

# STATIC DECAY ANALYZER

## Model 4406

Microprocessor-based system measures electrostatic dissipation of materials.

### Features:

- Static Decay per MIL STD 3010, Method 4046 (Std configuration)
- Meets static decay requirements:
  - Mil PRF-81705E
  - NFPA 99
  - ANSI/ESD S541
  - CECC 00015
- Automatic and manual test modes
- Preset and variable cutoff levels from 1% to 99%
- 0.001 second decay time resolution
- Optional Non-Destructive Test Fixture



Model 4406 Static Decay Analyzer

### Applications:

Materials used in static sensitive applications such as electronics packaging, clean rooms, hospitals and hazardous locations must dissipate static charge in a rapid, but controlled manner. **Static decay per Method 4046** is specified for planar material, but available custom test fixtures allows this method to evaluate formed objects, garments, table top surfaces, flooring material storage systems etc.

The Model 4406 Static Decay Analyzer meets the requirements of virtually all static decay test methods described in applicable DOD, NFPA, ESDA Industry and EU specifications.



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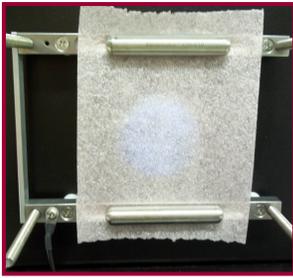
## Description:

**General:** The Model 4406 is an integrated microprocessor-based system that measures static decay of material and formed objects in accordance with current specifications when used with the appropriate electrodes. The instrument consists of two components: Control Unit and Test Fixture. This configuration enables the system to adapt to different test methods and to allow the Test Fixture to be placed inside a chamber such as an ETS Series 5500 Series Controlled Environment Chambers for testing under controlled environmental conditions.

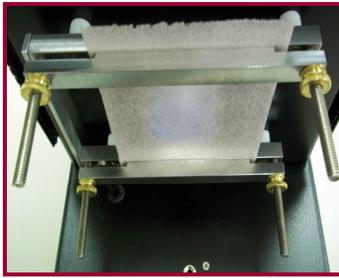
The Control Unit contains the high voltage power supply, microprocessor, 4-line vacuum fluorescent display and keyboard.

The Analyzer may be operated in either Manual mode, where all functions are controlled by the operator, or Automatic mode, where multiple testing of the same sample is performed in a consistent and repeatable manner. The HVPS is programmable from 600 to 5,500 Volts depending on the Test Fixture being used. The Display shows Test Configuration, Settings and Decay and/or Charging measurements.

**Static Decay per Method 4046:** This is the standard configuration. It performs the same tests as the previous Model 406D Static Decay Meter. It includes the Model 4406-FTC Faraday Test Cage that accepts the specified sample size of 3.5 x 5.5" (89x140mm). Optional electrode configurations plus custom configurations are available.



Magnetic (std)



Clamp (std)



Small Sample (opt)

The Model 4406 has 2 modes of operation. MANUAL mode enables the operator to select the cutoff level to which decay time is measured, measure initial charge (IC) on the sample prior to applying the charging voltage and the voltage conducted onto the sample after a set period of time (AC) such as 60 seconds for material in the insulative range. Three (3) decay time measurements at each polarity are displayed.

In AUTO mode, operation is controlled by the microprocessor. Depressing the DECAY TEST key starts the measurement sequence by conducting 3 measurements each at +V and -V at the selected cutoff level then displaying all 6 decay time measurements.

The STM-2 System Test Module simulates a sample and is used to verify system operation.

The Model 806B is a non-destructive test fixture for measuring large planar objects and with special electrodes, non-planar surfaces, powders and liquids.



Model 806B Non-Destructive Test Fixture

## Specifications:

### CONTROL UNIT

**Charging Voltage:** Programmable  $\pm 600$ -5,500V

**Electrostatic Sensor:**

Drift - <1%/min

Step Response - 1ms @ 10-90%

**Display:** 4-Line, Vacuum fluorescent

**Operating Modes:**

Manual: Operator controls all functions

Auto: Operator programs test protocol

**Cutoff Levels:** 1%, 10% & Adjustable

**Decay Time Resolution (sec):**

<0.003: LOW; 0.003 - <1.0: 0.001;

0 -<10: 0.01; 10-99.9: 0.1; >100: 1.0

**System Test:** STM-2 System Test Module

0.22 sec (nominal) @10%

**Power:**

Voltage: 90-260VAC, 50/60Hz; 2 Amps max

Input: IEC Socket with 8' (2.4m) cable with NA plug (Std)

**Dimensions:**

**Size:** 19"Wx12"Dx3.75"H (48.24x77.4x9.5cm)

**Weight:** 12 lbs (5.4kg)

### TEST FIXTURES

**Faraday Cage:** Model 4406-FTC

Electrodes:

Magnetic: - Film, Fabric

Clamp: Non-flexible sheet

Custom: Shaped objects

Dimensions:

Size: 11"Dx9"Wx11"H

Weight: 15 lb (6.1kg)

**Non-Destructive:** Model 806B

Electrodes: 4" (102mm)

Conductive rubber

Spring-loaded pin array (Optional)

**Warranty:** One (1) Year

*Specifications subject to change without notice*