The Model 511 is a high-quality, portable, chopper-stabilized, non-contacting electrostatic field meter designed for measuring and auditing electrostatic fields in ESD sensitive areas so that operators can find them before they become a problem. Features of the Model 511 such as its LED indicator with a switch selectable measurement range of either ±2 kV or ±20 kV, add to instrument flexibility and benefit the operator through its ease of use. Operators also benefit from the ability to obtain or audit reliable and accurate ESD measurements in either ionized or non-ionized environments.

The Model 511 can also be used for testing balance and +/- decay capabilities of ionizers when the optional Ionizer Test Kit (which includes the Model 511, the Model 511-CP Charge Plate and the Model 511-CH Charger) is ordered. See page 2 for ordering information.

**Key Specifications**

- **Measurement Range:**
  - Low range: 0 to ±2 kV / inch
  - High range: 0 to ±20 kV / inch

- **Measurement Accuracy:**
  - Voltage monitor output: Better than ±5% of reading, ±10 mV
  - Voltage display: Better than ±5% of reading, ±2 counts

**Typical Applications Include**

- Audit/monitor electrostatic decay
- Monitor ESD in semiconductor production
- Measure electrostatic fields on film, polymers, and paper
- Assess charge generation of materials, equipment and personnel

**Features and Benefits**

- Available for use as a Field Meter and for testing balance and +/- decay capabilities of ionizers (with the optional Ionizer Test Kit)
- Push-button “auto-zero” feature removes any offset voltage
- Compact, pocket size
- Easy-to-read LED display
- Distance ranging system utilizes LEDs to indicate a 1-inch spacing between the instrument and the test target
- Hold function allows the user to hold a display when a measurement is being taken in a location where ready the display is difficult
- Chopper-stabilized probe technology allows for use in ionized environments
- NIST-traceable Certificate of Calibration provided with each unit
- CE compliant
## Model 511 Specifications

### Performance

<table>
<thead>
<tr>
<th>Measurement Range (switch selectable)</th>
<th>Low Range</th>
<th>0 to ±2 kV / inch</th>
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</thead>
<tbody>
<tr>
<td>High Range</td>
<td>0 to ±20 kV / inch</td>
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<tr>
<td>Measurement Accuracy</td>
<td>As tested in TREK Test and Calibration Fixture # PE15024</td>
<td></td>
</tr>
<tr>
<td>Voltage Monitor Output</td>
<td>Better than ±5% of reading, ±10 mV</td>
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<tr>
<td>Voltage Display</td>
<td>Better than ±5% of reading, ±2 counts</td>
<td></td>
</tr>
<tr>
<td>Measurement Stability</td>
<td>±10 counts</td>
<td></td>
</tr>
</tbody>
</table>

### Voltages Monitor

- **Output**: 2 volts output at full scale
- **Ratio**
  - Low Range: 1/1000 of the measured electrostatic field
  - High Range: 1/10000 of the measured electrostatic field

### Front Panel Meter

- **Voltage Display**: 3 ½ digit LED display
- **Range**
  - Low: 0 to ±1.999 kV / inch
  - High: 0 to ±19.99 kV / inch
- **Display Resolution**
  - Low Range: 1 V / inch
  - High Range: 10 V / inch
- **Sampling Rate**: 3 readings per second

### Features

- **Ground Snap Connector**: Provides connection for a grounding wire
- **Automatic Shutoff**: Unit will shut off after 20 minutes from last activity
- **Ranging System**: LED distance indicator; aligned targets indicate one (1) inch
- **Range/Zero Switch**: LED distance indicator. Resets the instrument to zero and selects the measurement range
- **Low Battery Indicator**: An LCD display message indicates when the battery is low

### Features (cont.)

- **Hold Switch**: Retains the LCD display reading when depressed

### General

- **Dimensions**: 23.9 mm H x 69.9 mm W x 125.5 mm L (0.94” H x 2.75” W x 4.94” L)
- **Weight**: 140 g (4.9 oz.) with battery
- **Voltage Monitor Connection**: 2.5 mm jack (3/32”) monophone
- **Tip**: Signal
- **Sleeve**: Ground
- **Operating Conditions**
  - Temperature: 10°C to 30°C (50°F to 86°F)
  - Relative Humidity: To 80%, non-condensing
  - Altitude: To 2000 m (6561.68 ft.)

### Power Requirements

- **Power**: One (1) 9-volt alkaline battery (not supplied)
- **Operating Time**: Greater than 50 hours, with a new battery at 21°C continuous
- **Power Switch**: A membrane switch that is designed to prevent accidental turn on. Powers the instrument on and off

### Included Accessories

- **Operator’s Manual**: PN: 23480

### Optional Accessories

- **Ionizer Test Kit**: Model: 511 Ionizer Test Kit (comes complete with the Model 511 Field Meter, the Model 511-CP Charge Plate and the Model 511-CH Charger)

### Certifications

- **Calibration**: TREK, INC. certifies that each Model 511 is tested and calibrated to specifications using measurement equipment traceable to the National Institute of Standards and Technology. A Certificate of Calibration accompanies each instrument when it is shipped from the factory

### CE Compliance

- **IEC 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General Requirements**
- **IEC61326-1 Electrical equipment for measurement, control and laboratory use - Part 1: General Requirements**

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