

[epilogue]

Intelligence in your vision!

Huvitz is always striving to reflect all your questions and demands through state-of-the-art refraction system.

Finally we introduce HDR-9000 reinforced with systematic customizable refraction entailing 21 point exam and curvilinear design.

A brand new refractor, this is another challenge Huvitz will overcome.

Huvitz Digital Refractor HDR-9000



[prologue]

Tomorrow with Huvitz

What is achieved is not a future, but a history.

Striving future achievement and future satisfaction will always motivate Huvitz to redefine and recreate our history.

Huvitz Digital Refractor HDR-9000

Specification

Measurement Range

Spherical Lens	-29.00~+26.75D (Regular) -19.00~+16.75D (During XC or Prism Tests) (0.12/0.25/0.5/1/2/3/4D increments)
Cylinder Lens	0.00~±8.75D (0.25/0.5/1/2/3D increments)
Cylinder Axis	0°~180° (1/5/15° increments)
PD	48~80mm (0.5/1mm increments) Near PD : 50~74mm Near Working Distance : 35~70cm
Rotary Prism Lens	0~20Δ(0.1/0.2/0.5/1/2Δ increments)
Cross Cylinder	±0.25D ±0.50D ±0.25D Prism Split Lens (Dual Cross Cylinder)
Retinoscopic Lens	+1.5D, +2.0D (Measurement Distance 67cm, 50cm)

Auxiliary Lenses

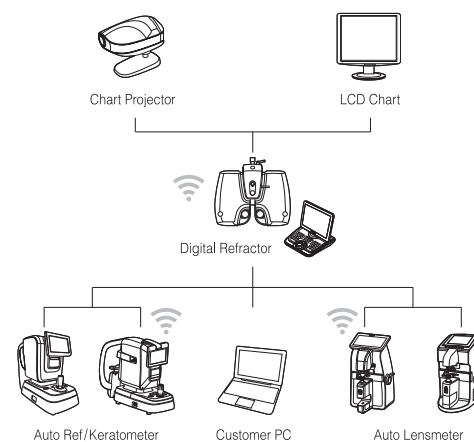
Occluding Aperture	
Pinhole Lens	∅2mm
Maddox Rod	Right Eye (Red, Horizontal), Left Eye (Red, Vertical)
Red / Green Filter	Right Eye (Red), Left Eye (Green)
Polarizing Filter	Right Eye (135°, 45°), Left Eye (45°, 135°)
Split(Dissociation) Prism	Right Eye (6ΔBU) Left Eye (10ΔBI : up to 5Δ complement)
PD Check Lens	
Fixed XC Lens	(±0.50D, with the axis fixed at 90°)
Visual Field	40° (VD=12mm)

Hardware Specification

Digital Refractor	329(W) X 103(D) X 296(H)mm, 4.20kg
Operation Panel	249(W) X 245(D) X 248(H)mm, 2.75kg (including internal printer)
Junction Box	240(W) X 141(D) X 71(H)mm, 1.24kg
Power Supply	100-240VAC~, 1.0~0.5A, 50/60Hz

Designs and details can be changed without prior notice for the purposes of improvement.

System Networking





The More Exam Options You Have, The More You See [All New] HDR-9000 Digital Refractor

Here HDR-9000 with all new technologies is waiting for you.
 HDR-9000 helps those who suffer from visual acuity problems with advanced
 customizable for individual preference and satisfaction.
 A beautiful curvilinear design speaks emotional stability in you.
 With HDR-9000, take satisfaction which you have ever enjoyed before.

21 Point Exam Package

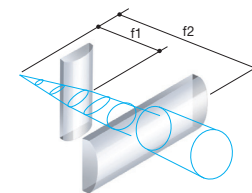
21 Point Exam removes complex knowledge or experience and
 now everyone can perform refraction easily.
 No more headache-explanation is needed, but all results appear on
 display for easy reading for both examiners and patients.





“Experience 21 Point Exam”
 Accuracy, Systemization and Customization,
 All in 21 Point Exam.

Cross Cylinder Lens



21-point Exams #8 H,Phoria (F)



PD Adjustment

Automatic Convergence Function

Illuminated Vertex Distance Check Window

Illumination / Detachable Near Chart Rod



Tilttable Refractor Body

Tilttable Body

Highly advanced near vision exam is enabled with tilttable body from 0° to 45° delivering feeling of reading a book.

LCD Chart Compatibility

Compatibility with polarized LCD chart provides even economical efficiency.
 (Both linear and circular polarization)

Fast and Silent Lens Loading

Fast lens loading helps to minimize accommodational interference and fatigue of examinees' eyes. Silent operation offers more comfort during exam.

Slimmer Design

Slimmer design even prevents minimum mechanical interference during exam and enables easy monitoring over patients.

21 Point Exam

21 Point Exam removes complex knowledge or experience and now everyone can perform refraction easily.

No more headache-explanation is needed, but all results appear on display for easy reading for both examiners and patients.

Guidance with prism, addition power prescription and visual function test in accordance with exam results are available for easy use.

Cross Cylinder Lens

Dual cross cylinder lens as well as Jackson cross cylinder lens supports highly accurate exams over astigmatism axis and visual acuity.

Improved speed of lens movement prevents accommodation interfering exam and guarantees accurate astigmatic exam.

Monocular Height Adjustment

Customized exam is available for those who have different monocular heights within adjustment +/- 3mm.

Various Charts and Contents

Diversification of near vision exam is realized through highly reliable near vision test charts, visual function test and various refraction charts along with vision therapy-related contents.

Real Time Guide

Graphical representation displayed on screen guides test process easier and faster in real time.

Easy Explanatory Images

Various near vision charts for incomplete color blindness test, amsler grid and many other tests such as anatomy image, refractive power readings and progressive lens guidance help patients understand results easily.

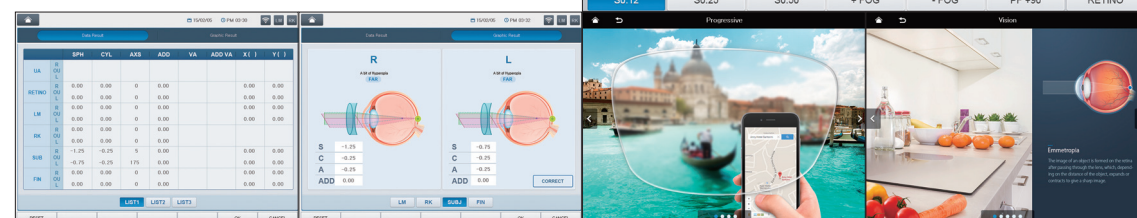
Tablet PC Control (Optional)

Exam can be carried out with not only basic OP panel, but also Tablet and PC for examiners' preferences.

(Tablet PC OS : Win 7 or 8 / Resolution 1366x768)



Displaying the Result in Tables and Graphics



Built-in Printer



Tilting and Swiveling Display

Regardless of examinees' positions, information on display is recognized easily by tilting and swiveling display.

Wireless Communication

Wireless Communication with HRK-9000A and HLM-9000 via Wi-Fi allows perfect data transmission regardless of working environment. Classic communication via RS-232 cable is available for data transmission with previous models.

Built-in Printer

Built-in printer on operation panel supports easy use of printer and even replacing paper at one go.



“Going Beyond Display”

New design of display not only conveys results, but also presents results and exam charts.

[epilogue]

Intelligence in your vision!

Huvitz is always striving to reflect all your questions and demands through state-of-the-art refraction system.

Finally we introduce HRK-9000A reinforced with subjective VA test and curvilinear design.

A brand new auto ref/keratometer, this is another challenge Huvitz will overcome.

Huvitz Auto Ref/Keratometer HRK-9000A with Wavefront Technology



[prologue]

Tomorrow with Huvitz

What is achieved is not a future, but a history.

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Huvitz Auto Ref/Keratometer HRK-9000A with Wavefront Technology

Specification

Measurement Mode

K/R Mode	Continuous Keratometry & Refractometry
REF Mode	Refractometry
KER Mode	Keratometry
KER P Mode	Peripheral Keratometry
Color View Mode	Color View & Contact Lens Fitting Assistance (White & Blue LED Light)
Meibography Mode	Special Mode for Observing Meibomian Gland
TFBUT Mode	Special Mode for Measuring TFBUT (Tear Film Break-Up Time)

Refractometry

Vertex Distanc(VD)	0.0, 12.0, 13.5, 13.75, 15.0
Sphere(SPH)	-30.00~+25.00 (VD=12mm) (increments : 0.01, 0.12, 0.25D)
Cylinder(CYL)	0.00~±12.00D (increments 0.01, 0.12, 0.25D)
Cylinder Form	-, +, ± (Mixed)
Pupil Distance	10~85mm
Minimum Pupil Diameter	∅ 2.0mm

Keratometry

Radius of Curvature	5.0~13.0mm (increments : 0.01mm)
Corneal Power	25.96~67.50D (increments : 0.05, 0.12, 0.25D) (When corneal equivalent refractive index is 1.3375)
Corneal Astigmatism	0.00~ -15.00D (increments : 0.05, 0.12, 0.25D)
Axis	0~180° (increments : 1°)
Pupil, Iris Diameter	2.0~14.0mm (increments : 0.1mm)
Memory of Data	10 measurements for each eye

VA Test - Subjective Refractive Test

VA Measurement	<0.1/0.1/0.25/0.32/0.4/0.5/0.63/0.8/1.0/1.25> <20/200 / 20/200 / 20/80 / 20/60 / 20/50 / 20/40 / 20/30 / 20/25 / 20/20 / 20/16>
Sphere(SPH)	-22D to +22D (increment 0.25D)
Cylinder(CYL)	0 to ±10D (Max, increment 0.25D)
Cyl Axis	0 to 180° (increment 1°/5')

Movement Range

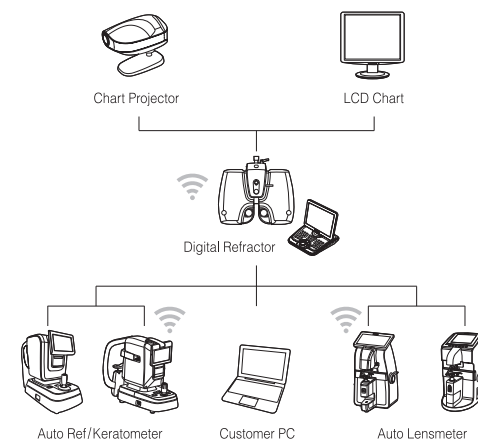
Up-Down	±15mm
Left-Right	±5mm, ±2mm
Forward-Backward	±5mm, ±2mm

Others

Display	7 inch Wide Color TFT LCD, Touch panel with Tilting function
Interface	RS-232 x 1, USB(for Service) x 1, Wi-Fi (for Data communication)
Wi-Fi	Band : 2.4GHz, IEEE802.11b/g Security : WPA2-PSK
Internal Printer	Thermal line printer with Auto cutting function
Power Saving	Automatic switch-off (5min)
Power Supply	100-240VAC, 1.0-0.6A, 50/60Hz
Dimension / Weight	262(W) X 518(D) X 441(H)mm, 19kg

Designs and details can be changed without prior notice for the purposes of improvement.

System Networking





Combining Everything into One

[All New] HRK-9000A Auto Ref/Keratometer

Unceasing efforts for higher accuracy lead to objective refraction followed by standardized subjective refraction with HRK-9000A and in the end, unprecedented accurate results wait for you.

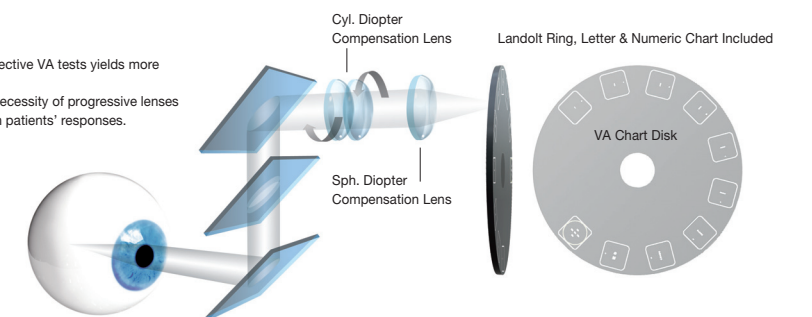
HRK-9000A speaks no compensation, but perfectionism in refraction composed of glare test, superior contrast sensitivity and TFBUT/Meibography which are introduced for the first time in the world.

A beautiful curvilinear design speaks emotional stability in you.

With HRK-9000A, take satisfaction which you have ever enjoyed before.

Subjective VA Test

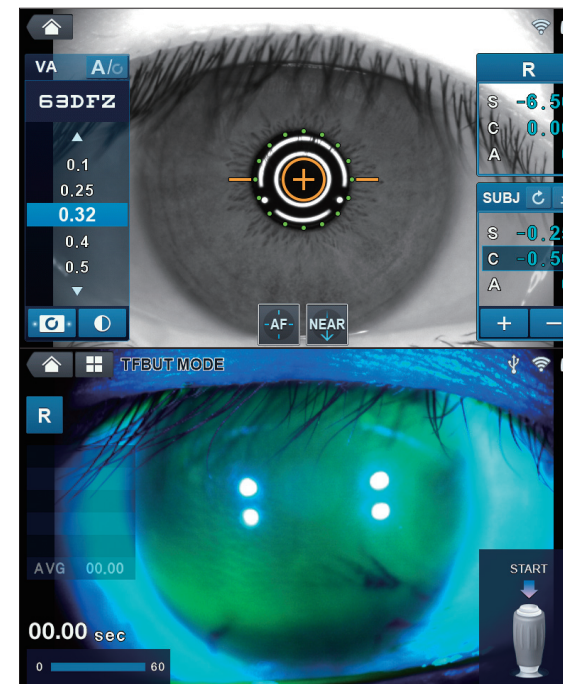
Comparison between subjective and objective VA tests yields more reliable and accurate data. Subjective VA test is useful in deciding necessity of progressive lenses because it checks visual acuity based on patients' responses.



“Subjective VA Test Available? or Not?”
Experience Difference in Your Vision!



Subjective VA Test - Glare Mode



TFBUT Measurement

Wavefront Technology

Huvitz' wavefront analysis algorithm goes beyond general refraction to conclude highly accurate and reliable cornea refractive power and index. Wavefront technology measures the wavefront of light reflected from the retina and the refractive power with various sensors divided by sectors and analyzes them with extreme precision.

Micro Lens Array

Huvitz' own developed Micro Lens Array creates a number of separated focal spots, of which the pattern provides valuable information of patients' ocular systems.

More Accurate Data

Accuracy of KER data is improved by setting optimal zone diameter on measuring spot and also REF data by standardization of quantity of light of fogging chart and fogging lens position along with complete block of accommodation.

Color View Mode

Full color CCD camera and white LED light source in auto ref/keratometer enable you to see eyes and contact lens fitting status which was previously only possible with slit lamps.

Subjective VA Test

Comparison between subjective and objective VA tests yields more reliable and accurate data. Subjective VA test is useful in deciding necessity of progressive lenses because it checks visual acuity based on patients' responses.

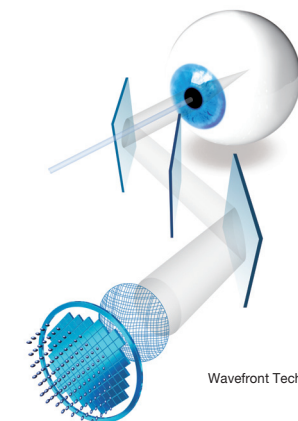
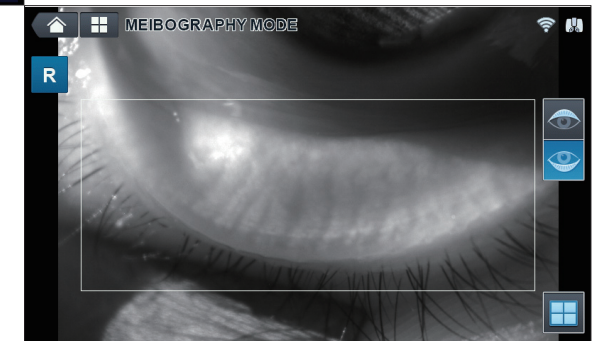
Contrast Sensitivity and Glare Test

Highly reliable night visual acuity is examinable with low contrast sensitivity test and glare test which perfectly reproduces halo effect. Progress after refractive or cataract surgery can be monitored effectively.

TFBUT Measurement and Meibography

Conditions of tear film and dry eye can be collected by TFBUT(Tears Break-Up Time) are readable for thorough understanding of visual acuity. Degeneration of meibomian gland can be also monitored with enough light source and image enhancement function.

Meibography Measurement



Wavefront Technology / Micro Lens Array

Peripheral Keratometry Measurement

Continuous measurement on periphery of cornea at 90° both vertically and horizontally from center of cornea produces curvature and eccentricity values of all points and allows best fitting of contact lenses.

IOL Mode

Extra measurement mode is available for IOL power or visual acuity after cataract surgery.

Iris and Pupil Diameter Measurement

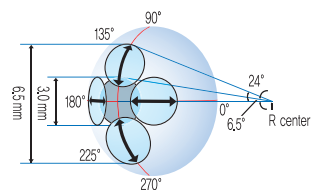
Image capturing function supports highly accurate exam by measurement of iris and pupil diameter with diameter from 2mm to 14mm.

Contact Lens Fitting Assistance Guide

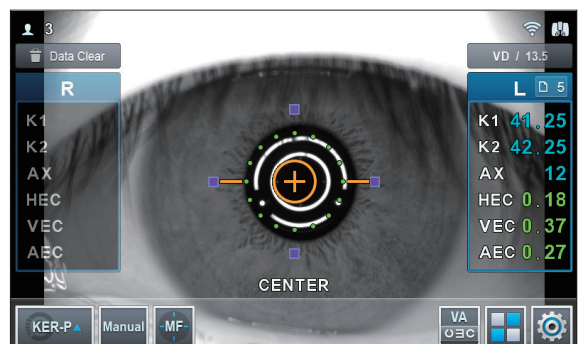
The world's first contact lens fitting function in an auto ref/keratometer enables you to see fluorescein liquid with blue illumination.

Efficient Contact Lens Prescription

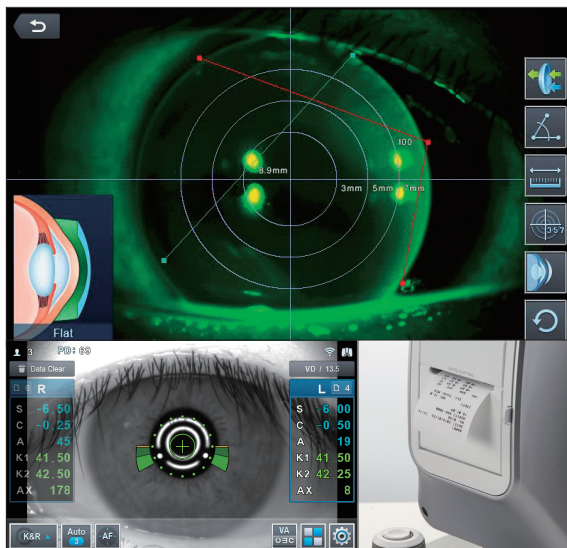
Image capture and contrast regulation are possible. HRK-9000A gives you the best On-K fitting guide based on the base curve and KER value.



Peripheral Keratometry Measurement



Contact Lens Fitting Assistance Guide



Auto Tracking Guide

Auto Cutting Printer



Touch and Tilting 7" Color Display

Wide color TFT LCD supports high-resolution images and real-time image processing to realize afterimage-less image quality. Moreover, swiveling and tilting touch display is readable from any direction for smooth communication between examiners and examinees.

Auto Tracking

Cutting edge auto sensor and 3 dimensional movement mechanism allow you to track down a measuring focus of an eye automatically and complete measurement perfectly even with inexperienced users.

Auto Cutting Printer

Embedded printer allows to print 10 measurement data within 3 seconds without noise at all. Replacement of paper roll is in one-touch action.

Wireless Communication

Wireless Communication via Wi-Fi allows perfect data transmission with HDR-9000 and HLM-9000 regardless of working environment. Classic communication via RS-232 cable is available for data transmission with previous models.

“Remove Barrier Between Examiner & Examinee”

With Tilting and Swiveling Display, Get Closer to Examinees



[epilogue]

Intelligence in your vision!

Huvitz is always striving to reflect all your questions and demands through state-of-the-art refraction system.

Finally we introduce HLM-9000 reinforced with Hartmann sensor and curvilinear design.

A brand new lensmeter, this is another challenge Huvitz will overcome.

Huvitz Auto Lensmeter HLM-9000



Huvitz Re:define. Re+create

[prologue]

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Huvitz Auto Lensmeter HLM-9000

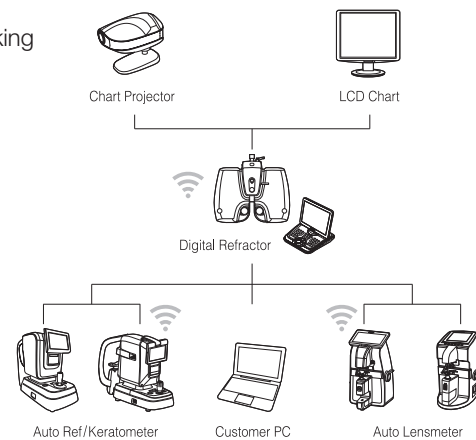
Specification

Measurement Specification

Sphere	0D~±25D (0.01/0.06/0.12/0.25)
Cylinder	0D~±10D (0.01/0.06/0.12/0.25)
Axis	0°~180° (1° step)
Add	0~10D (0.01/0.06/0.12/0.25)
Cylinder Mode	0 to ±10.00D (Mix/-/+)
Prism	0~20Δ (0.01/0.06/0.12/0.25)
Measurable Lens Diameter	∅ 20 to 120mm (Contact Lens : ∅ 5 mm over)
Wavelength	545nm (Green)
Measurement Method	Hartmann Sensor
Contact Lens Measurement	Hard / Soft
UV Transmittance	0~100%
Blue Light Transmittance	0~100%
Display	Tilttable 7" Color LCD IPS panel (800x480) / Touch panel
Printer	Auto Cutting Printer
Interface	RS-232C / USB 2.0 Port / Wi-Fi(802.11b, 2.4GHz)
Dimensions	222(W) X 240(D) X 370(H)mm, 5.4kg
Power Supply	100-240VAC~, 0.5-0.3A, 50/60Hz

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System Networking



Huvitz

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<http://www.huvitz.com>

Distributed by





Change in Core Technology, Different Way of Measurement

[All New] HLM-9000 Auto Lensmeter

Striving both accuracy in measurement and efficiency in operation at a time leads you to HLM-9000.

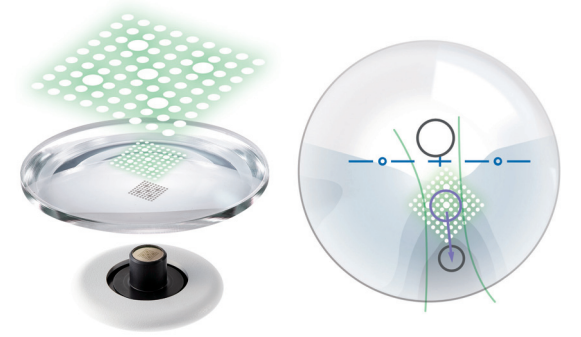
HLM-9000 welcomes you to enjoy its superiority in wavefront analysis technology of Hartmann sensor and automatic lens recognition.

A beautiful curvilinear design speaks emotional stability to you.

With HLM-9000, take satisfaction which you have ever enjoyed before.

Wavefront Analysis Technology of Hartmann Sensor

Implementation of Hartmann Sensor Wavefront Analysis Technology with more measuring spots maximizes accuracy in measurement even for multi-focal and high curved lenses.



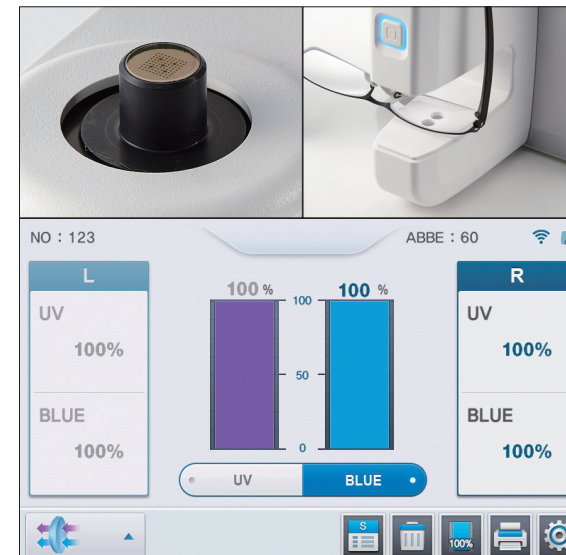
Hartmann Sensor / Green Light Beam(540nm)

Progressive Lens Measurement

“Another Jump in Accuracy, Wavefront Tech”
Reliable Data with Maximized Satisfaction



Hartmann Sensor Blue Light Hazard Measurement



Blue Light Hazard and UV Measurement

Multi-focal Lens Measurement

Automatic recognition of multi-focal lenses supports easy measurement with measurement guidance on display and even measurement of sunglasses and prism multi-focal lenses is simple.

Improved Accuracy with Green Light Beam

Green light beam(545nm), which is nearly same as Fraunhofer e-line(546.1nm) of ISO standards, speaks higher accuracy in measurement than general infrared light.

Auto Lens Recognition

Single vision, progressive and other lenses are recognized automatically and turns into corresponding measurement mode.

Contact Lens Measuring Kit

Hard and soft contact lenses are measurable.
(Soft Contact Lens Jig : Optional)

Hartmann Sensor Wavefront Analysis Tech

Implementation of Hartmann Sensor Wavefront Analysis Technology with more measuring spots maximizes accuracy in measurement even for multi-focal and high curved lenses.

Blue Light Hazard Measurement

As usage of smart phones, LCD monitors and many electric devices increases, blue light hazard emitted from LED displays is recognized as one of noxious rays.

HLM-9000 measures blue light transmittance of blue light blocking lens.

UV Measurement

Easy operation and easy display of UV transmittance allow easy understanding of UV transmittance level from single vision lenses and sunglasses.

Progressive Measurement



Contact Lens Measurement

Contact Lens Measuring Jig

7" Color LCD Display

Wide display with unlimited viewing angle (178°) minimizes work fatigue and maximizes work efficiency.

Wide Tilting Angle

Clear and bright display is readable from any direction with wide tilting angle.

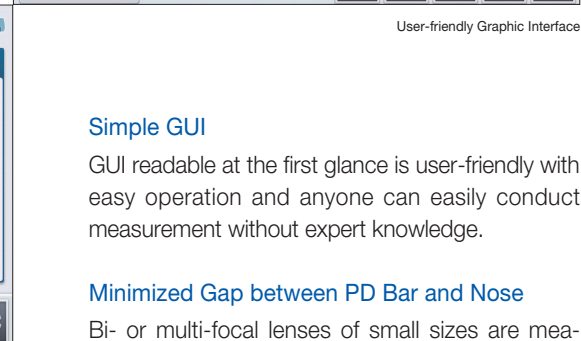
Intuitive Prism Direction

Moving directions of both actual lens and lens on display are in same direction to avoid any confusion during measurement.

Wireless Communication

Wireless communication via Wi-Fi allows perfect data transmission with HRK-9000A and HDR-9000 regardless of working environment.

Classic communication via RS-232 cable is available for data transmission with previous models.



Intuitive Prism Direction



Simple GUI

GUI readable at the first glance is user-friendly with easy operation and anyone can easily conduct measurement without expert knowledge.

Minimized Gap between PD Bar and Nose

Bi- or multi-focal lenses of small sizes are measurable and accurate measurement is possible over entire spot of lens.

Auto Cutting Printer

Fast and quiet printer with automatic cutting function shows all data to customers quickly. Replacement of paper roll is in one touch action.

Extra Storage

Extra storage on upper section allows small accessories to be stored without any dust penetration by cover of rubber material.

“Improved Interface means Improved Efficiency”

Experience intuitive and easily accessible design

