# LT 1 Lamp Tester - Instruction Manual


References marked on instrument or in instruction manual:

⚠ Warning of a potential danger, comply with instruction manual.

☞ Reference. Please pay utmost attention.

Caution! Dangerous voltage. Danger of electrical shock.

Continuous double or reinforced insulation complies with category II DIN EN 61140.

CE UKCA Conformity symbol, the instrument complies with the valid directives. It complies with the EMC Directive (2014/30/EU) and EN 61326-1s fulfilled. It also complies with the Low Voltage Directive (2014/35/EU) and EN 61010-1 is fulfilled.

Instrument complies with the directive (2012/19/EU) WEEE.
Device complies with RoHS Directive 2011/65/EU and Delegated Directive 2015/863.

⚠ The instruction manual contains information and references, necessary for safe operation and maintenance of the instrument.

Prior to using the instrument (com-missioning / assembly) the user is kindly requested to thoroughly read the instruction manual and comply with it in all sections.

⚠ Failure to read the instruction manual or to comply with the warnings and references contained herein can result in serious bodily injury or instrument damage.

The respective accident prevention reg-ulations established by the professional associations are to be strictly enforced at all times

## 1.0 Introduction/Scope of Supply

The Lamp Tester LT1 is a handy test in-strument for fast lamp failure detection, especially for all gas filled low pressure and high pressure vapor lamps. The gas filled lamps are ionized using a high frequency voltage (approx. 3 kV) and thus tested.

- Lamp Tester for gas filled lamps
- Continuity Tester
- Single Pole Voltage Tester
- Torch Light

This instrument is used for testing cabling, capacitors, resistors and following lamp types:

- fluorescent lamps
- low pressure sodium vapor lamps
- high pressure sodium vapor lamps
- neon tubes
- mercury and metal halogen lamps

**Scope of supply:**
1 pc. lamp tester LT1 | 1 pc. Battery 9V, IEC 6LR61 | 1 pc. Manual

## 2.0 Transport and Storage

Please keep the original packaging for later transport. Any transport damage due to faulty packaging will be excluded from warranty claims.
In order to avoid instrument damage, it is advised to remove battery when not using the instrument over a certain time period. However, should the instrument be contaminated by leaking battery cells, you are kindly requested to return it to the factory for cleaning and inspec-tion.
The instrument must be stored in dry and closed area. In the case of an instru-ment being transported in extreme tem-peratures, a recovery time of minimum 2 hours is required prior to instrument operation.
These devices (except for the models with support) should be installed on the wall, at the centre of the room, about 2 m. above ground level (avoid positioning at corners; the air captured and treated by the device must be allowed to circulate through the room unhindered). The final result of the disinfection is however related to a higher or lower value of the outside contribution of germs in the air during UV disinfection. To install the device on the wall use the two triangular brackets enclosed in the packaging. Screw the brackets to the threaded holes on the back side of the device by use of bolts (M6x10) enclosed in the packaging. Make nr 2 holes on the wall by checking the centre distance between the brackets. Secure the device to the wall by means of two expanding wall plugs (Ø 8 ÷ Ø10 mm.) (not provided).

## 3.0 Safety References

⚠ The respective accident prevention regulations established by the pro-fessional associations for electrical systems and equipment must be strictly met at all times.

⚠ In order to avoid electrical shock, the valid safety and VDE regulations regarding excessive contact voltages must receive utmost attention, when working with voltages exceed-ing 120V (60V) DC or 50V (25V)rms AC. The values in brackets are valid for limited ranges (as for example medicine and agriculture).

⚠ Measurements in dangerous prox-imity of electrical systems are only to be carried out in compliance with the instructions of a responsible electronics technician, and never alone.

⚠ If the operator's safety is no longer ensured, the instrument is to be put out of service and protected against use. The safety is no longer insured, if the instrument:

- shows obvious damage
- does not carry out the desired measurements
- has been stored for too long under unfavourable conditions
- has been subjected to mechanical stress during transport.

⚠ The instrument may only be used within the operating ranges as spec-ified in the technical data section.

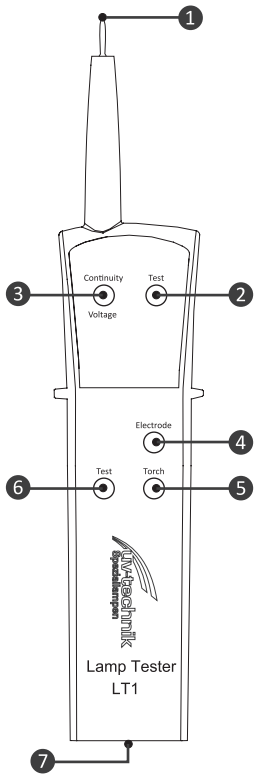
⚠ Avoid any heating up of the instrument by direct sunlight to ensure perfect functioning and long instrument life.

⚠ The instrument may only be used under those conditions and for those purposes for which it was conceived. For this reason, in particular the safety references, the technical data including enviromen-tal conditions and the usage in dry environments must be followed.

When modifying or changing the instrument, the operational safety is no longer ensured.

## 4.0 Operation Elements

① Test Probe for lamp test, voltage test and continuity test
② LED for lamp test
③ LED for voltages 60-250V and continuity
④ Touch electrode for voltage and continuity test
⑤ Button for lamp test
⑥ Button for torch light
⑦ Battery case




## 5.0 Carry out measurements

General Information to carry out meas-urements

⚠ Measurements in dangerous prox-imity of electrical systems are only to be carried out in compliance with the instructions of a responsible electronics technician, and never alone.

⚠ Instruments may only be touched at handle surfaces provided. Abso-lutely avoid the direct contact of the test probes.

⚠ Measurements have to be carried out by respecting the standards.

## 5.1 Voltage Measurement

The lamp tester LT1 allows AC voltage tests between 60-250V

⚠ To avoid electrical shock, the valid safety measures and VDE directives strictly have to be met concerning excessive contact voltage when working with voltages exceeding 120V (60V) DC or 50V (25V)rms AC. The values in brackets are valid for limited areas (such as e.g. medicine, agriculture).

☞ A correct indication is only ensured for AC voltage circuits with a fre-quency of 40-60 Hz being grounded in accordance with the regulations.

☞ The quality of the indication may be impaired when testing in unfavour-able locations, such as wooden lad-ders or in insulated floor coverings.

⚠ Test voltage tester function prior to testing on a known voltage source.

⚠ Never use the lamp tester under the influence of moisture and water.

Touch contact electrode during voltage test.

Connect test probe to UUT (unit under test). Illumination of the LED voltage/continuity indicates the sence of an AC voltage between 60 and 250 V. Simultaneously an acoustic sound is audible.

## 5.2 Lamp Test

Hold the test probe against the glass body or a contact pin/cable end and press the Test button for the duration of the test.

☞ Do not touch the contacts of the lamp, not even with objects. This can lead to ambiguous results.

**Testing Fluorescent Tubes**
If the lamp can be made to light up with the lamp tester but does not light up when installed, the filaments or the bal-last may be defective. The filaments and the wiring to the lamp can be checked with the continuity tester. The ballast unit must not be connected for this pur-pose (risk of destruction).

⚠ Before testing a lamp, make sure that the lamps to be tested are de-energised. Failure to do so may cause serious injury to the user and the appliance/lamp tester may be caused.

**Testing low pressure sodium vapor tubes**
Test tube by contacting the socket pins with test probe and observe if the inner tube is glowing. In some cases, only part of the tube is glowing. The other part should be lit when the test probe con-tacts the second pin.

**Testing high pressure sodium vapor tubes**
Touch tube with test probe. A clear, blue line within the arched tube indicates that the tube is in perfect condition. Any other test results indicates a defective tube.

**Testing Neon Tubes**
Touch the test probe to the lamp tube or the contacts on the cap and press the Test button. Replace the lamp if it does not light up.

**Testing mercury vapor and metal halogen lamps**
Touch a contact of the lamp with the test tip and press the Test button. A slightly bluish and diffused glow must be visible inside the lamp. If, on the other hand, no glow appears or the glow appears very dark violet or reddish or the glow is not diffuse but strongly constricted, the lamp is defective.
Please make sure that you only carry out this test when the lamp has cooled down to room temperature. Otherwise there is a risk of burns. It is also possible that the luminous effect will be distort-ed.
When testing low pressure UV lamps, high output UV lamps and UV medium pressure lamps light in the visible band-width is created, but no strong UV radia-tion. Due to this no special protection of the eyes and the skin is necessary. Small amounts of ozone can also be produced.

## 5.3 Continuity / Diode Test

For continuity tests, test probe and one hand touches the voltage free Electrode of the Lamp Tester.

⚠ Prior to any continuity test, it must be ensured that the resistance to be measured is not live. Failure to com-ply with this prescription can lead to dangerous user injuries.

- Hold the lamp tester in one hand. The thumb must touch the “electrode” button.
- The other side of the test object must be touched with one finger of the second hand.

The continuity test facility enables re-sistance tests between 0 and approx 5 MΩ. The resistance value can be de-termined by the intensity and the sound level of the acoustic signal. A higher sound level indicates a lower resistance value (approx. 0Ω). Simultaneously the LED Continuity is illuminated.
The diode testing is carried out in the same way. The negative test voltage pole is connected to the test probe, whereby the hand represents the pos-itive pole.
Test probe connected to the diode cath-ode, hand connected to anode - the LED continuity is illuminated.
Test probe connected to the diode an-ode, hand connected to cathode – no LED and no acoustic signal is indicated.

## 6.0 Maintenance

When using the instrument in compli-ance with the instruction manual, no special maintenance is required.
Should operational problems occur during daily use, our consulting service (phone +44 (0) 1582 805304) will be at your disposal, free of charge. For any queries regarding the instrument, please always quote product number.
If functional errors occur after expira-tion of warranty, our after sales service will repair your instrument without de-lay.

## 6.1 Cleaning

If the instrument is dirty after daily us-age, it is advised to clean it by using a humid cloth and a mild household de-tergent. Prior to cleaning, ensure that instrument is switched off and discon-nected from any other instruments (such the test object (UUT)).
Never use acid detergents or dissolvants for cleaning. After cleaning, the appli-ance must not be used until it is com-pletely dry.

## 6.2 Calibration Interval

The instrument has to be periodically calibrated by our service department in order to ensure the specified accuracy of measurement results. We recom-mend a calibration interval of two years.

## 6.3 Replacement of Batteries

Prior to storage battery replacement, disconnect the instrument from all con-nected circuits.
Only use batteries as described in the technical data section!

- Loosen the screw (i.e. with a coin) on the instrument’s bottom. Lift the battery case cover.
- Remove the discharged battery.
- Insert new battery.
- Replace the battery case cover and re tighten the screw.

Please consider your environment when you dispose of your oneway battery. They belong in a rubbish dump for hazardous waste. In most cases, the battery can be returned to their point of sale.

Please, comply with the respective valid regulation regarding the return, recy-cling and disposal of used batteries and accumulators.
If an instrument is not used over an ex-tended time period, the battery must be removed.
Should the instrument be contaminated by leaking battery cell, the instrument has to be returned for cleaning and in-spection to the factory.

## 7.0 Technical Data

**Voltage Test**

| | |
|---|---|
| Test Range | 60 - 250 V AC |
| Frequency | 40 - 60 Hz |
| Test Current | < 200 mA |

**Lamp Test**

| | |
|---|---|
| Voltage with new battery | approx. 3 kV / 280 kHz |
| Field strength 270-290 kHz | approx. 100 µV/m |
| Display | red LED Test |

**Continuity Test**

| | |
|---|---|
| Test Range | approx. 0 - 5 MΩ |
| Test Current | < 7 µA |
| Display | red LED Continuity/ Voltage and acoustic signal |
| Temperature Range | -10°C - +50°C rel. Humidity 70% |
| Height over sea level | up to 2000 m |
| Measurement Cat | CAT II/300 V |
| Power Supply | 9 V Battery IEC 6LR61 |
| Dimension | approx. 255 x 60 x 40 mm |
| Weight | approx. 170 g |

## 8.0 24 Months Warranty

The instruments are subject to strict quality control. However, should the instrument function improperly during daily use, you are protected by the le-gally required warranty (valid only with invoice). We will repair free of charge any defects in workmanship or material, provided the instrument is returned un-opened and untampered with, i.e. with undamaged warranty label. Any damage due to dropping or incorrect handling are not covered by the warranty. If the instrument shows failure following ex-piration of warranty, our service depart-ment can offer you a quick and econom-ical repair.

Subject to technical changes without notice!