Experience Spectacular Retinal Imaging with the new NIDEK F-10 Digital Ophthalmoscope

The F-10 was developed to give Ophthalmologists a high definition (HD) diagnostic imaging system. Designed to provide astonishing infrared scanning images, high contrast FA Images with streaming video plus super IA choroidal views. Auto fluorescence is also available for early dry AMD patients/studies.

The F-10 is the Next Generation of Scanning Laser Ophthalmoscope. It is equipped with the latest in Laser Digital Technology, providing unsurpassed image quality for every detail of the retina and choroid. It is very useful in identifying minute details of any retinal and choroidal pathology.

Optimized Catadioptoric System of the F-10 captures crystal clear images of the retina even on periphery areas with minimized affects of aberration. The F-10 Digital Ophthalmoscope provides exceptional capillary details without any post-exam image processing.

The F-10’s four light sources for each unique wavelength are applicable for various clinical applications.

The F-10 is capable of both IA and FA streaming video and digital images, or simultaneous imaging of both. The F-10’s high-speed capture rate enables clinicians to locate the exact location of retinal irregularities.

As well as angiography, the F-10’s IR scanning offers the possibility of its utilization as a daily routine examination device.

The F-10 Digital Ophthalmoscope also provides new techniques such as DCO - Differential Contrast Ophthalmoscopy and Dark Field Imaging.
Image is Everything.

Fabulous
Futuristic Technology
Fundamental

Outstanding Images
Ahead of its Time
Foundation of Basic Disease Detection
High-quality image provides retinal details even in the capillary scale.

*Each Fluorescein Angiography (FA), ICG Angiography (IA) and simultaneous imaging of both with high frame rate enables clear observation of pathology from the early stage of examination.*
Retinopathy - Panoramic imaging with preset fixation points

Panoramic Imaging of the F-10 is useful in capturing details of retinopathy in central and peripheral areas of the patient’s retina.

BRVO (Branch Retinal Vein Occlusion) - FA with 60 degrees wide-angle adaptor

60 degrees wide-angle adaptor enables practitioners to capture details of pathology in peripheral area of retina, as well as macular area.

AMD (Age Related Macular Degeneration) - Using simultaneous FA and IA

Choroidal Neovascularization is clearly observed from an early stage of fluorescence imaging.
4 different light sources

<table>
<thead>
<tr>
<th>Blue (490 nm)</th>
<th>Green (532 nm)</th>
<th>Red (660 nm)</th>
<th>IR (790 nm)</th>
</tr>
</thead>
</table>

Each color of laser captures the image different depth of retina.

*Green laser image is less chromatic aberration than red-free image of fundus camera.

The F-10’s unique 532nm Laser Imaging provides clear observation of blood leakage, that can be very helpful as pre-operational examination before PDT or TTT.

532nm laser imaging is useful in monitoring patient with Glaucoma by looking at the RNFL.

AutoFluorescence - Autofluorescence Imaging

490nm wavelength light source of the F-10 enables Autofluorescence Imaging. Since Autofluorescence imaging requires no injections to the patient, it is comfortable for the patient, yet offers high quality images for early AMD diagnosis.

PCV case  
CSC case
**Futuristic Technology - Ahead of its Time**

**DCO (Differential Contrast Ophthalmoscopy) on FA Image**
Overlay of vessel over pathology is clearly observed.

**Retro Mode**
Retro Mode is a new non-invasive technique which can detect the pathology high-sensitively and quickly.

- Retro mode shows distribution of cystoid macular edema clearly.
- Retro mode detects spread of drusen high-sensitively.

Scattered light of IR visualizes abnormal reflection caused by drusen, edema etc.
Pre-Proliferation Diabetic Retinopathy-FA

FA with 60° wide-angle adaptor

Early stage RPE Degeneration-FA

CNV observation on patient with a High Myopia (-15D) - FA

Retinal Pigment Epithelium Detachment (PED) - FA

Polypoidal Choroidal Vasculopathy (PCV) - IA

Polypoidal Choroidal Vasculopathy (PCV) - IA

Central Retinal Vein Occlusion (CRVO) - FA

Submacular Hematoma in BRVO - IA
Central Serous Chorioretinopathy (CSC)
Simultaneous FA and IA

Retinal Angiomatous Proliferation FA and IA

High Frame Rate

F-10 captures in-flow fluorescent image with high frame rate (Max. 26 Hz). This is important at early stage of fluorescence imaging both in FA and IA, since in-flow imaging enables to accurately localize where the pathology exists, such as CNV, Leakage, Vein Occlusion, etc.
**Feasible - Experience the Freedom**

The NAVIS-Lite is the sophisticated and user-friendly data filing software, allowing easy management of movie files and still images, as well as patient data management.

**Capturing Mode**
Operation enables easy capturing of movie or still image.

**Thumbnail, Still Image Review Mode**
NAVIS Lite is equipped with sophisticated patient database.

**Panoramic Imaging**
Panoramic Imaging is built in feature of NAVIS Lite.

**CID ratio**
Cup/Disk Ratio and other measuring functions are standard features of NAVIS Lite.

**Autofluorescence Imaging Function**
Autofluorescence Imaging Function is standard feature of NAVIS Lite.

**Improved User Friendliness**
IR imaging is recommended as focal alignment at the first stage of the examination. Depending on various scene of clinical application, the operator can switch to manual selection of scanning laser wavelength, or enter FA, IA or simultaneous FA/IA mode. All switches required for operation is located at the front side of the device, thus intuit operation is enabled.
## F-10 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Filed of view</strong></td>
<td>40 (24 x 32) 60 (36 x 48) with non contact wide field lens</td>
</tr>
<tr>
<td><strong>Focus range</strong></td>
<td>-15 to +15 dioptres spherical, increments of 0.5 dpt</td>
</tr>
<tr>
<td><strong>Progressive scanning system</strong></td>
<td></td>
</tr>
<tr>
<td>Digital image size (pixels) [Single display mode]</td>
<td>1600 x 1200 1280 x 960 800 x 600 640 x 480</td>
</tr>
<tr>
<td>Display image size</td>
<td>1024 x 720 1024 x 720 800 x 600 640 x 480</td>
</tr>
<tr>
<td>Max. image frequency</td>
<td>10 Hz 12 Hz 20 Hz 26 Hz</td>
</tr>
<tr>
<td>Ref. / FAG / ICG / FAG and ICG [Dual display mode]</td>
<td></td>
</tr>
<tr>
<td>Display image size</td>
<td>512 x 720 (x 2) 512 x 720 (x 2) 512 x 600 (x 2) 512 x 480 (x 2)</td>
</tr>
<tr>
<td>Max. image frequency</td>
<td>3 Hz 3 Hz 5 Hz 6 Hz</td>
</tr>
<tr>
<td><strong>Optical resolution</strong></td>
<td>16 to 20 µm</td>
</tr>
<tr>
<td><strong>Fixation</strong></td>
<td>Red laser internal 2 x 2 LED</td>
</tr>
<tr>
<td><strong>Confocal aperture</strong></td>
<td>1.5 to 7 mm (5 increments) Dark field (3 increments)</td>
</tr>
<tr>
<td><strong>Measurable pupil diameter</strong></td>
<td>2.5 mm or larger</td>
</tr>
<tr>
<td><strong>Laser source</strong></td>
<td>ICG excitation and IR reflectance: laser 790 nm (Class 1) FAG excitation and blue reflectance: laser 490 nm (Class 1) Green reflectance: laser 532 nm (Class 1) Red reflectance: laser 660 nm (Class 1)</td>
</tr>
<tr>
<td><strong>Image mode</strong></td>
<td>Fluorescein angiography (FA) ICG angiography (IA) FAG excitation and blue reflectance Ring aperture Retro mode Differential contrast ophthalmoscopy (DCO)</td>
</tr>
<tr>
<td><strong>Sensor mode</strong></td>
<td>Normal sensor / differential contrast sensor</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>NTSC LAN (10 / 100 Base-T)</td>
</tr>
<tr>
<td><strong>Software</strong></td>
<td>- Export function - Automatic image transfer to PC - Guided fixation - List and thumbnail index available</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>AC 100 to 120 V or AC 220 to 240 V ±10% 50 / 60 Hz</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>A maximum of 350 VA</td>
</tr>
<tr>
<td><strong>Dimensions / Weight</strong></td>
<td>450 (W) x 610 (D) x 590 to 630 (H) mm / 55 kg 17.7 (W) x 24.0 (D) x 23.2 to 24.8 (H) &quot; / 121.3 lbs.</td>
</tr>
</tbody>
</table>

Caution: U.S. Federal Law restricts this device to sale, distribution and use by or on the order of a physician or other licensed eye care practitioner.

This device complies with class 1 laser product.
Specifications and design are subject to change without notice.