Marco HandyRef-K

HANDHELD REFRACTOMETER/KERATOMETER

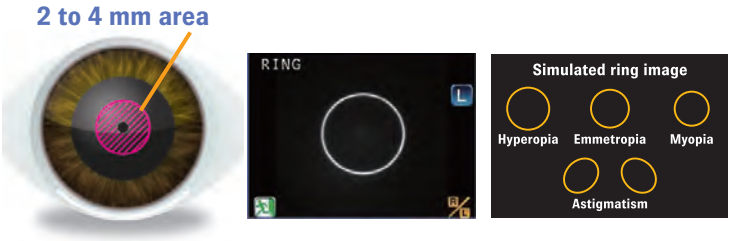
HANDYREF-K

HIGHLY PRECISE MEASUREMENT

ACHIEVE PRECISE MEASUREMENTS ANYTIME, ANYWHERE. NIDEK'S new HANDYREF-K provides an excellent compact solution. You can achieve precise measurements, anytime, anywhere because the compact body design allows simple one hand, multi-position operation. The HandyRef-K will become a reliable partner you can always count on.

Pupil Zone Imaging Method The HandyRef-K analyzes a wide area (Max. 4 mm diameter) pupil zone, giving measurement data representing the refractive error of the patient's system. Small pupils (Min. 2 mm diameter) can also be measured.

Super Luminescent Diode (SLD) & Highly Sensitive CCD Super luminescent diode (SLD) light source provides a sharper and better defined ring image compared to the conventional LED. The highly sensitive CCD camera detects the image even if the fundus reflection is weak due to media opacities.



SynchroScan Technology The HandyRef-K uses "SynchroScan Technology": Measurements start when alignment is achieved, and data is captured when alignment becomes optimal. This provides a more stable, effective, and efficient measurement.

Measurement Mode

Auto Shot Mode When the alignment / focusing becomes optimal, the HandyRef-K obtains measurement data automatically.

Additional Measurement Mode If the measurement data obtained by auto shot is unstable, additional measurements will automatically be performed by additional measurement (AM) mode.

Cataract Measurement Mode If appropriate data can not be obtained by a standard measurement mode, the cataract measurement mode automatically engages to obtain data more easily.

Quick Measurement Mode The quick measurement mode provides faster and simpler measurement. By relaxing the measurement range, children or patients whose eye movements are not stable can still be measured smoothly.

Full Graphic LCD with 3.5-inch Color Screen New full graphic 3.5-inch color LCD is 40% larger than the previous model. Clear screen design and intuitive icons are user-friendly.

Focusing Indicator By detecting the distance between the instrument and the patient's eye, the alignment guide mark is displayed on the screen to facilitate smooth measurement.

Supine Position Mode When tilting the instrument 60° or more downward, the supine position mode automatically starts. When measuring from the patient's side, the cylinder axis is compensated by 90°, and is displayed.

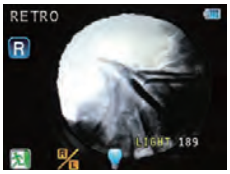
Axis Correction Function An internal sensor detects the inclination of the instrument to display the automatically corrected axis.*

*When the axis correction parameter is set to "YES"

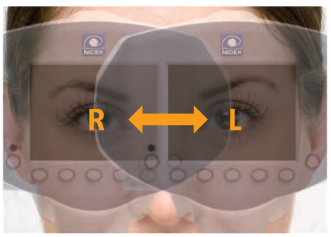
Unique Features | Benefits

Pupil Size Measurement Pupil size measurement is performed automatically during AR measurement. The pupil size can also be measured manually.

Retroillumination Image Observation Retroillumination image enables the observation of any opacity within the optical media. The last captured image can be saved.



R / L Auto Detection Patient's right / left eye can be detected automatically and R or L icon will be displayed on the screen.



Keratometry Measurement with Mire Ring The HandyRef-K measures keratometry easily.

Contact Lens Measurement Function* Curvature of gas permiable contact lenses can be measured with the provided contact lens holder.

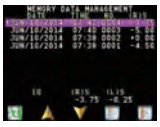
*Soft contact lenses can not be measured.

Anytime-anywhere Handheld Measurement

Lightweight Compact Design The HandyRef-K is lightweight with excellent weight distribution. Its compact design makes it easy to hold, balance, and use with either hand.

Removable Magnetic Occluders Removable magnetic occluders cover unmeasured eye to enable the measured eye to fixate on the target.

Improved Usability by Innovative Functionality



Memory Data Management The measurement data of 50 patients (100 eyes) is saved in the main body memory.

Summary Screen Refractive data, "K" readings and pupil size are displayed together on the summary screen.

Melody Function A melody can be played to hold a child's attention during measurement.

Printer Function (available for the printer equipped model) Auto cutter function is included. By using IR or wireless LAN (WLAN) connection, measurement data can be printed even if the main body and station are separated.

Transportable The main body and station is housed compactly and convenient to carry.

Enhanced Interface

Connection with NIDEK RT (available for the printer equipped model) RS232C cable and EyeCa-RW2 (Eye Care card)* provide quick and easy data transfer from the HandyRef-K to RT.

*RS232C cable is only for RT-5100.

Connection with PC* Measurement data transfer to PC through wireless LAN (WLAN), LAN cable (by station) and infrared connection is possible.

*Available communication methods differ according to the type.

HandyRef-K Specifications

Auto Refractometer		
Measurement Range	**Sphere**	-20.00 to +20.00 D (VD = 12mm) (0.12 / 0.25 D increments)
	Cylinder	0 to 12.00 D (0.12 / 0.25 D increments)
	Axis	0 to 180° (1° / 5° increments)
Minimum Measurable Pupil Diameter	2 mm	
Auto Keratometer		
Measurement Range	**Curvature radius**	5.00 to 13.00 mm (0.01 mm increments)
	Refractive power	25.96 to 67.50 D (0.12 / 0.25 D increments)
	Cylindrical power	0 to 12.00 D (0.12 / 0.25 D increments)
	Axis	0 to 180º (1° / 5° increments)
Sagittal Measurement	25º each from the center (superior side, inferior side, temporal side, nasal side)	
Pupil Size Measurement Range	1.0 to 10.0 mm (0.1 mm increments)	
Fixation Target	Scenery	
Display	3.5-inch color LCD	
Interface	USB: 1 port Wireless LAN (WLAN): 1ch (Wireless LAN (WLAN)-equipped model only)*1	
Power Specification		
Battery Pack	Lithium-ion battery (7.2 V 1800 mAh). Good for 60 minutes of continuous use or 90 minutes of intermittant use.	
Station Feed	DC 9 V 2 A (maximum)	
Dimensions / Mass	206 (W) × 181 (D) × 224 (H) mm (including occluders) / 998 g (including battery pack) 8.1 (W) x 7.1 (D) x 8.8 (H)" (including occluders) / 2.2 lbs. (including battery pack)	
Station		
Printer	Thermal line printer with easy loading and auto cutter (printer-equipped model only)	
Interface	USB: 1 port, LAN: 1 port, RS-232C: 1 port (printer-equipped model only)	
Battery Charging		
Battery Pack	Lithium-ion battery (7.2 V 1800 mAh)	
Charging Time	When inserted in the main body: Approx. 180 min. (when the main body is placed on the station). When inserted in the battery slot: Approx. 140 min.	
Power Supply	AC 100 to 240 V, 50 / 60 Hz	
Power Consumption	60 VA	
Dimensions / Mass	224 (W) x 283 (D) x 147 (H) mm / 2.7 kg (printer-equipped model), 2.5 kg (model without printer) 8.8 (W) x 11.1 (D) x 5.8 (H)" / 5.9 lbs. (printer-equipped model), 5.5 lbs. (model without printer)	
Standard Accessories		
	Occluder (2 units), neck strap, printer paper (3 rolls / printer-equipped model only), power cord, connection cable, battery pack, dust cover, spherical model eye, contact lens holder	
Optional Accessories		
	Carrying case, carrying case with portable stand, barcode scanner, magnetic card reader, EyeCa-RW2, Eye Care card, communication cable, battery pack, USB flash drive	

*1Limited to the USA, Canada, and other countries that implement the R&TTE Directive.

NIDEK | MARCO

Designed and Manufactured by NIDEK – Represented by MARCO

D163500 BR-HandyRef-K