



# PLR™-3000 Pupillometer



NEUR OPTICS

# PLR™-3000 Pupillometer

## Important Research Tool

- Used by researchers at leading universities, pharmaceutical companies, and contract research organizations worldwide
- Quickly and accurately measures pupil size and pupillary light reflex

## Simple to Use and Operate

- One button activation
- No calibration required
- Portable, battery operated, hand-held device
- Durable, ergonomic design

## Features

- Adjustable settings (light stimulus intensity and duration, duration and onset of measurement, background illumination)
- Data stored on device, results uploadable to external computer via Bluetooth®
- Infrared camera, high precision optics, processor and LED light source
- Video playback wand downloading video of last measurement.
- Continuous pupil recording ( $\leq 10$  minutes without light stimulus,  $\leq 41$  seconds with light stimulus)



“Great **quantitative tool** for research.”

—Sr. Researcher, Allergan



# Reproducible Measurement Results

Testing has shown that the NeurOptics® Pupillometer is consistent from unit to unit and operator to operator. In fact, the NeurOptics Pupillometer has the highest accuracy and lowest error of all commercially available pupillometers, while at the same time being the most economical hand-held infrared device.

## Objective Measurement

Broadcast Function	Range
Init = Maximum Diameter	Maximum pupil size before constriction
End = Minimum Diameter	Pupil diameter at peak constriction
Delta = % Change	% of change (Size-MIN)/Size as a %
LAT = Latency of constriction	Time of onset of constriction following initiation of the light stimulus
ACV = Constriction Velocity	Average velocity of how the pupil diameter is constricting measured in millimeters per second
MCV = Maximum Constriction Velocity	Maximum velocity of how the pupil diameter is constricting measured in millimeters per second
ADV = Dilation Velocity	The average pupillary velocity when, after having reached the peak of constriction, the pupil tends to recover and to dilate back to the initial resting size, measured in millimeters per second
T75 = Time to reach 75% recovery	The time to reach 75% of the original baseline pupil diameter after the peak of the constriction



“**More insight** on pharmacokinetic data.”

–Clinical Study Manager, Covance

## Ordering Information

NeuroOptics® PLR™-3000	Part Number
<b>System Includes:</b> PLR™-3000 Pupillometer, Charging Station & Power Supply, Eye Cups (2), Carrying Case	PLR3-KIT-01
Optional Accessories	Part Number
Printer Kit	NEUR-PRTS445-BT
Barcode Scanner	BCS-CC-01

**Caution:** Federal (USA) law restricts this device to sale by or on order of a physician. Refer to product package insert for instructions, warnings, precautions and complications.

## Bluetooth® Broadcast Range and Frequency

Broadcast Function	Range	Frequency
Bluetooth Barcode Scanner to/from PLR-3000 Pupillometer	Up to 100 yards depending on environment	2.45 GHz

## Technical Specifications

Parameter	Description
Measurement Characteristics	Input= Human pupil sizing varying from 1 mm–9 mm
	Mean and standard deviation of pupil diameter at different background illuminations
	Accuracy: +/- 0.03 mm
Degree of protection against electric shock	Pupillometer is double insulated (Class II protection)
Classification of the equipment against ingress of liquids	Ordinary equipment
Degree of safety of application in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide	The equipment is not an AP or APG category equipment
Mode of Operation	On Demand battery operation
Power Supply	Input: 100-240 VAC +/- 8%
	Output: 6V, 2.8 Amps
Battery	3.7V 3350 mAmp/hour Li: Ion Cell
Operating Environment	Temperature Range: 18° C (65 F) to 30° C (86° F)
	Relative Humidity: 20% to 70% RH. Non condensing at all times
Transportation and storage environment	Temperature Range: 0° C (32° F) to 75° C (167° F)
	Relative Humidity: 10% to 95% RH. Non-condensing at all times
Dimensions	With eye cup = 7.5" H, 3.5" W, 4.5" D
	Without eye cup = 7.5" H, 3.5" W, 3.5" D
Weight	320 grams +/- 10 grams
Classification	Class 1 LED product per IEC 60825

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