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Chapter 1 Summary

1.1 Summary

Thank you very much for choosing EFC-5200 Series Fundus camera. For your security and benefit, please read the <Operation Instruction> of the instrument carefully before using it.

◆ Product name: Fundus camera
◆ Model: EFC-5200 Aspherical

Product Features: Fundus camera is suitable for diagnosis retinopathy.

Scope of application: Suitable for retinal examination and applicable to the diagnosis of optic nerve, macula, blood vessels and other tissue lesions.

Product Contraindications: Liver and kidney dysfunction, heart disease, high blood pressure, angle-closure glaucoma disabled.

Notice: This device is only to be used by a trained ophthalmology physician. Connect the device only to a grounded socket. Do not use this instrument in the inflammable, hot and dusty environment and pay attention to keep it clean and dry; To avoid being damaged by the environment (Damp, Dusty, Liquid, under the sun and so on). Do not let the liquid or any other small objects run into the instrument, otherwise these objects may make the inner parts of the instrument short-circuit, and even make the users get an electric shock or even cause a fire hazard.
About <Operation Instruction> of this Instrument

◆ The copyright of the operation instruction belongs to US OPHTHALMIC;
◆ The pictures in the operation instruction is only for reference, please make the object as the standard. Contents are subject to change without prior notice.
◆ US OPHTHALMIC has the right of interpreting and revising this operation instruction.

If you can not understand some of the content or clause, or if you meet technical problems when using it, please do not hesitate to contact us, our telephone number: 786-621-0521;

1.2. Device description

The device uses an advanced optical electromechanical integration technology, integrated digital fundus photography cameras and image processing system. Fundus digital image acquisition and image processing system will process all color images by adopting digital technology and record the complete data in the computer, which is available for image processing, reports inspection, graphic editing, and generated medical record data by having retrieval management system at any time. Lesion size can be measured, calculated, and the image can be zoomed, moved, pasted, mosaiced, the color of the image can be adjusted, the patient's case image data can be burned on the CD and attached to the case history which could help the researching and teaching. The system is compatible with a variety of Fundus image acquisition devices, supporting medical network function, in line with the digital medical imaging, networking develop trend.
US OPHTHALMIC image processing and software analysis system V1.0:
Programming under WIN XP platform, English interface, easy operation, powerful analysis software for processing the images in different ways, which including below mentioned features:
1. Zoom and move image; lesion size measurements and calculations.
2. Color photography and analysis by comparing different groups of pictures
3. Save in computer or save in CD, two kinds of storage model.

1.3 Hardware composition

1. Fixation lamp: guide patients to gaze at the right direction during the detection of the patient's retinal surrounding area
2. Objective lens cylinder: please cover the objective lens once the operation is completed.
3. Chinrest: to aid in the positioning of the patient's chin on the instrument
4. Chinrest lift handle
5. The color image collector: DSLR
6. Focusing knob: adjust the sharpness of the image
7. Optical element body
8. Optical element body locking knob: control the move of left and right
9. The platform mobile handle: move the platform around and take pictures.
10. Transfer Switch: Push this button for anterior-posterior para-position transferring
11. Platform locking knob: it can lock the platform, so the platform cannot be moved
12. Power switch
13. Power Indicator
14. Power input socket

1.4. System Configuration

1.4.1 Hardware

Medical electrical device:
   a) optical body
   b) color image collector
   c) operation platform
   d) Chin-rest
   e) Joystick components

1.4.2 Non-Medical electrical device

Computer (main computer, monitor, keyboard, mouse), printer and removable multi-socket.

1.4.3 Medical electrical system which consists of medical electrical device (1.4.1) and non-medical electrical device (1.4.2) can be connected by a removable multi-socket.

1.4.4 Medical electrical device is used in the patient environment; non-medical electrical device (1.4.2) is used outside the patient environment.

1.4.5 The software of fundus camera consists of the following modules

   a) Patient information input module;
   b) Image analysis software module;
   c) Document management module;
   d) Document printout module;

1.4.6 Computer and operating system requirements

   ● CPU: Intel Celeron 2.5 G or above;
   ● Memory: 2 G or above;
   ● Hard disk: 500 G or above;
Monitor: 19" or above;
Operating system: Windows XP, WIN 7, WIN 8
Screen Resolution: 1440*900

1.5. Product type and model

<table>
<thead>
<tr>
<th>Model Specification</th>
<th>Hardware components</th>
<th>instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFC-5200</td>
<td>Optical body, moving platforms, image analysis software</td>
<td>Non-Mydriatic Digital Fundus camera</td>
</tr>
</tbody>
</table>
Chapter 2 Technical parameter

2.1 Product performance and basic parameters

2.1.1 Working distance: 40mm ± 2mm

2.1.2 Field Tolerance: Angle of view is 53°, Tolerance: ±7%

2.1.3 Min. pupil size for photography: pupil size ≥ 3.3mm]

2.1.4 Fixation target: external eye fixation lamp & 9 internal fixation target (LED dot matrix)

2.1.5 Focus: Split-line aligning + one dots position assisting manual focusing

2.1.6 Automatic recognition of the left and right eye position: automatically identify the position of eye on the image.

2.1.7 Pedestal moving range:
   
   Forward and backward: 60mm±5mm  
   Left and right : 102mm±5mm  
   Up and down: 30mm±3mm

2.1.9 Optical requirements:

<table>
<thead>
<tr>
<th>Standard Project</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td></td>
</tr>
<tr>
<td>Angle of view ≤ 30°</td>
<td>The center of the visual field.</td>
</tr>
<tr>
<td></td>
<td>The central field of view (r/2)</td>
</tr>
<tr>
<td></td>
<td>At the edge of the field of view (r)</td>
</tr>
<tr>
<td>Angle of view &gt; 30°</td>
<td>The center of the visual field.</td>
</tr>
<tr>
<td></td>
<td>The central field of view</td>
</tr>
<tr>
<td></td>
<td>view (r/2)</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Patient’s diopter compensation</td>
<td>Not less than: -15D ~ +15D</td>
</tr>
<tr>
<td>CCT of camera flash</td>
<td>4500K ≤ Tc ≤ 6700K</td>
</tr>
</tbody>
</table>

2.1.10 Image Resolution: Color Image Resolution ≤ 12 million pixels;

2.1.11 Power: a.c. 220VA

2.1.12 Specific Information: The relative spectral output pattern of the equipment under the condition of the maximum intensity and maximum aperture bar, and between the spectral wavelength of the 305 nm ~ 1100 nm, is shown as below:

![Graph showing relative spectral output pattern](image.png)

2.2 Equipment Structure diagram

```
IMAQ

Image

Image

Image printout
```
2.3 The meaning of doing fundus examination

Fundus examination is to check whether the fundus has lesion by visually check the fundus color image. The most important meaning of fundus examination is detected fundus (retina, choroid, optic nerve head) whether there is disease, such as: retinal detachment, macular degeneration, glaucoma, optic neuritis, choroidal tumors.

Many systemic diseases such as hypertension, arteriosclerosis, diabetes, various parts of the body will produce changes in small blood vessels. Because the small blood vessels in the body, only in the retina can be seen directly, so by fundus examination, can detect whether these diseases have produced vascular lesions. And to test results and treatment judged as a reference for the course.
Chapter 3 Precautions

3.1 Precautionary information

3.1.1 For your safety and benefit, please read all instructions and product information carefully before using the device. A result of any personal injury, property or other damages because of not apply in accordance with operation instructions, US OPHTHALMIC, LLC. will not be liable.

3.1.2 Use it in a darkroom and it can only be operated by those who have been trained by engineers of US OPHTHALMIC or the engineers of US OPHTHALMIC appointed distributor.

3.1.3 Computers, monitors, printers and portable multi-socket should be placed outside the patient environment; only the use of the fundus camera can be placed in the patient environment.

3.1.4 The voltage must be up to the given standard. If the voltage is not steady, please install a Constant Voltage Regulator. US OPHTHALMIC will not take responsibility for the damage caused by the voltage.

3.1.5 For avoiding being damaged by the environment (Damp, Dusty, Liquid, under the sun and so on), please do not let the liquid or any other small objects run into the instrument, otherwise these objects may make the inner parts of the instrument short-circuit, and even make the users get an electric shock or even cause a fire hazard.

3.1.6 Without the permission of US OPHTHALMIC, do not open the box of the instrument or US OPHTHALMIC will not take the consequences.

3.1.7 The cable of fundus camera cannot be hot-unplugged; it can only be unplugged after the computer has been shut off.

3.1.8 After turning off the device, wait 5 seconds if it has to be turned on again, and for the computer it needs to wait for 15 seconds.
3.1.9 If the equipment won’t be used for over a long period of time, please make sure the device is energized over 4 hours every three weeks.

3.1.10 Environment protection clause: Once the life is expired, the equipment should be disposed and recycled according to the local law and regulation for avoiding the pollution of the environment.

3.1.11 Requirements of electromagnetic compatibility: this device can not be placed in a strong electromagnetic field environment. Keep a distance of more than one meter from the other electromagnetic devices (such as heart pacemakers, cell phones, etc.) during the use of the device.

3.1.12 Chin rest and forehead hold which is touched by patient must be strapped with disposable medical cotton gauze. The cotton gauze must be replaced per patient to avoid skin contact and to prevent cross-infection between patients.

3.2 Warranty Statement

Commitment: The manufactory can supply the necessary information regarding the repairable parts specified by manufactory itself.

1. Our party will provide maintenance enquiry free for one life.
2. Our party will maintain the machine for free for one year since the date of purchasing if the machine is operated according to the operation instruction.
3. During the warranty period, the following circumstances will cause a charge for maintenance:
   - The damage caused by failure to apply the manual methods to use, maintenance and storage;
   - Take apart or amend the instruments without the permission of US OPHTHALMIC, which cause damage;
   - Damages is caused by accidents, use wrongly or caused by other major nature factors.

3.3 Manufacturer Responsibility

The company shall be responsible for the safety and performance reliability of the product under the following circumstances:

1. The assembling, adding additional parts, debugging, modifying or repairing of the device are carried out by the authorized engineer;
2. The installation of the device is in where the electrical facilities are complied with the specification requirements.
3. The device is used according to instruction requirements.
Chapter 4 Installation

4.1 Environmental Requirements

1) Use the device in a darkroom
3) The operation mode: Intermittent load continuous operation;
4) Type of protection against electric shock: Class I
5) Degree of protection against electric shock: BF
6) The instrument should be installed on level ground

4.2 Sort and count the inventory

4.2.1 All parts must be carefully took out from the shipping cartons, then sort and count the accessories according to the packing list. Make sure there is no shipping damage and the accessories are correct before the installation of equipment.

4.3 Installation of hardware

4.3.1 **EFC-5200** is the all in one model fundus camera, you will not need to do installation for optical body, but just start from Installing the Chin-rest and connecting the wires and install the cable cover box (as shown below)

![Image of EFC-5200 installation](image)

4.3.2 The connection steps of the computer mainframe and the camera body (Figure1)

a. Observe the back of the computer mainframe
b. Observing the USB interface, the USB ID Number can be found.
c. Insert the sequenced number of the USB cable into the labeled USB interface accordingly.

4.4 Installation of software

4.4.1 Installation of fundus camera software
Copy the software disk into the E drive, open the E drive and find the fundus camera software, and then open the corresponding folder according to the computer system software (XP system version or WIN 7 system version or WIN 8 system version)

1. **XP system version:**
   1. First install “dotnetfx35”, Open “dotnetfx35”, and double click and run “dotNetFx35setup.exe”
   2. and double click and run “FundusCamera.exe”
2. **WIN 7 system version:**
   Install “FundusCamera.exe” only, and double click and run “FundusCamera.exe”, the rest steps are the same like XP system version.

3. **WIN 8 system version:**
   (1) First install “dotnetfx35”, open “win8net3.5_25627” folder, and then double click and run “Win8__Net3.5_x64.exe”.
   (2) Install “FundusCamera.exe”, double click and run “FundusCamera.exe” the rest steps are the same like XP system version.
Chapter 5 Operation Steps

5.1 Power on

5.1.1 First, switch on the main power, open the monitor, and then turn on the computer, wait until the startup is complete. Switch on the power of fundus camera on the power box, and then turn on the camera’s power, the power of the printer can be turned on just before printing. After the computer enters the desktop page, double-click the desktop icon to enter into the fundus camera software system.

5.2 Preparation before examination

5.2.1 Color fundus photography
If the patient's pupil is bigger than 3.5mm, the color fundus photography can be done without using mydriatic. If the pupil size is less than 3.5 mm, the mydriatic must be used (applying the mydriatic drops according to its requirement). Understand patients’ refractive situation (whether have cataract, vitreous opacity problem, etc. which affect the quality of the photography); understand the clinical characteristic of the patient (may help in the targeting and shooting the lesion).

5.3 Software Introduction

The structure components of the software contents four parts: document management->data acquisition->image processing->Diagnostic Report

Document management: Establishment of patient's files, finding patient's information, can input, modify, delete patient's data.
Data acquisition: Getting fundus color picture through image collector and camera.
Image processing: Adjusting the image for getting the better quality, the measurements and labels can also be marked in the picture.
Diagnostic Report: Adding the processed image to the report list, and adding the diagnostic text information, the typical cases can also be added for future use.

5.4 Software application

5.4.1 Double click the "Ezer Retinal camera Retina Image system V1.0" icon on the desktop as follow:

5.4.2 Main interface as follow

Enter image capturing: selecting patient from waiting area or historic data for capturing image
Diagnosis opinion inputting: selecting patient’s thumbnail or date recording to diagnosis and printing.

Print: selecting patient from historic data list or any thumbnail for printing.

Image comparing: selecting two or more than two thumbnails for image comparing.

Export image: selecting any thumbnail or data from historic patient list for exporting image.

Register a new patient at the waiting area.

Delete a patient record in patient list: can either delete all information of the relating patient or delete only a record under this patient’s date database (note: when delete the record, it will delete all the pictures under this record at the same time)

Edit a selected patient’s information in the patient list.

Show all patient record in database, by pulling down the scroll bar to view.

Query/recall patient record in database. Search based on the conditions of patient name, doctor name, reference number, ID number, examination date, case type, diagnostic opinions, etc.

Import a patient listed in patient information into waiting area

Export a patient listed in waiting area/Cancel waiting
Thumbnail: You can select the thumbnail by single click the mouse or by mouse pulling.
Delete the thumbnail: choose the pictures which shall be deleted and then right click the mouse for deleting.

(1) Registering a patient

Click at to register a patient when the patient is not registered in the database. Fill in the information and then click the [OK] button to finish or click the [Entering continuously] to register the next patient without close the following pop-up window.

Note: The new created patients are all in waiting area, click the patient in the waiting area for collecting images.

(2) Save the name of the hospital:
Choose one examination date of one patient, and click at the [Diagnosis opinion] icon, input the hospital name and click [save], the system will save the hospital name eternal
Disease type: entering the type of disease according the picture captured from patient. The data can be recall by entering the type of disease in the future.
Image show: the description of the image can be saved and print out later.
Diagnosis opinion: the diagnosis of the image can be saved and print out later.

5.4.3 Image collection interface as follow:

- **Position fixation dots**: the position is fixed successfully when both of the white dots are located in the grey circle clearly.
- **Split-line**: When it is green, the focus is ready.
Mode: FP: Non-mydriatic or mydriatic fundus color photography
Parameter: the default setting of the fundus camera is "AUTO" (automatically set the flash intensity based on the patient pupil size). Other parameters can also be selected manually via the drop-down menu.

Internal fixation light: For internal and external fixation light switch, and changing the orientation of the fixation light, manual selection with the mouse: to take pictures through software.

OD or OS: Identify the left or right eye according to the joystick sensor system.

Shoot: The system is default set as "Fundus photography" model.

5.4.3.1 Color fundus photography operation procedure:

(1) **Set up**

New patient information. click  for setting the related patient information.

(2) **Image Acquisition**

Choose the related patient information at the waiting area, then choose  for entering into the camera mode, where the system will automatically switch to the black and white optical monitoring mode.

(3) **Patient’s position correction and photographing**

Guide the patient to put jaw on the chin rest frame, making the forehead of the patient nestled closely to the ribbon of the forehead bracket. Guide the patient to look at the fixation light, and adjust the lifting platform to the level of comfort.

(4) The photography process is as below:

1: Push the pedestal forward slowly to make the two light spot stay inside of the green circle
2: Push the transfer button to switch from anterior-posterior para-position
3: Adjust the pedestal joystick lightly to make the white spot stay inside the grey circle
4: Adjusting the focusing knob, until the up and down split line turn green; fine adjustment of the joystick(left and right, up and down, forward and backward) until the retinal image becomes symmetrical and does not have the stray light or any light leak. When the "position fixation dots" reach to one dot most clear moment, both of the yellow line turn green
5: Press the joystick button to capture the image, and the image will automatically transfer into the system data base.
⑥: The incorrect operation diagram:

- Light leak at the right side: adjust the joystick to make the image symmetrical; no lights should be appeared around the fundus image
- The position fixation dots diverge: adjust the joystick fine to make the position fixation dots stay inside of the grey circle
- Retinal image is not clear: The up and down split line are not aligned. Adjust the focusing knob until the up and down split line turn green.

(5) If the patient has photophobia, a single shot can be made by pressing the shooting button and releasing immediately, thus an image can be captured automatically and saved in the software.

5.4.4 Double-click any thumbnail at the main interface or image collection interface, and enter into the image processing interface, as follow:

- Image processing icon on the toolbar
- Thumbnail store area
- Video screenshot function: during playback or pause, click this key to grab the current image; shortcut: F12
- Image display area
- The status bar contains patient information: name, sex, date of birth,

- Print preview of current image
- Zoom in/out: left click the mouse to zoom out, and right click the mouse to room in; the mouse wheel can also be used to zoom
- Shift Image: view the enlarged image
Flying Magnifier: put the mouse on the image, the original effect is displayed at this part of image.

Adjust the brightness of image. Left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

Adjust the contrast of image. Left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

White/black setting: change the image into black and white.

Red: left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

Green: left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

Blue: left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

Gamma: left click the mouse to strengthen, and right click the mouse to weaken; The mouse wheel can also be used to strengthen and weaken.

Annotate Image: move the mouse to the position where you want to enter the text, and then type the text and right click to confirm, thus the text is printed on the image.

Arrow Mark: at anywhere in the image, hold down the left mouse button, pull the mouse to draw an arrow, release the mouse, the arrow is finished.

Length Measure: hold down the left mouse button to draw the line measurements, release the mouse once finished, and click the mouse button at anywhere to get the measurement result.

Area/Perimeter Measure: hold down the left mouse button to draw a line, then hold down the mouse to draw another line which is along with the previous line, and so on, and finally sealing the entire graph, then right click the mouse to finish the drawing, and then left click the mouse at anywhere to get the outcome; (Note: Graphic must be sealed in order to obtain correct results)

Angle Measure: Hold down the left mouse button to draw a line, release the mouse button, then hold down the left mouse to form another sideline, move the mouse to form any angle, release the mouse once finished, click the mouse button at anywhere to get the result.

Cup-disc ratio: holding down the left mouse button, and draw a large circle to trap the optic nerve on the fundus picture, and then draw a small circle in the large circle to trap the reflection of the optic nerve; right click the mouse to finish the graphic painting, and then left click the mouse button at anywhere to get the outcome.
5.4.5 Image comparison is as follow

(1) The comparison can be done only by selecting two or more sheets of thumbnail image at the main interface
(2) Directly print out the images at the image comparison interface, without inputting diagnostic advice
(3) Input diagnostic advice, and directly print without saving diagnostic results.
(4) Input diagnostic advice, click “save as” for record, then click “print”, the diagnostic result and image will be created under another record date.

5.4.6 Print preview:

(1) Select the print paper in three formats: A4, A5, A6
(2) Individual sheet printing: Support A5, A6 landscape printing formats

(3) Double sheet printing: Support A4, A5, A6 three formats.
(4) Three or four sheets printing: Support A4, A5, A6 three formats.

(5) Five or six sheets printing: Support A4, A5, A6 three formats.

(6) A6: one page print for maximum 6 photos, the rest will be printed out on the next page.

(7) A5, A4: one page print for maximum 12 photos, the rest will be printed out on the next page.

(8) Change photo printing sequence:
The results after the movement is as follow:

5.4.7 Fundus mosaic operation manual
(1) Selected two or more pictures arbitrarily at the main interface, click on the mosaic button, shown as below:
You may also import images in the image mosaic interface.

(2) Enter the image mosaic interface as shown below:

(3) Double-click on the needed picture in the mosaic storage interface to enter the screenshot interface, as shown below:
Since screenshot shape cannot be selected with view status, please ensure that the View button is unselected while choosing the screenshot shape.

1. Choosing the screenshot shape by requirement.

2. Select button: Select an interception area, you can move the select button to select the desired area.

3. View buttons: the image background turns to green. (You may also switch 2,3 steps according to your personal habits):
4. The OK button: Confirm the image has been taken;

5. Reset button: Cancels the selected area, restore the original state of the image;

6. Delete button: Click the Select button to select unwanted area, then click to delete; also you may directly select the unwanted area and right-click the mouse, then left-click to delete; (Above all could also be in the "Operation" by manual selected)

(4) Image captured Confirm, then back to the image mosaic interface as shown below:
5) Image mosaic interface, the captured image storage area, double-click on the "image", to put image into the "mosaic arranging area", as shown below:

1. Click and hold the left mouse button to move a single image position;
2. Click right mouse button on the image to make the following adjustment:

   Image mosaic interface buttons explanation:
   - selected area to be on top;
   - make selected area float on the present layer;
   - make the selected area lining under the present layer;
   - selected area to be at bottom;
   - selected area to be deleted;
   - delete picture of the image storage area;
   - delete picture of the screenshot image storage area;
   - import image;
Chapter 6 Maintenance and care

6.1. Maintenance and care

6.1.1 The objective lens must be in the dry and clean condition. During the examination, the patient's breathing should not contact the objective lens. Do not contact the lens with any hard object or finger for avoiding damage. If the lens is dirty, the cleaning methods must be in strict accordance with the method taught by trained personnel.

6.1.2 Scan and defrag the computer disk regularly, clean the host computer and monitor regularly with a dry cloth.

6.1.3 The equipment can be used only in a clean, dry indoor environment, better with air condition.

6.1.4 If the equipment won’t be used for over a long period of time, please make sure the device is energized over 4 hours every three weeks.

6.1.5 If the device breakdown, the manufacturer or a professional service person should be notified first.

6.1.6 Chin rest and forehead hold which is touched by patient must be strapped with disposable medical cotton gauze. The cotton gauze must be replaced per patient to avoid skin contact and to prevent cross-infection between patients. Disinfect the chinrest, frontlet, the operating handle with 75% medical alcohol.

6.2 Other notes:

⚠ Computers, monitors, printers and portable multi-socket should be placed outside the patient environment (1.5m outside), only the use of the camera can be placed in the patient environment.

⚠ The portable multi-socket should not be placed on the ground.

⚠ The other additional portable multi-socket or the extension cord should not be accessed to the system.

⚠ The portable multi-socket can only give the power supply to the system of this electrical equipment. The access of the non-system components into the portable multi-socket may cause the equipment become unable to work normally, or cause the leakage amount of the electricity exceed the standard limit which may lead to an electric shock hazard. And if the power is too large, it may cause a fire.
The maximum permissible load of the portable multi-socket is 220 V 10A

Camera operator can not touch the host computer and the patient at the same time

Camera operator can not touch the power system network components and the patient at the same time,

6.3 Component replacement

The fuse type on the fundus camera: T2AL 250V.

Turn off the equipment and unplug the mains supply plug. Unscrew the fuse cap and put a new fuse for replacement. Attention: the model of the fuse is T2AL 250V. Then put the cap back to place.

6.4 During the preventive maintenance of the equipment ensure that the device is powered down and the placement of the part is stable and reliable.

6.4.1 Check whether the pedestal is flexible or not every three months, if it is not flexible, use 75% of alcohol to clean the dust on guide rail of the pedestal, and then apply a little oil for lubrication.

6.4.2 Check all the cables every six months to see if there is any damage; if they are damaged please contact the manufacture or distributor company to buy the same wire for replacement.
Chapter 7 Transportation and Storage

7.1 The packaged fundus camera can be transported by ordinary vehicle, please pay attention to moisture, heavy load, and avoid severe vibration during transportation.

7.2 Should be stored in room where the temperature is between -5 °C ~ 45 °C, the relative humidity is less than 90%, the atmospheric pressure is between 760 hPa ~ 1060 hPa, non-corrosive gases and well-ventilated.

7.3 If the installed equipment needs to be moved or be transported in a short distance, all the cable between the equipment must be removed before the transportation. If the instrument must be transported in a long distance, re-pack it into its package for transporting.
Chapter 8 Symbolic interpretation

8.1 Symbolic interpretation

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<tr>
<th>Power on</th>
<th>Power off</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF</td>
<td>a.c. Alternating current</td>
</tr>
<tr>
<td>Notes! Look through the file</td>
<td>Earth wire</td>
</tr>
</tbody>
</table>

8.2 Packaging Symbols

- The transport package containing fragile items, please handle it with care.
- Handle the package that it must be stored the right way up. The arrows point towards the top of the package.
- Handle the package to keep out of the rain and not to store it in damp conditions.
- The packing items can stack up to three layers.
## 9.1 Common Faults

<table>
<thead>
<tr>
<th>Breakdown</th>
<th>Possible cause</th>
<th>Treating ways</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illuminating bulb dose not work</td>
<td>Power cord is not properly connected or the power cable is loose; main power supply or connection panel is switched off; bulb is burnt out; fuse is fused. The dysfunction of brightness adjustment knob.</td>
<td>Connect the power cord correctly; switch on the main power supply and connection panel; Change the bulb; Change the knob</td>
</tr>
<tr>
<td>The fixation light does not work</td>
<td>The wire of fixation lamp loose or lamp broken</td>
<td>Tighten the loose connections, change the fixation light.</td>
</tr>
<tr>
<td>Failure to transfer images</td>
<td>USB cable is loose, the system appears thermal fault,</td>
<td>Re-inserted the USB connection into the USB port, restart the computer.</td>
</tr>
<tr>
<td>Wizard prompts during the image transmission</td>
<td>Digital acquisition transfer model is not set</td>
<td>Set digital acquisition transfer model</td>
</tr>
</tbody>
</table>

### 9.2 Maintenance Contact

If the fault can not be excluded by the above guidelines, please contact our local distributor.