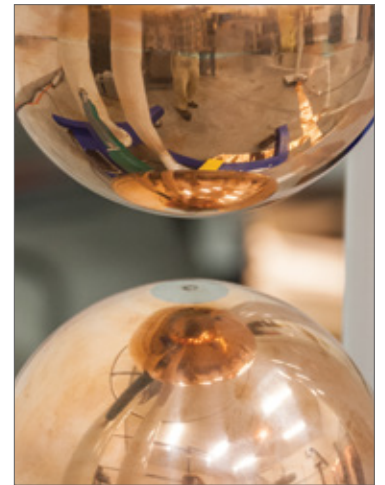


H-J Enterprises High Voltage Test Laboratory

Wet AC Withstand
Dry AC Withstand
Radio Interference Voltage
Partial Discharge
Power Factor
Impulse
Temperature Rise
Current Rating
Thermo Cycling
Tension
Compression
QUV Accelerated Weathering
Differential Scanning Calorimetry
Thermal Imaging
Contact Resistance
Cantilever
X-ray Imaging



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H-J Enterprises' Test Facility in St. Louis, Mo. USA.

The H-J Family of Companies, a leading supplier of Transformer and Switchgear Components worldwide, has continued its policy of using the latest technology in its production and manufacturing processes. As a leading manufacturer in this segment, H-J has taken the next step in its extensive customer support program with the development of an independent high voltage test laboratory. This laboratory allows H-J to stay on the vanguard of its industry and further advance its product offerings through high quality research and development.

H-J can now provide test services

for its entire spectrum of customers, including Utilities, OEM's, Repair Shops, Universities and others.

The laboratory is located in St. Louis, Missouri, adjacent to the Company's manufacturing facilities. The floor space of the lab is 100' X 100' feet with a ceiling-to-floor clearance of 50 feet, thus accommodating small to large sized equipment.

Acknowledging that safety is the most important factor, the new laboratory includes extensive safeguards as well as the presence of highly qualified personnel, carefully developed systematic procedures, visual and

audible safety systems and access controls to all test areas.

H-J has the ability to conduct testing in accordance with all applicable standards including: ANSI/IEEE, NEMA, CSA and IEC. Tests can also be performed according to customer specific requirements.

H-J's commitment to always provide better products and broader support to its customers continues with the addition of this laboratory. It clearly represents just one more value added service in its continued commitment to provide "Quality Products of International Reputation."

H-J Enterprises' Testing Facility



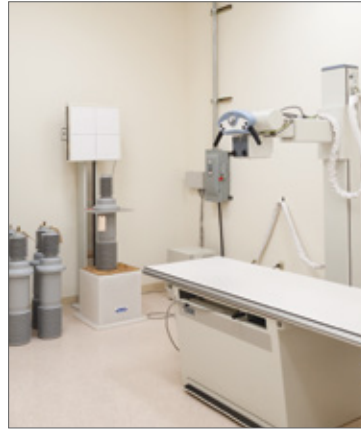
The laboratory design includes a sophisticated and extensive copper ground grid system that was designed and located under the entire test building. The grid has multiple access points throughout the facility.

Utilities and services provided for testing include: single phase power for 120, 240 and 480 volts, high pressure air for tools and equipment, heating and air conditioning, and certified hygrometer and temperature indicators.

Support Services:

- Computerized Design and Manufacturing (CAD/CAM)
- Complete Machine Shop and Assembly Area
- Third Party Consulting Engineers Available
- Prototype Development
- Test(s) Design

Electrical Testing Capabilities



Full-Wave and Chopped-Wave Impulse

Haefely SGDA600-30 600 kV impulse generator and multiple chopping gap for lightning impulse testing of components and equipment per IEEE and IEC standards.

Continuous Current Temperature Rise

0 to 20,000 AMPs with 440 V - 150 kVA (4 – 8 Volts Secondary) Variable Power Source. System Includes Automatic Cycling, Computerized Data Acquisition with 32 Channel Thermocouple Measurements and Resistance Measurements.

Partial Discharge (Corona) and Radio Interference Voltage (RIV)

0 to 120 kV Indoor PD testing with Omicron Electronics MPD-500 Detection System.

Dry 60 Hz AC Withstand

0 to 150 kV at 10 kVA with Biddle Hi-Pot Mobile Unit.

Wet Withstand

Wet withstand testing up to 150 kV RMS at 60 Hz per IEEE and IEC standard using precipitation conditions specified in IEEE Std 4.

Power Factor (Capacitance and Dissipation %)

Biddle 10 kV Test Set.

Insulation Resistance

Fluke 1550B Meg Ohm Meter high voltage insulation resistance tester for checking the integrity of insulation in electrical equipment up to 5 kV DC.

Contact Resistance

Raytech Micro Centurion II precision digital micro ohm meter for measuring contact resistance of electrical conductors at up to 200 AMPs DC.

Environmental Testing Capabilities

Temperature Chamber (Thermo Cycling)

-68°C to +177°C (-90°F to +350°F) with Thermotron Model S-8-2800, 24" wide X 24" deep X 24" high. Equipped with Computerized Controls

Environmental Scanning Calorimetry

NETZSCH DSC 200 F3 Maia with an intercooler and automatic sample changer that can be used for thermal analysis of polymers over a temperature range of -70°C to 600°C.

QUV Accelerated Weathering

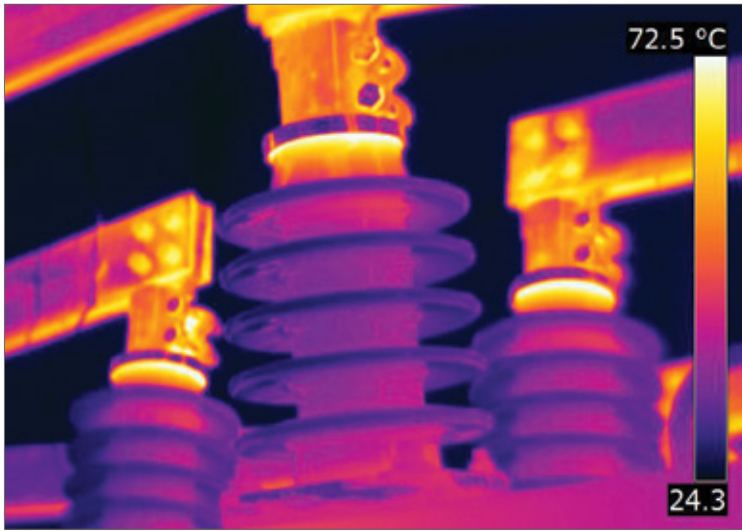
Q-Lab QUV/se simulates outdoor weathering using UV and condensation on up to 48 specimens, and features irradiance control for repeatable results.



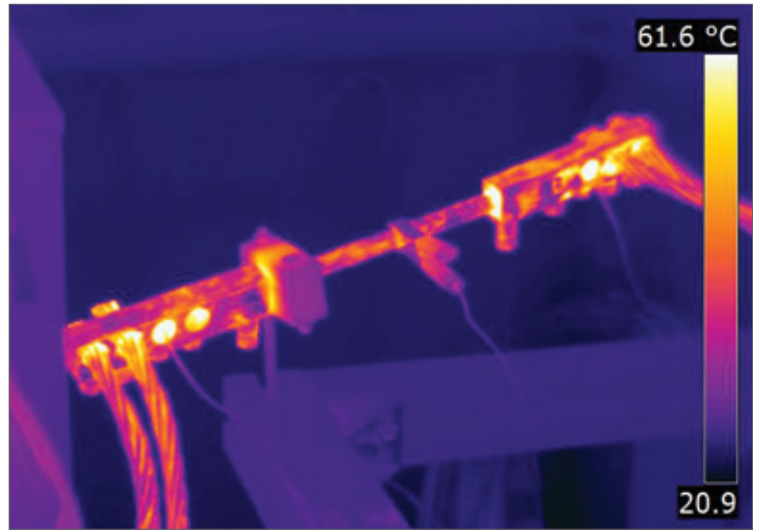


Thermal Imaging

Flir E60 infrared camera with a temperature range of -20°C to 650°C to identify hot spots during temperature rise testing.



Circuit Breaker Heat Run Test.



Set Screw Bar Current Cycle Loop Test.

Mechanical Testing, Analysis & Inspection

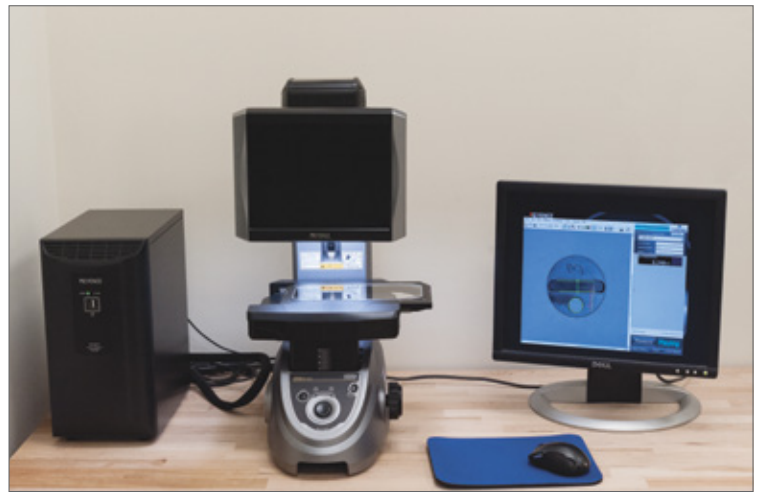


Instron Universal Testing Instrument

FARO Edge ScanArm with Laser Line Probe
(Coordinate Measuring Machine)

Accuracy +/- 0.0014 in. Scan rate up to 45,120 points/sec.

Keyence Model #IM-6120 Image Dimension
Measuring System



Keyence Measuring System

Instron Universal Testing Instrument
Model 1137-30

300 to 30,000 pounds tension, compression, torsion, bending
and cantilever.