

CAB | lab



ELECTRICAL & MECHANICAL TESTING LABORATORY

**We don't break things,
we discover their limits**

Introduction

CAB | lab – Precision Testing for Critical Decisions

CAB | lab is a precision testing laboratory embedded within Cablex, one of Europe's leading cable assembly manufacturers.

Unlike conventional external service providers, CAB|lab was established to meet the stringent demands of internal production quality control, R&D validation, and supplier component qualification. This industrial foundation directly shapes our capabilities—ensuring practical relevance, rigor, and reliability in every analysis we perform.

Our laboratory is equipped with advanced instrumentation, including high-resolution optical microscopy, CT microtomography, pull-force testing systems, and electrical test and simulation platforms. Each capability has been deliberately selected and continuously refined through years of solving real-world manufacturing and reliability challenges. We specialize in classical and IDC crimping technologies, delivering a level of analytical depth typically available only within OEM environments. Our expertise extends to the broader qualification and failure analysis of electromechanical components and cable assembly subsystems.

For decision-makers in QA and R&D, CAB | lab provides what matters most:

clear answers, backed by precise
measurement, comprehensive
documentation, and full traceability.

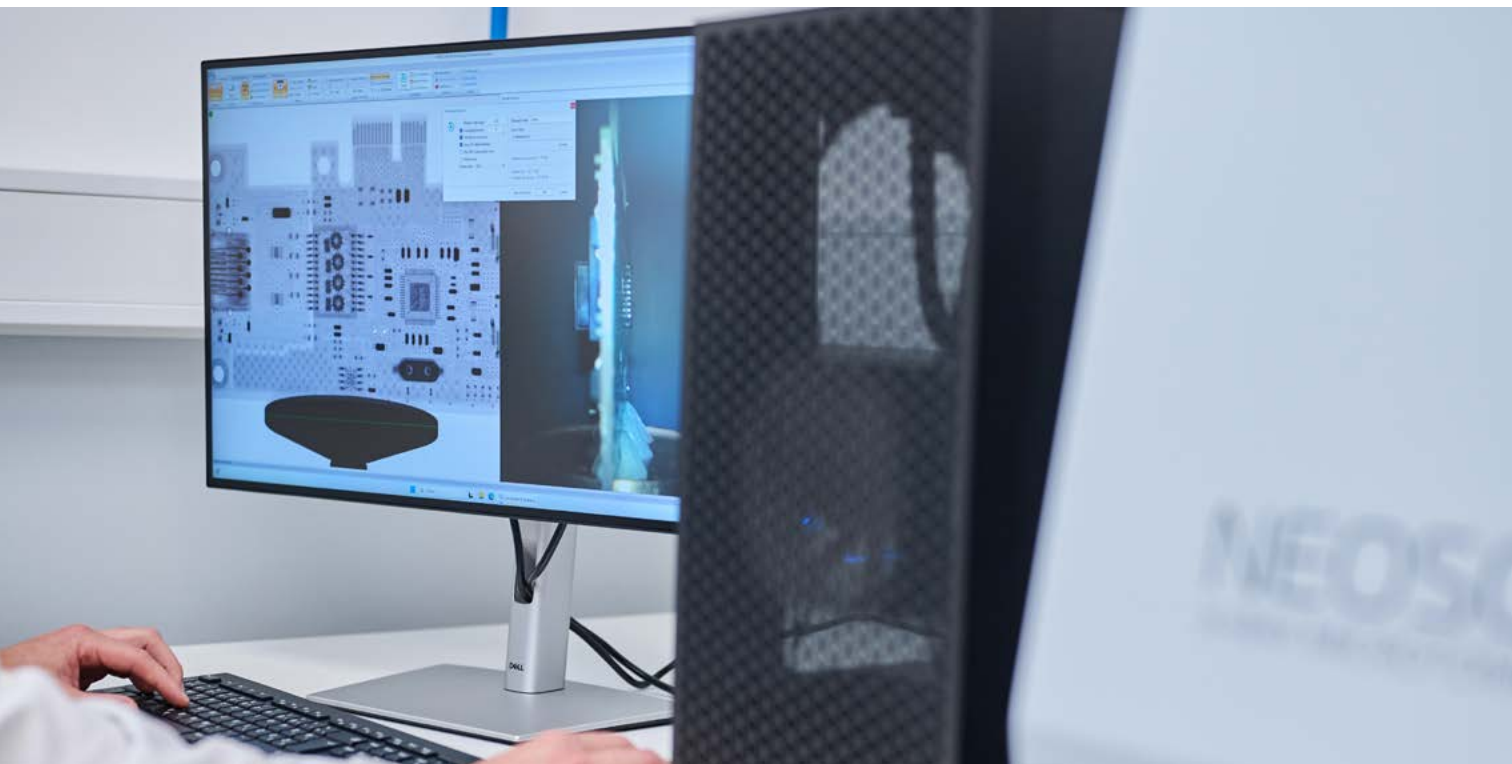


What We Do

Every test begins with a critical question — and ends with a clear, actionable answer. Here are just a few of the challenges we solve:

- **You suspect a defect, but nothing is visible.**
 - ▶ We reveal the invisible using high-resolution CT scanning.
- **You need certainty that insulation performs under real voltage stress.**
 - ▶ We validate reliability through high-voltage withstand testing.
- **You want to know how much stress a component can truly handle.**
 - ▶ We measure limits with precise pull-force and push-force testing.
- **You need to investigate internal structure or surface defects.**
 - ▶ We uncover the details with advanced microscopy.
- **You need to compress years of environmental exposure into days.**
 - ▶ We simulate reality using accelerated aging in climate chambers.
- **You're qualifying a new component—or diagnosing a field failure.**
 - ▶ We combine methods into a comprehensive, data-driven analysis.

Whatever your question, we don't just test — we deliver clarity, confidence, and decisions you can act on.

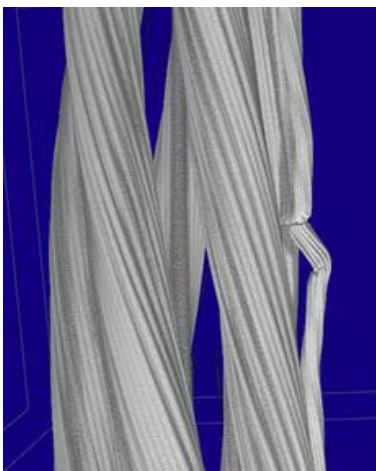
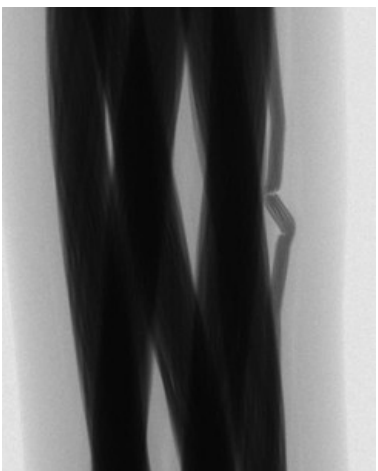




OUR SERVICE

CT Microtomography

Test Method	Computed Tomography (CT), non-destructive scanning
Equipment	Neoscan N70
Purpose	Internal inspection of components without sectioning or damage
Technical limits	▪ Max. sample diameter: 120 mm (rotational scanning) ▪ Max. sample height: 190 mm
Output & records	▪ Image and video files of scanned sample ▪ 2D measurements in defined planes ▪ 3D model
Quality Objective Supported	▪ Detection of internal defects ▪ Verification of internal structure ▪ Support for product conformity assessment





OUR SERVICE

Microscopical Analysis

Test Method	Microscopical examination
Equipment	ASH Omni 3
Purpose	Visual inspection and measurement
Technical limits	- Examination area: 200 mm × 120 mm - Zoom: 63× optical, 133× digital
Output & records	- Image - measurements and remarks
Quality Objective Supported	- Visual inspection of sample - Verification of crimp quality - Detection of fault



OUR SERVICE

Pull & Push Force Testing

Test Method Pull and push force tester

Equipment Mecmesin OmniTest 2.5

Purpose Force testing

Technical limits

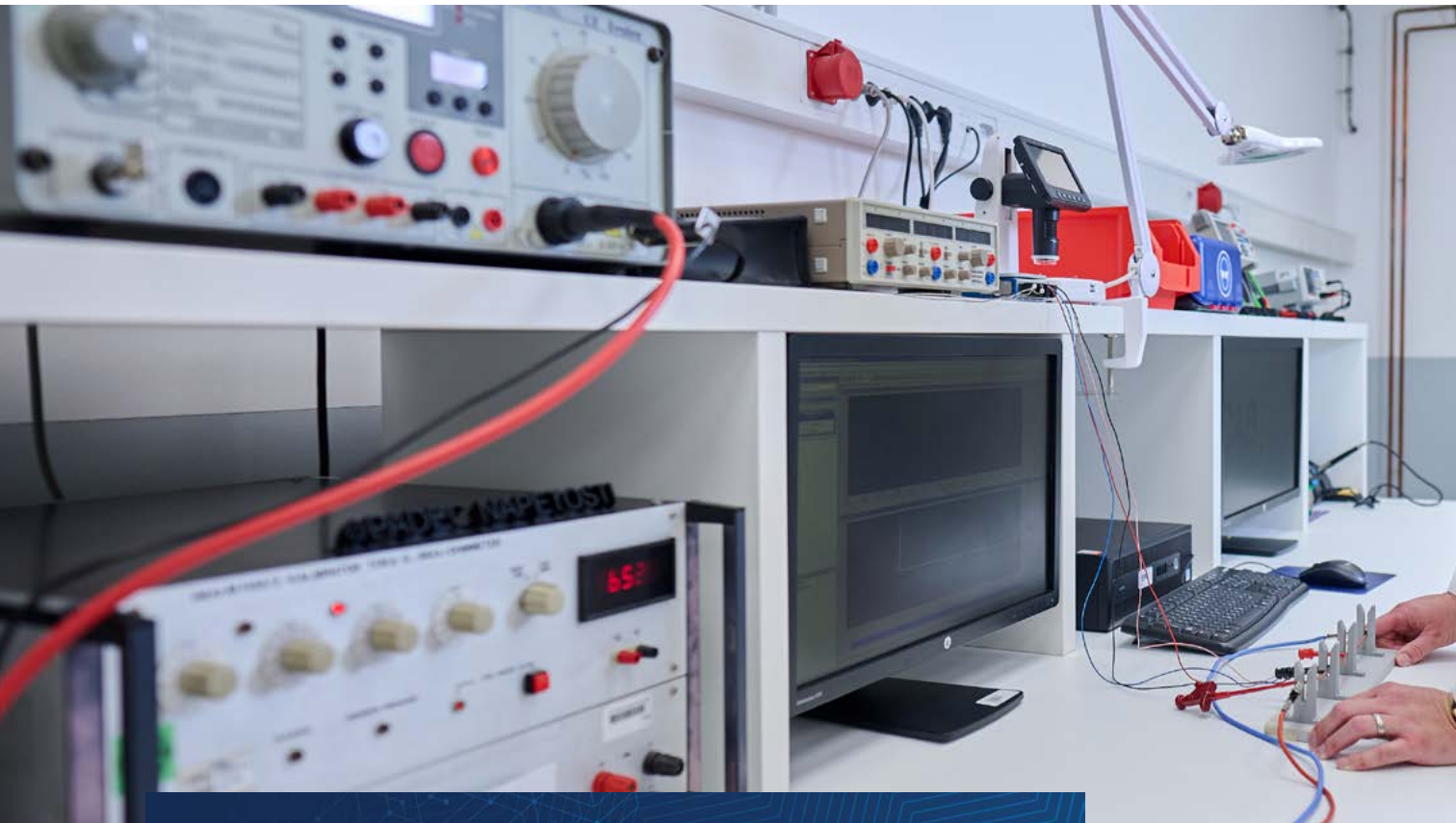
- 2.500N pull force
- 2.500N push force
- Hold at force test (sustained load testing)

Output & records

- PDF report
- measurements and remarks
- Force chart

Quality Objective Supported

- Quality of crimp
- Minimum force requirement validation
- Breakage force determination



OUR SERVICE

Electrical Testing

Test Method	High voltage test
Equipment	Metrel CE tester MA2053
Purpose	Insulation withstanding
Technical limits	5.000 V AC
Output & records	PDF report
Quality Objective Supported	Verification Dielectric Withstand

Test Method	Resistance measure
Equipment	Gwinstek GOM-805 MiliOhm Meter
Purpose	Checking material resistance
Technical limits	0.1 $\mu\Omega$ to 5 M Ω
Output & records	PDF report
Quality Objective Supported	Verification of material resistance



OUR SERVICE

Climate & Stress Testing

Test Method	Accelerated aging in climate control chamber
Equipment	Kambič KK-68 CHLT
Purpose	Accelerated environmental aging and thermal stress simulation
Technical limits	▪ Range from - 40 °C +180 °C ▪ Humidity 0 to 90%
Output & records	▪ PDF report ▪ Side opening allows electrical measurements
Quality Objective Supported	▪ Assessment of aged sample ▪ Determination of resistance at various temperature ranges ▪ Verification of material quality



OUR SERVICE

Calibration Services

Test Method	Calibration with certified length and weight standards
Equipment	Mitutoyo gauge block set & HÄFNER weight standards
Purpose	Calibration of small measure tools and scales
Technical limits	- Measure tools: blocks from 1 mm to 60 mm - Scales: standards from 1 g to 20 kg
Output & records	- calibration report - calibrated tool
Quality Objective Supported	Ensures measurement traceability for production and incoming inspection tools

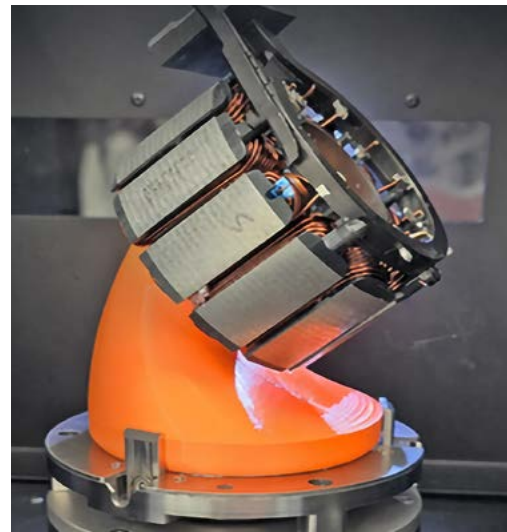
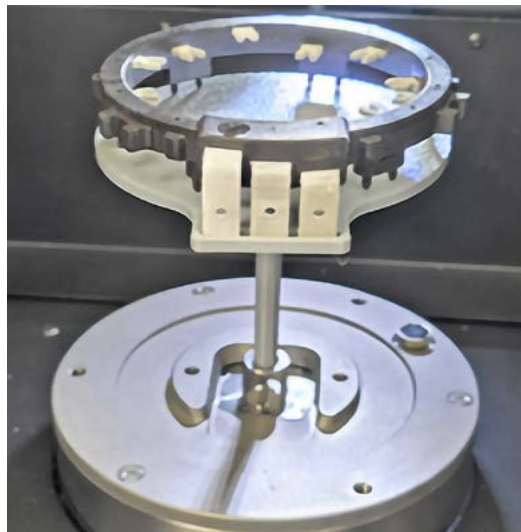
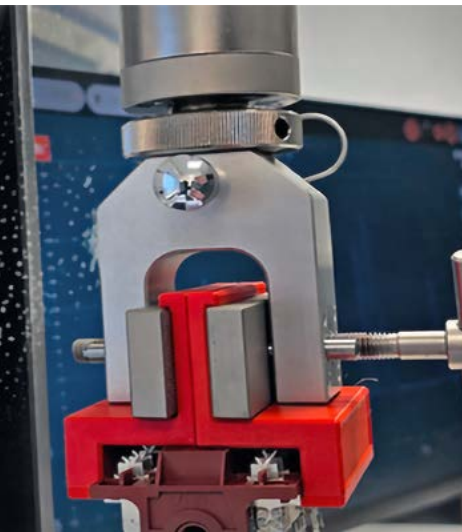


OUR SERVICE

3D Coordinate Measurement and Scanning

Test Method	Structured light 3D scanning
Equipment	GOM ATOS ScanBox
Purpose	Full-surface 3D geometry inspection and deviation analysis vs. CAD
Technical limits	Max part size: up to 500 mm
Output & records	- Full-surface deviation color map 3D inspection report (PDF)
Quality Objective Supported	- First article inspection (FAI) - Dimensional conformity verification

OUR SERVICE – Tailored. Precise. Collaborative.



We offer a comprehensive portfolio of standardized tests and analyses. But when standard methods are not enough, we go further.

We work closely with you to design **custom testing strategies** that align precisely with your technical requirements, objectives, and challenges.

Backed by a multidisciplinary team of experts in **3D printing, programming, and electrical engineering**, our laboratory develops tailored fixtures, tools, and testing setups—enabling solutions that go beyond off the shelf capabilities.

For complex or highly specific cases, we seamlessly integrate **external specialist expertise**, ensuring every result is robust, reliable, and meaningful.

At CAB|lab, we approach every challenge with **curiosity, precision, and commitment** — continuously expanding our know-how and advancing our capabilities to deliver better answers for your business.



Part of Cablex Group

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The CABLEX logo, consisting of the word "CABLEX" in a bold, white, sans-serif font, enclosed within a white oval border. The background of the entire page features a dark blue pattern of interconnected lines and dots, resembling a network or circuit board design.

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