



edp
Labelec

Center of technical excellence

Electrical Energy Lab

High Voltage Laboratory

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With more than 35 years of experience (created in 1985), the High Voltage Laboratory is prepared to test and diagnose electrical equipment and systems from low voltage up to extra high voltage (400kV).

Maximum voltage levels

- Lightning impulse: 2400kV
- switching impulse: 1300kV
- AC testing: 800kV (50Hz up to 175Hz)
- partial discharge and RIV: 800kV
- capacitance and Tan δ : 600kV
- pollution tests: 245kV.

Tests rooms

- Main test hall: 29m length x 17m width x 19m height
- secondary test hall: 9m length x 6m width x 7,5m height
- salt fog test hall: 8m length x 6,75m width x 10m height.

Reference standards

- IEC
- CENELEC/EN
- ANSI.



Complementary information

- Tests accredited by the portuguese institute of accreditation, partner of ILAC
- **cable testing** (LV, MV and HV):
 - reactance source: 120kV (960kVA); 800kV (2400kVA)
 - load cycling: 10kA
 - automatic system for heating tests (IEC tests)
 - DC voltage: 120kV
- **mechanical Lab:** tensile, compression, mechanical operation, thermal cycle tests
- **environmental tests:** climatic test chamber 1m³ up to -35°C to 85°C
- **HV Measurements Lab:** AC/DC calibrations up to 100kV and lightning impulse up to 600kV.

On-site testing

- EMF measurements (1Hz up to 3GHz)
- earthing grids
- power transformers and instrument transformers
- rotating machines
- post-mortem analysis
- power quality and transient analysis
- acoustic measurement on substations and development of mitigations solutions.





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