

IRIS POWER EL CID EVOLUTION™

The next generation in EL CID technology for
detecting stator core problems



IRIS POWER EL CID EVOLUTION STATOR CORE TESTER

Finds core lamination shorts faster and with better accuracy

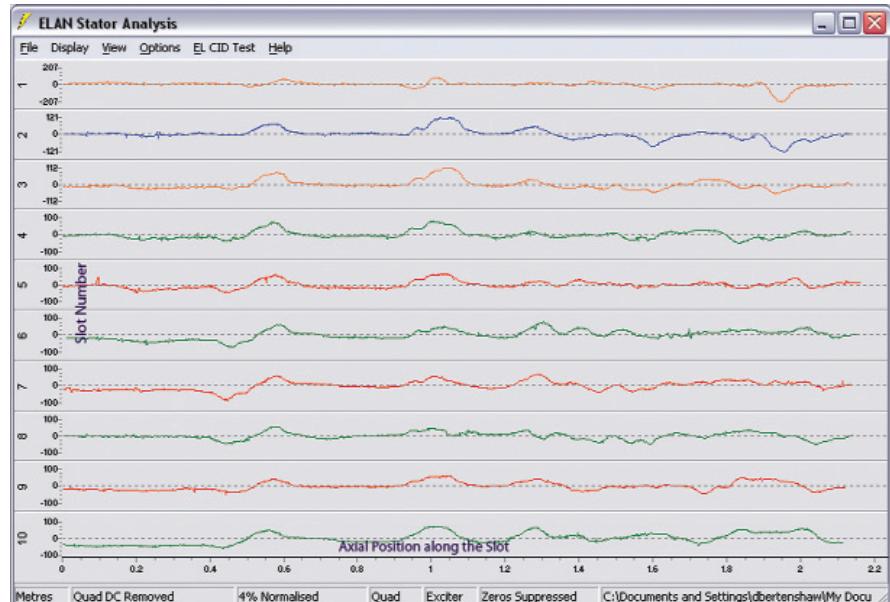
IRIS POWER OFF-LINE PRODUCTS

IRIS POWER EL CID EVOLUTION

Electromagnetic Core Imperfection Detection (EL CID) testing is accepted world-wide for reliable and safe detection of stator core inter-laminar insulation faults.

Originally developed by the CEGB utility in England, the Iris Power EL CID Evolution is the third generation of this reliable, easy to use, stator core test. Iris Power's EL CID Evolution tests the condition of a stator core in less time and with lower costs than earlier EL CID models.

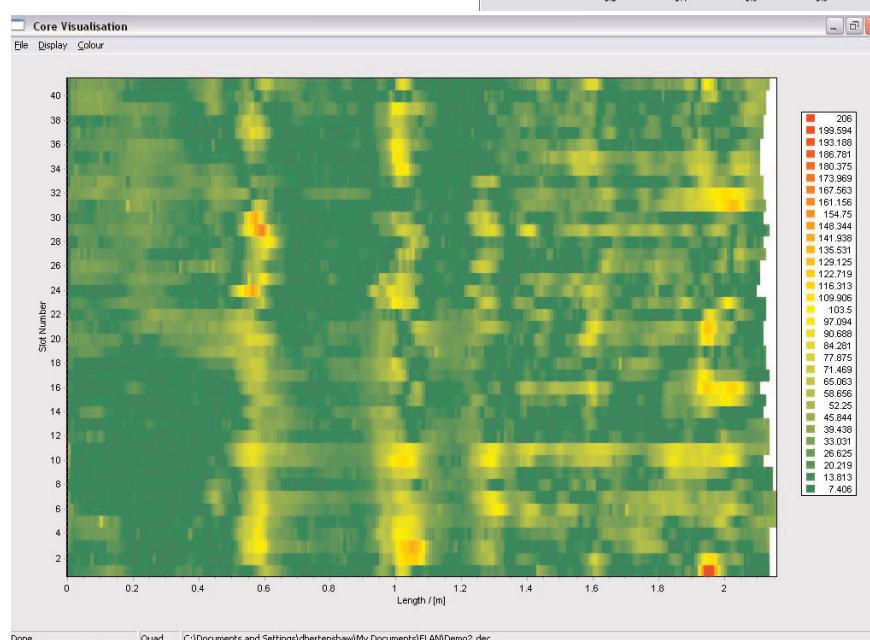
The Iris Power EL CID Evolution test can be equally applied to turbine generators, hydro generators, and large motors.



Graph of inter-laminar current vs. core length and slot



Expanded analysis of one slot



Map of EL CID readings over entire core (red areas show regions of shorted laminations)

IRIS POWER EL CID EVOLUTION

EL CID TESTING VS RING FLUX TESTING

The only alternative to the Iris Power EL CID Evolution test is the Ring Flux (full flux) test. The Ring Flux test requires large power supplies, considerable manpower and expensive infrared viewing cameras. The EL CID test has the following advantages compared to the Ring Flux test:

- EL CID test provides rapid testing of the machine, often less than one work shift for turbo generators and motors. The Ring Flux test typically takes 3 work shifts
- only one technician is needed to perform the test, saving skilled resources and cost, instead of up to 6 technicians
- typical labor is reduced from 144 to 360 man-hours for a major turbo generator Ring Flux test* to just 8 to 10 man-hours for EL CID test
- rapid setup to retest after any repair ensures quick turnaround
- minimize intrusive repairs by instantly verifying the results.

*Source – Westinghouse



Testing a hydro generator



Testing a motor



NEW AND IMPROVED FEATURES WITH THE IRIS POWER EL CID EVOLUTION

- Faster test scanning (up to 120 mm/sec at 60 Hz)
- Easier excitation calculations
- Simpler testing with dual Chattocks (detection coils)
- User-friendly LCD display to guide user operation
- Combines step-iron data with main core traces
- Easily identifies "hot spots" via color map display
- Fully compatible with data from earlier versions

ADVANTAGES

- Tests are repeatable
- Immediate test results are available for local analysis and email
- Determines if defects are on the surface, under conductors, or sub-surface
- Tests with or without windings
- Better detection of buried faults
- Partial retests of core are possible, with ability to merge results to obtain a complete picture of the core condition
- Trending of previous results
- Excellent quality assurance test

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WHY CORE TEST?

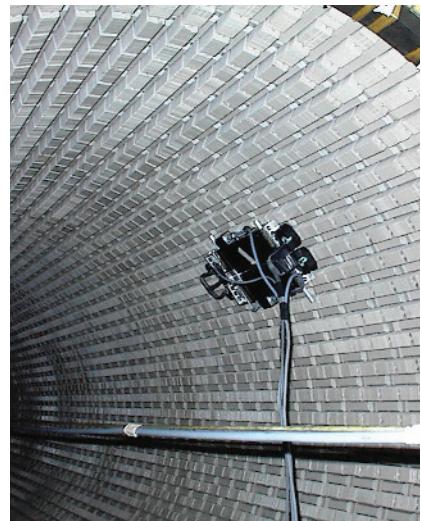
Stator cores are made of thin laminations of magnetic steel separated by insulation to prevent axial currents. If lamination shorts occur, the high temperatures that result can burn stator coil insulation and even lead to melting of stator cores.

IRIS POWER EL CID EVOLUTION TEST

Iris Power EL CID Evolution tester operates at only 4% of normal operating flux, generated by its quickly installed excitation kit. Any imperfections in the core inter-laminar insulation produce fault currents which are detected by a Chattock coil and analyzed by the Iris Power EL CID Evolution signal-processing unit. Measurement results are digitally stored in the PC for analysis and report generation, and faults can be precisely located in the core. Future results can be compared to past results for trend analysis.

The traditional stator core test method known as Ring Flux test uses near-full rated operating flux, which is potentially damaging to the uncooled machine and dangerous to operators, requiring large power cables, high voltages and currents, and often auxiliary generators.

So why not reduce your test outage time and avoid the hazards of the stator core Ring Flux test with the Iris Power EL CID Evolution test?



Robotic test in progress
on a turbo generator
(RIV feature is optional)

RELATED PRODUCTS



Wedge Tightness Detector –
Objectively test stator
core wedging off-line



Robotic Inspection Vehicle (RIV)
with Camera – Off-line inspection
and testing of the stator core
with rotor in place

Iris Power EL CID Evolution is a
trademark of Qualitrol-Iris Power.

QUALITROL-IRIS POWER HAS BEEN THE WORLD LEADER IN MOTOR AND GENERATOR WINDING DIAGNOSTICS SINCE 1990,
PROVIDING A FULL LINE OF ON-LINE AND OFF-LINE TOOLS, AS WELL AS COMMISSIONING AND CONSULTING SERVICES.



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www.irispower.com

www.qualitrolcorp.com

Iris Power LP
3110 American Drive
Mississauga, ON, Canada L4V 1T2
Phone: 1-905-677-4824
Fax: 1-905-677-8498
sales.iris@qualitrolcorp.com

Qualitrol Company LLC
1385 Fairport Road
Fairport, NY, USA 14450
Phone (585) 586-1515
Fax (585) 377-0220



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