Photoconducting Drum Test System

PDT®-2000L

The PDT-2000L photoconducting drum test system is a quality control tool designed to test photoreceptors used in electrophotographic printers and copiers. The PDT-2000L evaluates drum quality and remaining life by measuring the drum's electrophotographic characteristics, the best predictors of future performance. Developed primarily for toner cartridge remanufacturing, the system also plays an important role in research and development.

Overview

A standard PDT-2000L system consists of a light-tight scanner, a built-in electrostatic voltmeter, an LED exposure light source, and a bank of erase LEDs. A user-supplied computer runs the Microsoft Windows®-based control software and houses the data acquisition and control hardware. The system supports a wide variety of drum types and sizes. Typical cycle time is 60 seconds.

PDT-2000L test functions are software-controlled. Key test parameters, such as charging level, 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 PDT-2000L scanner, sets the test parameters, and activates the test. The system performs the scan, gives a pass/fail reading based on 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 measurements
- Cyclic fatigue tests
- Photo-induced discharge curve (PIDC)
- Axial and helical scans
- Single and multiple track scans
- Charge and discharge uniformity mapping
- Defect mapping

Typical Applications

- Manufacturing quality control
- Assessment of recycled drum condition
- Remaining life prediction
- Acceptance testing

Quality Engineering Associates, Inc.

755 Middlesex Turnpike, Unit 3, Billerica, Massachusetts 01821 USA
Tel: +1 978-528-2034 Fax: +1 978-528-2033 Email: info@qea.com Web: www.qea.com

System Specifications*

PDT®-2000L

Test Functions
- Charge acceptance scans
- Photo-discharge scans
- Dark decay measurements
- Cyclic fatigue tests
- Photo-induced discharge curve (PIDC)
- Axial and helical scans
- Single or multiple track scans
- Charge and discharge uniformity mapping
- Defect mapping
- User-selectable pass/fail criteria

Cycle Time
- Typical cycle time is less than 60 seconds

System Hardware
- Light-tight scanner
- Corona charging system; negative charging standard, positive charging available as an option
- Built-in non-contact electrostatic voltmeter
- LED exposure light source
- LED erase light source
- Instrumentation; data acquisition and control hardware
- All necessary interface electronics, cables, and connectors

Drum Dimensions
Standard model (PDT-2000L)
- Maximum drum length 360 mm
- Maximum drum diameter 60 mm
- Geared and gearless drums can be tested. Drum adapters for 24 mm and 30 mm gearless drums are supplied with the system. Others are available as options.

Short model available (PDT-2000)
- Maximum drum length 260 mm
- Maximum drum diameter 60 mm
- Geared and gearless drums can be tested. Drum adapters for 30 mm gearless drums are supplied with the system. Others are available as options.

Control Software
- Control software provides all motion control, data acquisition, measurement control, and data analysis functions, including basic statistical functions (minimum, maximum, and mean voltages and standard deviation).

Computer Configuration (customer-supplied)
- Operating System: Windows® XP or Windows® 7 (32-bit)
- RAM: 512MB (XP) or 2GB (Windows® 7)
- Hard Drive: 80GB
- CD-ROM/DVD-ROM
- USB 2.0

Electrical Requirements
- 110 VAC±10% @ 50/60 Hz or 230 VAC±10% @ 50 Hz

Maintenance and Operating Environment
Requires 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
- Packaged dimensions: 64 cm x 84 cm x 38 cm (25” x 33” x 15”)
- Approximate shipping weight (2 packages): 24 kg (53 lb)

Documentation
- User’s guide