



# Microperimeter MP-3



THE ART OF EYE CARE

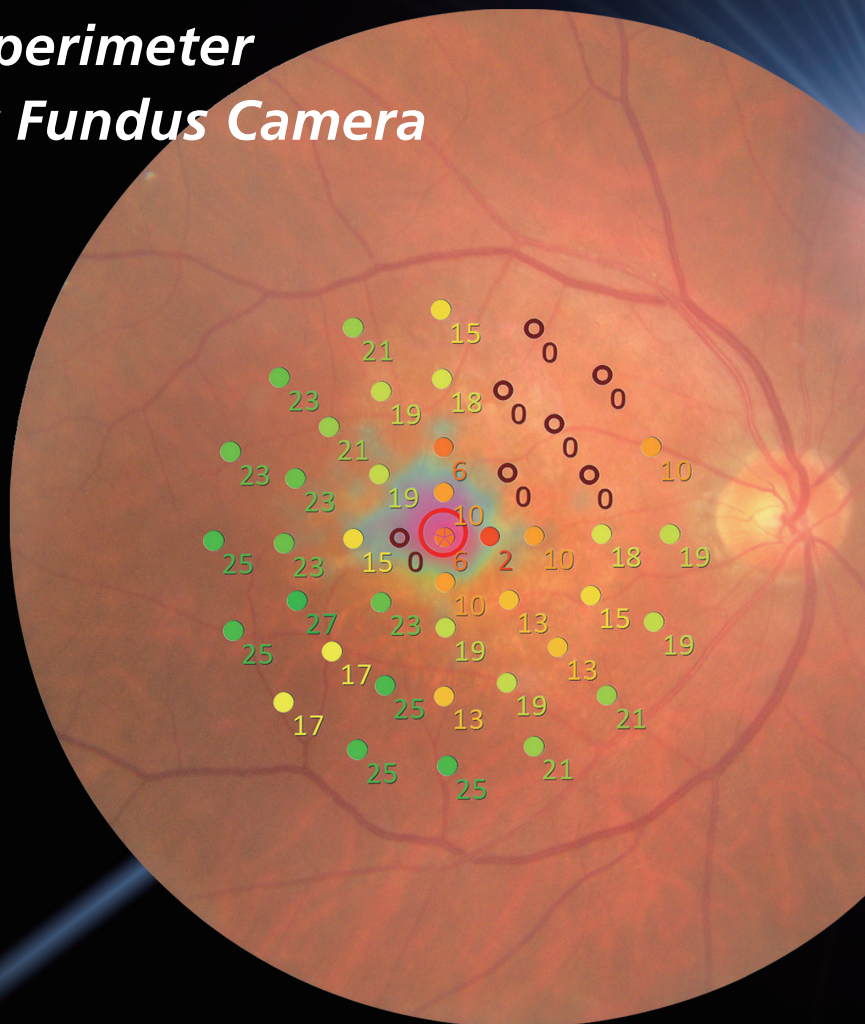


# MP-3

## Microperimeter

### *The Automatic Microperimeter with a Non-mydriatic Fundus Camera*

There have been significant advances in the assessment of retinal morphology since the incorporation of optical coherence tomography (OCT) into clinical practice. Additionally, microperimetry has advanced functional evaluation of the retina. The MP-3 measures local retinal sensitivity for functional assessment of the retina and uses the results to provide biofeedback exams for training low vision patients.



Lecture



Functional Loss in GA  
By Ursula Schmidt-Erfurth, MD

[https://www.nidek-intl.com/education/video\\_lib/special/entry-3469.html](https://www.nidek-intl.com/education/video_lib/special/entry-3469.html)



Microperimetry: The Link between Structure and Function in AMD  
By Anna Tan, MD

[https://www.nidek-intl.com/education/video\\_lib/special/entry-3645.html](https://www.nidek-intl.com/education/video_lib/special/entry-3645.html)



Article



Correlation of OCT Angiography and Microperimetry in Wet AMD  
By Manish Nagpal, MS, DO, FRCS(Edin); Jayesh Khandelwal, MS; Rakesh Juneja, MS; and Navneet Mehrotra, MBBS, DNB (Ophthalmology), FRF

[https://www.nidek-intl.com/education/case\\_report/retina/mp3/entry-2961.html](https://www.nidek-intl.com/education/case_report/retina/mp3/entry-2961.html)

## ■ **Functionality**

### Microperimetry

#### -Wide Measurement Range

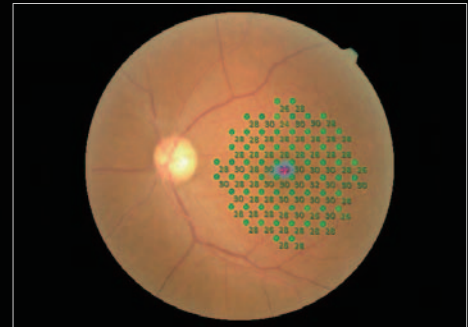
The MP-3 has a wider range of stimulus intensity, from 0 to 34 dB, compared to the MP-1. The MP-3 measures perimetric threshold values, even for normal eyes. A maximum stimulus luminance of 10,000 asb\* allows evaluation of low-sensitivity.

\* In accordance with ISO12866 measurement methods

### Fixation Test

#### -Precise Tracking System

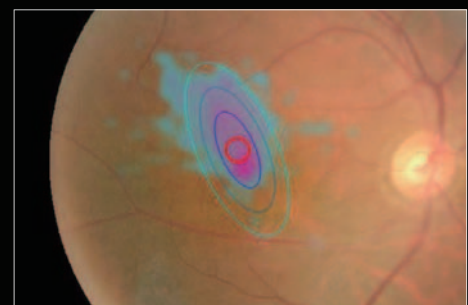
The MP-3 can measure fixation and determine the preferred retinal locus, simply by having the patient fixate on a target. Constant tracking of the eye during microperimetry allows evaluation of fixation in patients with central visual field defects and determines whether fixation improves after treatment.



MP-3 Normal Eye Image (34 dB)



Stable Fixation



Unstable Fixation

## ■ **Morphology**

### Retinography

#### -High Resolution Non-mydratiatic Fundus Camera

An easy to use 12-megapixel fundus camera is incorporated into the MP-3 and acquires high resolution images of retinal pathology.

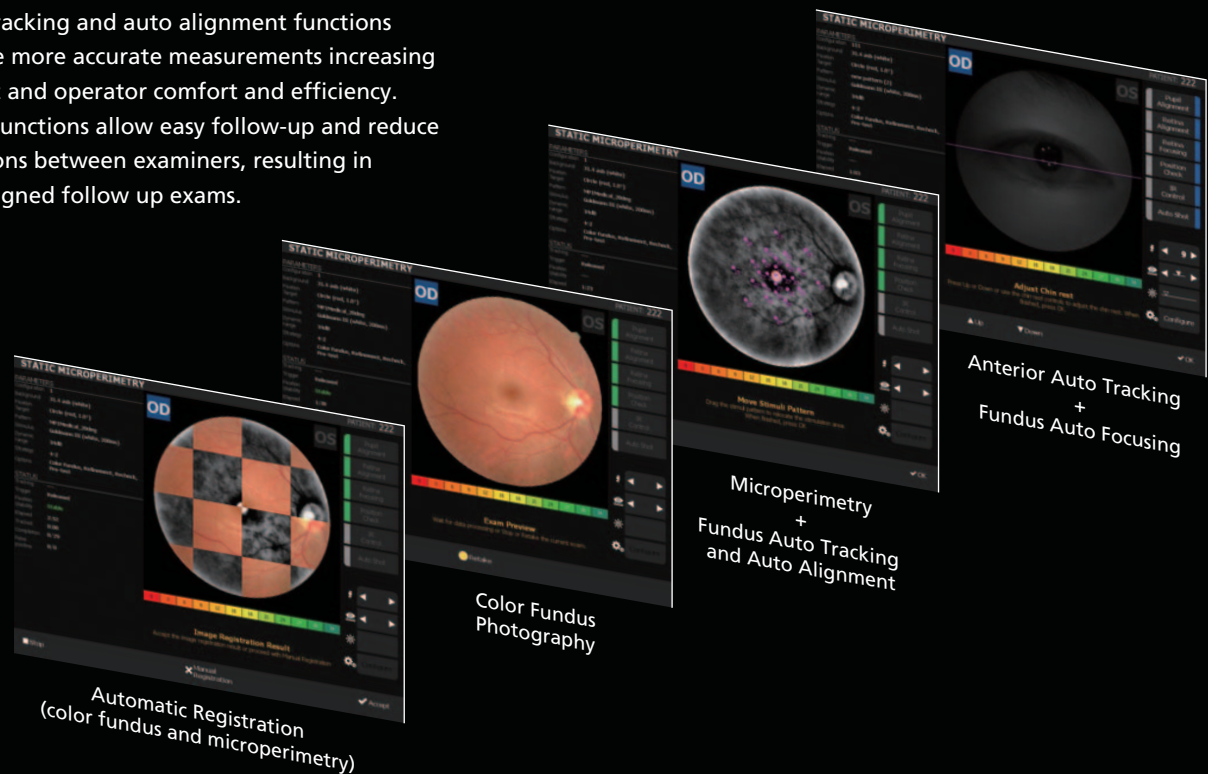


Fundus Camera Image

## ■ Precise Measurements and Follow-up

### Auto Tracking and Auto Alignment

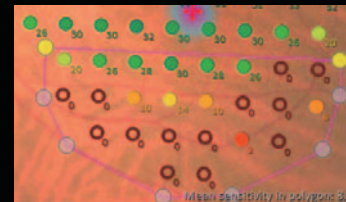
Auto tracking and auto alignment functions provide more accurate measurements increasing patient and operator comfort and efficiency. These functions allow easy follow-up and reduce variations between examiners, resulting in well-aligned follow up exams.



## ■ Evaluation of Treatment

### Region-specific Test Evaluation

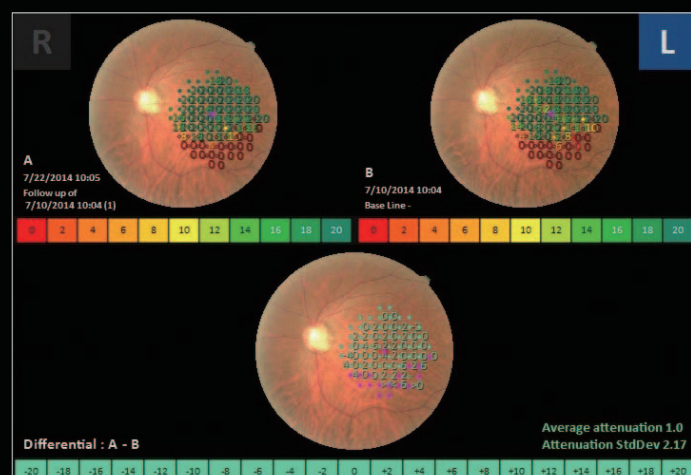
After completion of measurements, results can be evaluated in a specific region of interest to allow easier comparison with other pathology images. By specifying the region of interest, the average results in the region are displayed.



Magnified Image of Specified Fixation Point

### Follow-up Test

A follow-up test can be performed on the same area using the same parameters as a previous test. This feature allows evaluation of disease progression or assessment of pre- and post-treatment outcomes. Any differences in two microperimetry images are displayed for quick, intuitive interpretation.



Follow-up Image

## ■ Visual Rehabilitation

### Feedback Exam

The visual rehabilitation mode trains low-vision patients who have lost foveal fixation to relocate their preferred retinal locus (PRL) to a different region, called the trained retinal locus (TRL). The TRL is predetermined by a physician, and fixation rehabilitation allows the patient better functional vision (i.e. reading speed) due to increased fixation stability and visual outcomes.

Active flickering pattern stimulation and cheery music create an effective and pleasant training experience for the patient.

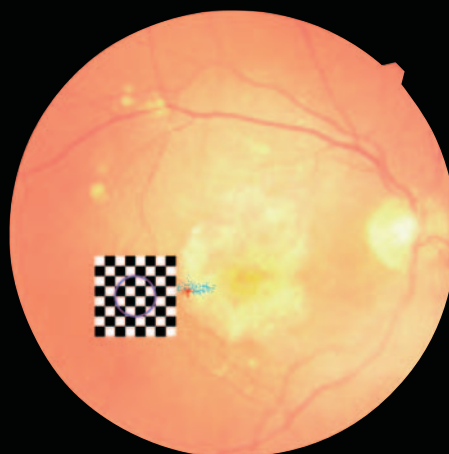


Image courtesy of the National Centre of Services and Research for the Prevention of Blindness and Rehabilitation of Visually Impaired - IAPB Italia Onlus, Rome - Italy

Related  
Article



Active Visual Rehabilitation: A New Paradigm in Low Vision Services

By Filippo Amore, MD, PhD

[https://www.nidek-intl.com/education/case\\_report/retina/mp3/entry-3612.html](https://www.nidek-intl.com/education/case_report/retina/mp3/entry-3612.html)

## ■ Functional Assessment in Scotopic Conditions (Available for the MP-3 type S)

### Scotopic Microperimetry

The MP-3 type S measures retinal functions under scotopic conditions (scotopic microperimetry) in addition to the standard functions of the MP-3.

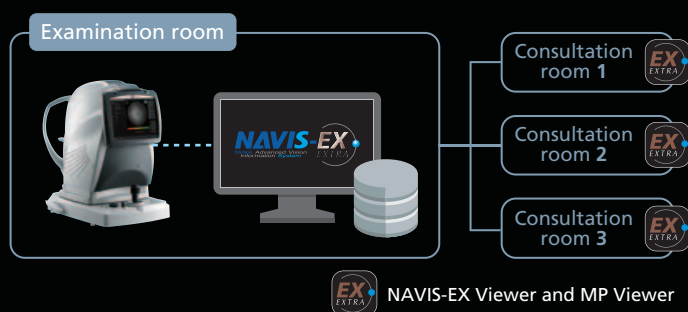
Scotopic microperimetry is used to assess the changes in rod sensitivity of degenerative retinal diseases including age-related macular degeneration and some forms of retinitis pigmentosa. This modality can be used in clinical trials of new therapeutics for retinal diseases that impair rod function.



## ■ User-friendly Functions

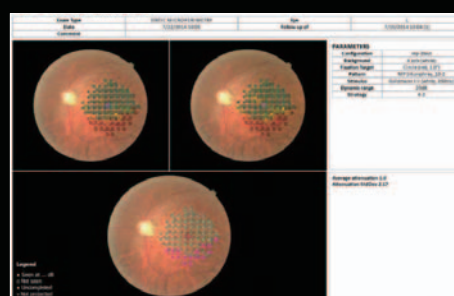
### NAVIS-EX

NAVIS-EX is an image filing software that networks the MP-3 and other NIDEK fundus imaging devices.



### Print Setup

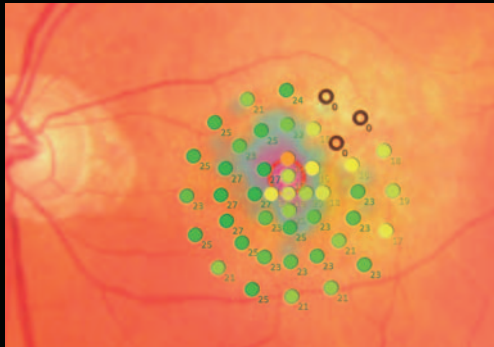
Various printed reports are available including user specified layouts when used with NAVIS-EX.



Print Image

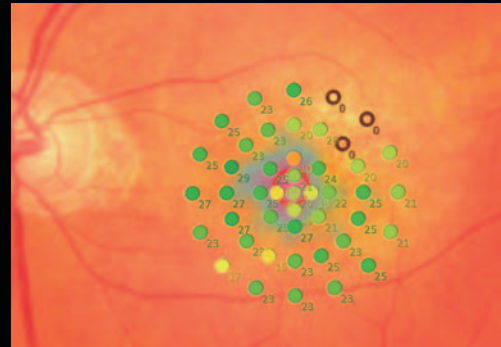
## ■ Pre- and Post-treatment Comparison

### Case of anti-VEGF treatment for age-related macular degeneration (AMD)



Pre-treatment

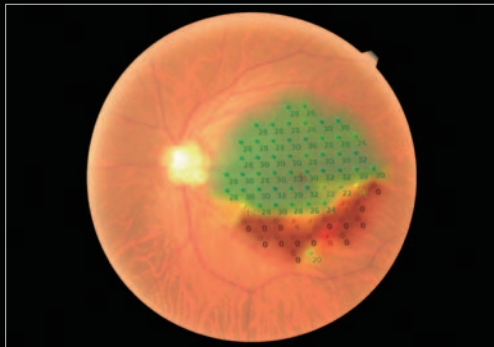
Circle at 2° Percentage of fixation points 66.1%  
 Circle at 4° Percentage of fixation points 92.1%  
 Mean sensitivity: 20.4



Post-treatment

Circle at 2° Percentage of fixation points 68.1%  
 Circle at 4° Percentage of fixation points 95.5%  
 Mean sensitivity: 20.9

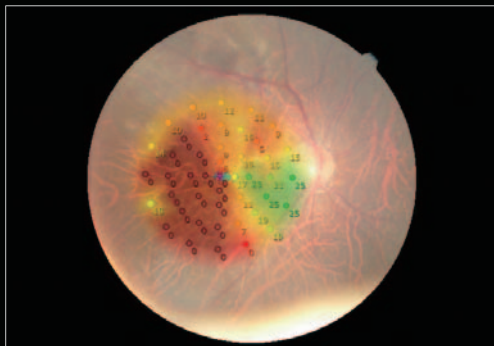
## ■ Clinical Examples



Glaucoma



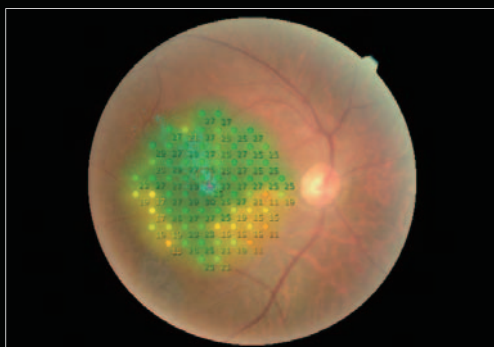
Age-related Macula Degeneration  
(Geographic Atrophy)



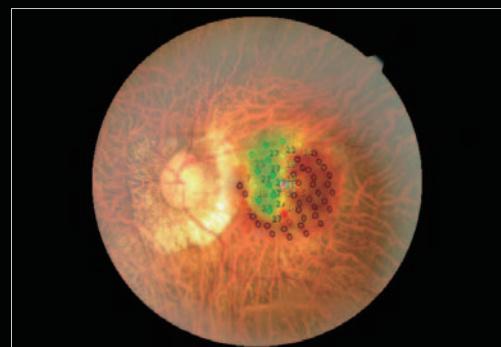
Polypoidal Choroidal Vasculopathy



Retinal Angiomatous Proliferation



Central Serous Chorioretinopathy

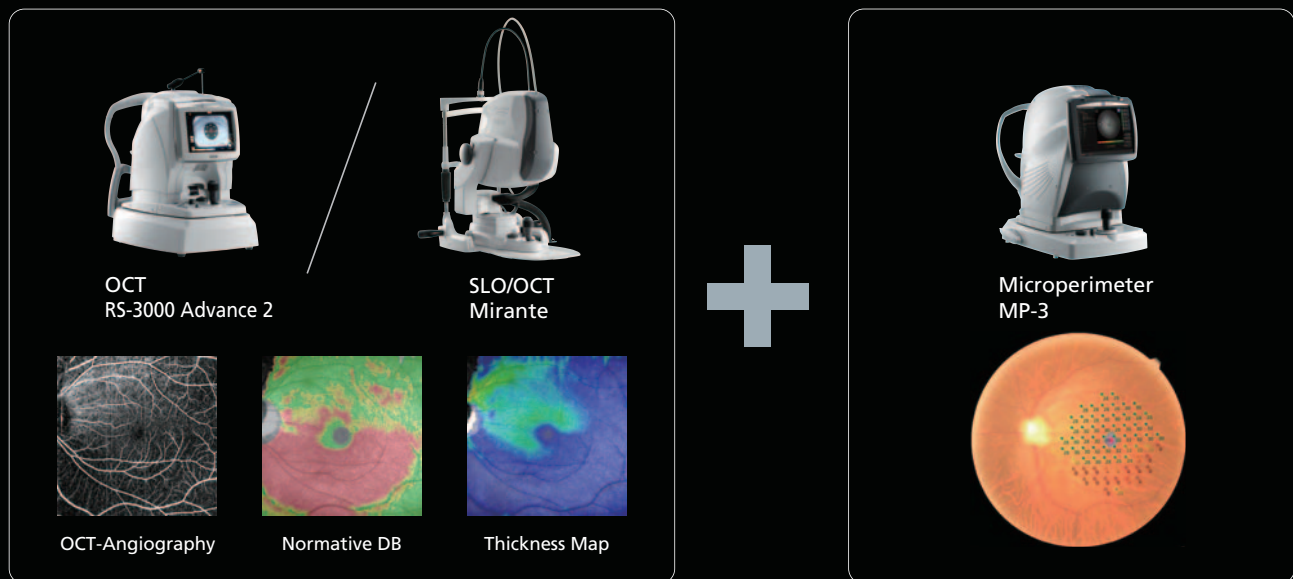


Excessive Myopia

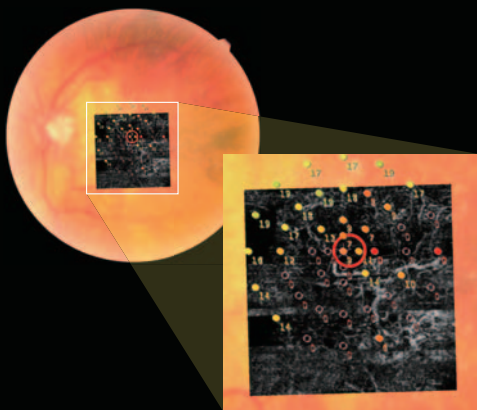
## ■ *Structural and Functional Evaluation Using OCT*

Evaluate retinal structure and function simultaneously using combined OCT and Microperimetry images

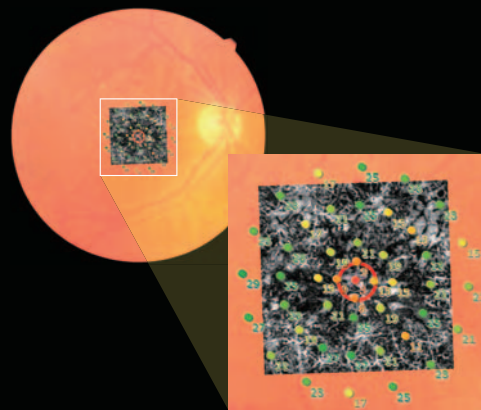
Various OCT modalities can be registered with Microperimetry.



### ■ Age-related Macular Degeneration

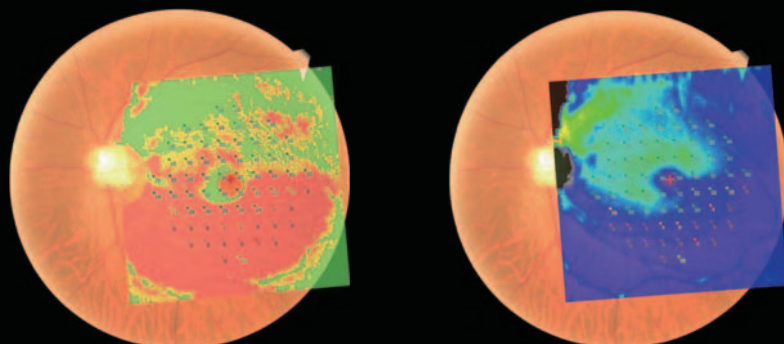


### ■ Diabetic Macular Edema



Images courtesy of Prof. S. Rizzo, MD and Dr. D. Bacherini, MD, University of Florence

### ■ Glaucoma



## MP-3 Specifications

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Microperimetry                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Visual field                      | 40°                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Maximum stimulus luminance        | 10,000 asb (in accordance with ISO12866 measurement methods)                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Background luminance              | 31.4 asb / 4 asb (in accordance with ISO12866 measurement methods)                                                                                                                                                                                                                                                                                                                                                                                                               |
| Stimuli luminance threshold range | Scotopic microperimetry test*: 0.003 asb<br>Standard [Background luminance: 31.4 asb]<br>10,031.4 asb (0 dB) to 35.4 asb (34 dB)(Contrast: 319.5 to 0.13)<br>Equivalent to NIDEK MP-1 [Background luminance: 4 asb]<br>404 asb (0 dB) to 8 asb (20 dB) (Contrast: 101 to 1.01)<br>1,004 asb (0 dB) to 4.4 asb (34 dB) (Contrast: 251 to 0.1)<br>Scotopic microperimetry test* [Background luminance: 0.003 asb]<br>0.303 asb (0 dB) to 0.0042 asb (24 dB) (Contrast: 101 to 0.4) |
| Stimulus size                     | Goldman I/II/III/IV/V compatible                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Threshold strategy                | 4-2 / 4-2-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fixation target                   | Shape: single-cross, circle, four-crosses, four-lines<br>Color: select from white/yellow/red/blue                                                                                                                                                                                                                                                                                                                                                                                |
| Fundus Camera                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Type                              | Non-mydriatic fundus camera, color                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Angle of view                     | 45° ±5% (The refraction of the eye is 0 D)                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Minimum pupil diameter            | ø4 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Camera                            | Built-in 12-megapixel CCD camera                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Auto tracking                     | X-Y-Z directions                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Auto shot                         | Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Working distance                  | 45.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Display                           | 10.4-inch color LCD touch screen                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Diopter correction range          | -25 to +15 D                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Fundus auto focus range           | -12 to +15 D                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Power supply                      | 100 to 240 V AC<br>50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Power consumption                 | 160 VA                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Dimensions/Mass                   | 334 (W) x 562 (D) x 560 (H) mm / 36 kg<br>13.1 (W) x 22.1 (D) x 22.0 (H) " / 79 lbs.                                                                                                                                                                                                                                                                                                                                                                                             |
| Optional accessories              | Motorized optical table                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

\* Available for the MP-3 type S



MP-3



MP-3 type S



More clinical information available  
online at the NIDEK Education page

For more clinical information, please visit the Education page on the NIDEK website. This site allows access to case reports, journal articles, and video presentations.



<https://www.nidek-intl.com/education/>



Case reports



Videos

Product/Model name: Microperimeter MP-3

Brochure and listed features of the device are intended for non-US practitioners.

Specifications may vary depending on circumstances in each country.

Specifications and design are subject to change without notice.



Eye & Health Care

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