


AUTO REF/KERATOMETER
GR-3100K

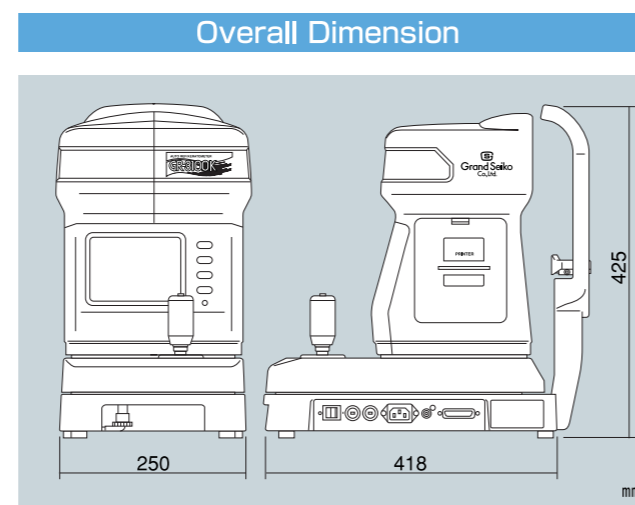
Enhanced Kerato Function

| Specification | |
|-------------------------------|--|
| Refraction Measurement | Sphere $-25 \sim +25D$ (0.01/0.12/0.25DStep) |
| | Cylinder $0 \sim \pm 10D$ (0.01/0.12/0.25DStep) |
| | Axis angle $0 \sim 180^\circ$ (1°Step) |
| Measurement of Corneal Radius | Corneal radius $5.0 \sim 10.0mm$ (0.01mmStep) |
| | Refractive power $33.75 \sim 67.5D$ (0.01/0.12/0.25DStep) |
| | Cylindrical power $0 \sim \pm 9D$ |
| | Axis angle $0 \sim 180^\circ$ (1°Step) |
| Corneal Measurement Range | Center $\phi 3.5mm$ Peripheral $\phi 6.5mm$ |
| Vertex Distance | 0, 10, 12, 13.5, 15mm |
| Minimum Pupil Diameter | $\phi 2.3mm$ |
| Pupillary Distance | Measurement Range 85mm (1mmStep) |
| Printer | Thermal printer with Automatic Cutter (Width 57mm) |
| Internal Monitor | 5.6 inch LCD Display (Color) |
| Movable Distance | Back/Force $\pm 17mm$ Right/Left $\pm 43mm$ Up/Down $\pm 17mm$ |
| Movable Distance of Chinrest | $\pm 30mm$ |
| Overall Dimension | (W) 250mm \times (D) 418mm \times (H) 425mm |
| Weight | About 15kg |
| Output | RS232C Interface Video Output (NTSC) |
| Rated Voltage | 100~240V 50/60Hz |
| Consumption | 80VA |
| Power Save | OFF, 3,5,10 min. (Selectable) |

- Specifications and design are subject to change without prior notice for improvement.
- The part of screen is composed photograph.
- The color of instrument on the catalogue and the real product might be different.
- Medical equipment manufacturer license No.37BZ0028

- Accessories**
- Contact lens holder / 1 pc
 - 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

- Option**
- Electric table
 - Chair
 - The Data Collection Software (Windows 98 or later)
 - Carrying case
- 



AUTO REF/KERATOMETER
GR-3100K



HIGH-TECH
HIGH-TOUCH
HIGH-IDEALS

RyuSyô

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

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● Agency

Grand Seiko Co.,Ltd.

Easier Measurement With Color LCD!

GR-3100K carries the functions, which make easier to use and very practical, for both the inexperienced person and the expert. Color Display and Icon make the measurement very easy. Additionally, by using the Focus Guiding System and the Auto Start, you can concentrate on focusing, since you just need to operate the joystick. Moreover, once the measurement is over, the data is printed out and the paper is cut off automatically.



Wide Measurement Range

We made possible to measure Sphere $-25D \sim +25D$ and Cylinder $0 \sim \pm 10D$.

Measurement of Corneal Peripheral

Since the measurement of Corneal Peripheral is done automatically in a second, it is very useful for the selection of base curve of Contact Lens.

Measurement of Tonic Accommodation

GR-3100K is the first Auto Refractor in the world with the function to measure the Tonic Accommodation. Traditionally, it must be measured in a special room by showing an "EMPTY FIELD". But, with this function, it can be done very easily Now.

| | | | |
|-----------------------------------|------------|-------------|--|
| NAME | 2003 01 01 | 13:10 | Ref data |
| VD=12 | | | Tonic accommodation data |
| Right eye data | <R> | SE -5.43 | |
| | | TA -5.48 | |
| | | TA-SE -0.05 | |
| Left eye data | <L> | SE -5.43 | Difference between Ref data and Tonic accommodation data |
| | | TA -5.48 | |
| | | TA-SE -0.05 | |
| GRAND SEIKO CO., LTD. GR-3100K | | | |

Relax Function

By using the Relax Function, it can reduce the margin of measurement error, which occurs with strain.

Color LCD Display

By using the color display, it becomes easier to see and confirm the alignment. Furthermore, since the Icon is used instead of the character, it becomes easier to operate even if the person has never used the instrument.

Printer with Automatic Cutter

The printout can be taken off easily and cleanly since it cuts the printing paper automatically.



Auto Start

When it is focused, the instrument starts the measurement automatically without pressing any switch. Then, after the one eye is measured for the fixed times, it indicates to go to the other eye with sound and arrow. Furthermore, once both eyes are measured, it starts printing automatically.

Data Output

Video Output / It allows you to show the same image as the internal monitor to the external monitor (NTSC System).

RS-232C Interface / It allows you to send the measurement data to the external machines, like computer. By using The Data Collection Software (Option), the data can be sent to the spreadsheet automatically.

Measurement

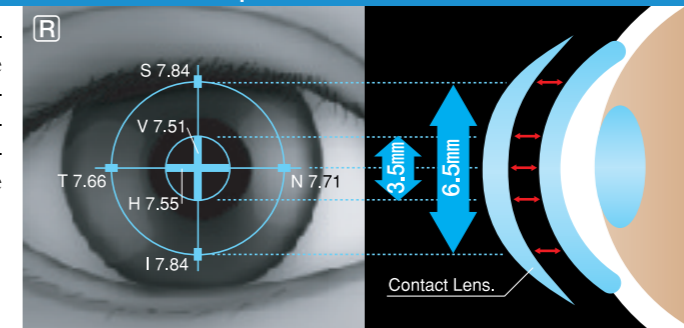
PD / It measures the PD for Far Distance, automatically. Additionally, it calculates the PD for Near Distance, automatically as well (Select from 30, 35, 40, and 45 cm). The result can be printed out as NPD.

IOL Mode / With the addition of IOL Mode, the measurement under difficult conditions becomes much easier.

Measurement of Small Pupil Diameter / As small as 2.3 mm Pupil Diameter can be measured.

Function of Corneal Peripheral Measurement

With the Corneal Peripheral measurement, base curve of contact lens can be chosen more precisely. Additionally, it would particularly help the fitting of large size contact lens.



S(Superior) T(Temporal)
V(Vertical) H(Horizontal)
I(Inferior) N(Nasal)

LCD Display

Right eye data Date & time

| | | | |
|--|------------|--------|-------------------------|
| Message Area | | | |
| No. | 00001 | | |
| NAME | 2003 01 01 | 13:10 | |
| VD=12 | | | |
| <R> SPH | CYL | AX | Refraction data |
| -4.75 | -0.25 | 62 | |
| -4.75 | 0.00 | | |
| -4.75 | 0.00 | | |
| <R> | mm | D | Corneal data |
| R1 | 7.59 | 44.50 | 120 |
| R2 | 7.57 | 44.50 | 30 |
| AVE | 7.58 | 44.50 | |
| CYL | | 0.00 | |
| S | 7.84 | T 7.66 | Corneal Peripheral Data |
| V | 7.51 | H 7.55 | |
| I | 7.84 | N 7.71 | |
| e(VER) | 0.551 | | |
| e(HOR) | 0.396 | | |
| e(AVE) | 0.475 | | |
| <L> SPH | CYL | AX | Refraction data |
| -4.50 | -0.75 | 90 | |
| -4.50 | -0.75 | 90 | |
| -4.50 | -0.75 | 89 | |
| -4.50 | -0.75 | 90 | |
| <L> | mm | D | Corneal data |
| R1 | 7.59 | 44.50 | 120 |
| R2 | 7.57 | 44.50 | 30 |
| AVE | 7.58 | 44.50 | |
| Left eye data | | | |
| Average Eccentricity | | | |
| Horizontal Eccentricity | | | |
| Vertical Eccentricity | | | |
| Representative value (Displayed when the measurement is taken 3 times) | | | |