

HAL LED

The production line safety test solution for LED Lighting manufacturers in accordance with EN60598

The HAL LED is designed to ensure maximum productivity and efficiency when safety testing on LED and other luminaire production lines; whilst the high resolution power measurement allows for greater quality control measures to be implemented. The HAL LED tests in accordance with EN 60598.

200mVA Resolution Power Measurement

LED lighting is fast becoming the choice for 'green' conscious consumers; manufacturers are striving to produce more efficient lighting solutions for a competitive market.

With a 200mVA resolution, the HAL LED is designed so that manufacturers can measure the output of every product manufactured to ensure it falls within acceptable power limits. This gives the manufacturer peace of mind that correct components, such as LED drivers were fitted at time of manufacture.



Key Features

- Greater accuracy for low power verification - 1000 VA Power measuring range with 200mVA power resolution.
- Storage of test results offers full traceability on tested products
- Flexible parameters allow for worldwide product testing to meet IEC/EN/UL international standards.
- Increased operator safety in compliance with EN 50191, due to isolated test outputs on flash/HiPot/dielectric strength/insulation test.
- Repeatable test conditions independent of supply fluctuations are enabled by regulated outputs on flash/HiPot/dielectric strength, insulation and ground/earth bond tests
- PLC and Remote control - Simple command protocol for external control via communications port, ideal for automated test stations
- Large graphical display, visual and audible pass fail indication provide easy to read test values and increased test status awareness.
- Operation from 115 and 230 V (nom.), 50 or 60 Hz mains supply, with Selectable 50 or 60 Hz output frequency for AC tests ñ Suitable for use worldwide
- Barcode scanner support enables fast, accurate data entry

HAL LED Users

Most appropriate for medium-large scale electrical manufacturers:

- LED lighting manufacturers
- LED lighting importers
- QA and product auditing departments
- Manufacturers of low powered Equipment



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Traceable Results

With quality systems placing more pressure on manufacturers to provide traceable, accurate results the HAL LED eliminates the pressure of manually logging test results.

Date and Time stamps are applied to each product tested along with an optional field for a product identifier such as a serial or batch number. A large memory capable of storing 6000 tested products will capture the daily results of even the busiest production line.

Flexible User Configurable Test Sequences

The HAL LED can store up to 50 test sequences in its automatic mode configuration. Each test sequence can comprise of up to 5 individual tests (not including repeats).

Once configured, automatic mode provides a structured and repeatable method of testing, ensuring that the required test parameters and timings are adhered to during end-of-production-line test requirements.

Designed with Safe Testing Practices in Mind

In order to aid compliance with safe test area requirements (EN 50191) the HAL LED utilises a number of safety features.

Isolated test outputs when performing flash (HiPot) and insulation resistance tests reduce the potential for shock.

The inbuilt guard switch enables automatic disconnection of test voltages if opened, ideal for ensuring safety if a person enters the test area unwittingly during a potentially hazardous test. That coupled with a 'plug and play' style beacon port enables clear identification when high voltage testing is being performed.

Accessories

Standard Accessories

1x Output Box for Connections (G2-5001)
1 x Earth Bond Probe with Remote Start Switch (01520/1)
1x Flash / HiPot Probe with Spring Loaded Contact Point (03918/2)
1x Flash / HiPot Clip (H-5003)
1x Guard Switch for EN50191 Compliance (DCS317)
1x 19 Way Connector
1x 12 Way Connector
1x Mains Power Lead (39044)
1x Manual
1x Data Cable (H-5014)

Optional Accessories

Productivity Accessories

Earth Bond Clip (01521/1)
Non Contact CCD Barcode Scanner (194A922)
Desk Test n Tag Label Printer (312A912)
Safety E-Base (482A910)
Printer Ink Ribbon (312A952)

Printer Labels

White (312A951)
Orange (312A954)
Red (312A961)
Green (312A962)
Yellow (312A956)
Blue (312A957)

Safe Test Area Accessories (EN 50191 Compliance)

Safety Warning Beacon (H-5017)
Rubber Matting (Call to Discuss - IRM001)
Barrier Post (Call to Discuss - BARCL001)
Barrier Chain (Call to Discuss - BARCL002)
Hand Guard Switch (CON965)

Verification Accessories

PAT Checkbox – Daily Check Box (227A910)
Calibration Checker (V242)
Earth / Flash Fault Simulator (Y160H)

Integration Accessories

SwitchSmart – (462A910)
Test Enclosures – (Call to discuss)

Electrical Test Functions

- Power/Functional Test (From Mains or 50 / 60Hz 80 -300V via External Supply)
- Protective Conductor Current Test (Leakage)
- Touch current test
- 50 Hz Flash/HiPot/Dielectric Strength test
- 60 Hz Flash/HiPot/Dielectric Strength test
- DC Flash/HiPot/Dielectric Strength test
- Earth / Ground Bond test at 40A
- Insulation Resistance Test

Additional Products / Services

- Extended Warranty / Service Packages
- Training
- On Site Calibration
- UKAS Calibration

Please call to discuss your requirements for service, training and calibration.

Technical Specification

AC Flash / HiPot Test

Programmable Voltage Range	0.10 kV-5.00 kV (10V/Step Resolution)
Frequency Independent of Supply	50 or 60 Hz
Voltage Display Range and Accuracy	0.10 kV-5.00kV $\pm 1\% \pm 5$ Counts
Voltage Display Resolution	0.01kV
Current Display Range and Accuracy	0.01mA-20.00mA $\pm 1\% \pm 5$ Counts
Current Display Resolution	0.01mA
Selectable Range of Pass/Fail Levels	0.01mA-20.00mA
Maximum Current Output	20.00mA @5kV
Optional Arc Detection	9 Levels

DC Flash / HiPot Test

Programmable Voltage Range	0.10 kV-6.00 kV (10V/Step Resolution)
Programmable Voltage Range	0.10 kV-6.00kV $\pm 1\% \pm 5$ Counts
Voltage Display Resolution	0.01kV
Current Display Range and Accuracy	0.01mA-10.00mA $\pm 1\% \pm 5$ Counts
Current Display Resolution	0.01mA
Selectable Range of Pass/Fail Levels	0.01mA-10.00mA
Maximum Current Output	10.00mA
Optional Arc Detection	9 Levels

Insulation Resistance Test

DC Output Voltage	250V, 500, or 1000V Selectable
Display Range	0.01M Ω -500M Ω
Display Range / Accuracy	0.03M Ω - 350 M Ω $\pm 5\% \pm 5$ Counts 350M Ω -500 M Ω Indication Only
Display Resolution	0.01M Ω
Pass/Fail Level	0.00M Ω -500.0M Ω

Earth / Ground Bond Test

Test Voltage	Nominal 6V AC
Frequency	50 or 60 Hz (independent of supply)
Display Range and Accuracy	0-1500m Ω $\pm 2\% \pm 5$ Counts
Display Resolution	1 m Ω

Compliance Test Ranges

Current/Load Resistance/Time	5A - 1000m Ω - Continuous 10A - 500m Ω - Continuous 25A - 200 m Ω - Continuous 30A - 150 m Ω - 60 secs 40A - 100 m Ω - 60 secs
Settable Output Current Range	0.1A - 40.0A
Selectable Range of Pass/Fail Levels	0-1500 m Ω

Power and Leakage Test

Power Output Rating	
Test Voltage	80V - 300V AC 20A nominal (Vin-Vout)
Maximum Power Output	999.9W

Output Power Measurement

Single Phase Power Measurement	
Display Range and Accuracy	+/-5% +/- 2 digits (200mV/VA). 000.0 to 999.9 VA
Selectable Range of Pass/Fail Levels	000.2 -1000 VA
Measurement Circuit Characteristics	
Crest Factor:	
Maximum Crest Factor = 2 Harmonic Content: Accuracy degradation is directly proportional to % harmonic content.	

Single Phase Power Factor Measurement

Display Range and Accuracy Ratio	0.000 -1.000 ± 0.030
Selectable Range of Pass/Fail Levels	0.000-1.000

Leakage Current Measurement

Display Range and Accuracy	0.10mA-20.00 mA $\pm 1\% \pm 5$ Counts
Display Resolution	0.01mA
Selectable Range of Pass/Fail Levels	0.01mA-20mA

Touch Current Measurement

Display Range and Accuracy	0.02mA - 5.00 mA $\pm 1\% \pm 5$ Counts
Display Resolution	0.01
Selectable Range of Pass/Fail Levels	0.02mA-5.00mA
Measuring Device	IEC/EN 60990 Fig 4 (IEC/EN 60990 Fig 3 or Fig 5 Upon Request)