Flexible Field Angle
Detailed images of smaller field of view in high quality by utilizing full frame 35mm in 45º field of view.

Unique Blink Control
With the automatic blink detection, the AFC-230 / 210 automatically stops the photography when the patient blinks.

Anterior Eye Photography Mode
When pressing the button for anterior eye photography, the AFC-230 / 210 automatically switches to mode and provides clear anterior eye photography.

**Features of AFC-230 / 210**

**Accurate Anterior Eye Observation before Photography**
For AFC-230 / 210 integrates the 3.9 inch LCD display, in addition to the special optic system, CCD camera and high resolution receiver for anterior eye observation, allowing accurate confirmation of the anterior eye status (Brushoptosis, conjunctivitis, corneal disorder, etc.). This assures high-quality visual photography.

**Smaller Pupil Diameter Mode**
In addition to the regular minimum Pupil Diameter ø4.0 mm, the AFC-230 / 210 is also highly capable of detecting a smaller Pupil Diameter - Minimum ø3.7 mm. When the patient’s Pupil Diameter is detected to be smaller than 4.0 mm, the AFC-230 / 210 automatically switches to mode for the ø3.7 mm smaller Pupil Diameter mode.

**Stereo Mode**
Stereo fundus photography is also possible. *Requires stereo viewer (optional).

**High-Speed Image Transfer to a PC**
Connection to a PC through USB 2.0 allows quick and easy transfer of the images. The data can also be saved in an outside electronic chart system and easy transfer of the images. The data can also be saved in an outside electronic chart system.

**Ergonomic Design for Easy Operation in Darkened Room**
Ergonomically designed to allow intuitive operation. These allows the operator to take a photograph easily even in a dark room.

**Compact Body**
All necessary functions are integrated into this compact body, offering greater portability.

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**AFC-230 / 210 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>AFC-230</th>
<th>AFC-210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Type</td>
<td>5.7-inch TFT LCD</td>
<td>5.7-inch TFT LCD</td>
</tr>
<tr>
<td>Image Sensor</td>
<td>1/3&quot; CMOS 4,800,000 pixels</td>
<td>1/3&quot; CMOS</td>
</tr>
<tr>
<td>Display Type</td>
<td>640 x 480 monitor</td>
<td>640 x 480 monitor</td>
</tr>
<tr>
<td>Frame Type</td>
<td>High resolution digital SLR camera</td>
<td>High resolution digital SLR camera</td>
</tr>
<tr>
<td>Normal / Maximum Power</td>
<td>150VA / 300VA</td>
<td>150VA / 300VA</td>
</tr>
<tr>
<td>Power Supply</td>
<td>AC 100-240V, 50/60Hz</td>
<td>AC 100-240V, 50/60Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Connection</td>
<td>USB 2.0</td>
<td>USB 2.0</td>
</tr>
<tr>
<td>Stereoscopic</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Focusing Method</td>
<td>Auto Focus, 0.5 EV increments</td>
<td>Auto Focus, 0.5 EV increments</td>
</tr>
<tr>
<td>Minimum Pupil Diameter</td>
<td>ø3.7mm (in smaller pupil diameter mode: ø4.0mm)</td>
<td>ø3.7mm (in smaller pupil diameter mode: ø4.0mm)</td>
</tr>
<tr>
<td>Working Distance</td>
<td>45.7mm (from camera lens to cornea)</td>
<td>45.7mm (from camera lens to cornea)</td>
</tr>
<tr>
<td>Picture Angle</td>
<td>45º (in smaller pupil diameter mode: 37º)</td>
<td>45º (in smaller pupil diameter mode: 37º)</td>
</tr>
<tr>
<td>Illumination Adjustment</td>
<td>Xenon Flash lamp (Max. 300 Ws)</td>
<td>Xenon Flash lamp (Max. 300 Ws)</td>
</tr>
<tr>
<td>Dioptric Compensation</td>
<td>-33 to -7 D (with minus dioptric lens)</td>
<td>-33 to +35 D (total)</td>
</tr>
<tr>
<td>Display</td>
<td>17 levels : F1 (F4.0 + 0.7 EV) to F17 (F22 + 0.5 EV)</td>
<td>17 levels : F1 (F4.0 + 0.7 EV) to F17 (F22 + 0.5 EV)</td>
</tr>
<tr>
<td>Focusing method</td>
<td>Auto Focus, 0.5 EV increments</td>
<td>Auto Focus, 0.5 EV increments</td>
</tr>
<tr>
<td>- Minus dioptric lens</td>
<td>-33 to -7 D (with minus dioptric lens)</td>
<td>-33 to -7 D (with minus dioptric lens)</td>
</tr>
<tr>
<td>- Plus dioptric lens</td>
<td>-33 to +35 D (total)</td>
<td>-33 to +35 D (total)</td>
</tr>
</tbody>
</table>

**Standard accessories**

- Camera body cap (x1)
- Objective lens cap (x1)
- Blower brush (x1)
- Power cord (x1)
- USB cable (x1)
- Dust cover (x1)
- Chinrest paper (x1 pack)
- Chinrest paper pins (x2)
- External camera (x1)
- Auto Tracking (x1)
- X-axis movement (x1)
- Y-direction movement (x1)
- Vertical movement (x1)
- External fixation target (x1)
- Internal fixation target (x1)
- Illumination adjustment (x1)
- For photography (x1)
- Focusing method (x1)
- Minimum pupil diameter (x1)
- Working distance (x1)
- Picture angle (x1)

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*Specifications and design are subject to change without notice for improvement.*

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**Pro Photographer**

- **AFC-230 / 210** Non-Mydriatic Auto Fundus Camera

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*Printed on environment-friendly recycled paper.*

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**Manufacturer**

NIDEK 2006 Printed in Japan AFC-230 / 210 NPDKM

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**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.
NIDEK delivers the innovative non-mydriatic digital fundus camera that integrates every function required for easy retinal screening. Customized built-in functions of the NIDEK AFC-230 / 210 improve the quality and efficiency of medical examinations.

**High Quality Retinal Imaging**

Integrating the innovative imaging optical system, the technologically advanced AFC-230 / 210 realizes digital fundus imaging of high resolution and fine gradation. The fine gradation provides clear and detailed display of the entire fundus image from the light optic disc to a darkened disease area. With noise greatly reduced, the system offers retinal photography with minimum flash exposure allowing quick and efficient fundus photography of both eyes, thereby minimizing patient discomfort.

With advanced optical system with large sensor, the AFC-230 / 210 offers high quality image at true 45º field of view.

First Non-Mydriatic Camera with Auto Tracking & Auto Focus

NIDEK’s advanced auto-tracking technology allows easy and accurate capture of the anterior corneal center. Also, the auto focus system provides automatic switching from anterior to retina, realizing high-performance focusing without touching the joystick. Also included is the unique auto-chinrest feature.

**Stress Free Photography Management**

The AFC-230 / 210’s advanced technology reduces every day problems.

**High Performance Retinal Image Filing System - NAVIS-Lite**

The AFC-230 / 210 system incorporates the sophisticated and user-friendly data filing software - NAVIS-Lite - allowing easy management of patient data.

**Key Features of NAVIS-Lite**

1. Images that are automatically imported from the AFC-231 / 210 are sorted by patient name.
2. Easy-care pathways in place for displaying patient information.
3. Sophisticated imaging functions are incorporated, including image processing, drawing, measurement, and panoramic imaging for large field analysis.
4. Zoom: Images can be zoomed freely.

**Effects:** Sharp, Combination, Edge enhancement

**Color control:** Grey scale, Contrast, Off, Red Free, Channel split, Color reversal, Brightness, Contrast, Histogram, Gamma control, Selection

**Rotate / Reverse:** Image can be rotated / reversed at any angle

**Measurement:** C/O ratio, Disc size, Two point separation, Selected isolation area

**Drawing:** Text / objects can be inserted to the image.

**Flexible print layout display for patient reports**

**Data-back up function**

**Email function:** Email is accessible allowing message text with image file attachment

**The data can be transferred to an DICOM (Digital Imaging and Communications in Medicine) 3.0 compatible server (Optional).**

**Sample Screens**

**High resolution Image Photography**

**Always in focus**

**Cut out retakes**

**Patient friendly**

**User friendly**

**DICOM Connection (Optional)**

 DICOM connection can be achieved. Downloading work lists from the HIS server is also possible.

**Various System Configurations**

1. **Stand-alone Module**

   - Key connection with a laptop or PC using USB 2.0 interface.
   - Quick and easy install to a laptop or PC using NAVIS-Lite installer OS requirement: Windows XP or later version.

2. **Communication with Existing Modules**

   - DICOM connection can be achieved. DICOM images can be automatically / manually exported to a designated folder.
   - DICOM images can be imported from a DICOM server.

**Pro Photographer**
NIDEK delivers the innovative non-mydriatic digital fundus camera that integrates every function required for easy retinal screening. Customized built-in functions of the NIDEK AFC-230 / 210 improve the quality and efficiency of medical examinations.

### High Quality Retinal Imaging

Integrating the innovative imaging optical system, this technologically advanced AFC-230 / 210 realizes digital fundus imaging of high resolution and fine gradation. The fine gradation provides clear and detailed display of the entire fundus image from the light optic disc to a darkened disease area. With noise greatly reduced, the system offers retinal photography with minimum flash exposure allowing quick and efficient fundus photography of both eyes, thereby minimizing patient discomfort.

With advanced optical system with large sensors, the AFC-230 / 210 offers high quality image at true 45º Field of view.

### First Non-Mydriatic Camera with Auto Tracking & Auto Focus

NIDEK’s advanced auto-tracking technology allows easy and accurate capture of the anterior corneal center. Also, the auto focus system provides automatic switching from anterior to retina, realizing high-performance focusing without touching the joystick. Also included is the unique auto-chinrest feature.

### Stress Free Photography Management

The AFC-230 / 210’s advanced techniques reduce every day problems.

#### High-resolution Image Photography
Always in Focus
Cut out retakes
Patient friendly
User Friendly

### High-Performance Retinal Image Filing System - NAVIS-Lite

The AFC-230 / 210 system incorporates the sophisticated and user-friendly data filing software - NAVIS-Lite - allowing easy patient data management.

#### Key Features of NAVIS-Lite
- Images that are automatically imported from the AFC-230 / 210 are sorted by patient name.
- Easy-care pathways in place for displaying patient information.
- Sophisticated imaging functions are incorporated, including image processing, drawing, measurement, and panoramic imaging for large field analysis.
- Zoom: Images can be zoomed freely.
  - Effects: Sharp, Combination, Edge enhancement
  - Color control: Grey scale, Contrast, RGB, Red-free, Channel split, Color reversal
  - Brightness, Contrast, Histogram, Gamma control, Selection
- Rotate / Reverse: Image can be rotated / reversed at any angle.
- Measurement: C / D ratio, Disc HV, Two point separation, Selected inclusion area
- Drawing: Text objects can be inserted to the image
- Flexible print layout display for patient reports
- Data-back-up function
- Images easily exported
- Email function is accessible allowing message text with image file attachment
- The data can be transferred to an DICOM (Digital Imaging and Communications in Medicine) 3.0 compatible server (Optional).

### Various System Configurations

#### 1. Stand-alone Module
- Key connection with a laptop or PC using USB2.0 interface.
- Quick and easy interface to a laptop or PC using NAVIS-Lite installer
- OS requirement: Windows XP or later version

#### 2. Communication with Existing Modules
- Image file and XRM files can be automatically or manually exported to a designated folder. XRM files include information that links the patient data and image files, allowing data export to NAVIS and other existing software modules.

#### 3. DICOM Connection (Optional)
- DICOM connection can be achieved. Downloading work lists from the HIS server is also possible.
NIDEK delivers the innovative non-mydriatic digital fundus camera that integrates every function required for easy retinal screening. Customized built-in functions of the NIDEK AFC-230 / 210 improve the quality and efficiency of medical examinations.

Next Generation Non-Mydriatic Auto Fundus Camera offering High Quality Image and Advanced Operation

The AFC-230 / 210 offers high quality image at true 45º field of view.

* Conventional frame size camera is also attachable by utilizing adapter (factory option) with true 45º field of view.

**Image**

- Integrating the innovative imaging optical system, this technologically advanced AFC-230 / 210 realizes digital fundus imaging of high resolution and fine gradation. The fine gradation provides crisp and detailed display of the entire fundus image from the light optic disc to a darkened disease area. With noise greatly reduced, the system offers retinal photography with minimum flash exposure allowing quick and efficient fundus photography of both eyes, thereby minimizing patient discomfort.

- With advanced optical system with large sensor, the AFC-230 / 210 offers high quality image at true 45º field of view.

- Stress Free Photography Management

- The AFC-230 / 210’s advanced technologies reduce every day problems.

- High resolution Image Photography Always in Focus
- Cut out retakes
- Patient friendly
- User Friendly

<table>
<thead>
<tr>
<th></th>
<th>High Performance Retinal Image Filing System - NAVIS-Lite</th>
</tr>
</thead>
</table>

The AFC-230 / 210 system incorporates the sophisticated and user-friendly data filing software - NAVIS-Lite - allowing easy patient data management.

**Key features of NAVIS-Lite**

- Images that are automatically imported from the AFC-231 / 210 are sorted by patient name.
- Easy-care pathways in place for displaying patient information.
- Sophisticated imaging functions are incorporated, including Image Processing, Drawing, Measurement, and Panoramic Imaging for large field analysis.
- Zoom: Images can be zoomed freely.
- Effects: Sharp, Combination, Edge enhancement
- Color control: Grey scale, Contrast, Black, Red-Free, Channel split, Color reversal, Brightness, Contrast, Histogram, Gamma control, Selection
- Rotate / Reverse: Image can be rotated / reversed at any angle
- Measurement: C/D ratio, Disc HV, Two-point separation, Selected occlusion area
- Drawing: Text / objects can be inserted to the image

- Flexible print layout display for patient reports
- Data-back-up function
- Images easily exported
- E-mail function is accessible allowing message text with image file attachment
- The data can be transferred to an DICOM (Digital Imaging and Communications in Medicine) 3.0 compatible server (Optional).

Sample Screens
Features of AFC-230 / 210

Accurate Anterior Eye Observation before Photography

For AFC-230 / 210 integrates 1.3-MP (1,280 x 960) CMOS 70º wide-angle image sensor allowing accurate confirmation of the anterior eye status (Nystagmus, blepharoptosis, in-growing eyelashes, mydriasis, cataract, corneal disorder, etc.). This assures high-quality internal photography.

Flexible Field Angle

Optical 44º field of view, the AFC-230 / 210 can provide detailed image of smaller field of view in high quality by utilizing full frame 35mm in 45º field of view.

Unique Blink Control

With the automatic blink detection, the AFC-230 / 210 automatically switches to the ø3.7 mm smaller Pupil Diameter mode.

Anterior Eye Photography Mode

When pressing the button for anterior eye photography, the AFC-230 / 210 automatically switches to mode and provides clear anterior eye photography.

Smaller Pupil Diameter Mode

In addition to the regular minimum Pupil Diameter ø4.0 mm, the AFC-230 / 210 is also highly capable of detecting a smaller Pupil Diameter - Minimum ø3.7 mm. When the patient's Pupil Diameter is required ø3.7 mm, the AFC-230 / 210 automatically switches to mode for the ø3.7 mm smaller Pupil Diameter mode.

Stereo Mode*

Stereo fundus photography is also possible.

High-Speed Image Transfer to a PC

Connections for a PC through USB 2.0 allows quick and easy transfer of the images. The data can also be saved in an outside electronic chart system.

Ergonomic Design for Easy Operation in Darkened Room

With the automatic blink detection, the lever and the dial is ergonomically designed to allow intuitive operation. These allows the operator to take a photograph easily even in a dark room.

Compact Body

All necessary functions are integrated into this compact body, offering greater portability.

AFC-230 / 210 Specifications

- **Field Angle**: 44º (in regular mode), 45º (in smaller pupil diameter mode)
- **Resolution**: 1.3-MP (1,280 x 960)
- **Frame Rate**: 3 fps
- **Image Quality**: 12-bit color
- **Image Storage**: Internal (3,000 images max.)
- **Image Transfer**: USB 2.0
- **Image Size**: 1,280 x 960
- **Image Type**: JPEG, TIFF
- **Power Supply**: Normal 150 VA, Max. 300 VA
- **Dimensions**: 11.0 (W) x 19.9 (D) x 20.0 (H) " / 55 lbs.
- **Weight**: 280  (W) x 505  (D) x  507 (H) mm / 25 kg
- **Resolution**: 640 x 480
- **Monitor**: 5.7-inch TFT color LCD
- **Light Source**: Xenon Flash lamp (Max. 300 Ws)
- **Focusing Method**: (Auto / Manual, in -12 to +15 D range)
- **Dioptric Compensation for Patient’s Eyes**: ±10% (±5 degrees)
- **Minimum Pupil Diameter**: ø4.0 mm (in regular mode), ø3.7 mm (in smaller pupil diameter mode)
- **Working Distance**: 45.7 mm (from camera lens to cornea)
- **Picture Angle**: 45º (in regular mode), 37º (in smaller pupil diameter mode)
- **Type**: Non-Mydriatic Auto Fundus Camera
- **Dioptric Compensation for Patient’s Eyes**: ±10% (±5 degrees)

*Manufacturer:
NIDEK Co., LTD.
34-14 Maehama, Hiroishi, Gamagori, Aichi 443-0038, Japan
Gamatel: 13-853-8888

Software:
Windows XP / Windows 7 / Windows 8 / Windows 10

Hardware:
Intel Core i3 / i5 / i7

Memory:
4 GB RAM (8 GB recommended)

Storage:
1 TB Hard Drive

Operating System:
Windows 10

Precautions:
- Use a clean, dry cloth to wipe the surface to be photographed.
- Do not use any chemicals or solvents to clean the equipment.

CE Mark:
Collected and prepared by a photographer in 2020.

Specifications and design are subject to change without notice for improvement.
Features of AFC-230 / 210

**Accuracy in Anterior Eye Observation before Photography**

The AFC-230 / 210 integrates high-definition 45º field of view, 10:1 zoom and 35mm-sized photos in a compact and lightweight body. The wide-angle 45º field of view and the 10:1 zoom together with the highly accurate anterior eye photography and automatic focusing and image saving functions help you observe patient eye condition with ease.

**Flexible Field Angle**

The AFC-230 / 210 can provide detailed images of smaller field of view in high quality by utilizing full frame 35mm in 45º field of view.

**Unique Blink Control**

With the automatic blink detection, the AFC-230 / 210 automatically stops the photography when the patient blinks.

**Anterior Eye Photography Mode**

With the automatic blink detection, the AFC-230 / 210 automatically switches in mode to take the 37º small pupil diameter photography for better diagnostic images.

### AFC-230 / 210 Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>AFC-230</th>
<th>AFC-210</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field of view</td>
<td>45º</td>
<td>37º</td>
</tr>
<tr>
<td>Pupil Diameter</td>
<td>ø4.0 mm</td>
<td>ø3.7 mm</td>
</tr>
<tr>
<td>Power consumption</td>
<td>Normal 150 VA, Max. 300 VA</td>
<td>Normal 150 VA, Max. 300 VA</td>
</tr>
<tr>
<td>External camera</td>
<td>High resolution digital SLR camera</td>
<td>High resolution digital SLR camera</td>
</tr>
<tr>
<td>Interface</td>
<td>USB 2.0</td>
<td>USB 2.0</td>
</tr>
<tr>
<td>Auto Tracking</td>
<td>X-Y-Z Direction</td>
<td>X-Y-Z Direction</td>
</tr>
<tr>
<td>Chinrest movement</td>
<td>62 mm (up and down, motorized)</td>
<td>32 mm</td>
</tr>
<tr>
<td>Vertical movement</td>
<td>85 mm (left and right)</td>
<td>40 mm (back and forth)</td>
</tr>
<tr>
<td>External fixation target</td>
<td>17 levels : F1 (F4.0 + 0.7 EV) to F17 (F22 + 0.5 EV)</td>
<td>17 levels : F1 (F4.0 + 0.7 EV) to F17 (F22 + 0.5 EV)</td>
</tr>
<tr>
<td>Internal fixation target</td>
<td>Xenon Flash lamp (Max. 300 Ws)</td>
<td>Xenon Flash lamp (Max. 300 Ws)</td>
</tr>
<tr>
<td>Illumination adjustment</td>
<td>Halogen lamp 12V 50W with infrared filter</td>
<td>Halogen lamp 12V 50W with infrared filter</td>
</tr>
<tr>
<td>Focusing method</td>
<td>Infrared split bright target coincidence</td>
<td>Infrared split bright target coincidence</td>
</tr>
<tr>
<td>Display</td>
<td>5.7-inch TFT LCD</td>
<td>5.7-inch TFT LCD</td>
</tr>
<tr>
<td>Minimum pupil diameter</td>
<td>ø4.0 mm</td>
<td>ø3.7 mm</td>
</tr>
<tr>
<td>Working distance</td>
<td>45.7 mm (from camera lens to cornea)</td>
<td>45.7 mm (from camera lens to cornea)</td>
</tr>
<tr>
<td>Picture angle</td>
<td>45º</td>
<td>37º</td>
</tr>
</tbody>
</table>

### Optional Accessories

- Conventional frame size camera adapter (Factory Option)
- NAVIS-Lite, External fixation target, Stereo viewer, Optional accessories
- Blower brush (x1), Objective lens cap (x1), Camera body cap (x1), Chinrest paper (x1 pack), Chinrest paper pins (x2), Power cord (x1), USB cable (x1), Dust cover (x1)

### CE Mark

The CE mark signifies that the device conforms to the applicable EU directives. The CE mark is required on all devices sold in the European Union.

### Instructions for Use

*Note: Instructions for use are subject to change without notice for improvements.*

*Printed on environment-friendly recycled paper.

*Specifications and design are subject to change without notice for improvement.*