



LUMETRON CTI-01 Comparative Tracking Index Apparatus



The **LUMETRON CTI01 Comparative Tracking Index Test Set** is designed to perform the test specified in many standards where resistance to Tracking in insulating parts supporting live parts is required to be established. Generally, insulation breakdown occurs either through its volume or over its surface or in both ways. Surface failure may arise from flashover or from the progressive degradation of the insulation surfaces by small localized sparks. Such sparks are the result of breaking of a surface film of conducting contaminant on the insulation, by the heat of leakage current through it. The rapid break in the leakage current produces an over voltage at the site of the discontinuity & an electric spark is caused. These sparks may cause carbonization on organic insulation & lead finally to a carbon track between points at different potentials. This process is known as **Tracking**. The **LUMETRON CTI-01** will indicate the relative behavior of solid electrical insulating materials with regard to their susceptibility to surface tracking when exposed, under electric stress, to water & other contaminants from the surroundings. The apparatus is especially suitable for synthetic resin moldings. It has been designed with much attention concerned with the standard drop conditions & uses a special pump system designed by Lumetronics.

The sample to be tested is subjected to a voltage between 100 to 600 V by means of two electrodes resting on it with a load of 1.0 N. Between electrodes, drops of conductive solution are dropped at regular intervals. A pump feeds electrolyte through a nozzle to produce drops which fall on the sample. The number of drops allowed to fall on the sample are preset by a drop counter. Sensing of a drop stops the pump until the next timing signal is received. Automatic shutdown is achieved when the tracking current exceeds 0.5 A, registering a 'FAIL'. After the preset number of drops & no breakdown, the unit will revert to standby mode & indicate a 'PASS'.

Features

- * Fully self contained unit, requires 230 V, 50 Hz, single phase input supply.
- * Control Panel and Test Chamber housed in separate cabinets. Test chamber is placed above the control panel and electrically coupled to it with two cables.
- * Built in electrolyte container & pump, generating drops of preset volume at 30 sec. intervals.
- * 3 digit presettable Drop Counter with precision Gold plated drop sensor.
- * Adjustable sample platform & lamp source for electrode alignment.
- * Pre calibrated load on the electrodes, exerting a force of 1.0 N each.
- * Voltage-Current tracking system to ensure 1A short circuit current at all voltages from 100 to 600 V.
- * Presettable current sensor with tripping circuit.
- * Exhaust fan for removal of fumes.
- * Clear acrylic front cover for safety and creating a draught free surrounding.
- * Cover open switch for additional safety.
- * Priming facility for the pump to enable electrolyte flushing.
- * Fully automatic unit with minimum of user controls / adjustments.

Specifications

Test Voltage	: 100 to 600 V AC adjustable, 50 Hz
Short Ckt Current	: 1 A max. at all voltage levels from 100 to 600 V
Trip Current	: 0.5 A, presettable.
Voltage Indication	: $\frac{1}{8}$ DIN, 3 digit Voltmeter, 100 to 600 V
Current Indication	: $\frac{1}{8}$ DIN, 3 $\frac{1}{2}$ digit Ammeter, 0 to 1.000 A
Dropping unit	: Automatic by special positive displacement pump
Drop interval	: 30 \pm 3 seconds
Drop regulation	: Mechanical, operated by external knob
Drop Volume	: 20 $^{-0/+5}$ cu.mm
Drop indication	: Presettable Digital counter, 0 to 999
Dropping Height	: \leq 40 mm
Electrolyte	: 0.1 % NH ₄ Cl (Ammonium Chloride) in distilled water
Load on sample	: 1.0 Newton (each electrode)
Electrodes	: Brass (Option = Platinum)
Supply	: 230 V AC, 50 Hz, Single phase
Max Fuse Rating	: 3 A Rapid, 20 x 5 mm Glass Cartridge
Weight	: 33 kgs approximate
Dimensions	: 410 W x 515 H x 315 D mm overall, approximate



TEST CHAMBER



CONTROL PANEL