

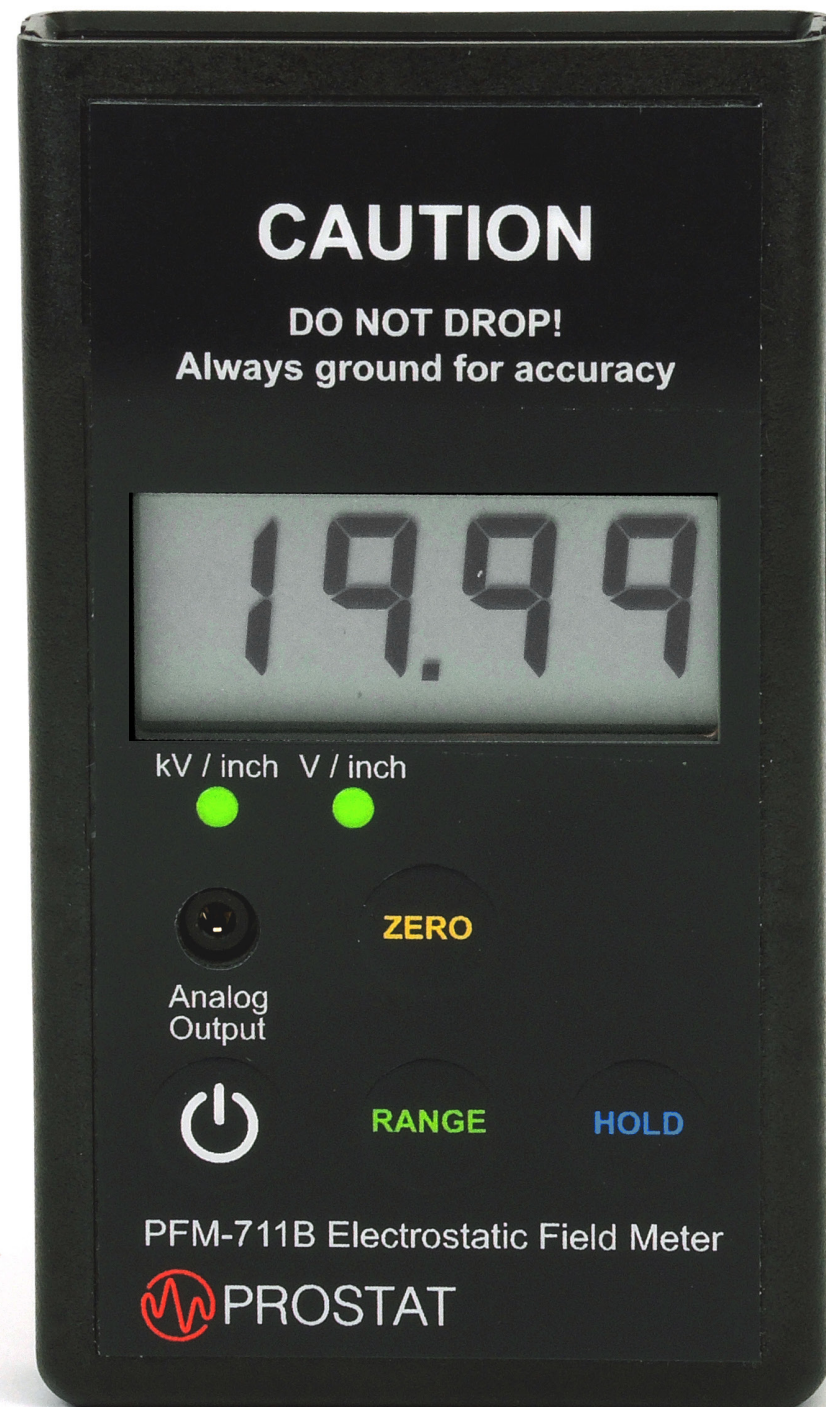
# PFK-100B

## Electrostatic Field Meter



# PFM-711B Electrostatic Field Meter

HANDHELD FIELD METER LOCATES AND MEASURES ELECTROSTATIC FIELD DENSITY



## Product Overview

### Uses a Chopper-Stabilized Sensor

The PFM-711B is an accurate, portable electrostatic field measuring device that is easy to use and designed for one hand operation. The PFM-711B is a digital, electronic chopper design, which allows the instrument to make electrostatic field measurements in areas where ionized air is present. Used by itself, the PFM-711B will measure electrostatic fields emanating from virtually any flat surface or object.

### Measure in 1 Volt and 10 Volt Increments

The PFM-711B uses a dual range for measuring surface voltage and electrostatic potentials in both positive and negative polarity charges. In the kV/Inch range, the PFM-711B will indicate electrostatic field voltage from 0 to  $\pm 20,000$  volts in 10 volt increments at 1" (25mm) distance from the charged surface. In the V/Inch range, the field meter measures field density from 0 to  $\pm 1,999$  volts in 1 volt increments at 1" (25mm) distance from the charged surface. The instrument is easy to use and its controls are designed for one hand operation.

### Provides a Ground Reference

The PFM-711B Fieldmeter case is conductive. It provides the ground reference for its measuring circuit. For accurate measurements, it is necessary that the person holding the meter be properly grounded, or the meter has a ground connection made to the 10 mm snap fastener mounted on back of case. Ground the case by wearing a functional wrist strap that is properly grounded. Turn the meter on and select the desired range. Adjust the display to zero (0) volts by pressing the ZERO control.

### Bulls Eye for Accurate Measurements

The ranging lights help position the instrument for accurate measurements. Align the front sensor of the PFM-711B Field Meter approximately 1" (25mm) from the surface or object being measured. Move the instrument toward, or away from the surface until the ranging lights are focused on the test surface. Once the field meter is properly positioned, the PFM-711B will indicate the electrostatic field measured on its display.

### Long Lasting Battery

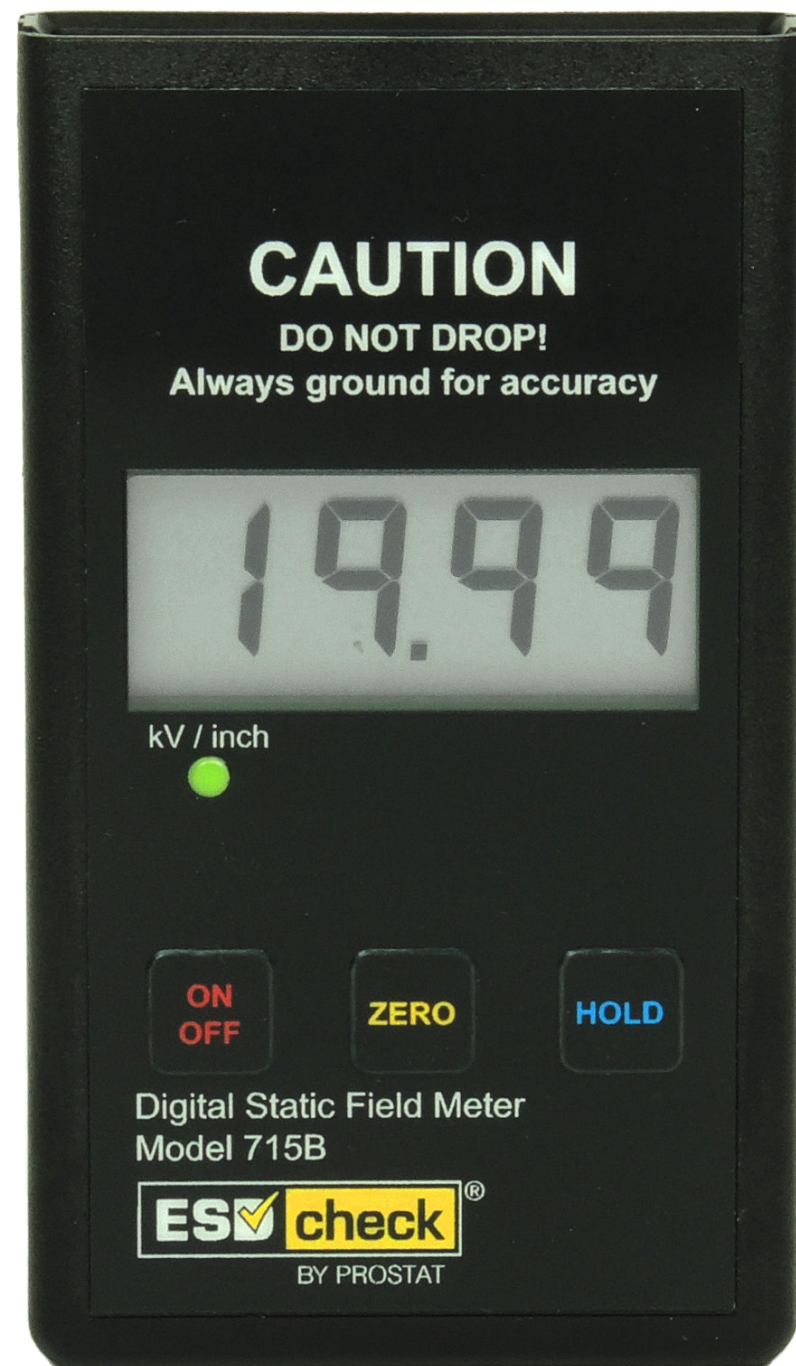
The PFM-711B uses a 9 volt alkaline battery (included), which provides an approximate life of 30 hours. The display is designed to indicate when the battery is low. The low battery indicator is conveniently programmed to come in at 7.2 DC volts, which is the minimum voltage required for accurate measurements.

- Lightweight, portable, hand-held Field Meter
- Measure in 1 volt/in increments 0 to  $\pm 1,999$  Volts
- Measure in 10 V/in increments 0 to  $\pm 20,000$  Volts
- Accuracy of  $\leq \pm 5\%$
- LED ranging lights help position the meter at the right distance
- Analyze Footwear/Flooring Combinations
- Zero button allows the display to be adjusted to zero (0)
- Hold feature freezes the measurement on the display
- Use with Prostat CPM-720B Charge Plate Monitor and PCS-730B Electrostatic Charger
- Use with Prostat PGA-710B AutoAnalysis System or X-Y Plotter
- Verify Ionizer Balance and Decay Time Performance
- 2-year Limited Warranty (1 year on the sensor)



# MODEL-715B Digital Static Field Meter

MEASURE SURFACE VOLTAGE AND POLARITY ON OBJECTS



## Product Overview

### Measure Surface Voltage and Polarity on Objects

The Model 715B is a static field meter that indicates electrostatic field voltage from 0 to  $\pm 19.99$  kV in 10 volt increments at a distance of 1" (25mm) from the charged surface.

The 715B uses a chopper-stabilized sensor that can be operated in both normal and ionized environments with an accuracy of  $< \pm 5\%$ .

### An Easy to Use Digital Zero Function

The Zero function allows to easily provide a zero-reference point by pressing a push-button instead of a rotary knob. The Hold button will lock the measurement on the display to allow analysis and to preserve battery life.

### Ranging Lights for the Right Distance

The ranging LED lights help guide the user to position the field meter at exactly 1 inch (25mm) from the charged object to be measured, providing a greater accuracy of the measurement.

### Ground Reference through Conductive Enclosure

The static field meter is grounded through the conductive case and the built-in 10mm snap when held by a grounded user.

- Assess electrostatic fields or charge on objects
- Measures up to  $\pm 19.99$  kV at a distance of 1 inch
- Accuracy of  $< \pm 5\%$  in both normal and ionized environments
- Uses a chopper stabilized sensor
- LED ranging lights for positioning the meter at the right distance
- Zero function allows the display to be adjusted to zero (0)
- Hold feature to lock the reading on the display
- Low battery indicator on the display
- 1-year limited warranty



# Electrostatic Field Meter Selection Guide

Characteristics	PFM-711B Electrostatic Field Meter	MODEL 715B Digital Static Field Meter
Chopper-Stabilized Sensor	√	
Overall Range	Low Range: 0 V to ±1999 V High Range: 0 V to ±19.99 kV	0 V to ±19.99 kV
Display Resolution	Low Range: 1 Volt increment High Range: 10 Volt increments	10 Volt increments
Accuracy Voltage Display	Better than ±5% of reading, ±2 counts	
Sampling Rate	Display readings are updated every 0.5 seconds	
Digits	3-1/2 digits	
Battery Power	9 volt alkaline battery	
Battery Life	Approx. 20 hours (of continuous use)	
Battery Status Indicator	√	
Measurement Hold	√	
Spot Resolution as described in ANSI/ESD S20.20	√	---
Analog Output	√	---
Response Time	Less than 180ms (90-10%)	---
Ground Snap	√	
Recommended Charge Plate Monitor	CPM-720B Charge Plate Monitor	---
Operating Relative Humidity	0% – 80%, non-condensing	
Warranty	2 years <sup>1</sup>	1 year

<sup>1</sup>Warranty on circuit board, display and membrane. Warranty on the sensor is 1 year and is limited to a defective sensor that was not dropped or used for measuring a source greater than 20kV.



# PFK-100B Electrostatic Field Meter Kit

MEASURE FIELDS AND VOLTAGE GENERATION AND BALANCE IONIZERS



## Product Highlights

- Measure range & polarity of electrostatic fields in 1 volt or 10 volts increments
- Charges from zero to over 1000 volts in less than 5 seconds
- Balance Ionizers per ANSI/ESD SP3.3 Periodic Verification
- Measure Ionizer Decay time as per ANSI/ESD S3.1 and ANSI/ESD SP3.3.
- Measure Body Voltage Generation and Decay
- Use with a data-logger to record measurements and create reports
- Compatible with the Auto-analysis System
- Accuracy of  $\pm 5\%$
- Battery Operated

## Product Overview

### Uses a Chopper-Stabilized Sensor

The PFM-711B is an accurate, portable electrostatic field measuring device that is easy to use and designed for one hand operation. The PFM-711B is a digital, electronic chopper design, which allows the instrument to make electrostatic field measurements in areas where ionized air is present. Used by itself, the PFM-711B will measure electrostatic fields emanating from virtually any flat surface or object.

### Measure in 1 Volt and 10 Volt Increments

The PFM-711B uses a dual range for measuring surface voltage and electrostatic potentials in both positive and negative polarity charges. In the kV/Inch range, the PFM-711B will indicate electrostatic field voltage from 0 to  $\pm 20,000$  volts in 10 volt increments at 1" (25mm) distance from the charged surface. In the V/Inch range, the field meter measures field density from 0 to  $\pm 1,999$  volts in 1 volt increments at 1" (25mm) distance from the charged surface. The instrument is easy to use and its controls are designed for one hand operation.

### Provides a Ground Reference

The PFM-711B Field meter case is conductive. It provides the ground reference for its measuring circuit. For accurate measurements, it is necessary that the person holding the meter be properly grounded, or the meter has a ground connection made to the 10 mm snap fastener mounted on back of case. Ground the case by wearing a functional wrist strap that is properly grounded. Turn the meter on and select the desired range. Adjust the display to zero (0) volts by pressing the ZERO control.

### Bulls Eye for Accurate Measurements

The ranging lights help position the instrument for accurate measurements. Align the front sensor of the PFM-711B Field Meter approximately 1" (25mm) from the surface or object being measured. Move the instrument toward, or away from the surface until the ranging lights are focused on the test surface. Once the field meter is properly positioned, the PFM-711B will indicate the electrostatic field measured on its display.

### Use it with a Recording Device

The PFM-711B is the most flexible field meter in the ESD control marketplace. Combined with a variety of accessories, it can perform many different measurements to analyze the static sensitive process or environment. The analog output allows documentation of measurements when used in conjunction with X-Y plotter, analog data recording device, or the Prostat PGA-710B Autoanalysis System. (Recording device and cable not included.)

### Long Lasting Battery

The PFM-711B uses a 9 volt alkaline battery (included), which provides an approximate life of 30 hours. The display is designed to indicate when the battery is low. The low battery indicator is conveniently programmed to come in at 7.2 DC volts, which is the minimum voltage required for accurate measurements.

### Portable Charge Plate Monitor

The CPM-720B Charge Plate Assembly is a 3.25" x 3.25" isolated plate attachment for the PFM-711B Electrostatic Field Meter. It converts the PFM-711B Field Meter into a portable, battery operated charged plate monitor. By attaching a CPM-720B Charge Plate to the PFM-711B, the meter can also be used for Ion Balance voltage measurements.

### Charge It Up!

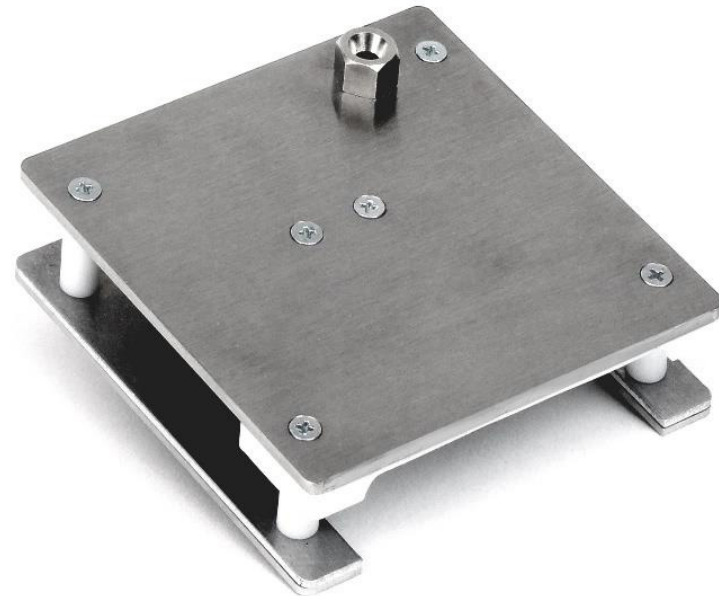
The PCS-730B can be used to place a  $\pm 1000V$  charge on the CPM-720B Charge Plate making it possible to also measure the discharge times of air ionization equipment per ANSI/ESD SP3.3 Periodic Verification of Air Ionizers.





# CPM-720B Charge Plate Monitor Assembly

CONVERTS PFM-711B FIELD METER TO A PORTABLE, BATTERY OPERATED CHARGED PLATE MONITOR



## Product Overview

The CPM-720B Charge Plate Monitor Assembly is a miniature isolated plate attachment for the PFM-711B Electrostatic Field Meter. It converts the PFM-711B Field Meter into a portable, battery operated charged plate monitor. This unique design allows precision balancing of ionizing blowers and other devices to less than  $\pm 5$  volts accuracy.

When used with auxiliary leads or wrist strap, the CPM-720B measures body voltage and equipment charge generation. Combining this unique assembly with the Prostat PCS-730B Electrostatic Charger, one can easily confirm ionizer performance, plot decay times, measure suppression, and perform a variety of other electrostatic evaluations and demonstrations.

Characteristics	CPM-720B
Tolerance	Matches the PFM-711B Field Meter within 5% when calibrated together
Capacitance	19 Picofarads (pF) $\pm 1$ pF when mounted to the PFM-711B
Range	0 to $\pm 5$ kV $\pm 2\%$
Case	Through conductive case and snap fastener of PFM-711B Field Meter
Operating Temperature	10°C to 30°C (50°F to 80°F)
Operating Relative Humidity	0% – 70%, non-condensing
Operating Temperature	10°C to 30°C (50°F to 80°F)
Operating Relative Humidity	0% – 80%, non-condensing
Operating Altitude	2000 m
Without the Banana Input Jack	8.25 cm L x 8.25 cm W x 1.75 cm H 3.25" L x 3.25" W x 0.69" H
With the Banana Input Jack	8.25 cm L x 8.25 cm W x 2.29 cm H 3.25" L x 3.25" W x 0.90" H
Weight	187 g (6.6 oz.)

- Portable, battery operated charged plate monitor
- Precision balancing of ionizing blowers to less than  $\pm 5$  volts accuracy
- Measures body voltage and equipment charge generation
- Confirms ionizer performance and plot decay times
- NOT compatible with the PFM-711A or Model 715B



# CPM-760A Portable 6 Inch Charge Plate Monitor

COLLAPSIBLE FOR EASY, COMPACT STORAGE AND PORTABILITY



Characteristics	CPM-760A
Isolated Plate	Electro-plated aluminum plate 6.0" x 6.0" (15 cm x 15 cm)
Ground Plate	Plated aluminum sheet 6.0" x 6.0" (15 cm x 15 cm)
Plate Spacing	Approximately 0.63" between isolated and ground plates. Plate spacers made from machined virgin, white Teflon® Rod
Support	Stored disassembled, plated aluminum sheet and steel lower stabilizing block
Assembly	Assembled with machine cap screws
Capacitance	Parallel Plate Capacitance 20 picofarads (pF) ±2 pF
Range	0 to ± > 5 kV at a plate separation of 0.63"
Accuracy	±5% 0 to 1,000 Volts
Charge Retention	5 Minute Decay when charged to 1kV, floating plate voltage decays less than 5% (< 50 @ 50% Rh: volts) over a 5 minute period
Calibration	Accomplished via adjustable instrument saddle and grounding device
Grounding	Via snap fastener of PFM-711A or PFM-711B and meter saddle assembly
Assembly Height	6.0" (15 cm) high in vertical test configuration 9.0" (22.86 cm) high in horizontal test configuration; center of plate 6.0" (15 cm) from worksurface
Weight	2.5 lbs (1.13 kg)

## Product Overview

### Charge Plate Monitor in Accordance with ANSI/ESD STM3.1 and ANSI/ESD SP3.3

The CPM-760A is a 6" x 6" (15 cm x 15 cm) portable charge plate monitor assembly with a capacitance of 20pF ± 2 pF, meeting the requirements of ANSI/ESD STM3.1 and ANSI/ESD SP3.3.

### Use it with the PFM-711A or PFM-711B Electrostatic Field Meters

The CPM-760A is intended for use with the Prostat PFM-711A or PFM-711B Field Meters, PCS-730 or PCS-730B Electrostatic Chargers and the PDT-740B Static Decay Timer.

### For Both Overhead and Benchtop Ionizers

This handy accessory is designed to perform very accurate performance audits on overhead ionizers and room ionization systems. Used with extension wings, the CPM-760A is also used to evaluate and balance bench top ionizers.

It may be used for evaluating voltage generation and static decay performance of personnel, footwear, flooring, chairs, carts and other equipment and materials.

### Designed for Portability and easy Storage

The CPM-760A is completely collapsible for compact storage in any of the Prostat ESD Auditing Kit Series. The Charge Plate Monitor assembles in minutes making it ideal for transportation.

- 6" x 6" (15 cm x 15 cm) conductive plate
- Total system capacitance of 20 pF ± 2 pF
- Meets the requirements of ANSI/ESD STM3.1 and ANSI/ESD SP3.3
- Designed to perform audits on overhead ionizers and room ionization systems
- Flexible to also evaluate and balance bench top ionizers
- Completely collapsible for compact storage
- Designed to be used with the PFM-711A and PFM-711B



# PCS-730B

## Electrostatic Charger Specifications

Characteristics	PCS-730B
Output	$\pm 1,250 \pm 5\%$ volts DC Current limited to less than 1 microamp
Output Connector	Female banana jack provided with mating contact rod
Charging Speed	Charges from zero to over $\pm 1000$ volts in 3 seconds at ambient conditions
Input	9 VDC alkaline battery included
Battery Life	Minimum of 28 hours (of continuous use) Approximately 20,000 charges of either polarity
Grounding	10mm female snap fastener on rear of case
Operating Temperature	10°C to 30°C (50°F to 80°F)
Operating Relative Humidity	0% – 80%, non-condensing
Operating Altitude	2000m
Response Time	2.85 cm H x 6.12 cm W x 12.65 cm L 1.12" H x 2.41" W x 4.98" L
Ground Snap	Length: 4.45cm (1.75") Length: with banana plug: 8.18 cm (3.22") Diameter: 0.154"
Weight	147 g (5.2 oz.) with battery







# Ionization Test Kits Selection Guide

## PFK-105 IONIZATION TEST SET

### PERFECT KIT FOR TESTING AND BALANCING IONIZERS

- Ionization Test Kit for Measuring Offset Voltage and Discharge Times
- Includes a Field Meter, Charge Plate Monitor, ±1000 Volt Charger and Decay Timer
- Balance Ionizers per ANSI/ESD SP3.3 Periodic Verification
- Measure Ionizer Decay time as per ANSI/ESD S3.1 and ANSI/ESD SP3.3.
- Measure Body Voltage Generation and Decay
- Evaluate Ionizers and Packaging Materials
- Includes a fixture to hold the PFM-711B, CPM-720B and PDT-740B as one
- Molded Carrying Case with Foam Insert Included

## PFK-101 BASIC FIELD KIT

### AN INTRODUCTION TO THE PORTABILITY AND FUNCTIONALITY OF THE PROSTAT LINE

- Measure Electrostatic Fields
- Balance Ionizers and Analyze Ionizer Performance
- Record Temperature and Relative Humidity
- Measure Body Voltages
- Measure Decay Times
- Measure Charge Generation

## PIK-110 IONIZATION KIT

### MEASURE IONIZER PERFORMANCE WITH THE UPGRADABLE PIK-110

- Measure Surface Voltage and Polarity on Objects up to ±19.99 kV
- Balance Ionizers and Analyze Ionizer Performance in accordance with ANSI/ESD SP3.3
- Measure Relative Humidity and Temperature in Celsius or Fahrenheit
- Measure Body Voltage Generation
- Measure Charge Decay of Ionizers per ANSI/ESD STM3.1
- Measure Charge Generation
- Measure Air Flow Speed



Characteristics	PFK-105	PFK-101	PIK-110
Measure Electrostatic Fields	✓	✓	✓
Analyze and Balance Ionizers	✓	✓	✓
Measure Decay Times	✓	✓	✓
Measure Temperature and Humidity	---	✓	✓
Measure Air Flow Speed	---	---	✓
Includes Grounding Accessories	---	✓	✓
Meets ANSI/ESD S3.1	✓	✓	✓
Meets ANSI/ESD SP3.3	✓	✓	✓