M3®

MARCO

THE LEADER IN VISION DIAGNOSTICS®

MARCO M3® WORLD'S FIRST SYSTEM COMBINING TONOMETRY WITH AUTOREFRACTION

New Non-Contact Tonometer, Automatic Refractor, and Automatic Keratometer

3 in 1

Combining the measurement of refractive power, corneal curvature and intraocular pressure (IOP), the device provides fast and accurate ophthalmic patient care.

◎ SPACE SAVING

Compact & Efficient

The M3 provides auto refraction, keratometry, and tonometry, while saving space and offering greater efficiency, as well as patient convenience. It eliminates the need for multiple instruments. Also, the M3 interfaces with EMR.

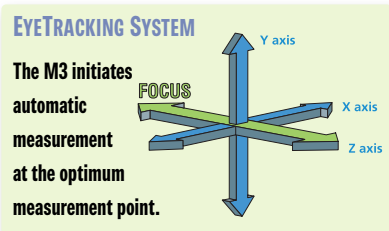### ◎ FAST AND ACCURATE

High-Speed & Reliable Measurement

With the latest advanced technologies, the M3 provides highly accurate, reliable measurements with significantly reduced measurement time.

◎ FULLY AUTOMATIC

EyeTracking System

The M3 is completely automatic, using three axes: alignment, tracking, and focusing.

When the alignment is in the proper position, measurement begins automatically.

EYETRACKING SYSTEM

The M3 initiates automatic measurement at the optimum measurement point.

FOCUS

Y axis
X axis
Z axis

◎ USER FRIENDLY

Adjustable Monitor

The clear 5-inch color LCD monitor with tilting function offers easy operation. If the operator needs to stand to lift the patient's eyelid, the monitor will still be able to be viewed.

TILTABLE LCD

New Easy-Load Paper

Printer provides fast and automatic paper loading, cutting and detachment.

Simply open door, drop in paper, and go. No spool or feed to put paper through.

EASY-LOAD PAPER

Motorized Chinrest

Up/Down buttons are used to adjust the motorized chinrest to the correct height for patient measurement.

ADJUSTABLE MOTORIZED CHINREST

◎ BALLOON TARGET

The balloon picture is an infinity target. Automatic fogging minimizes accommodation and maintains fog through all measurement readings.

BALLOON TARGET   **TARGET WITH FOG**

COLOR ALIGNMENT INDICATORS

AUTO MEASUREMENT

RING DISPLAY

TONOMETRY READINGS

◎ PATIENT FRIENDLY

Gentle Air

The new M3 has an advanced APC (Automatic Pressure Control) function which provides a softer puff of air for IOP measurement and increased patient comfort.

Patient Detection Sensor

When a patient is in front of the unit, the chinrest will not move during calibration and initialization.

◎ ADDITIONAL MEASUREMENTS

SLD vs. LED Technology.

Competitors' utilization of LED technology to measure the refractive power of the optical system presents disadvantages including poor penetration of the LED through media opacities, limited data and accuracy of patients measured.

What's the difference?

SLD vs. LED Technology
Comparison of Images on CCD Through Cataract SLD vs. Cataract LED

SLD   LED

IN-HOUSE TRIAL DATA (MODEL EYE)

Cataract Images From the M3 of the Human Eye

The Marco M3 adopts the advanced Pupil Zone Imaging Method for refraction measurement, which analyzes a wider area (max. ø4mm) to obtain more reliable and realistic data that is closer to manifest refraction.

Examples of Myopia, Hyperopia, and Astigmatism

-6D   +6D   6D CYL

◎ NON-CONTACT TONOMETRY

The M3 non-contact tonometry requires no sterilization. The automatic NCT measurements are operator independent, repeatable, and reproducible. Training is quick and easy.

◎ PRINTOUT

The Automatic Refractor, Automatic Keratometer, and Non-Contact Tonometer data are automatically separated when printing. The printer comes equipped with an automatic paper cutter, eliminating torn printouts.

SAMPLE PRINTOUT

ENHANCED COMPREHENSIVE DIAGNOSTICS

```
----------0002----------
ID   12345678901234567890

NAME                    M/F
  JULY/28/2008       4:10 PM
VD=12.00mm
WD=35cm

<R>      S       C       A
    - 1.75  -0.50   173   8
    - 1.25  -1.00   177   8
    - 1.25  -1.00     5   8
    <- 1.25  -1.00   177>
    <- 2.00 SE          >



TL   - 1.25  -1.00   177
CL   - 1.25  -1.00   177
     - 1.75 SE

<R1   7.98  42.25    174>
<R2   7.65  44.00     84>
<AVE  7.82  43.25       >
<CYL         -1.75   174>
  CS  12.5           PS   5.5
                    (LAMP=ON)


PD  63                  N  59

IOP  (mmHg)
     [R]           [L]
     13            13
     13            13
     13            13
Avg. 13.0          13.0
```

- Vertex Distance
- Near Working Distance
- Automatic Refraction
- Confidence Index
- SE Value
- Eyeprint
- Thin Lens Data
- CL Conversion Data
- Spherical Equivalent
- Automatic Keratometry
  - Sagittal K readings with eccentricity values.
- Pupil Size
- Corneal Size
  - Measurements are taken from limbus to limbus and recorded on a printout.
- Near PD
- Pupillary Distance
- Non-Contact Tonometry

Actual printout includes data for both right and left eyes.

MARCO

M³ SPECIFICATIONS

AUTO REFRACTOR/KERATOMETER

Measurable Range	
Sphere	–30.00D to +25.00D (V.D. =12mm),(0.01/0.12/0.25D increments)
Cylinder	0D to ±12D (0.01/0.12/0.25D increments)
Axis	0° to 180° (1°/5° increments)
Measurable Minimum Pupil Diameter	2mm
Chart	Scenery chart (balloon target)
Radius Curvature	5.00 to 13.00mm (0.01mm increments)
Refractive power	25.96D to 67.50D (n=1.3375),(0.01/0.12/0.25D increments)
Astigmatism	0D to ±12.00D (0.01/0.12/0.25D increments)
Axis	0° to 180° (1°/5° increments)
Auto Tracking & Auto Shooting	X-Y-Z direction, Auto Shooting
PD Measurable Range	30.00mm to 85.00mm (indication increments: 1mm)
Corneal Size (CS)	8.1mm–14.6mm (indication increments: 0.1mm)
Pupil Measurable Range	0.8mm–12.1mm (indication increments: 0.1mm)

NON-CONTACT TONOMETER

Measurement Range	1mmHg to 60mmHg
Measurement Range Setting	APC40, APC60 (APC=Automatic Puff Control)
Working Distance	11.0mm
Eye Fixation	Inner Fixation Light
Auto Tracking & Auto Shooting	X-Y-Z direction, Auto Shooting

GENERAL INFORMATION

Monitor	Tiltable 5.7 inch color LCD
Printer	Thermal line printer with automatic paper cutter
Power Supply	AC100-240 V±10%
Power Consumption	100VA
Dimensions & Weight	10.23"(W) x 18.93"(D) x 19.9"(H) / 50.7 lbs.
Standard Accessories	Spare printer paper, Chinrest paper, Fixing pins, Power cord, Dust cover, Model eye.

The TONOREFII (M3) is manufactured by Nidek for Marco.

NIDEK