connection systems

- High and low voltage terminals, connectors and housings
- RF terminals, connectors and housings
- Sockets and plugs: e. g. charging devices, trailer couplings

Protection systems

- Adhesive tapes
- Sleeves, hoses, tubes: e. g. smooth, braided, corrugated, heat-shrink
- Longitudinal wrapping systems

Batteries, interfaces and assemblies

- Batteries: cells, modules, packs
- Interfaces: e. g. fuse boxes, controllers, relays
- Assemblies: e. g. mountings, fixtures, fasteners

And more...

Our core test scope



Vibration



Environmental simulation



Electrical



Mechanical



Radio frequency



Chemical



Climatic



Temperature



Material analyses



Performance analyses



Special / customised



And more...

Further activities

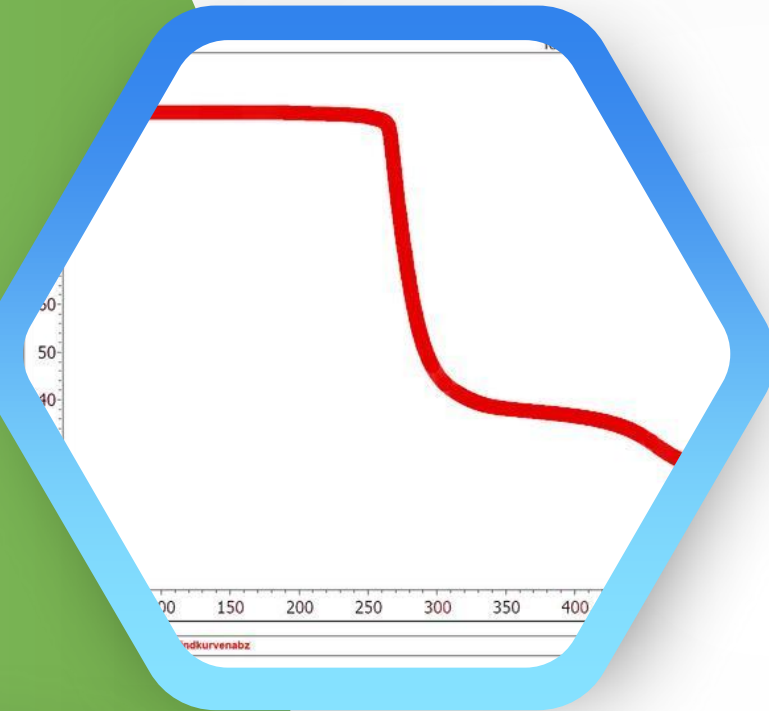


- Pre-development projects
- Competitive analysis
- Development of new tests
- Failure-cause analysis



- Over 20 years of membership in (inter-) national committees of specifications
- Contribution to important work groups in the German automotive industry

Material Analyses



- DSC
 - Differential scanning calorimetry
- TGA
 - Thermogravimetric analysis
- FTIR
 - Fourier-transform infrared spectrometer
- MFR/ MVR test equipment
 - Mass flow rate / Mass volume rate
- X-ray-fluorescencespectroscopy

Electrical



- Derating systems
- Electrical power supply and loads up to 3000 A
- Precision resistance measuring equipment into the μOhm range
- High resistance measuring equipment covering the T Ohm range
- High voltage testing equipment up to 50 kV

Mechanical



- Tensile testing machines
- Bending cycle testing apparatus
- Impact testing equipment
- Abrasion test devices
- Motorised mandrels for winding tests

Chemical



- Extraction test equipment
- Equipment for different chemical tests, e. g. storage in
 - oil
 - fuels
 - battery acid
 - other fluids and chemicals

Microscopic



- Video microscope
- Stereo microscope
- Digital microscope with a magnification of 0 – 200x and a depth of focus of 4 cm
- Overhead-light microscope
- Fully automatic microscope equipment for cables and wires
- Micro-section laboratory for measuring crimp contacts
- 3D Optical Profilometer



Thermal and climatic



- > 40 climatic/temperature test cabinets and chambers up to 11,5 m³ test space
 - Temperature range: - 80 °C to + 250 °C
 - Humidity range: 10 % to 98 % RH
- Temperature shock chamber
- Tests under thermal/climatic profiles are possible, e. g. vibration tests
- > 150 ovens for ageing tests up to 1200 °C

Environmental simulation



- Laboratory for storing in environmental fluids, e. g. storage in salty fluids
- Salt spray chamber
- Ozone chamber
- Flame test apparatus
- IPX-chamber
- Water storage apparatus for hydrolysis

Radio frequency



- Network analysers (5 Hz to 26,5 GHz)
- Triaxial-measurement tubes (40 mm and 90 mm diameter)
- Line injection measurement equipment
- Extract of the measurement possibilities:
 - Return and insertion loss
 - Characteristic impedance
 - Determination of shielding effectiveness
 - Line symmetry

Vibration

Shaker 1



Shaker 2



Nominal force sine / random / shock (kN)

50 / 50 / 100

80 / 80 / 160

Frequency range (Hz)

5 to 2700

5 to 2500

Smax (Peak to peak: sine / random + shock)(mm)

36 / 50,8

50,8 / 76,2

Dimensions slip table and head expander (mm)

600 x 600

600 x 600

Test space of the climatic chamber (WxDxH in mm)

1040 / 960 / 1080

1020 / 890 / 1120

Temperature range (°C) / r. h. (%)

- 40 to 150/ ≤ 95

- 40 to 150

Vibration

Shaker 3 - 4



Nominal force sine / random / shock (kN)

300 / 270 / 900

Frequency range (Hz)

5 to 2000

Smax (Peak to peak: sine / random + shock) (mm)

63,5 / 63,5 / 76,2

Dimensions slip table and head expander (mm)

2100 x 2100 / 2100 x 1900

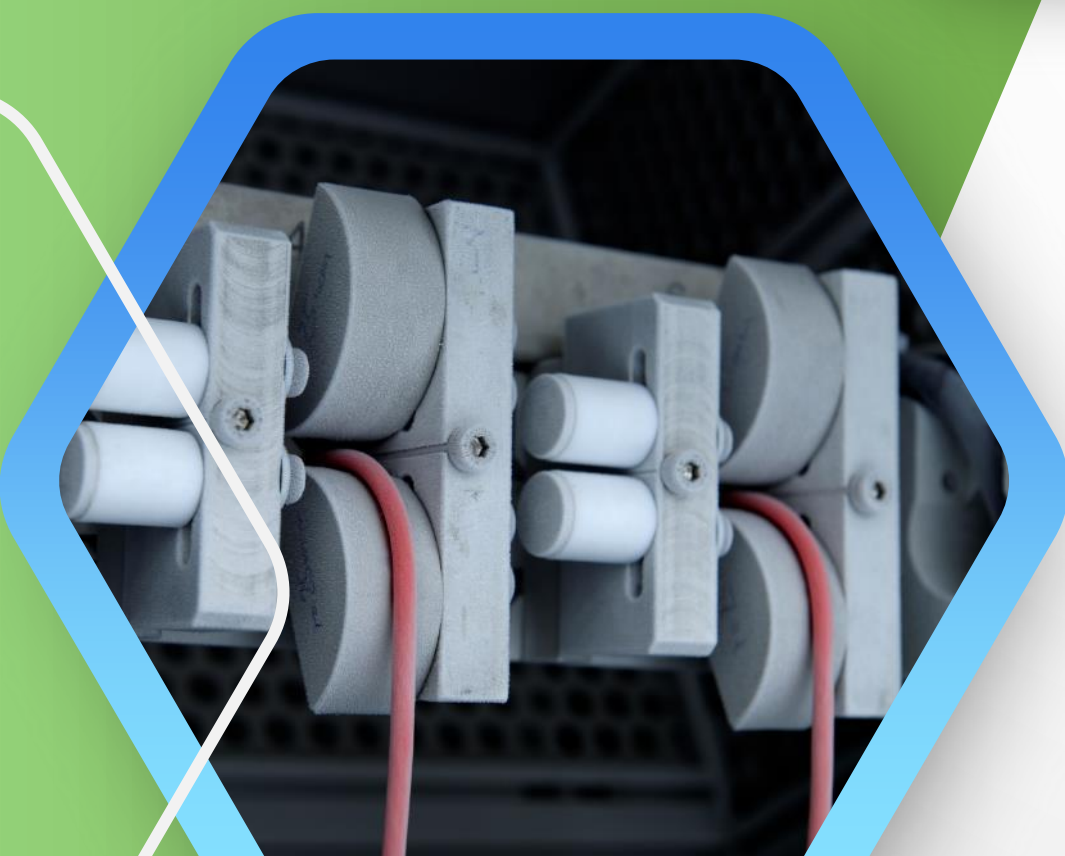
Test space of the climatic chamber (WxDxH in mm)

2500 / 3115 / 1500

Temperature range (°C)

- 45 to 140

Special and customised



- Door slam trial apparatus
- Micro- and shore-hardness test equipment
- ABS-Simulation test equipment
- Slow-motion-test apparatus (up to 260 °C)
- Flexural strength (from -40 °C to 180 °C)

Battery cyclers



Test equipment	Max. power simultaneous	Max. voltage per battery	Max. current per battery
Cell tester	10, 8 kW	6 V	1500 A
Module tester	64 kW	60 V	1200 A
Pack tester	1100 kW	1200 V	4000 A

Possible combinations:

- Climatic chambers
- Cooling systems
- Vibration test systems

Protected by our high-pressure water mist extinguishing system

Thank you for your attention



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