Advanced Photoconducting Drum Test System PDT®-2000LA

The PDT-2000LA is an advanced drum test system widely used in photoreceptor research, development and production quality control. Designed for testing photoreceptors, the PDT-2000LA is also an effective tool for testing charge rollers.

Overview

A unique feature of the PDT-2000LA is its dual charging systems. The system is equipped with both a corona and a charge roller charger, user-selectable via the control software. A standard PDT-2000LA system consists of a scanner, an electrostatic voltmeter, an external exposure light source with fiber-optic light guide, an LED erase light source, a light meter, and a high-voltage power supply for charge roller charging. A user-supplied computer runs the Microsoft Windows®-based control software and houses the data acquisition and control hardware. The scanner supports a wide variety of drum types and sizes. The computer-controlled tungsten-halogen light source is equipped with bandpass filters for wavelength selection.

PDT-2000LA test functions are software-controlled. Key test parameters such as charging level, charging method, exposure energy, erase intensity, scan type, and scanning speed are specified by the user. In a typical test session, the operator loads a drum into the scanner, selects the test to be run, sets the test parameters, and activates the test with the control software. The system performs the scan applying the user-specified parameters and reports the results. The scan data are saved for further review and analysis and can be exported to other software.

Built-in Test Functions

- Charge acceptance scans
- Photo-discharge scans
- Dark decay measurement
- Cyclic fatigue tests
- Photo-induced discharge curve (PIDC)
- Erase residual measurement
- Axial and circumferential scans
- Single and multiple track scans
- Charge and discharge uniformity mapping
- Defect mapping
- Charge roller characterization (AC or DC sweep)

Typical Applications

- Photoreceptor and charge roller materials research and development
- Photoreceptor and charge roller production quality control
- Acceptance testing of photoreceptors and charge rollers
- Competitive benchmarking
- Failure analysis and problem solving

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System Specifications

PDT®-2000LA

Test Functions

- Charge acceptance scans
- Photo-discharge scans
- Dark decay measurement
- Cyclic fatigue tests
- Photo-induced discharge curve (PIDC)
- Erase residual measurement
- Axial and circumferential scans
- Single or multiple track scans
- Mapping of charge and discharge uniformity
- Defect mapping
- Charge roller characterization

System Hardware

- Scanner unit
  - Maximum drum length 360mm
  - Maximum drum diameter 40mm
  - Minimum drum diameter 16mm
  - One set of 30mm gearless drum adapters
    Other adapters available as options
    (Please consult factory)
  - Maximum roller length 360mm
  - Maximum roller diameter 15mm
  - Minimum roller diameter 8mm
- Electrostatic voltmeter
- Tungsten-halogen light source
  - One 780nm interference filter
  - One 10% neutral density filter
  - Other filters available as options
    (Please consult factory)
  - Computer-controlled shutter & aperture
- Red LED erase exposure
- Light meter
- Corona charger – negative charging standard; positive charging option available
- Charge roller DC-AC power supply
  - Maximum AC peak-to-peak voltage is 2000V
  - Frequency of sinusoidal AC adjustable from 300 to 2000hz
  - DC voltage from 0 to -1500V

EPLab® Control Software

- Provides all motion control, data acquisition, measurement control, and data analysis functions in both automatic and manual modes
- Provides graphical analysis tools such as color maps, zoom/unzoom, cursors, indicator for local voltage, current and resistance, and defect locator
- Performs statistical functions (e.g., minimum, maximum and mean voltages and standard deviation)

Minimum PC Requirements (customer-supplied)

- Operating System: Windows® 7 to 10, 64-bit
- RAM: 8 GB or more
- Microsoft Excel® 2007 or higher
- CD-ROM drive
- Two USB 2.0 ports

Recommended Application Software

Microsoft Excel 2007. *(Note that no third party application software is required for basic data acquisition, display, and simple analyses. To perform more extensive data analyses, the above application software is highly recommended*)

Electrical Requirements

- 110 Vac±10% @ 50/60 Hz or 230 Vac±10% @ 50 Hz

Maintenance and Operating Environment

A temperature and relative humidity sensor is built into the system for monitoring purposes only. The customer is responsible for controlling test environment conditions, and should follow good maintenance practices typical for laboratory equipment

Temperature
Operating: 10° to 32° C (50° to 90° F)
Storage: 0° to 35° C (32° to 95° F)

Relative humidity
Operating: 20% to 80%
Storage: 10% to 95% (non-condensing)

Dimensions and Shipping Weight

Standard model - packaged dimensions

- Main unit: 74 cm x 51 cm x 25 cm (29” x 20” x 10”)
- Approximate shipping weight (including accessories): 65 kg (142 lb)

Documentation

- User’s Guide

* *Specifications subject to change without notice. Rev. 160223*

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