The Retinomax Series, the world’s leading...

**New** Much lighter and has a thinner grip

Weighing just under one kilogram, the main body with battery is over 17% lighter in the case of the K-plus 3 and 11% lighter in the case of the Retinomax 3 than conventional Retinomax Series models.

- **Retinomax 3**
  - Main body (with battery): 969 g
  - Down 11.1% from the conventional model (1,060 g)
  - Retinomax K-plus 3
  - Main body (with battery): 999 g
  - Down 17.5% from the previous model (1,200 g)
- The girth of the grip (upper part): 145 mm
  - Down 11.5% from the previous model (175 mm)

The Retinomax Series 3’s center of gravity is in the grip, making the Retinomax Series feel much lighter than it actually is.

**New** Auto Quick measurement

If no measurement is made within six seconds, the unit automatically enters Quick mode. Measurement is then taken in 0.07 second. In Auto Quick mode, “AQ” appears on printouts.

**New** Parallel sensor detects inclination of main body and displays value

Unlike conventional methods, in which operators guess levelness, levelness can be detected digitally with the use of the unit’s parallel sensor. Levelness is displayed on the monitor in every 2° pitch up to ±12°, and every 3° pitch up to ±45°. (This is only displayed in the standing position. No levelness display appears when the patient is lying down.)

**New** Auto pupil measurement, display and printout

The unit measures pupil size automatically, displays the X (horizontal) size on the monitor, and prints out the XY (horizontal and vertical) sizes separately. These results can be used for reference for checking accommodation, mydriasis, ADIE and Horner-associated syndrome, etc. The user can choose to print out either all the data or representative values only.

- **Representative values only**
- **Whole values**

Pupil size displayed on the monitor

Some data does not show pupil size due to eyelash obstruction or unstable instrument position.
New \textbf{Alignment indicator display}  
Indicators showing alignment directions are displayed on the monitor to facilitate alignment. The Mire ring makes focusing much easier.

New \textbf{Two memory functions}  
1. Data from the last measurement is automatically saved after the Retinomax 3 is turned off. The last patient data can be recalled by pressing the \textsc{print} key. The data can be transferred wirelessly to a printer.

2. Press the \textsc{memory} key for more than one second to enter Memory Set. Here you can save the data of up to 50 patients (100 eyes) in 10, 20, 30- and 40-patient steps. Data can also be printed out with Memory Set. For measurements, first press the \textsc{memory} key to enter Memory mode. After each measurement, press \textsc{print} to save individual patient data. This avoids the possibility of single-eye readings being mixed up. In normal readings, numbers are assigned in series. However, in Memory mode, saved data is numbered from "1."

Up to 50 sets of patient data can be saved or printed out. To delete saved data, select the \textsc{delete all} on the Memory Set screen.

To print out multiple sets of data, use the optional printer cable (main body to printer) to transfer data to the printer.

New \textbf{Achieving long and continuous use}  
With the adoption of a lithium ion battery, continuous operational time has been extended to approximately 80 minutes. The station has an AC adapter, allowing it to be connected to the main body with a DC cord (optional) to enable extended continuous operation. This facilitates screening, as well as use in an operating room.

DC cord: 2.9 m (length), 4 mm (diameter)

Optional DC cord connects main body and station

New \textbf{Fixation intensity is automatically lowered for pupils less than 3 mm in size}  
The minimum pupil measurement size in Auto Quick mode is 2.3 mm. If a pupil is less than 3.0 mm, the fixation target intensity is automatically reduced by approximately 45% to avoid pupil contraction. The intensity can also be reduced with the fixation intensity key.

New \textbf{Extended diopter adjustment range}  
The diopter adjustment range has been extended to ±8D.
Accuracy and stability have been improved

Measurement is made five times

If the equivalent spherical difference is less than ±0.50

End

If the equivalent spherical difference is over ±0.750

Measurement is made three more times

If the equivalent spherical difference is less than ±0.50

End

If the equivalent spherical difference is still over ±0.750, continue measurement

New Quick startup and fast printout

The main body takes only four seconds to start after power is turned on (some 60% faster than conventional models). Printout time has been reduced by 45%.

New Three fixation targets are available.

Specify when ordering.

Tulip (for general use)

Rocket (may not be suitable for children under 3 years old)

Bear (primarily for children)

New Retinomax 3 also has retro illumination mode

The Retinomax 3 includes the retro illumination mode for observation of the inside of the pupil. Accordingly, the only major difference between the Retinomax 3 and the Retinomax K-plus 3 is the adoption of kerato functions (including peripheral kerato readings).

In retro illumination mode

Retinomax 3

Startup screen

Measurement screen

Measurement completed screen

Retinomax K-plus 3

Startup screen

Measurement screen

Measurement completed screen
Stylish, streamlined designs and bright colors

Hand Held Ref
Retinomax 3

Handheld Autorefract Keratometer
Retinomax K-plus 3

Operation panel (main body)
1. Fixation intensity key
2. MEMORY key
3. Axis rotation key
4. POWER key
5. QUICK/Melody key
6. RETRO mode/Pupil size key
7. R/L(right/left) select key
8. PRINT key
9. START switch

Operation panel (main body)
1. Fixation intensity key
2. MEMORY key
3. PERI key (cornea peripheral measurement)
4. Axis rotation key
5. QUICK/Melody key
6. POWER key
7. MODE key
8. RETRO mode/Pupil size key
9. R/L(right/left) select key
10. PRINT key
11. START switch

Outstanding functionality in keeping with past Retinomax Series models

- The angle of the viewfinder can be adjusted within a range of 0° to 135°, making measurement easy regardless of patient's position or posture.

- A cylinder axis correction function with a 45° angle facilitates the use of the Retinomax on patients lying down.

- The 50-mm working distance is the same as that of the table-top model.

- The melody function provides a more relaxed atmosphere for children.

- Wireless data transfer from the main body to a printer is possible within a range of 8.7 meters directly and 6 meters at an angle of 30°.
### Optional accessories

- Hard carry case
- Soft carry case
- Spare battery
- PV/PC interface cable
- Printer cable (main body + printer)
- DC cord

### Specifications

<table>
<thead>
<tr>
<th>Measurement range</th>
<th>Hand Held Ref Retinomax 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spherical (S + C)</td>
<td>-18.00 to +23.00 (in 0.25D increment)</td>
</tr>
<tr>
<td>Cylinder</td>
<td>0 to +120 or 0 to -120 (in 0.25D increment)</td>
</tr>
<tr>
<td>Cylinder axis</td>
<td>1 to 180° (in 1° increment)</td>
</tr>
<tr>
<td>Minimum pupil size</td>
<td>±2.0 mm (Auto Quick)</td>
</tr>
<tr>
<td>Vertex distance</td>
<td>0.8 mm adjustable</td>
</tr>
<tr>
<td></td>
<td>6.14 sec. per indication (continuous)</td>
</tr>
<tr>
<td></td>
<td>+0.27 sec./° for measurement time</td>
</tr>
<tr>
<td>Measure mode</td>
<td>Auto/Continuous/Auto Quick/Quick</td>
</tr>
<tr>
<td>IOL wearing eye</td>
<td>Automatic support</td>
</tr>
<tr>
<td>Fixation target</td>
<td>Picture target</td>
</tr>
<tr>
<td>Battery life</td>
<td>Approx. 80 minutes (fully charged)</td>
</tr>
<tr>
<td>Eyspiece</td>
<td>4.05 x 3.02 mm LCD</td>
</tr>
<tr>
<td>Working distance</td>
<td>50 mm</td>
</tr>
<tr>
<td>Reaching distance</td>
<td>278 mm</td>
</tr>
<tr>
<td>External output</td>
<td>Infrared (Printer, Remote Vision)</td>
</tr>
<tr>
<td>Dimensions (main body only)</td>
<td>170(W) x 250(H) x 240(D) (mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 989 g (with battery); Approx. 100 g</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement range</th>
<th>Handheld Autorefract Keratometer Retinomax K-plus 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spherical (S + C)</td>
<td>-18.00 to +23.00 (in 0.25D increment)</td>
</tr>
<tr>
<td>Cylinder</td>
<td>0 to +120 or 0 to -120 (in 0.25D increment)</td>
</tr>
<tr>
<td>Cylinder axis</td>
<td>1 to 180° (in 1° increment)</td>
</tr>
<tr>
<td>Minimum pupil size</td>
<td>±2.0 mm (Auto Quick)</td>
</tr>
<tr>
<td>Vertex distance</td>
<td>0.12 mm adjustable</td>
</tr>
<tr>
<td></td>
<td>0.66 sec. per indication (continuous)</td>
</tr>
<tr>
<td></td>
<td>+0.27 sec./° for measurement time</td>
</tr>
<tr>
<td>Measure mode</td>
<td>Auto/Continuous/Auto Quick/Quick</td>
</tr>
<tr>
<td>IOL wearing eye</td>
<td>Automatic support</td>
</tr>
<tr>
<td>Fixation target</td>
<td>Picture target</td>
</tr>
<tr>
<td>Battery life</td>
<td>Approx. 80 minutes (fully charged)</td>
</tr>
<tr>
<td>Eyspiece diopter adjustable range</td>
<td>±80</td>
</tr>
<tr>
<td>Working distance</td>
<td>50 mm</td>
</tr>
<tr>
<td>Reaching distance</td>
<td>278 mm</td>
</tr>
<tr>
<td>External output</td>
<td>Infrared (Printer, Remote Vision)</td>
</tr>
<tr>
<td>Dimensions (main body only)</td>
<td>170(W) x 230(H) x 240(D) (mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 989 g (with battery); Approx. 100 g</td>
</tr>
</tbody>
</table>

### Station

| Dimensions        | 185(W) x 122(H) x 283(D) (mm) |
| Weight            | 1.35 kg |
| Power consumption  | 100 VA |

### Printer

| Interface        | RS-232C |
| Dimensions       | 93(W) x 77(H) x 203(D) (mm) |
| Weight           | Approx. 595 g (without battery) |

Retinomax Series 3 meets CE (EMC, GM), UL and FDA standards

⚠️ **WARNING:** To ensure correct usage, read all manuals carefully before using equipment

© 2007/2008 RIGHT MFG. CO., LTD.

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer.

The information in this brochure is correct as of June 2008.

**RIGHT MFG. CO., LTD.**

Ophthalmic Sales
1-47-3, Maeno-cho, Itabashi-ku, Tokyo 174-8633, Japan
Tel: +81-3-3960-2275 Fax: +81-3-3960-2285
email: egyousai@rightmfg.co.jp

**TOHOKU RIGHT MFG. CO., LTD.**

Ophthalmic Service
45-1, Azayashiki, Nakamura Osato-cho, Kurokawa-gun, Miyagi 981-3521, Japan
Tel: +81-22-359-3113 Fax: +81-22-359-3413

Printed in Japan (0806-02)