# AUTO REF

## Advanced IOL Mode & Measurement of Pupil Diameter

**AUTO REFRACTOMETER**

# GR-2200



Grand Seiko.com

## Auto Start

When the position and the focus are aligned, the measurement is taken automatically for the fixed times. Then, once both eyes are measured, print out will come out automatically.

## Tilting Large LCD

Depending on the position of operator, the angle of LCD can be changed freely. With this Large Color LCD, the measurement can be done easily since the measurement information is shown in color and by icon.

## User Friendly Fast Printer (with Auto Cutter)

For the replacement of paper, just put it in and close the cover. It is very simple and easy because there is no need to make any adjustment.

## Simple Lock

Just turn the knob to stop the main unit temporary.
It can be put on the slinding table safely.

## Electric Chin Rest

Chin Rest moves electrically with the switch in front of operator.

## Advanced IOL Mode

After redesigning the whole system and making the improvement, even the cataract and the IOL implanted subject can be measured much more than before.
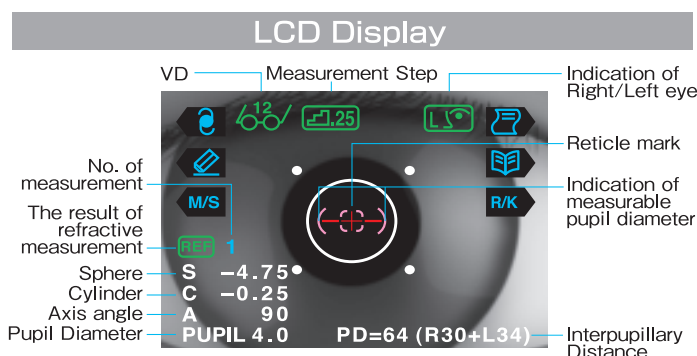
## PD Measurement

Measures the Far PD and the Near PD is calculated accordingly (select working distance from 30, 35, 40, 45cm). The result can be printed out as NPD as well.

## Small Pupil Measurement

Compare to the previous model, it measures smaller pupil of 2.2mm diameter to allow the measurement of elderly and the person with long eyebrows easier.

### LCD Display

VD — Measurement Step — Indication of Right/Left eye
No. of measurement
The result of refractive measurement
Sphere — S −4.75
Cylinder — C −0.25
Axis angle — A 90
Pupil Diameter — PUPIL 4.0     PD=64 (R30+L34)
M/S   REF 1   R/K
Reticle mark
Indication of measurable pupil diameter
Interpupillary Distance

### Specification

| Refraction Measurement | Sphere −22～+30D (VD=0mm) |
| | −30～+22D (VD=12mm) (0.01/0.12/0.25DStep) |
| | Cylinder 0～±10D (0.01/0.12/0.25DStep) |
| | Axis angle 1～180° (1°Step) |
| Pupil Diameter Measurement | φ2～φ8mm (0.1mm step) |
| Vertex Distance | 0, 10, 12, 13.5, 15mm |
| Minimum Pupil Diameter | φ2.2mm |
| Pupillary Distance | Measurement Range 0～85mm (1mmStep) |
| Printer | Thermal printer with Automatic Cutter (Width 57mm) |
| Internal Monitor | 5.7 inch LCD Display (Color) |
| Movable Distance | Back/Force ±17mm  Right/Left ±43mm  Up/Down ±17mm |
| Movable Distance of Chinrest | ±30mm |
| Overall Dimension | (W) 260mm×(D) 465mm×(H) 453mm |
| Weight | About 17kg |
| Output | RS-232C,USB2.0 Interface |
| Rated Voltage | 100～240V  50／60Hz |
| Consumption | 80VA |
| Power Save | OFF, 3, 5, 10 min. (Selectable) |

Right eye data  Date & time

Message Area

No. 00001
NAME
2009 10 01     13:10

VD=12
<R>  SPH  CYL  AX PUP.
    -4.75  -0.25  90  5.0
    -4.75  -0.25  90  5.0
    -4.75  -0.25  90  5.0

    -4.75  -0.25  90

<L>  SPH  CYL  AX PUP.
    -4.50  -0.75  90  5.0
    -4.50  -0.75  90  5.0
    -4.50  -0.75  89  5.0

    -4.50  -0.75  90

Refractive data
Refractive data

Left eye data
Representative value
(Displayed when the measurement is taken 3 times)

### Accessories

- Test eye／1 pc  ● Power cable／1 pc  ● Printer paper／3 rolls
- Fuse 2A／2 pcs  ● Chinrest paper／1 pack（1000 sheets）
- Chinrest pin／2 pcs  ● Dust cover／1 pc  ● Contact lens holder／1 pc
- Operation Manual／1 pc  ● USB Driver CD／1 pc

### Option

- MDC-1 The Measurement Data Collection software
- Electric table  ● Chair

● Specifications and design are subject to change without prior notice for improvement.
● The screen is composed photograph.
● The color of instrument on the catalogue and the real product might be different.
● We judge that the LCD Monitor is qualified if the total "lit pixel"and/or "missing pixel" is less than five (excluding non-sharp one and less than half one).
● Production and Distribution Registration Number:37B2X10001000040

⚠ **CAUTION**  For the proper and safety use, please read the Instruction Manual thoroughly before using the product.

● Agency