

SURFACE & VOLUME RESISTANCE/RESISTIVITY TEST FIXTURE

Model 853

Designed in accordance with European Standards EN 1149-1 & 2 for measuring surface and volume resistance and calculating resistivity of garments and other planar material.

Features:

- Surface Resistivity, $\rho_s=20R_m$
- Conductive rubber electrodes
- Concentric ring design
- BNC or banana plug test lead connections
- Ground & insulated test beds
- Useable with resistance meters meeting specified V_E & Range requirements
- Meets EN 1149-1 & 2



Applications:

EN 1149-1 & 2 are European Standards for measuring the resistance properties of electrostatic protective clothing. EN 1149-1 is most appropriate for materials when the electrostatic dissipative behavior is based on surface conductivity. This test determines resistance over short distances and may not be appropriate for evaluating full garments. EN 1149-2 is most appropriate for complete garments when the electrostatic dissipative behavior is based on the bulk conductivity of the material.

These specifications specify test methods for materials intended for use in the manufacture of electrostatic dissipative protective clothing (or gloves) to avoid incendiary discharge. They are not appropriate for materials used in the manufacture of clothing (gloves) used to protect against line (mains) voltages.

However, these test methods can also be used wherever the measurement of surface and or volume resistance of planar material is required.



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Description:

The Model 853 is designed in accordance with the test fixture specified in EN 1149-1 and 2. The concentric design incorporates a geometrical configuration that provides a x20 multiplication factor to convert the surface resistance measurement to surface resistivity. The electrode configuration is derived from the applicable formulas set forth in the EN 1149. The Model 853 can also be configured to measure volume resistance and thus calculate volume resistivity when the thickness of the material (cm) is known.

The electrodes are compliant material consisting of nickel impregnated silicone rubber with a nominal hardness of 60 durometer providing good probe/surface contact. For garments and non-rigid material additional pressure is not necessary. The resistance of the contact material is sufficiently low to allow resistance measurements as low as 10 Ohms.

The Model 853 is compatible with any resistance measuring device having standard 0.161" (4mm) banana jacks for connecting the SENSE, SOURCE (V_E) and Ground test leads and is capable of providing the specified test voltage and required measurement range of the material under test.



Specifications:

Electrodes:

Material: 0.125" (3mm) Nickel/Silicone Rubber
Configuration: Concentric Ring
Inner Ring OD: 50.4mm
Outer Ring ID: 69.2mm
Shore-A Hardness: 55±10 Durometer

Resistance to Resistivity conversion:

Surface (Ohms/sq): $20R_m$
Volume (Ohms-cm): $20R_m/t$ (cm)

Resistance measurement range:

Minimum: 10 Ohms
Maximum: 10^{13} Ohms

Probe Material:

Insulated: PVC
Metal: Stainless Steel
Handle: Aluminum

Probe Weight:

Inner Electrode: 1 lb, 5.8oz (0.62kg)
Outer Electrode: 1 lb.7.5oz (0.64kg)

Probe Dimensions:

Diameter: 3.94" (100mm)

Warranty: One (1) Year

Components supplied:

Conductive Plane
Insulated Plane
Coaxial BNC-Banana jack cable
SOURCE Cable for Volume Resistance
Ground Cable
BNC-Banana jack SENSE cable adapter
Manual (Adapter and Manual not shown)

