



The PDT-2000LTM is an advanced drum test system for characterizing photo-receptors used in electro-photographic printers and copiers. Designed primarily for drum testing, the system can also be used for belt or sheet sample testing. The PDT-2000LTM is typically used in production quality control and in research and development.

### Overview

A standard PDT-2000LTM system consists of a light-tight scanner, an electrostatic voltmeter, an external exposure light source with fiberoptic light guide, an LED erase light source, and a light meter. 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. Custom configurations are also available.

PDT-2000LTM 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 scanner, selects the test to be run, sets the test parameters, and activates the test with the control software. 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 measurement
- Cyclic fatigue tests
- Photo-induced discharge curve (PIDC)
- Erase residual measurement
- Axial and helical scans
- Single and multiple track scans
- Charge and discharge uniformity mapping
- Defect mapping
- Xerographic time-of-flight (option)
- Capacitance measurement (option)

### Typical Applications

- Photoreceptor manufacturing quality control
- Materials research and development
- Acceptance testing



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## Test Functions

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## Throughput

- Throughput depends on specific test selected

## System Hardware

- Instrumentation; data acquisition and control hardware
- All necessary interface electronics, cables, and connectors

### Drum Charging

- Corona charging system
- Negative corona standard, positive corona available as an option

### Exposure Light Source

- Tungsten-halogen light source
- One interference filter (typically 780 nm) and one neutral density filter (typically 10%) supplied with system; others available as options
- Interference filters available between 400 and 1000 nm (approximate 50 nm increments)
- Exposure on/off controlled by an electromechanical shutter; minimum pulse duration less than 0.1 second
- Computer-controlled aperture for setting exposure intensity; maximum exposure energy approximately 10µJ/cm<sup>2</sup> at 780 nm wavelength
- Light meter provided to monitor exposure intensity on-line
- Xenon flash or LED exposure source (options)

### Erasure Light Source

- Erasure light source is a bank of red LEDs; fluorescent erase lamp or LEDs with other wavelengths available as options
- Maximum erasure intensity typically 25µJ/cm<sup>2</sup>

### Voltage and Current Measurement

- System is equipped with a non-contact electrostatic probe for monitoring drum voltage
- Charging current measurement is built in
- Optional transparent probe allows exposing the drum through the probe

## Drum Dimensions

- Maximum drum length 360 mm
- Maximum drum diameter 60 mm
- Geared and gearless drums can be tested. Drum adapters for EX, BX2, and WX geared drums are supplied with the system. Others are available as options.

## Sheet Sample Testing (Option)

- Optional sample holder available for sheet sample testing

## Control Software

- Control software provides all measurement, data acquisition, and data analysis functions, including basic statistical functions (minimum, maximum, and mean voltages and standard deviation)
- Software allows user to set pass/fail criteria

## Computer Configuration (customer-supplied)

- Pentium PC
- Two ISA slots for interface cards
- Two free slots for connector brackets (adjacent to ISA slots)
- Microsoft Windows® 95 or 98
- Microsoft Excel® 7.0 or higher

## Electrical Requirements

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

- Main Unit: 25 cm x 51 cm x 74 cm (10" x 20" x 29")
- Packaged dimensions (2 packages): 64 cm x 84 cm x 38 cm (25" x 33" x 15") and 74 cm x 76 cm x 41 cm (29" x 30" x 16")
- Total shipping weight (2 packages): 45 kg (98 lb)

## Documentation

- User's Guide