

PDM

Digital PD Meter

User's Guide



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Caution: Federal law restricts this device to sale by or on the order of a licensed physician. Rx only.

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Warnings & Cautions

Reichert Technologies (Reichert) is not responsible for the safety and reliability of this instrument when:

- Assembly, disassembly, repair, or modification is made by unauthorized dealers or persons.
- Instrument is not used in accordance with this User's Guide.

WARNING: AN INSTRUCTION THAT DRAWS ATTENTION TO RISK OF INJURY OR DEATH.



WARNING: UNITED STATES FEDERAL LAW AND EUROPEAN REGULATIONS REQUIRE THAT THIS DEVICE BE PURCHASED ONLY BY A PHYSICIAN OR A PERSON ACTING ON BEHALF OF A PHYSICIAN.

WARNING: THIS INSTRUMENT SHOULD BE USED IN STRICT ACCORDANCE WITH THE INSTRUCTIONS OUTLINED IN THIS USER'S GUIDE. THE SAFETY OF THE OPERATOR AND THE PERFORMANCE OF THE INSTRUMENT CANNOT BE GUARANTEED IF USED IN A MANNER NOT SPECIFIED BY REICHERT TECHNOLOGIES.

WARNING: DO NOT REPAIR OR SERVICE THIS INSTRUMENT WITHOUT AUTHORIZATION FROM THE MANUFACTURER. ANY REPAIR OR SERVICE TO THIS INSTRUMENT MUST BE PERFORMED BY EXPERIENCED PERSONNEL OR DEALERS WHO ARE TRAINED BY REICHERT OR SERIOUS INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: MODIFICATIONS TO THIS INSTRUMENT ARE NOT ALLOWED. ANY MODIFICATION TO THIS UNIT MUST BE AUTHORIZED BY REICHERT OR SERIOUS INJURY TO THE OPERATOR OR PATIENT MAY OCCUR.

WARNING: IF THIS INSTRUMENT IS MODIFIED, APPROPRIATE INSPECTION AND TESTING MUST BE CONDUCTED TO ENSURE CONTINUED SAFE USE OF THIS INSTRUMENT.

WARNING: THIS INSTRUMENT IS NOT SUITABLE FOR USE IN THE PRESENCE OF FLAMMABLE ANESTHETIC MIXTURES, SUCH AS OXYGEN OR NITROUS OXIDE.

WARNING: THE BATTERY SHOULD ONLY BE REPLACED WITH THE BATTERY SPECIFIED IN THIS MANUAL. USE OF ANOTHER BATTERY MAY CAUSE FIRE OR AN EXPLOSION.

WARNING: DO NOT PLACE A SHORTING DEVICE BETWEEN THE BATTERY TERMINALS, OR ALLOW THE BATTERY TO BECOME WET. MISUSE OR IMPROPER DISPOSAL OF THIS BATTERY MAY CAUSE IT TO BECOME VERY HOT, IGNITE OR EXPLODE. DAMAGE TO THIS UNIT AND/OR SERIOUS PERSONAL INJURY MAY RESULT.

WARNING: DO NOT RECHARGE THE BATTERIES. THE BATTERY IS NOT DESIGNED TO BE CHARGED BY ANY ELECTRICAL SOURCE. CHARGING COULD GENERATE GAS AND INTERNAL SHORT-CIRCUITING, LEADING TO DISTORTION, LEAKAGE, OVERHEATING, EXPLOSION OR FIRE.

Warnings & Cautions (continued)

WARNING: DO NOT EXPOSE THE BATTERIES TO TEMPERATURES ABOVE 140°F, DISASSEMBLE THE BATTERIES, OR DAMAGE TO THIS UNIT AND/OR SERIOUS PERSONAL INJURY MAY RESULT.

WARNING: NEVER ALLOW LIQUID LEAKING FROM THE BATTERY TO GET IN YOUR EYES OR MOUTH AS THIS LIQUID COULD CAUSE SERIOUS PERSONAL INJURY. IF IT COMES IN CONTACT WITH YOUR EYES OR MOUTH, FLUSH THEM IMMEDIATELY WITH PLENTY OF WATER AND CONSULT A PHYSICIAN.

WARNING: ALWAYS KEEP BATTERIES OUT OF THE REACH OF INFANTS AND YOUNG CHILDREN TO PREVENT THEM FROM BEING SWALLOWED. IF SWALLOWED, CONSULT A PHYSICIAN IMMEDIATELY.

CAUTION: AN INSTRUCTION THAT DRAWS ATTENTION TO THE RISK OF DAMAGE TO THE PRODUCT.



CAUTION: DO NOT USE SOLVENTS OR STRONG CLEANING SOLUTIONS ON ANY PART OF THIS INSTRUMENT AS DAMAGE TO THE UNIT MAY OCCUR. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

CAUTION: USE OF AMMONIA BASED CLEANERS ON THE LIQUID CRYSTAL DISPLAY (LCD) MAY CAUSE DAMAGE TO THE DISPLAY. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

CAUTION: THE INTERNAL CIRCUITRY OF THE INSTRUMENT CONTAINS ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESDS) THAT MAY BE SENSITIVE TO STATIC CHARGES PRODUCED BY THE HUMAN BODY. DO NOT REMOVE THE COVERS WITHOUT TAKING PROPER PRECAUTIONS.

CAUTION: PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT CAN EFFECT MEDICAL ELECTRICAL EQUIPMENT.

CAUTION: THIS INSTRUMENT IS NOT TO BE USED NEAR HIGH-FREQUENCY EMITTING SURGICAL EQUIPMENT.

Symbols

The following symbols appear on the instrument:



Caution symbol indicating important operating and maintenance instructions that are included in this User's Guide



Consult Instructions for Use

REF

Catalog Number

SN

Serial Number



Type B Product Classification
Class II Equipment



Date of Manufacture



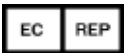
Waste of Electrical and Electronic Equipment



Fragile Contents in Shipping Container - handle with care



Keep Dry - Package shall be kept away from rain



Authorized Representative in European Community

Introduction

Congratulations on your purchase of the Reichert® PDM Digital PD Meter.

The PDM Digital PD Meter is a digital pupillometer capable of measuring pupillary distance.

This User's Guide is designed as a training and reference manual for operation, maintenance, and troubleshooting. We recommend that you read it carefully prior to use and follow the instructions in the guide to ensure optimum performance of your new instrument. Properly trained eyecare professionals such as ophthalmologists, optometrists, opticians and eye care technicians should operate this instrument.

Please retain this manual for future reference and to share with other users. For additional copies of this manual, contact your local authorized Reichert dealer or contact our Customer Service department directly at:

Tel: 716-686-4500

Fax: 716-686-4555

E-mail: reichert.information@ametek.com

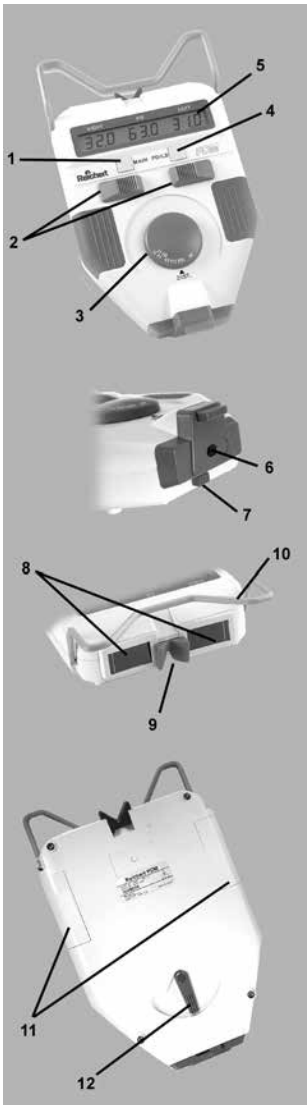
Indications for Use

The indications for use include measuring pupillary distance.

Contraindications

None.

Features and Functions



- 1. ON/OFF Button (MAIN)**
Press to turn the instrument on and off. The PDM turns off after one minute to ensure longer battery life.
- 2. Measurement Slide Controls**
Used to move the index lines that indicate Pupillary Distance and Right/Left Nose-to-Pupil Distance measurements.
- 3. Distance Dial**
Rotate to measure inter-pupillary distance at various distances, from infinity to 30 cm.
- 4. PD/LD button**
Changes between pupil distance (PD) and vertex distance (LD) modes.
- 5. LCD Screen**
Measurement data is displayed on the LCD.
- 6. Viewfinder**
Operator looks through the viewfinder to see the index lines and the patient's eyes.
- 7. Magnification Switch**
Changes the view magnification to suit the operator.
- 8. Patient Windows**
The patient views the fixation target through these windows.
- 9. Nose Support**
Used to stabilize the PDM against the patient's nose.
- 10. Forehead Support**
Used to stabilize the PDM against the patient's forehead.
- 11. Battery Compartments**
Accepts 2 AA batteries in each side.
- 12. R/L Occluder lever**
Used to occlude the right or left eye for monocular nose to pupil distance measurement.

Instructions for Use

Turning on the PDM

For all functions it is necessary to turn the PDM on. Press the ON/OFF button (MAIN). During initialization the unit will show “88.8” across the display. When the PDM is ready to measure, the display will indicate the numerical values of the slide control positions.

Calibration Verification

1. Turn the PDM on.
2. Set the distance dial to infinity.
3. Ensure that the occluder lever is in the middle position.
4. Look through the viewfinder and observe the small black calibration marks visible along the bottom edge of each patient window.
5. Move the measurement slide controls until the index lines are directly over the calibration marks.
6. Observe the LCD. The Right and Left measurements should each read 30 mm +/- 0.5 mm, with a total PD of 60 mm, +/- 0.5 mm.
7. If the measurement results are not within the specified range, contact Reichert at the contact information in the Introduction section of this manual.

PD Measurement

1. Set the Distance Dial to infinity.
2. Carefully position the instrument in front of the patient using the Nose and Forehead Supports to stabilize the instrument.
3. Instruct the patient to observe the green target.
4. Look through the Viewfinder and observe the reflected light on the center of the patient's cornea. Move the Measurement Slide Controls until the index lines are directly over the center of the corneal reflected light.
5. The right and left nose-to-pupil distance and the total interpupillary PD measurements are indicated on the display.

Monocular PD Measurement

To measure the pupil-to-nose distance of one eye, or to measure PD one eye at a time, switch the occluder lever to the left or right and follow steps 1-5 above.

Adjustable Distance PD Measurement

Near-viewing PD can be obtained for the distances shown on the Circular Dial. Turn the Circular Dial until the arrow is aligned with the desired viewing distance, then repeat steps 2-5 above.

Instructions for Use (continued)

Vertex Distance Measurement

Measurement of the distance between a pair of mounted spectacle lenses and the patient's eye is possible using the LD mode.

1. Press the PD/LD button - The LCD will show dashes where the PD value is normally displayed.
2. Look through the Viewfinder and observe the fixed index line at the far right or left of the respective patient windows.
3. Approach the patient's head from the side and position the PDM so that the fixed index line appears to be touching the front of the cornea.
4. Position the Forehead Support against the side of the patient's temple. Keep the fixed index line positioned on the front of the cornea.
5. Move the Measurement Slide Control until the moving index line appears to be touching the front of the spectacle lens.
6. Observe the measurement result on the LCD and subtract the thickness of the lens to arrive at the vertex distance.

Cleaning & Maintenance

Cleaning

CAUTION: DO NOT USE SOLVENTS OR STRONG CLEANING SOLUTIONS ON ANY PART OF THIS INSTRUMENT AS DAMAGE TO THE UNIT MAY OCCUR. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

CAUTION: USE OF AMMONIA BASED CLEANERS ON THE LIQUID CRYSTAL DISPLAY (LCD) MAY CAUSE DAMAGE TO THE DISPLAY. SEE MAINTENANCE SECTION FOR DETAILED CLEANING INSTRUCTION.

Clean the exterior surfaces of the PDM as necessary. Do not use alcohol or other solvents to clean the covers, patient windows or screen, as damage may occur to the instrument.

1. Apply a small amount of mild soap solution to a clean soft cloth and wipe the exterior of the PDM to remove any contaminants that may accumulate from normal use.
2. If necessary, apply a small amount of clean water to a clean, soft cloth to remove any residual soap solution.
3. Dry the exterior using a clean, soft cloth.
4. Isopropyl alcohol may be used to clean the Forehead and Nose Supports. Remove the Nose Support before cleaning to prevent contacting the Patient Windows with alcohol. Simply pull the Nose Support away from the instrument, clean, and reinstall.

Battery Replacement

1. Using your thumbs, push and slide the Battery Compartment covers on either side of the bottom of the PDM.
2. Remove and discard all 4 batteries.
3. Replace them with new AA batteries following the diagram on the inside of the Battery Compartment.
4. Replace the Battery Compartment covers.

Troubleshooting

Almost all potential problems, such as a no power, dim display, or dim illumination, are caused by a low voltage condition. When in doubt, always install new batteries in the instrument.

Specifications

Catalog Number 15020

Physical Dimensions	
Size:	Weight, unpacked: 1.50 lbs. (0.68 Kg)
Height: 2.2 in. (5.5 cm)	
Width: 6.1 in. (15.5 cm)	
Length: 8.9 in. (22.6 cm)	
Electrical	
Batteries:	Alkaline - 4 AA (DC 6V)
Display:	LCD - Digital
Fixation:	Green dot, with LED illumination
Measurement Range	
PD Measurement	
Binocular:	46 - 82mm \pm 0.5 mm, 0.5mm steps
Monocular:	23 - 41mm \pm 0.5 mm, 0.5mm steps
Vertex:	5 - 23mm \pm 0.5 mm, 0.5mm steps
Distances:	30cm - Infinity

Disposal

This product does not generate any environmentally hazardous residues. At the end of its product service life, follow your local laws and ordinances regarding the proper disposal of this equipment.

Software Revision

The software revision can be obtained by contacting Reichert Technologies. The serial number identifies the manufacture date and will provide access to the software version.

Product Warranty

This product is warranted by Reichert, Inc. against defective material and workmanship under normal use for a period of one year from the date of invoice to the original purchaser. (An authorized dealer shall not be considered an original purchaser.) Under this warranty, Reichert's sole obligation is to repair or replace the defective part or product at Reichert's discretion.

This warranty applies to new products and does not apply to a product that has been tampered with, altered in any way, misused, damaged by accident or negligence, or which has had the serial number removed, altered or effaced. Nor shall this warranty be extended to a product installed or operated in a manner not in accordance with the applicable Reichert instruction manual, nor to a product which has been sold, serviced, installed or repaired other than by a Reichert factory, Technical Service Center, or authorized Reichert Dealer.

Lamps, bulbs, charts, cards and other expendable items are not covered by this warranty.

All claims under this warranty must be in writing and directed to the Reichert factory, Technical Service Center, or authorized instrument dealer making the original sale and must be accompanied by a copy of the purchaser's invoice.

This warranty is in lieu of all other warranties implied or expressed. All implied warranties of merchantability or fitness for a particular use are hereby disclaimed. No representative or other person is authorized to make any other obligations for Reichert. Reichert shall not be liable for any special, incidental, or consequent damages for any negligence, breach of warranty, strict liability or any other damages resulting from or relating to design, manufacture, sale, use or handling of the product.

If notified promptly in writing of any action brought against the purchaser based on a claim that the instrument infringes a U.S. Patent, Reichert will defend such action at its expense and will pay costs and damages awarded in any such action, provided that Reichert shall have sole control of the defense of any such action with information and assistance (at Reichert's expense) for such defense, and of all negotiation for the settlement and compromise thereof.

reserves the right to make changes in design or to make additions to or improvements in its products without obligation to add such to products previously manufactured.

We use extreme care in selection, checking, rechecking and packing to eliminate the possibility of error. If any shipping errors are discovered:

1. Carefully go through the packing materials to be sure nothing was inadvertently overlooked when the unit was unpacked.
2. Call the dealer you purchased the product from and report the shortage. The materials are packed at the factory and none should be missing if the box has never been opened.
3. Claims must be filed within 30 days of purchase.

Our shipping responsibility ceases with the safe delivery in good condition to the transportation company. Claims for loss or damage in transit should be made promptly and directly to the transportation company.

If, upon delivery, the outside of the packing case shows evidence of rough handling or damage, the transportation company's agent should be requested to make a "Received in Bad Order" notation on the delivery receipt. If within 48 hours of delivery, concealed damage is noted upon unpacking the shipment and no exterior evidence of rough handling is apparent, the transportation company should be requested to make out a "Bad Order" report. This procedure is necessary in order for the dealer to maintain the right of recovery from the carrier.

Notes

Notes



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