

CLARUS® 700

Instructions for Use



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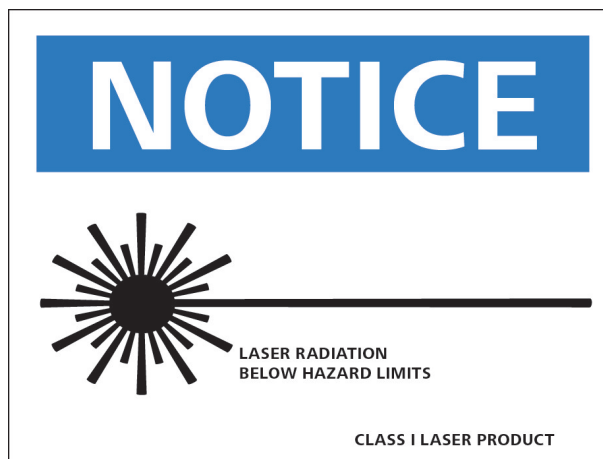
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1 Safety and Certifications

1.1 Compliance

CLARUS® 700 instruments from ZEISS are compliant with ISO 10940:2009 and ISO 15004-1:2006.

1.1.1 Laser Safety and Compliance



Complies with 21 CFR
Subchapter J

1.1.2 Optical Safety

CLARUS® 700 is compliant with the following optical safety standards:

- IEC 60825-1
- ANSI Z80.36
- ISO 15004-2
- **Classification:** Group 1 Instrument - Per ANSI Z80.36 and ISO 15004-2

Group 1 instruments are ophthalmic instruments for which no potential light hazard exists.

- Class 1 Laser Product – Per IEC 60825-1.












1.1.3 RoHS Compliance







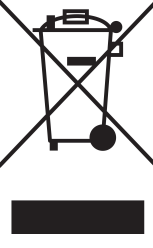



The product is RoHS-compliant according to Directive 2011/65/EU.

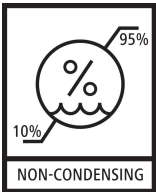
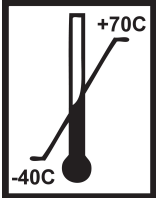


1.1.4 Electrical Safety

Electrical Safety Class I Equipment - Protection against electrical shock (per IEC 60601-1).

1.2 Symbols and Labels

Symbol	Meaning
	Warning
	Caution
	Note
	Electricity
	Must follow Instructions for Use
	Power On (computer)
	Power Off (computer)
	Protective Earth
	Fuse
	Direct Current
	Type B Applied Parts

Symbol	Meaning
	Manufacturer
	Authorized European Community Representative
	Serial Number
	Catalog Number/Part Number
	Model Number
LR 96697 	Certification mark of CSA – Nationally Recognized Testing Laboratory for US and Canada
	Disposal of the Product within the E.U. Do not dispose via domestic waste disposal system or communal waste disposal facility.
	Fragile
	Keep Dry
	This End Up

Symbol	Meaning
	Transport conditions: humidity (10% to 95%)
	Transport conditions: temperature (-40°C to 70°C)
	Transport conditions: atmospheric pressure (500 hPa to 1060 hPa)
	Caution: Federal law (or United States) restricts this device to sale by or on the order of a licensed healthcare practitioner

1.3 Warnings, Cautions, and Notes

1.3.1 Definitions

Warnings and cautions are defined as follows:

WARNING!

Indicates hazards that, if not avoided, could cause severe injury or death.

- ▶ These are actions that can be taken to prevent the hazard.

CAUTION!

Indicates hazards that, if not avoided, could cause minor or moderate injury.

- ▶ These are actions that can be taken to prevent the hazard.

1.3.2 Warnings

WARNING!

Opening the device covers may result in injury.

- ▶ Only ZEISS authorized service technicians may remove device covers.

 **WARNING!**

Tipping the device

may result in injury.

- ▶ Do not allow the patient to lean on the table or use it as a support to stand up.

 **WARNING!**

Modifying this device

may increase risks and decrease the service life of the device.

- ▶ Do not use in the presence of flammable gasses.
- ▶ Do not use in oxygen rich environments.

 **WARNING!**

Using this device in the presence of flammable gases

may cause ignition and result in a fire hazard.

- ▶ Do not use this device in the presence of flammable anesthetics or oxidizers such as pure oxygen or nitrous oxide.

 **WARNING!**

Use of this equipment adjacent to or stacked with other equipment

should be avoided because it could result in improper operation.

- ▶ If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

 **WARNING!**

Use of accessories, transducers, and cables other than those specified or provided by the manufacturer of this equipment

could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

- ▶ Use only the accessories, transducers, and cables specified or provided by ZEISS.

 **WARNING!**

Adding peripheral equipment or replacing parts

may result in noncompliance with the safety requirements of IEC 60601-1.

- ▶ You are responsible for ensuring that the system meets the safety requirements of IEC 60601-1.
- ▶ Only approved equipment to their respective IEC/ISO standards such as IEC 60601-1 or IEC 60950 are allowed to be connected to the Signal Input/Output parts (SIP/SOPs).
- ▶ Place any AC-powered, non-medical device peripherals at least 1.5 m away from the instrument and connect them to a separation device, unless an isolation transformer is used.

⚠ WARNING!

Unplugging the power cord is the means of disconnecting from the power supply.

Blocking access to the plug may result in an electrical hazard.

- ▶ Set up the instrument so that it can be unplugged easily.

⚠ WARNING!

Using parts that are not authorized by ZEISS

may compromise device safety during operation.

- ▶ Use only accessories authorized by ZEISS.
- ▶ In the U.S., call 800-341-6968. Outside the U.S., contact your local Zeiss distributor. You can find the ZEISS contact partner for your country on our website: www.zeiss.com.

⚠ WARNING!

Invisible Class 3B Laser Radiation Max 200mW @ 784nm.

This instrument incorporates a Class 3B Laser and exposure to potentially hazardous invisible laser radiation is possible.

- ▶ Avoid direct eye exposure. Protective eyewear required.
- ▶ Do not open the acquisition head cover to avoid exposure to Class 3B laser beam.
- ▶ Do not disassemble the Light Box while the laser is energized. In the case that the Light Box is disassembled with the laser energized, protective eyewear is required. See your manager.



⚠ WARNING!

Contact with the patient and a peripheral device

may cause an electric shock.

- ▶ Do not touch the patient and a peripheral device at the same time.

⚠ WARNING!

Device produces visual stimuli, including flickering light and flashing patterns, between 5 and 65 Hz

may adversely affect certain patients, although this effect is yet unproven.

- ▶ Medical professionals need to determine whether this device should be used for patients who may be photosensitive, including those with epilepsy.

 **WARNING!**

Unqualified personnel

may injure themselves or cause damage to the instrument.

- ▶ Only trained, qualified personnel may use this device.
- ▶ This device may be used only for its intended purpose.
- ▶ Only ZEISS authorized personnel may perform maintenance or repair procedures not described in this manual.

 **WARNING!**

Use of the acquisition device, a printer, or the power table with an extension cord or a power strip (multiple portable socket outlet)

could cause electrical shock to the patient or operator.

- ▶ Do not use extension cords with the instrument.
- ▶ If you plug something other than an instrument into the Multiple Socket Outlet (MSO), the MSO may not have the designed level of safety.
- ▶ Do not use power strips with the instrument.
- ▶ Do not plug in any other equipment into the same wall outlet as the instrument.
- ▶ To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

1.3.3 Cautions

 **CAUTION!**

Use of controls or adjustments or performance of procedures other than those specified herein

may result in hazardous optical radiation exposure.

 **CAUTION!**

Attempting to carry out activities not specifically endorsed by ZEISS

may void your warranty and could result in damage to the instrument.

- ▶ Read the user documentation.
- ▶ Follow directions carefully.
- ▶ Do not make upgrades, or carry out repairs or modifications, without specific guidance and instruction from ZEISS or an authorized ZEISS representative.

 **CAUTION!**

Improper cleaning

may result in inadequately disinfected equipment.

- ▶ Refer to the cleaning instructions in this Instructions for Use and local and national disinfecting regulations.

⚠ CAUTION!

Connecting the instrument to the Internet

increases its vulnerability to serious security risks, including viruses and worms that could disable your system or adversely affect its performance and may void the instrument warranty.

- ▶ Transfer data through internal networks.
- ▶ Ensure that all firewalls and internet security applications are up-to-date and running.
- ▶ Connecting the device to the internet or transferring data via USB devices may result in compromised patient privacy and expose the network to malware.

⚠ CAUTION!

Installing or putting the device into service without regard to EMC information provided

may void your Device warranty, result in damage to the instrument and/or compromise safety for patients and operators.

- ▶ This instrument has special EMC precaution requirements and needs to be installed and put into service according to the EMC information provided herein.

⚠ CAUTION!

Using this instrument with patients who are light-sensitive, including epileptics

may cause nausea or harm to the patient.

⚠ CAUTION!

Attempting to decommission your system

may result in damaged equipment and danger to personnel.

- ▶ Never attempt to decommission a ZEISS system or instrument. Only ZEISS approved representatives are qualified to safely decommission your system.
- ▶ Contact your ZEISS approved representatives to set up an appointment for system or instrument decommissioning.

⚠ CAUTION!

Packaging and transport by non-ZEISS personnel

could result in damage, loss, or non-compliance within the country of transit.

- ▶ Allow only change to Zeiss approved representative to prepare the instrument and associated components for transport.
- ▶ Allow only ZEISS-approved personnel to transport the instrument and associated components.

⚠ CAUTION!

Do not lift or carry the instrument using the patient support.

The patient support could break if used as a carrying handle.

- ▶ Make sure you support the instrument from the base whenever you carry the instrument.

⚠ CAUTION!

Portable RF communications equipment (including peripherals such as antenna cables and external antennas)

should be used no closer than 30 cm (12 inches) to any part of the device, including cables specified by the manufacturer.

- ▶ Otherwise, degradation of the performance of this equipment could result.

⚠ CAUTION!

This instrument is intended for use in a professional healthcare facility environment.

Using the instrument in any other environment may void the warranty and compromises the safety of the patient and/or operator.

⚠ CAUTION!

Image Degradation

If image quality is degraded or image is absent from display, please contact Zeiss customer service.

- ▶ The physician must decide whether the image is appropriate for diagnosis

⚠ CAUTION!

Injected dye can have side effects for some patients.

Adverse patient reactions to dye can interfere with FA image series completion or require a second FA image series (including dye injection).

- ▶ Read all dye manufacturer's documentation carefully.
- ▶ Heed all information regarding dye side effects and contraindications.
- ▶ If repeating an FA image series, consult the manufacturer's documentation regarding contraindications before additional dye injections.

1.3.4 Notes

NOTE

Transferring data via USB devices

may result in compromised patient privacy and expose the network to malware.

- ▶ Use access controls to ensure that only authorized personnel use the device.

NOTE

Connecting the device to a network that includes other equipment

may result in previously unidentified risks.

- ▶ You are responsible for analyzing and controlling these risks.
- ▶ You must reassess these risks when you make any changes to the network, including connecting, disconnecting, or upgrading equipment.

NOTE

Unprotected devices

may be at risk from unauthorized individuals.

- ▶ Select and set the Password strength setting in the User management screen.

1.4 Report Serious Accidents

Report any serious incident related to this instrument, the operator, patient, or anyone else:

- To the instrument manufacturer or distributor.
- (European Union only) To the competent authority in the state where the instrument operator is established.

1.5 Essential Performance

The main clinical performance of the CLARUS® 700 instrument is to capture, display and store images to aid in the diagnosis and monitoring of diseases and disorders occurring in the retina, ocular surface and visible adnexa. Since there are no surgical or treatment decisions made solely on data obtained by the instrument, it was determined that the CLARUS® 700 has no "essential performance" as defined in IEC 60601-1 standard.

1.6 Electromagnetic Compatibility (EMC)

WARNING!

Installing or putting the device into service without regard to EMC information provided

may void your ZEISS instrument warranty, result in damage to the instrument and/or compromise safety for patients and operators.

- ▶ This instrument has special EMC precaution requirements and needs to be installed and put into service according to the EMC information provided herein.

⚠ CAUTION!

This instrument is intended for use in a professional healthcare facility environment.

Using the instrument in any other environment may void the warranty and compromises the safety of the patient and/or operator.

NOTE

The emissions characteristics of this equipment

make it suitable for use in industrial areas and hospitals (CISPR 11 Class A).

- ▶ If it is used in a residential environment, this equipment might not offer adequate protection to radio-frequency communication services.
- ▶ The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

Electromagnetic Emissions [▶ 19] and Electromagnetic Immunity [▶ 19] are required per IEC 60601-1-2:2014.

1.6.1 Electromagnetic Emissions

This instrument complies with the following emission requirements:

Phenomenon	Standard
Conducted and radiated RF emissions	Group 1 CISPR 11 Class A
Harmonic distortion	IEC 61000-3-2 Class A
Voltage fluctuations and flicker	IEC 61000-3-3: Complies

Table 1: Electromagnetic Emissions

1.6.2 Electromagnetic Immunity

This instrument complies with the following immunity requirements:

Phenomenon	Basic EMC standard or test method	Immunity test levels
Electrostatic Discharge	IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air
Radiated RF EM fields	IEC 61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	See Wireless Communications [▶ 21]
Rated power frequency magnetic fields	IEC 61000-4-8	30 A/m 50 Hz or 60 Hz

Phenomenon	Basic EMC standard or test method	Immunity test levels
Electrical fast transients / bursts	IEC 61000-4-4	± 2 kV 100 kHz repetition frequency
Surges line-to-line	IEC 61000-4-5	± 0,5 kV, ± 1 kV
Surges line-to-ground	IEC 61000-4-5	± 0,5 kV, ± 1 kV, ± 2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V 0,15 MHz – 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz
Voltage dips, short interruptions, and voltage variations on power supply input lines	IEC 61000-4-11	0 % UT ¹ ; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % UT ¹ ; 1 cycle and 70 % UT ¹ ; 25/30 cycles Single phase: at 0°
Voltage Interruptions	IEC 61000-4-11	0 % UT ¹ ; 250/300 cycle

Table 2: Electromagnetic Immunity

¹UT is the a.c. mains voltage prior to application of the test level.

1.7 Wireless Communications

Test Frequency (MHz)	Band (MHz)	Service	Modulation	Maximum Power (W)	Distance (m)	Immunity Test Level (V/m)
385	380 - 390	TERTRA 400	Pulse 18 Hz	1.8	0.3	27
450	430 - 470	GMRS 460, FRS 460	FM \pm 5 kHz deviation 1 kHz sine	2	0.3	28
710 745 780	704 - 787	LTE Band 13, 17	Pulse 217 Hz	0.2	0.3	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse 18 Hz	2	0.3	28
1720 1845 1970	1700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1,3,4,25; UMTS	Pulse 217 Hz	2	0.3	28
2450	2400 - 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse 217 Hz	2	0.3	28
5240 5500 5785	5100 - 5800	WLAN 802.11 a/n	Pulse 217 Hz	0.2	0.3	9

Table 3: Test specifications for enclosure port immunity to RF wireless communications equipment.

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2 Introduction

2.1 Scope

2.1.1 Intended Use / Indications for Use

The CLARUS® 700 ophthalmic camera is indicated to capture, display, annotate and store images to aid in the diagnosis and monitoring of diseases and disorders occurring in the retina, ocular surface and visible adnexa. It provides true color and autofluorescence imaging modes for stereo, widefield, ultra-widefield, and montage fields of view.

CLARUS® 700 angiography is indicated as an aid in the visualization of vascular structures of the retina and the choroid.

2.1.2 Contraindications for Angiography

Injected dye can have side effects for some patients. Read all dye manufacturer's documentation carefully regarding dye side effects and contraindications.

Because there is a possibility of adverse effects of dye injections, only perform fluorescein angiography at the direction and under the supervision of a licensed physician.

- Always ask the patient for known allergies and compare it with the contraindications of the dye.
- Be aware of possible allergic reactions when dye is injected.

2.2 Usage

CLARUS® 700 is designed for continuous use in a professional healthcare facility environment.

The mode of operation for the table is 2 minutes on and 20 minutes off.

2.3 Intended Audience

The CLARUS® 700 **Administrator** creates a username and password for each user and assigns them a *role*. These roles are:

- **Operator**
- **Doctor**
- **Administrator**

For more information, refer to: About User Roles.

2.3.1 Patient Profile

This device may be used on any patient who is able to sit upright with his or her face in the instrument's chin and forehead rest, independently or with assistance.

2.3.2 Operator Profile

2.3.2.1 Intended Demographic

This device is intended for use by the following trained professionals:

- Opticians
- Ophthalmic Photographers
- Optometrists
- Ophthalmologists
- Medical Assistants
- Clinical Researchers

2.3.2.2 Required Skills

Operators are expected to have the following skills:

- Knowledge of how to capture fundus images
- Experience managing patients
- Experience with the Microsoft Windows operating system and applications based on it

2.3.3 Doctor Profile

2.3.3.1 Intended Demographic

Doctors are ophthalmologists, optometrists, or other health care professionals with training in interpretation of fundus images.

2.3.3.2 Required Skills

Doctors are expected to know how to evaluate fundus images.

2.3.4 Administrator Profile

2.3.4.1 Intended Demographic

Administrators maintain the facility's computers, instruments, and networks.

2.3.4.2 Required Skills

Administrators are expected to know:

- Windows administration principles
- Networking principles
- Data management principles
- Permissions and user assignment principles
- The site or facility systems, including:
 - Network(s)
 - Computers and connections
 - Medical record system connections
 - Instrument connections

2.4 User Documentation

2.4.1 Purpose

The user documentation that comes with your device is provided to ensure that all users operate and maintain it safely and successfully.

- Read all user documentation before starting and using the device
- Keep all user documentation where it is accessible at all times for all users
- Pass the user documentation on to the next owner of the device

2.4.2 Access

User documentation for your device is provided on the USB drive that came with the device as part of the Instrument Accessory Kit.

2.4.3 Conventions Used in This Document

Certain types of information are specially marked in this document for better recognition.

- This is a list.
 - This is a second level list.

This is a cross-reference: Questions and comments [▶ 25].

This is `software code or program text`.

The name of software windows are Capitalized. For example: "Patient Screen"

Names of menus, and buttons or other selectable items, are shown in **Bold**.

- **View** menu.
- **File > Save as**
- **My documents > Documents**

2.5 Questions and Comments

If you have questions or comments about this user documentation or the device, contact your ZEISS representative.

2.6 System Overview

2.6.1 System Description

CLARUS® 700 is a non-contact, high-resolution imaging device for in vivo imaging of the human eye. Imaging modes include:

- True color reflectance imaging
- FAF-Blue (Fundus autofluorescence with blue excitation)
- FAF-Green (Fundus autofluorescence with green excitation)
- Fluorescein angiography (FA)
- Stereo imaging
- External eye imaging

2.6.1.1 Principles of Operation

Using a monochromatic camera, a broad line of illumination scans across the retina.

Red, green and blue Light Emitting Diodes (LEDs) sequentially illuminate to generate true color images. The broad bandwidth of LEDs gives a true color rendering. Blue and green LED illumination enables Fundus AutoFlourescence (FAF) imaging and Fluorescein Angiography (FA) imaging.

By illuminating only a narrow strip of the retina at a time, the illumination stays out of the viewing path, keeping haze and fluorescence of the anterior segment out of the retinal image and allowing a clear view of much more of the retina than the annular-ring illumination used in traditional fundus cameras. The design allows a single exposure to image an area of the retina previously covered by the 7-fields in the Early Treatment of Diabetic Retinopathy Study (ETDRS).

2.6.1.2 Key Features

Scan Types

- True color
- FAF-Green
- FAF-Blue
- Fluorescein angiography (FA)

Field of View Options

- **Widefield:** A single image with a 133° FOV when measured from the center of the eye.
 (90° when measured as described in ISO 10940).
- **Ultra-widefield:** Two images stitched together into a montage with a 200° FOV when measured from the center of the eye.
- **AutoMontage:** a 4-scan montage using preset fixation targets.
- **Montage:** 2-6 widefield images stitched into a single, combined retina image.

Additional Options

- Stereo imaging
- External eye imaging

2.6.2 Hardware Overview

CLARUS® 700 is connected to the All-in-One PC using cables mounted under the table. The operator controls the instrument and software using the instrument joystick, the All-in-One PC touch-screen, wireless keyboard and touchpad.

2.6.2.1 System Hardware



Figure 1: System Hardware

1	Acquisition Head	2	All-in-One PC
3	Keyboard Tray	4	Touchpad
5	Joystick	6	Keyboard

2.6.2.1.1 USB Locations



Figure 2: USB Port Locations (6 total)

1	(2) USB 2.0; Side	2	(4) USB 3.0; Bottom
---	-------------------	---	---------------------

2.6.2.2 Patient View



Figure 3: Patient View

1	Forehead rest	2	Front lens
3	Chin rest	4	Chin rest adjuster

2.6.2.3 Operator Controls

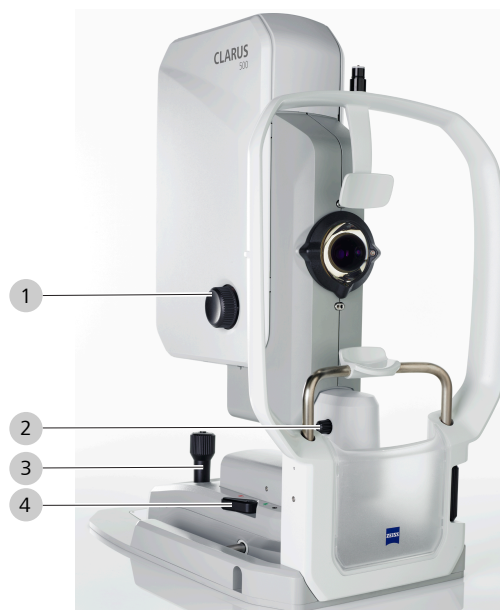


Figure 4: Operator Controls

1	Focus knob	2	Friction knob
3	Joystick	4	Cross-table lock

2.6.2.4 External Fixation Target

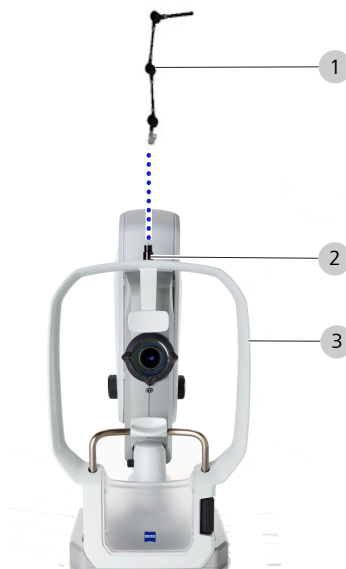


Figure 5: Installing the External Fixation Target

1	External Fixation Target	2	External Fixation Target Mount
3	Patient Support		

2.6.3 Application Overview

The instrument software includes three distinct areas: **Patient**, **Acquire**, and **Analyze** windows. All windows use the same top toolbar.







2.6.3.1 Main Toolbar










Figure 6: Main Toolbar - Instrument



Figure 7: Main Toolbar - Review Station

1		Navigates to the patient management screen.
2		<i>(Instrument Only)</i> Navigates to the scan acquisition screen.
3		Navigates to the Analyze screen to: <ul style="list-style-type: none"> ■ View a proof sheet of the patient's scan and select which scans to review. ■ Review, adjust, edit, and annotate scans. ■ Create reports.
4		Quickly hides the screen for patient privacy
5		Opens screen brightness adjustments.
6		Opens notification volume controls.

7	<i>(Review Station Only)</i>	
		Indicates that the review station is in standalone mode.
		Indicates that the review station is in standalone mode and DICOM is enabled.
		Indicates that the review station is in instrument mode and connected to an instrument.
		Indicates that the review station is in instrument mode and <i>not</i> connected to an instrument.
8		Opens the Settings to configure the instrument and set your preferences
9		Minimizes the application on the computer's desktop
10		Allows you to log off or shut down the CLARUS® 700 application

2.6.3.2 Patient Window

Use the **Patient** window to find, edit, and add patient records.

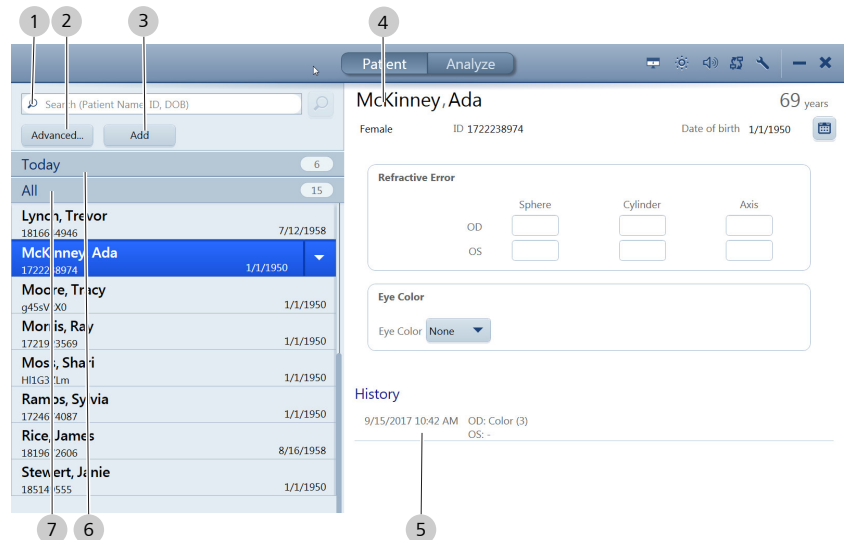
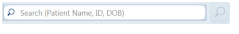
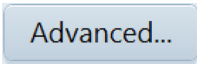





Figure 8: Patient Screen

1		Searches for a patient record by patient name, ID, or date of birth
2		Opens the Advanced search, which allows a more detailed search

3		Allows you to create a new patient record
4	Patient data	Displays data about the selected patient
5	History	Lists the selected patient's scans from prior visits
6		Lists patient records available on the local database
7		Lists patient records for the patients scheduled today

2.6.3.3 Acquire Window

Use the **Acquire** window to set image capture options and capture images.

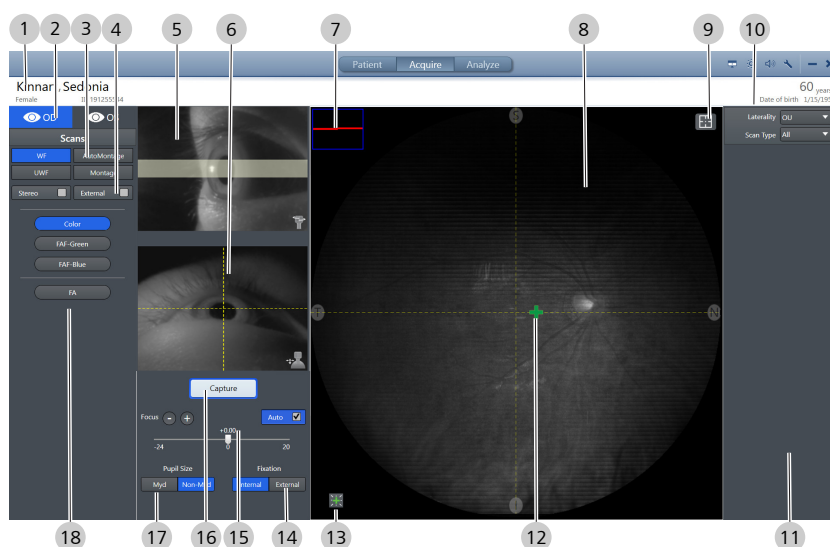

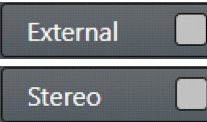
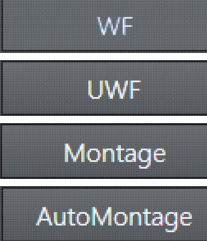
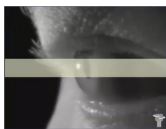
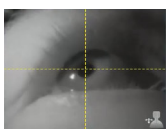

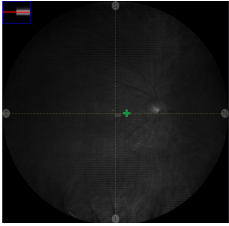




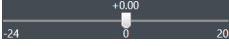


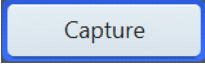

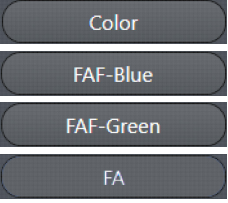


Figure 9: Acquire Window

1	Patient data	Information about the currently selected patient.
2		Indicates which eye is being captured (the CLARUS® 700 automatically detects laterality).
3		Special imaging features: external eye image or stereo image pair (see: Additional Imaging Options [▶ 111]).
4		Selects the field of view for the scan (see: Field of View Options).

5		Alignment preview (up/down): to help when adjusting the patient and instrument for proper height alignment.
6		Alignment preview (right/left and forward / back): to help when adjusting the patient and instrument for proper side-to-side and proximity alignment.
7		Focus aid helps you determine when the image is focused.
8		Displays a live, infrared preview image prior to capture and a quality check image following capture.
9		Selects a particular area of the image to optimize focus.
10	Thumbnail filters	Filters the capture bin by laterality or scan type.
11	Capture bin	Displays thumbnails of images that have already been captured, along with the capture settings.
12		Sets the location for the patient to direct their gaze.
13		Blinks the internal fixation target for a configurable amount of time.
14		Toggles between internal fixation and external fixation targets.
15		Displays the current focus and allows for manual focus adjustments.
		Fine focus adjustment buttons allow you to increment more precisely.
		Auto determines the best focus setting automatically.
16		Captures the image
17		Toggles between mydriatic and non-mydriatic acquisition modes.

18		Selects the type of scan to capture (see: About Acquisition [▶ 108]).
----	---	---

2.6.3.4 Analyze Window - Proof

The **Analyze** window has two screens:

- **Proof** to view and select images
- **Review** to compare and edit images

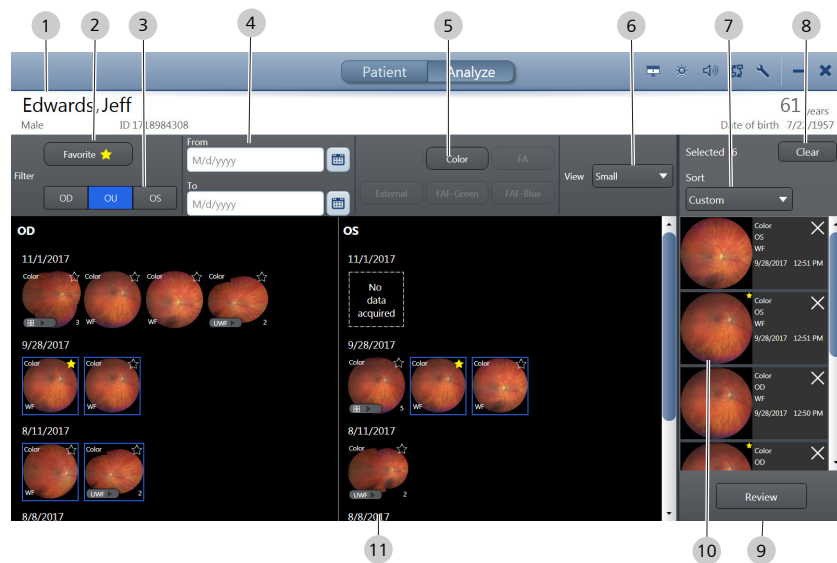
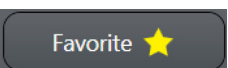


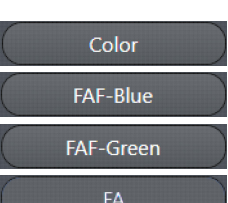
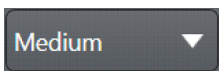

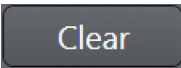
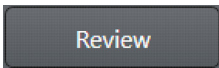


Figure 10: Analyze Window - Proof

1	Patient data	Displays information about the currently selected patient.
2		Flags selected thumbnails with a yellow star for easy identification.
3		Allows you to filter the thumbnails by laterality to show one or both eyes.
4		Allows you to filter the thumbnails to show only those taken between the start date and end date you set.
5		Allows you to select which type(s) of scans to show.

6		Allows you to select thumbnail image size: <ul style="list-style-type: none"> ■ Small ■ Medium ■ Large
7		Allows you sort the thumbnails by: <ul style="list-style-type: none"> ■ Scan Type ■ Laterality ■ Date/Time ■ Custom
8		Removes all thumbnails from the selection bin.
9		Opens the Review screen for viewing and editing the images in the selection bin.
10	Selection bin	Displays thumbnails of selected images.

2.6.3.5 Analyze Window - Review

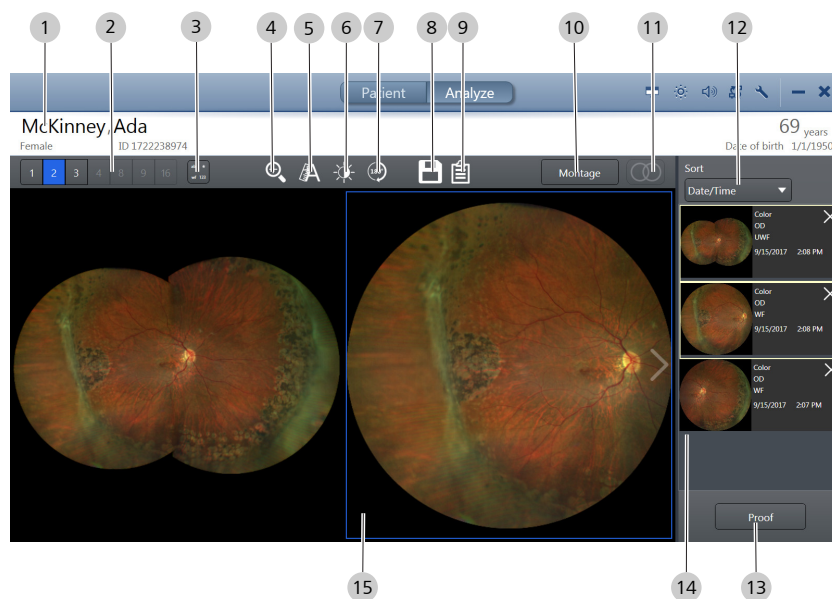
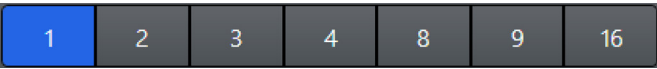







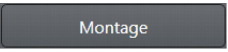

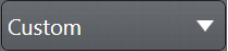
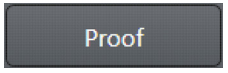


Figure 11: Analyze Window

1	Patient data	Provides information about the selected patient.
2		Controls how many images to view simultaneously in the main display area (see Choosing How Many Images to View [▶ 135]).
3		Shows or hides the image metadata information in the corners.

4		Opens the Zoom slider (see Zooming In or Out [▶ 138]).
5		Opens the Annotation tool panel (see: Annotating Images [▶ 140]).
6		Opens the brightness, contrast, saturation, and sharpness sliders (see Adjusting Image Brightness [▶ 148]).
7		Rotates the image 180° (see Rotating Images [▶ 149]).
8		Saves the edited image (see Saving Edited Images [▶ 151]).
9		Opens a preview of the report to print (see: Creating a Report [▶ 152]).
10		Allows you to select and create a montage (see: Manually Creating a Montage [▶ 149]).
11		Displays linked, side-by-side view of a Stereo image pair.
12		Allows you sort the thumbnails by: <ul style="list-style-type: none"> ■ Scan Type Laterality Date/Time Custom
13		Returns to Proof .
14	Selection bin	Displays thumbnails of the selected images.
15	Viewport	Allows you to see the selected images.

2.6.4 Networking Overview

CLARUS® 700 can run as a standalone instrument storing patient and exam data locally, or it can be connected to a network server or EMR system to share data and worklists in a central location.

WARNING!

Adding peripheral equipment

may result in noncompliance with the safety requirements of IEC 60601-1.

- ▶ You are responsible for ensuring that the system meets the safety requirements of IEC60601-1.
- ▶ Place any AC-powered, non-medical device peripherals at least 1.5 m away from the device and connect them to a separation device, or else use an isolation transformer.

WARNING!

Connection to It-Networks including other equipment

could result in previously unidentified risks related to patients, operators or third parties.

Changes to the IT networks could introduce new risks that require additional analysis.

Changes to the IT networks include:

- ▶ Changes to network configurations
- ▶ Connections of additional items
- ▶ Disconnection of items
- ▶ Update of equipment
- ▶ Upgrade of equipment

⇒ The Responsible Organization should identify, analyze, evaluate and control these risks.

Empty page, for your notes

3 Installation

3.1 Hardware Installation

Your instrument will be installed by qualified ZEISS representatives. Do not attempt to install the instrument yourself.

WARNING!

Unauthorized Installation

Unauthorized installation could lead to the injury of patients and operators, as well as to property damage.

- ▶ Only ZEISS authorized personnel may install Zeiss products.

WARNING!

Powering peripherals directly through a wall socket

could result in electrical shock to the patient and/or examiner.

- ▶ When using a printer in the USB configuration, always power the printer through an isolation transformer. Some ZEISS equipment comes with an isolation transformer that may be used by plugging into a special power strip provided with the equipment. Talk to your ZEISS Service Representative to determine if this is true for your equipment.
- ▶ If you are not sure, plug all peripherals (such as a printer), into an isolation transformer. This requires a special power cable. In North America, the required cable has an IEC-320-14 connector on one end and a NEMA 5-15R connector on the other end. This cable is included in the accessory kit shipped with the instrument.

CAUTION!

Do not lift or carry the instrument using the patient support.

The patient support could break if used as a carrying handle.

- ▶ Make sure you support the instrument from the base whenever you carry the instrument.

CAUTION!

This instrument is classified as stationary equipment.

Attempting to move the instrument could cause overbalancing and tipping.

- ▶ Do not move the instrument from one room to another.
- ▶ Contact your ZEISS Service Representative if you want to move the instrument from the room where it was originally installed.

3.1.1 Preparing to Install

CAUTION!

This instrument's optics are sensitive to environmental dust.

Keep the lens and the instrument covered when not in use:

- ▶ Cover the lens with the lens cap after capturing images.
- ▶ Cover the instrument with the dust cover after daily instrument shutdown.

Install the CLARUS® 700 instrument in an environment that meets the following requirements:

- no direct sunlight
- properly grounded, dedicated 15 A power source that meets all local electrical codes
- not connected to a power strip
- the device's ventilation openings are not blocked
- the device is not exposed to water or other liquids

Do not modify the instrument or use cables not provided by ZEISS.

The CLARUS® 700 instrument arrives on a pallet with three boxes that contain all parts and accessories needed to assemble the instrument and table.

3.2 Software Installation

CAUTION!

All instruments and review stations on the network must run the same software version.

- ▶ Once you begin an update, complete updates for every instrument and review station on your network without delay.

The CLARUS® 700 system ships with the software application installed on your instrument. From time to time you will be notified to upgrade system software (Upgrading Instrument Software and the Review Application [▶ 45]).

You can install the review application on any compatible laptop or computer that clinicians use to review scanned images (Installing Review Software [▶ 41]).

3.2.1 Preparing to Install Software

Anti-Virus software could conflict with system installation files causing the installation problems or prevent software from launching. Common conflicts include:

- Misidentifying installation files as possible threat.
- Quarantining required installation files.

Before installing software:

1. Configure anti-virus software to exclude the following folders from on-access and on-demand scanning:
 - ⇒ C:\Program Files\CZM\CLARUS
 - ⇒ C:\ProgramData\Carl Zeiss Meditec\Review
(Review software only)
2. Suspend anti-virus detection (temporarily; during installation only).
3. Complete software installation.
4. Restore anti-virus detection.

3.2.2 Installing Review Software

You can install review software on computers that clinicians use to compare, analyze, annotate and save scans acquired with the CLARUS® 700 instrument.

NOTE

If you need to uninstall review software, use the Windows control panel for adding and removing programs.

The computer must meet the following minimum requirements:

- Runs on:
 - Windows 7
 - Windows 8
 - Windows 10¹
 - Windows 2008 Server R2
 - Windows 2012 Server R2
- Has an Intel processor with a Passmark benchmark score of at least 5675
- Has at least 8 GB of memory
- Has a monitor with resolution set to at least 1024 x 768

If you encounter problems during installation, refer to: Installation Troubleshooting [▶ 169].

NOTE

Review software does not support: adding, editing, or deleting a patient record.

Adding, editing, or deleting a patient record

Deleting a scan

Adding users or user accounts

Adding, editing, or deleting the Institution data

NOTE

When installing review software on a review station running Windows 10, make sure you set the resolution to 1280 x 1024 before opening the review software.

If you do not set the screen resolution properly, the screens can appear distorted.

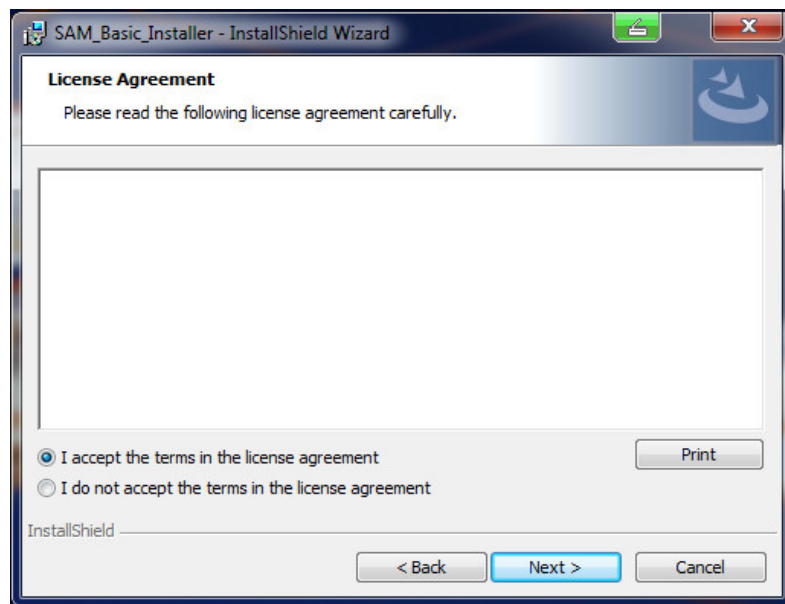
Prerequisite

- The computer and monitor meet the minimum requirements listed above.

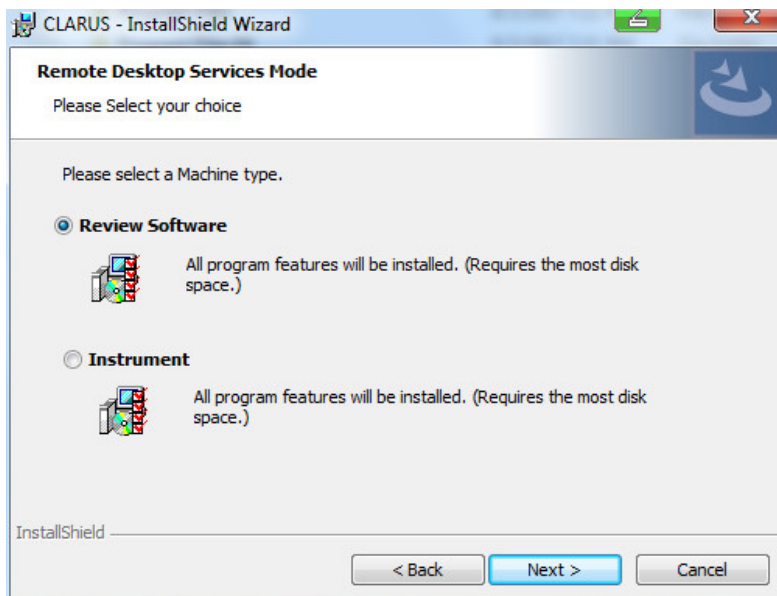
Action

To install review software:

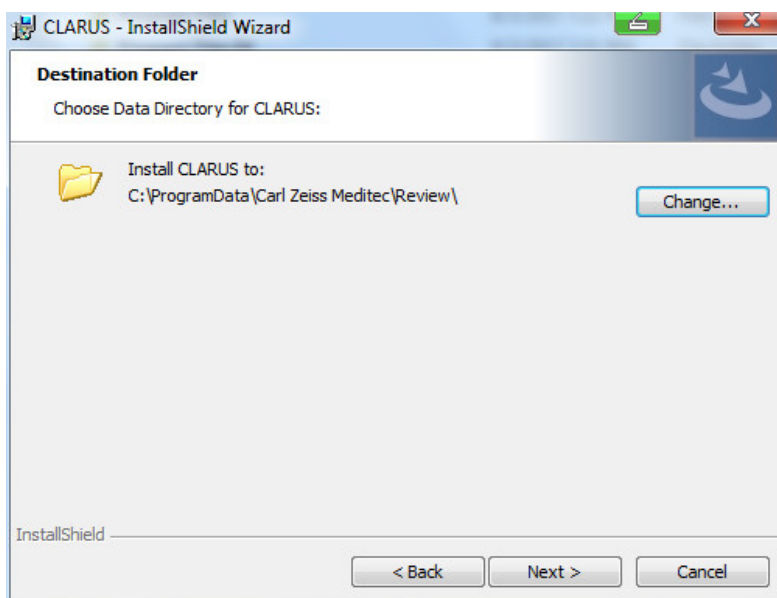
1. Insert the software media into the review station computer's USB drive.
2. In the CLARUS® 700 software folder, double-click on `setup.exe`.
 - ⇒ A confirmation opens.
3. Click **Next**.
4. Accept the license agreement, then click **Next**.



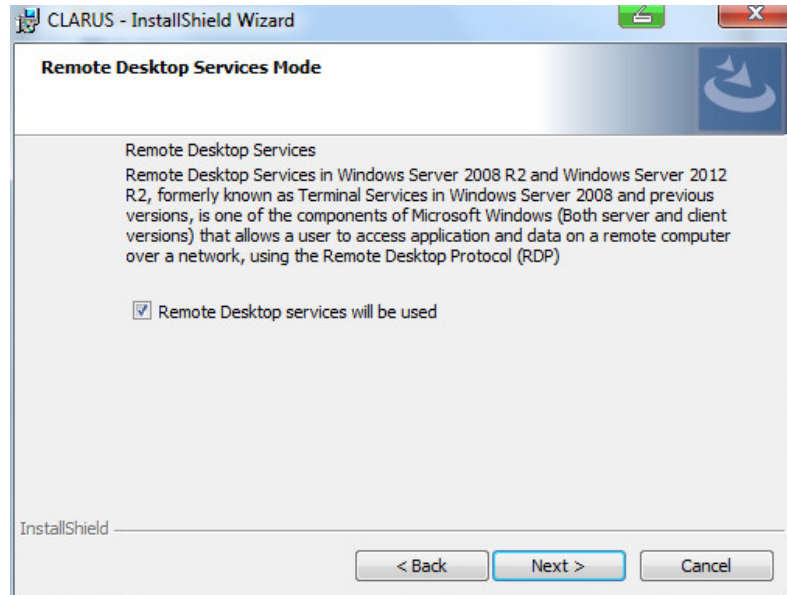
5. Type the user name and organization name and click **Next**.
6. Select **Review Software**, then click **Next**.



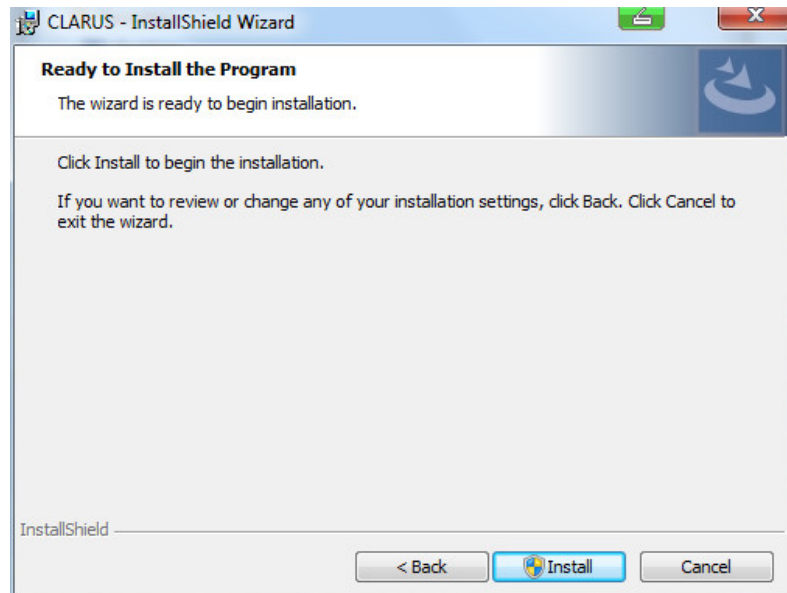
7. If you want to choose a different destination folder for the review software, click **Change...** and browse to the desired folder.



8. Click **Next**.
9. If this review software will use Remote Desktop Services, check **Remote Desktop services will be used**.



10. Click **Next**.

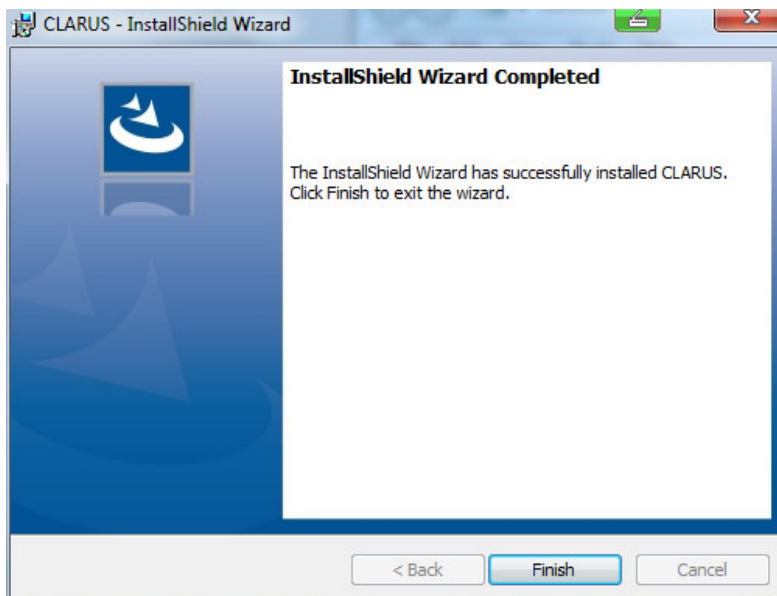


11. Click **Install**.

12. If your system prompts you to confirm changes on the computer, click **Yes**.

⇒ Review software installation begins. Installation takes several minutes to complete.

13. When installation is complete, click **Finish**.



⇒ Installation completes and the configuration wizard opens.

14. Set the screen resolution to 1280 x 1024.

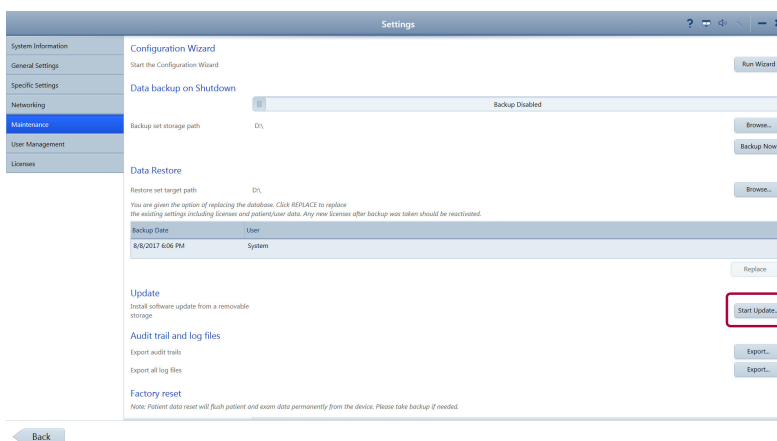
For more information about the configuration wizard, refer to:
Setting All Options [▶ 50].

3.2.3 Upgrading Instrument Software and the Review Application

Prerequisite
Action

Settings are open (Opening Settings [▶ 49]).

1. Select the **Maintenance** tab.
2. Under **Update**, click **Start Update...**



⇒ A confirmation opens.

3. Click **Yes**.

✓ The software installs and the system reboots.

Result

When you upgrade instrument or review application, CLARUS® 700 retains stored information including:

- Logins and Passwords
- Patient Data
- Exam Data

4 Daily Startup

NOTE

If a critical system test fails take the device out of service.

If a non-critical test fails or a warning appears, you can continue using the instrument.

Contact your ZEISS representative.

Each time you turn on the CLARUS® 700, system diagnostics checks that the system initialized correctly and is running properly.

If the diagnostic check detects any problems, an error or alert message displays. For more information about startup errors and alerts, refer to: Troubleshooting [▶ 163].

4.1 Turn on the Instrument

To turn on the CLARUS® 700 instrument:



Action

1. Turn on the instrument.
2. When the system test sequence completes, click **Continue**.
3. Log in (Logging In [▶ 47]).
 - ⇒ The **Patient** window displays.

Also see about this

📄 Troubleshooting [▶ 163]

4.2 Logging In

After the system boots up and runs a series of system checks, the login screen opens. The login screen also appears when a user logs out.

NOTE

Passwords are case-sensitive.

An Administrator must add a user's name and password before that user can log in. (Adding a New User [▶ 66])

Action



To log in:

1. Double-click on the CLARUS® 700 application icon.
⇒ The login screen opens.
2. Select your user name.
3. Type your password.

5 Configuration

5.1 About User Roles

Not all users have access to all features. The table below list some of the key differences for different types of users.

	Operator	Doctor	Adminis- trator
Acquire scans	X	X	
Review scans	X	X	
Select, edit and annotate scans	X	X	
Use review software installed on a separate computer	X	X	
Reset your own password	X	X	X
Delete a local patient record	X	X	X
Save and print reports	X	X	X
Import and export data	X	X	X
Configure import and export settings	X	X	X
Configure general settings		X	X
Configure network settings			X
Configure data backup			X
Restore data from a backup			X
Perform system maintenance			X
Manage licenses			X
Reset other user's passwords			X
Add or delete users			X
Export log files			X

Table 4: Permissions Levels

5.2 Opening Settings

The **Settings** icon is on the top toolbar of all application windows. You can open settings from any screen in the application.

Setting options allows you to configure the application the way you want to use it. Different types of users can set different options. For more information about settings permissions, refer to: About User Roles.

Tab	Settings
System Information	<ul style="list-style-type: none"> ■ Product name, version, and manufacturer ■ Software name, version, and manufacturer ■ Number of patients and exams in the database ■ Disk storage space (in use and remaining) ■ System alerts and history
General Settings	<ul style="list-style-type: none"> ■ Your institution information ■ Duration for displaying alerts ■ Local date, time, and language ■ Carl Zeiss Teleservice ■ On-screen keyboard ■ Patient name and ID settings ■ Printer and reports
Specific Settings	<p>Acquisition settings:</p> <ul style="list-style-type: none"> ■ Capture preview duration ■ Fixation target blink duration ■ Scan type presets <p>Import and Export Settings (DICOM and FORUM)</p>
Networking	Network connection settings
Maintenance	<ul style="list-style-type: none"> ■ Record backup and restore ■ Application update ■ Log files ■ Factory reset
User Management	<ul style="list-style-type: none"> ■ Create, edit, and delete users ■ Change passwords
Licenses	<ul style="list-style-type: none"> ■ View, activate, repair, and return licensed features

Table 5: Settings



Action

Result

To open settings:

1. Click on the **Settings** icon on the toolbar.

✓ The **Settings** window opens.

5.3 Setting All Options

CLARUS® 700 has an initial settings wizards that you can also use for checking or resetting options.

NOTE

Only Administrators can complete this task.

Prerequisite

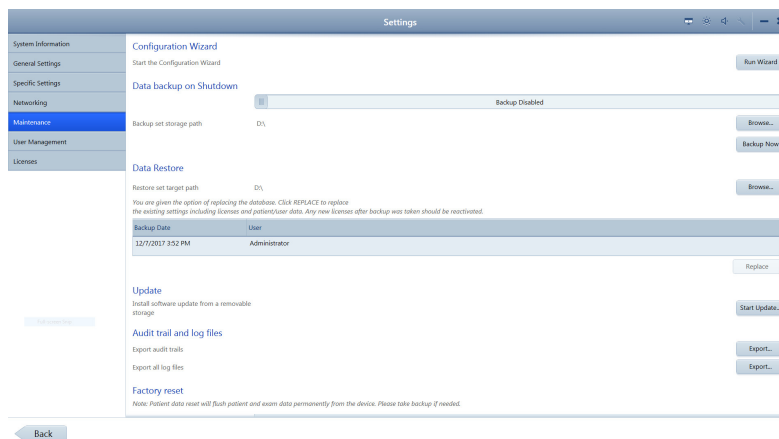
Action

To set all options using the wizard:

Settings are open (Opening Settings ▶ 49).

1. Click **Maintenance**.

⇒ The **Maintenance** settings opens.



2. Click **Run Wizard**.

⇒ The initial settings wizard opens and steps you through settings.

5.4 Managing Data

5.4.1 Manage Patient Records

When patient records are imported from an EMR, they are reconciled with local records as follows:

- Same ID and Issuer of ID, different name, date of birth, or gender: The local record is updated to match the EMR record.
- Different ID or Issuer of ID: A new patient record is generated.

Some EMR systems allow records that are missing key identifying information. The CLARUS® 700 instrument automatically adds the default "Unknown" if the name is missing, but rejects records that do not have a Patient ID or date of birth.

5.4.1.1 Adding a Patient

Adding the patient's name, date of birth, and gender are required.

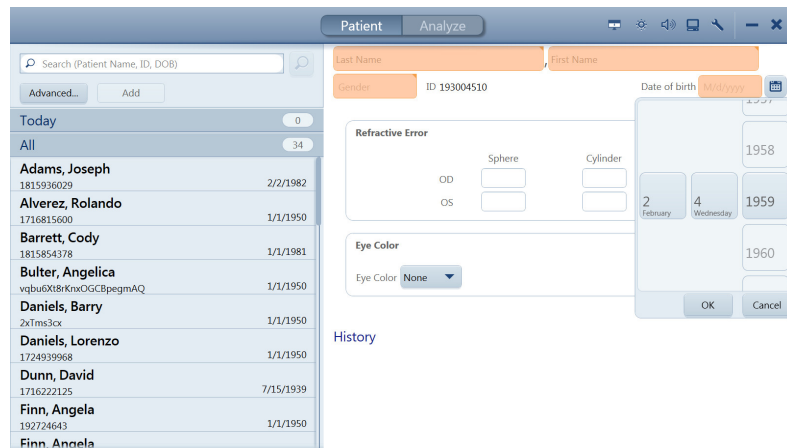
To add a patient:

The **Patient** window is open.

1. Click **Add**.

Prerequisite

Action



2. Type the patient's first and last name.
3. Select the patient's gender.
4. Select the patient's date of birth.
5. (Optional) Type the patient's **Refractive Error** information.
6. (Optional) Select the patient's **Eye Color**.
7. To acquire a scan, click **Acquire**.

5.4.1.2 Merging Patient Records

If two records are inadvertently created for the same patient, they can be merged to store all the patient data in one record.

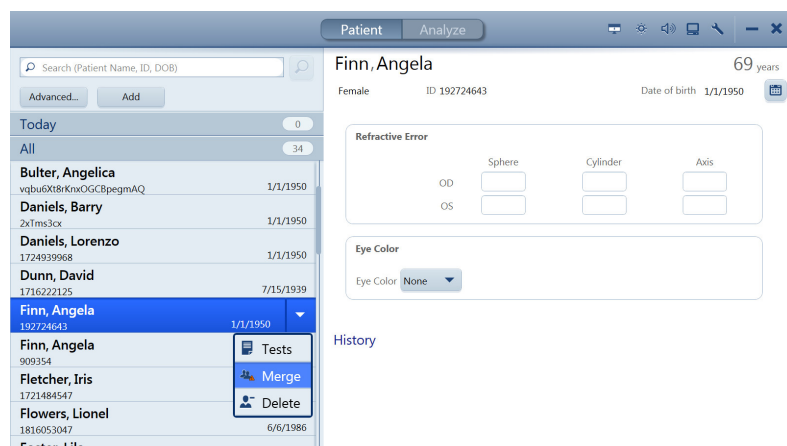
To merge patient records:

Prerequisite

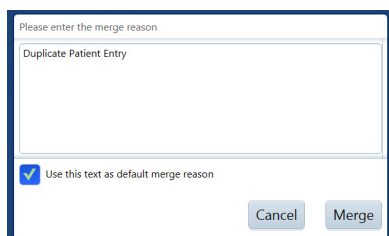
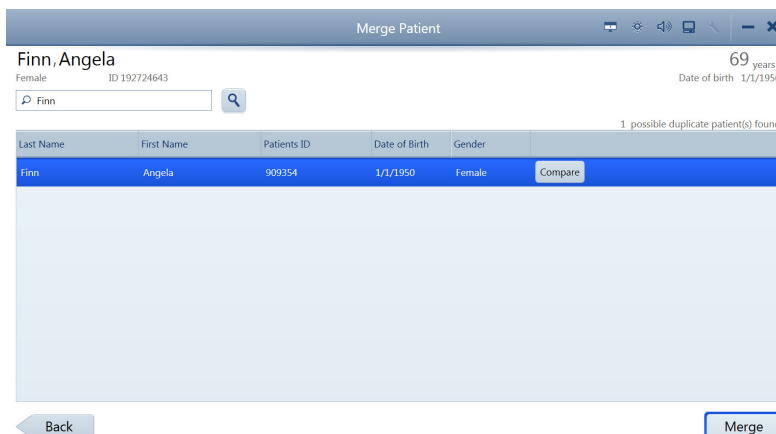
- The **Patient** window is open.

Action

1. Select the patient name and click on the down arrow.



2. Select **Merge**.
3. Type the name or ID for the duplicate patient record in the search field and click **Search**.



4. Select the duplicate patient record(s). You can merge up to 20 patient records.
5. To see the details of selected patient records side by side with the original record, select **Compare**.
6. Select **Merge**.
7. Enter a reason for the merge, then select **Merge** again.
 - ⇒ The exam data from the duplicate patient record is added to the original patient record.

5.4.1.3 Reassigning Image Scan

If you inadvertently select the wrong patient record at the beginning of an exam, you can reassign the data to the correct patient record.

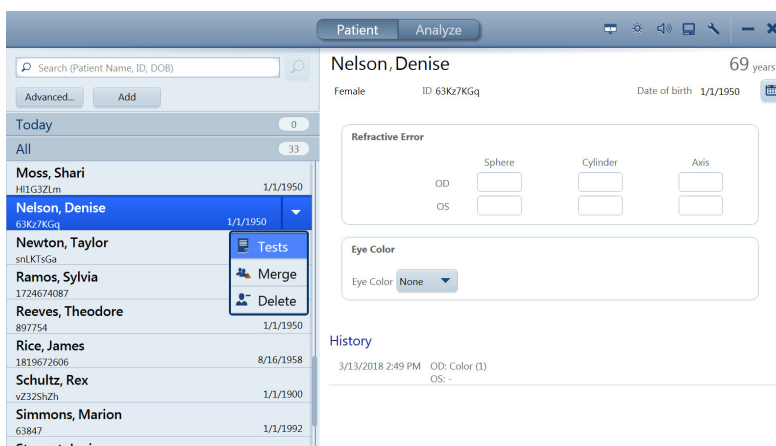
To reassign test data:

Prerequisite

- The **Patient** window is open.
- The patient with incorrect test data is selected (Finding a Patient [▶ 102]).

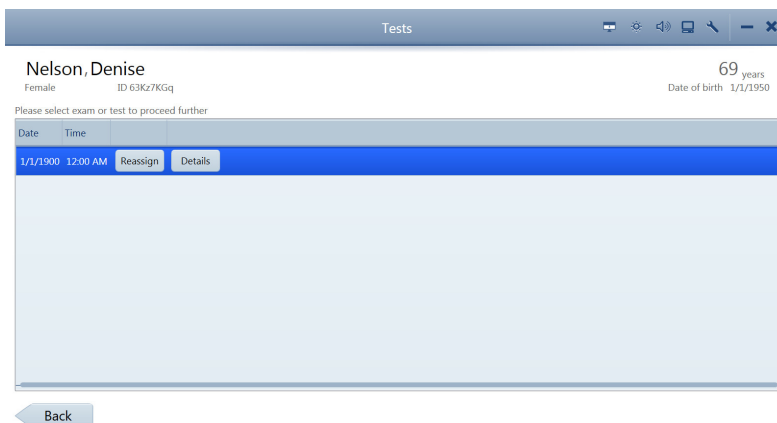
Action

1. Click the down arrow for the patient with test data that you want to reassign.



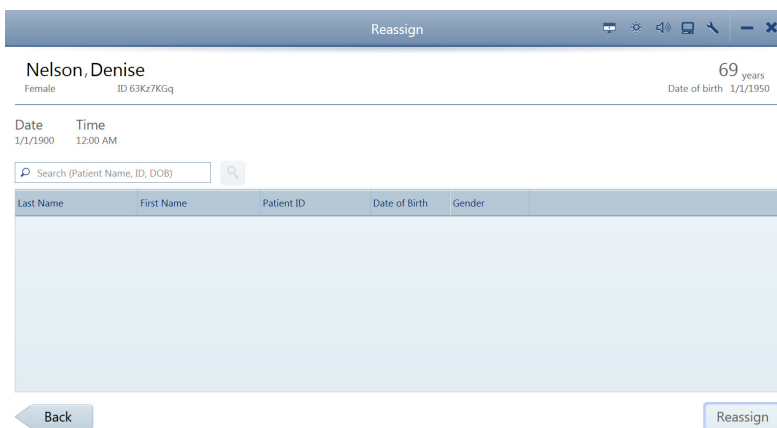
2. Select **Tests**.

⇒ A list of the tests assigned to the patient opens.

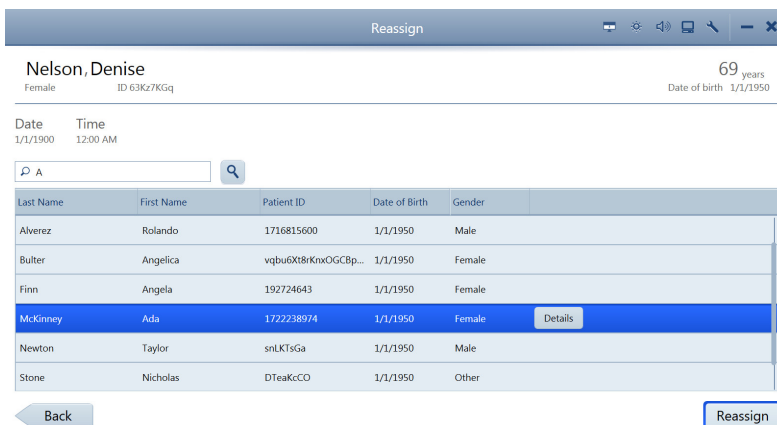


3. Select the incorrectly saved test and click **Reassign**.

⇒ The **Reassign** page opens.



4. In the search field, type the name, ID number, or DOB of the patient the test data belongs to and click the search icon.



5. Select the correct patient and click **Reassign**.

- ⇒ A confirmation opens.
- 6. Type a reason for reassigning the test.
- 7. Click **Reassign**.

5.4.1.4 Deleting a Patient Record

NOTE

Only Administrators can complete this task.

Patients deleted on the instrument are not deleted from the EMR system.

To delete a patient record:

- The **Patient** window is open.
- The instrument is not connected to FORUM or any other EMR system.

Prerequisite

Action

1. In the **Patient** window, select the patient name and click on the down arrow and select **Delete**.
 - ⇒ A confirmation opens.
2. Click **Delete**.

5.4.1.5 Manually Correcting Laterality

You can change the laterality of an image after it is saved using the **Review** or **Proof** screen.

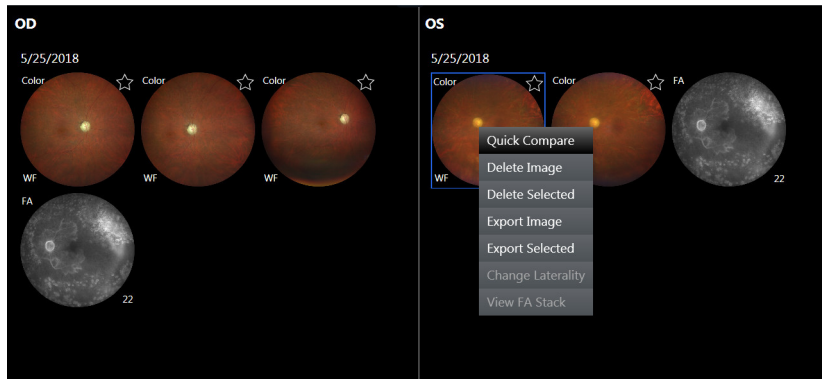
Laterality change feature does not work under the following conditions:

- After the data is exported
- In connected mode (FORUM)
- On imported data

To correct laterality manually in Proof:

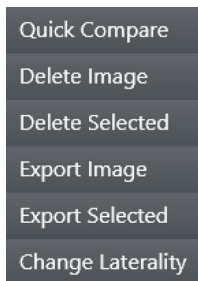
Prerequisite

Proof Sheet is open (Opening the Analyze Window [▶ 132]).



Action

1. Right-click on the image.
⇒ A menu opens.
2. Select **Change Laterality**.
⇒ A confirmation opens.
3. Click **OK**.



Result

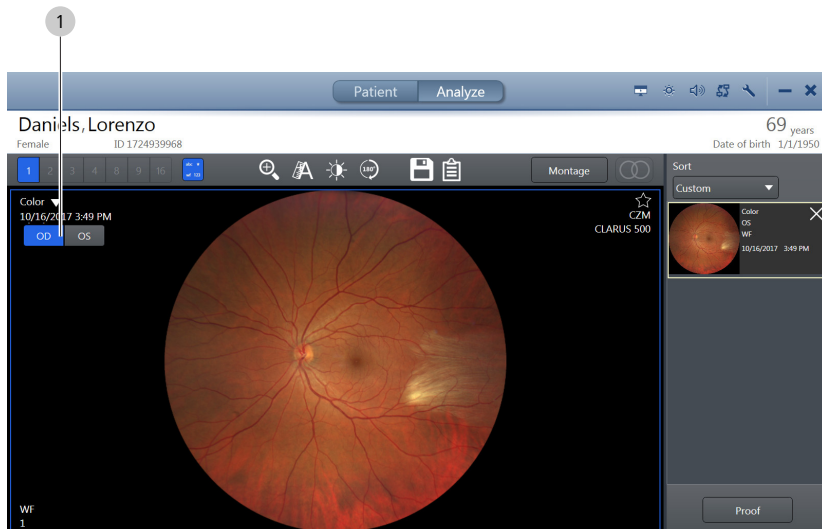
✓ The thumbnail changes laterality.

To correct laterality manually in Review:

Prerequisite

The **Review** screen is open (Opening the Analyze Window [▶ 132]).

4. Select the image you want to change.
5. Click on the current laterality indicator in the preview panel.
⇒ The other laterality appears for selection.



6. Click the desired laterality.
⇒ The laterality indicator changes.
7. Click **Save**.

5.4.1.6 Importing Data

You can import individual exams or multiple exams (bulk import). After you import files, you must **Shut Down** and re-launch the CLARUS® 700 application to see the newly imported data.

You can import the following file formats:

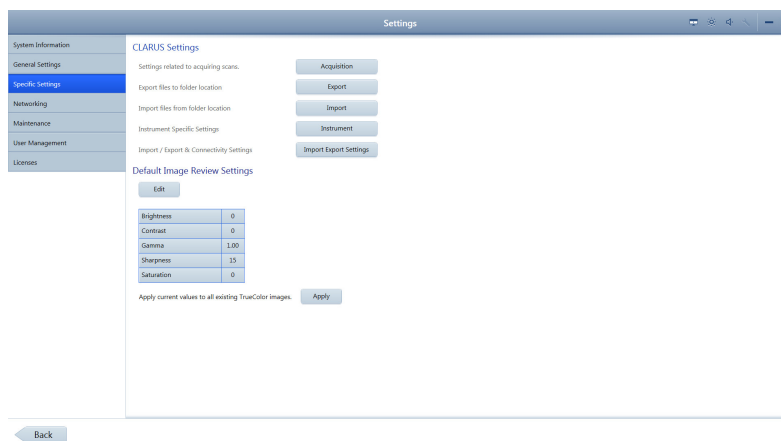
- JPG
- TIFF
- PNG
- JPEG2000
- DICOM
- ZIP (compressed)

To import data:

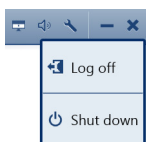
- Settings are open (Opening Settings [▶ 49]).
1. Insert the removable media into the USB port.
 2. Click **Specific Settings**.
⇒ The **Specific Settings** panel opens.

Prerequisite

Action



3. Click **Import**.
4. Click **Import...** and navigate to the file stored on the external removable media device.
5. Click **Select**.
⇒ A confirmation informs you when the import completes.
6. Click **OK**.
7. **Shut Down** the CLARUS® 700 application.
8. Re-open the CLARUS® 700 application.



Result

- ✓ The newly imported data is available.

5.4.1.6.1 Data Integrity of Imported Records

For all imported patient records, it is possible to import new scan data and update patient data, including obscured patient records. If during import the device encounters information associated with a patient that was already imported, the device does the following:

- imports all scan data (exams) not previously imported, but never deletes nor overwrites any scan data already imported
- updates patient data only if it was created on a later date than the data already imported. This prevents overwriting of newer patient data with older patient data

5.4.1.7 Exporting Data

NOTE

Before you export images in DICOM mode, configure export settings appropriately (see: [Configuring Export Settings \[▶ 63\]](#)).

- ▶ Ensure that the **Compression** setting is turned off.

You can export data in multiple ways:

- In the **Proof** or **Review** screen, select an image and right-click.
- In the **Proof** screen, select multiple images and right-click.
- Export all of a patient's data; select **Settings > Specific Settings > Export**.
- Set automatic export (Configuring Export Settings [▶ 63])

To export data:

- ☑ Settings are open (Opening Settings [▶ 49]).

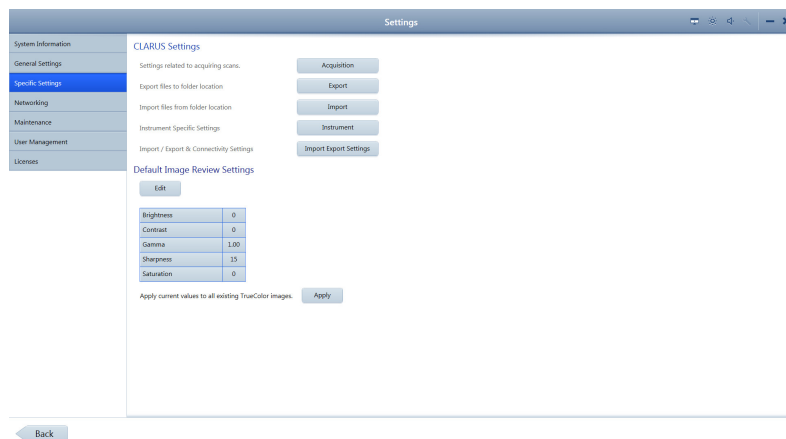
1. If you are exporting to removable media, insert the media into the USB port.

2. Click **Specific Settings**.

⇒ The **Specific Settings** panel opens.

Prerequisite

Action



3. Click **Export**.

⇒ A list of all patients opens.

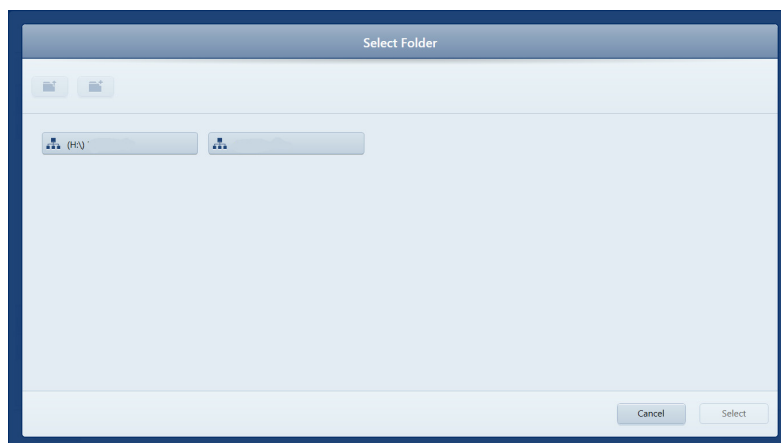


4. To select all patients, click **All**.

5. To select one or more patients individually, check the patients you want to export.

6. To deselect the selected patients, click **None**.

7. Click **Export**.



8. Navigate to the folder you want to use for export and click **Select**.

⇒ A progress bar appears until export is complete.

9. Click **OK**.

⇒ The data exports and a confirmation opens.

10. Click **OK**.

5.4.1.7.1 Exporting a Montage from the Proof Sheet

From the **Proof Sheet**, you can export individual component scans of a montage image or you can export the entire set, which includes the combined (montage) image and all of its component images.

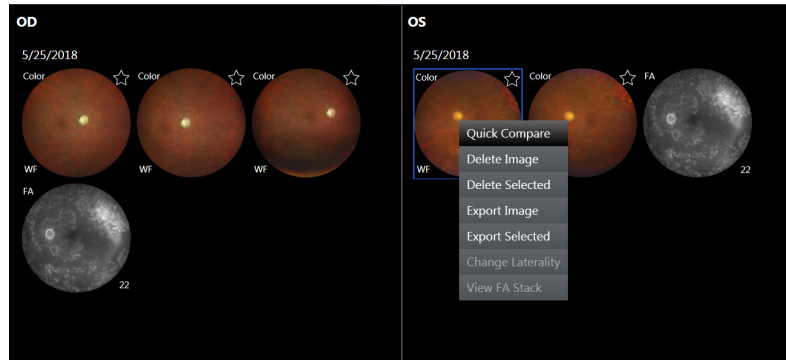
To export individual component scans of a montage:

Prerequisite

- A patient with at least one montage image is selected (Finding a Patient [▶ 102]).
- Proof Sheet** is open (Opening the Analyze Window [▶ 132]).

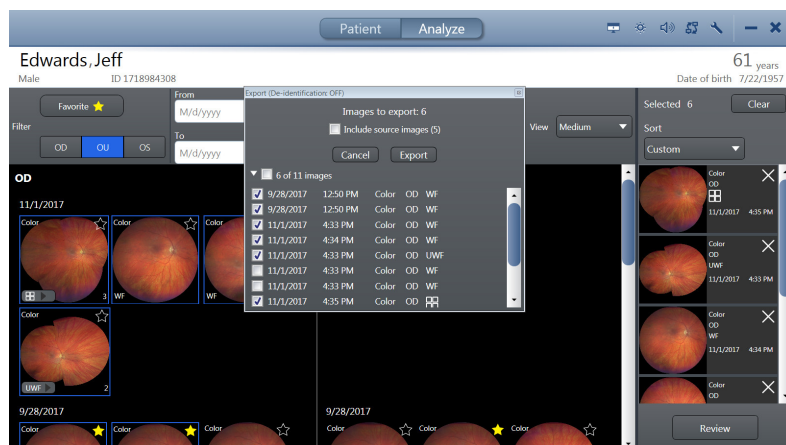
Action

1. Right-click on a montage image.
 - ⇒ A menu opens.

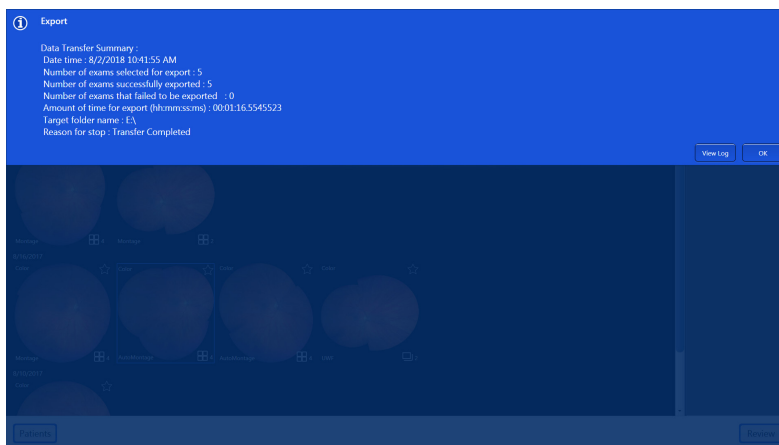


2. Click **Export Selected**.

⇒ A list of images to export opens. The montage image and each of its component images are listed.



3. Check the component image(s) or montage image that you want to export.
4. Click **Export**.
5. Navigate to the folder for the exported image(s) and click **Select**.
 - ⇒ A progress bar opens while the image(s) export.
 - ⇒ When the export completes, a summary opens.



6. Click **OK**.

5.4.1.7.2 Exporting a Montage from Montage Review

From the **Review** screen you can export the entire montage set, which includes the combined (montage) image and all of its component images.

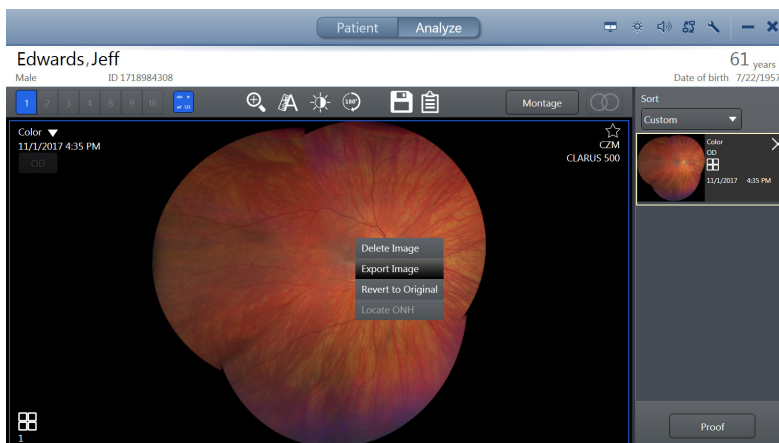
To export a full set of montage images:

Prerequisite

- A patient with at least one montage image is selected (Finding a Patient [▶ 102]).
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).

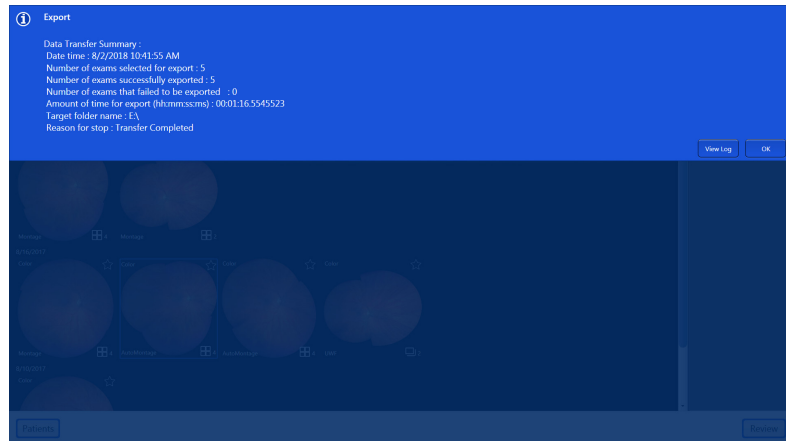
Action

1. Right-click on a montage image.
 - ⇒ A menu opens.



2. Click **Export Selected**.
3. If a de-identification message opens, click **Ok**.
 - ⇒ A list of images to export opens. The montage image and each of its component images are listed.
4. Navigate to the folder for the exported images and click **Select**.
 - ⇒ A progress bar opens while the images export.

⇒ When the export completes, a summary opens.



5. Click **OK**.

5.4.1.8 Configuring Import Settings

You can choose automatic import of images and data from a folder.

NOTE

If you use an EMR system, make sure you complete the networking settings

to ensure that automatic export can connect to your EMR server.

To configure import settings:

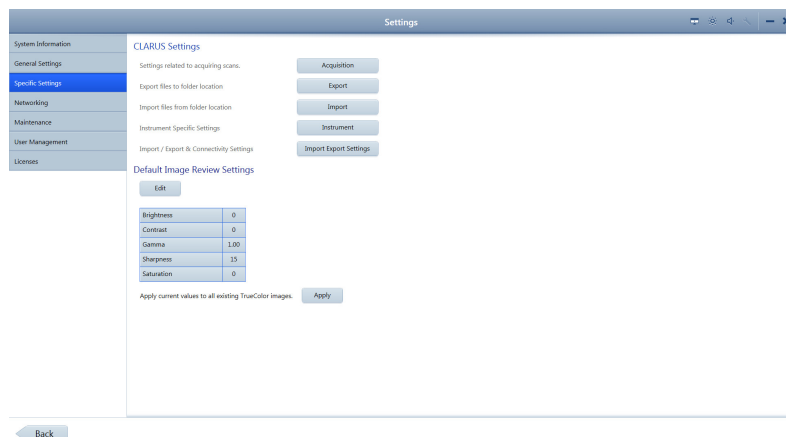
- Settings are open (Opening Settings [▶ 49]).
- A folder for automatic imports is created and you know the path to it.

Prerequisite

Action

1. Click **Specific Settings**.

⇒ The **Specific Settings** panel opens.



2. Click **Import Export Settings**.

3. Under **File import**, set **Auto import files** to **On**.
4. Click **Browse...** and navigate to the folder to use for automatic importing.
5. Click **Select**.
 - ✓ The folder path appears next to the **Browse....** button and files stored in that location will be automatically imported.

Result

5.4.1.9 Configuring Export Settings

NOTE

If you use an EMR system, make sure you complete the networking settings

to ensure that automatic export can connect to your EMR server.

You can choose automatic exporting of images and data settings, including:

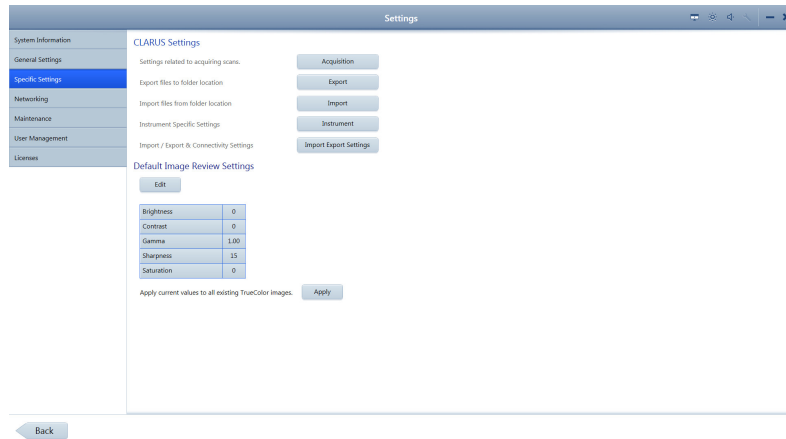
- How often to automatically export images and patient data (logout or shutdown)
- What type of EMR server to send the exported images and data and the server path
- What image format to use for export
- What report format to use for export
- Whether to compress files on export
- Whether to remove patient demographic information from exported exam data

To configure export settings:

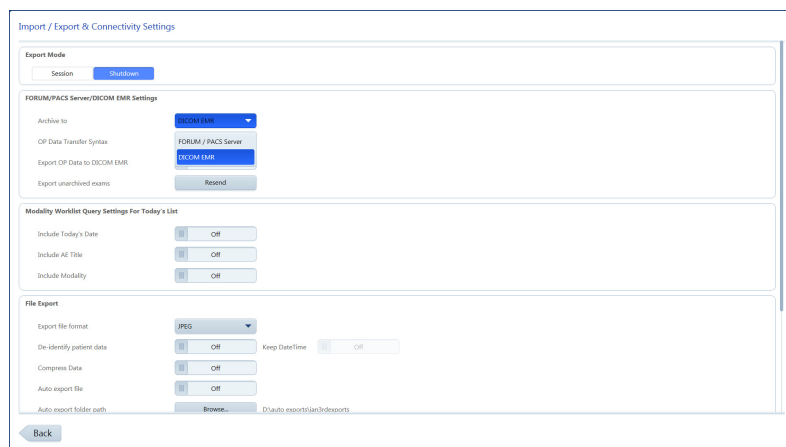
- ☑ Settings are open (Opening Settings ▶ 49)].
1. Click **Specific Settings**.
 - ⇒ The **Specific Settings** panel opens.

Prerequisite

Action



2. Click **Import Export Settings**.



3. Set the frequency of automatic exports:
To set automatic export when a user logs off, click **Session**.
To set automatic export when a user shuts down the ZEISS application, click **Shutdown**.
4. If you use and EMR system, select the type (FORUM/PACS or DICOM).
5. Under **File Export**, select the file format for images (DICOM, JPEG, PNG, TIFF, JPEG2000).
6. To automatically removes patient demographic information from exported exam data, set **De-identify** patient data to **On**.
7. Set **Compress Data** to **OFF**.
8. For **Report Export**, select whether to use PDF, ePDF or both formats.

5.4.1.10 **Configuring Scan Default Settings**

You can change the default settings for images. You can apply these changes to all existing color images after you set new defaults. The **ZEISS Default** settings are:

Setting	ZEISS Default	Adjustment Levels
Brightness	0	-100 to 100

Setting	ZEISS Default	Adjustment Levels
Contrast	0	-100 - 100
Gamma	1.00	0 to 5
Sharpness	15	0 to 100
Saturation	0	-100 to 100

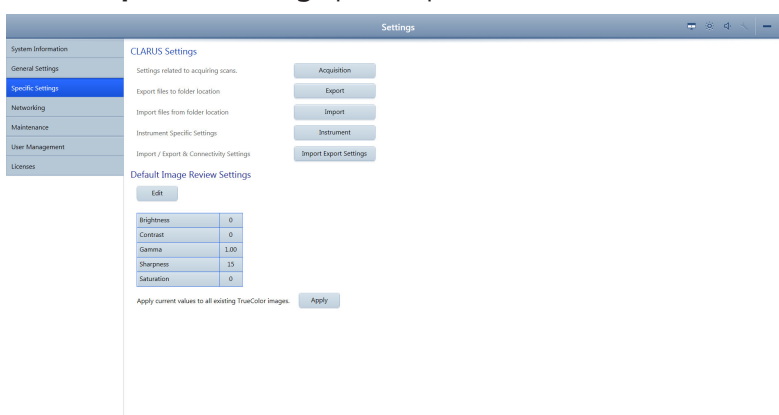
Prerequisite
Action

To configure scan default settings:

Settings are open (Opening Settings ▶ 49).

1. Click **Specific Settings**.

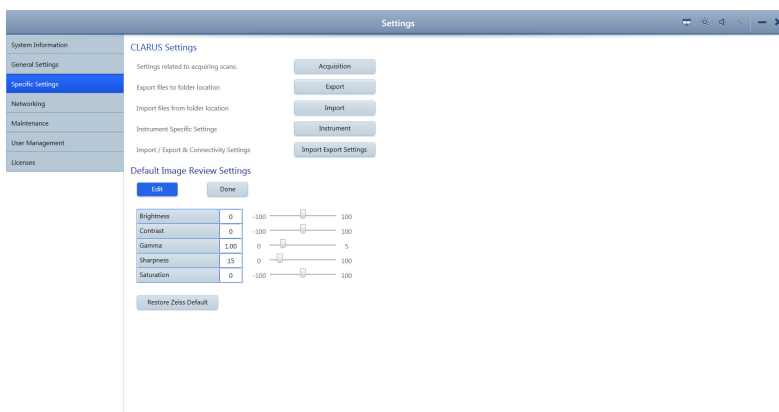
⇒ The **Specific Settings** panel opens.



← Back

2. Click **Edit**.

⇒ A set of sliders for each setting opens.



← Back

3. Click in the box and type a new setting or slide to adjust the default setting(s) you want to change.

4. Click **Done**.

5. To apply the newly set defaults to all color images, click **Apply**.

5.4.2 Manage Users

⚠ CAUTION!

Do not use Bitlocker Passkeys with this instrument or review software.

NOTE

Unsecured Logins

may result in unauthorized access or inaccurate record-keeping.

- ▶ Create individual user accounts for each staff member.
- ▶ Staff members should log out after every use.

NOTE

Changes to user permissions do not synchronize with other networked instruments immediately.

Updated user permissions synchronize when the user logs in.

5.4.2.1 Adding a New User

NOTE

Only Administrators can complete this task.

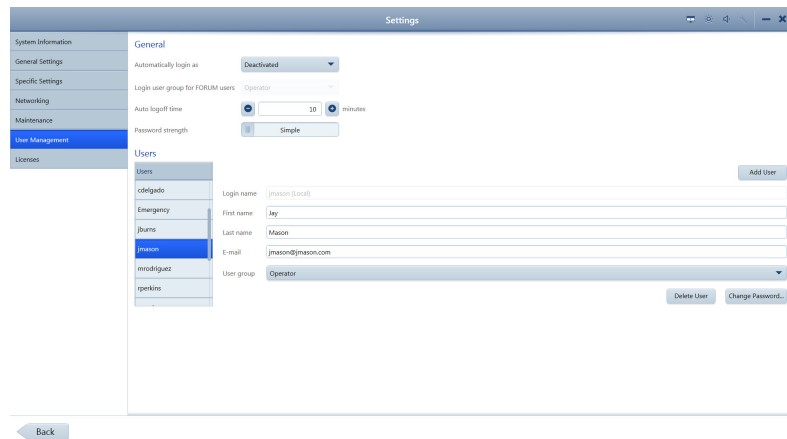
For valid password format, see: Password Requirements [▶ 69].

To add a new user:

- Settings are open (Opening Settings [▶ 49]).

1. Click **User Management**.

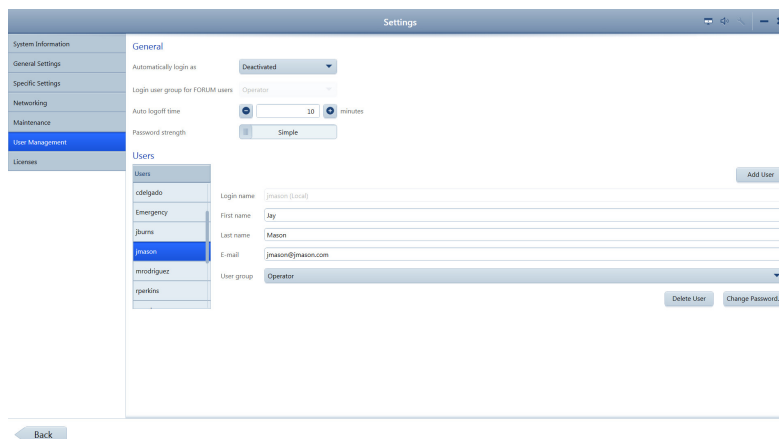
⇒ The **User Management** settings open.



2. Click **Add User**.

3. Type the information for the new user and select the user's role.

Prerequisite
Action



Result

4. Click **Add User**.
✓ The new user can now log in.

5.4.2.2 Deleting a User

NOTE

Only Administrators can complete this task.

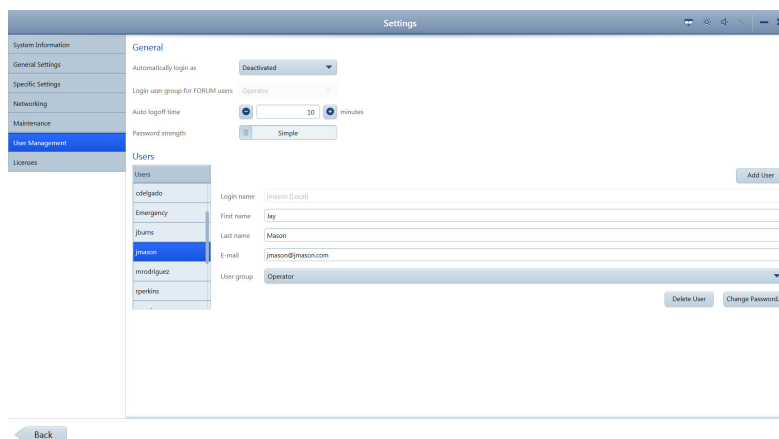
Prerequisite

To delete a user:

- Settings are open (Opening Settings [▶ 49]).

Action

1. Click **User Management**.
⇒ The **User Management** settings open.



2. Select the **Login name** for the user you want to delete.
3. Click **Delete User**.

Result

- ✓ The user's Login is now disabled.

5.4.2.3 Changing a User's Password

NOTE

Only Administrators can complete this task.

For valid password format, see: (Password Requirements [▶ 69])

To change a user's password:

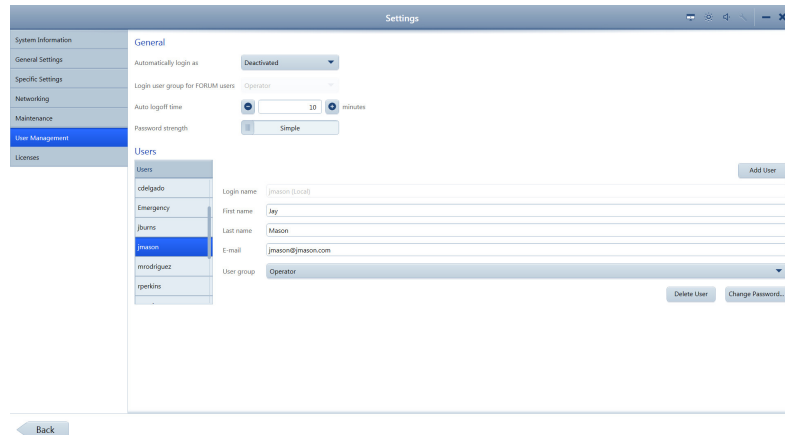
- ☑ Settings are open (Opening Settings [▶ 49]).

Prerequisite

1. Click **User Management**.

Action

⇒ The **User Management** settings open.



2. Select the **Login name** for the user who needs a new password and click **Change Password ...**

⇒ The password reset panel opens.

3. For **New password**, type a new password for the user.

4. For **Repeat new password**, retype the new password.

✓ The new password for the user is now active.

Result

Also see about this

- ☰ Opening Settings [▶ 49]

5.4.2.4 Changing Your Own Password

For valid password format, see: (Password Requirements [▶ 69])

To change your password:

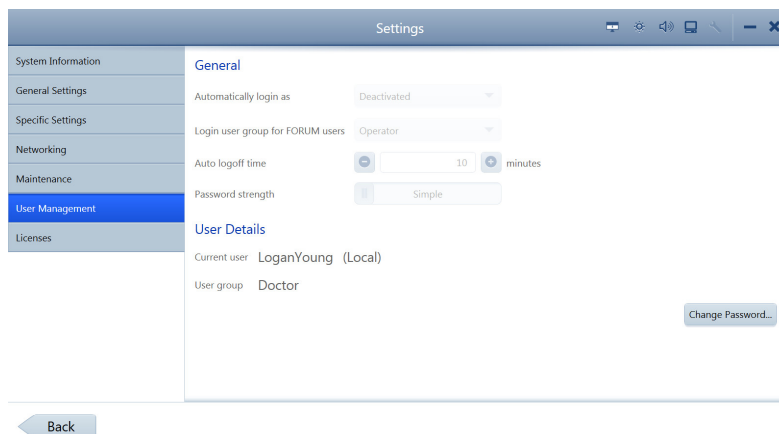
- ☑ Settings are open (Opening Settings [▶ 49]).

Prerequisite

1. Click **User Management**.

Action

⇒ The **User Management** settings open.



User name	rspark
Old password	<input type="password"/>
New password	<input type="password"/>
Repeat new password	<input type="password"/>
<input type="button" value="Cancel"/> <input type="button" value="Change password"/>	

Result

2. Click **Change Password ...**
3. For **Old password**, type your existing password.
4. For **New password**, type a new password.
5. For **Repeat new password**, retype the new password.

✓ Your password is now changed to the new password.

5.4.2.5 Password Requirements

CLARUS® 700 users' passwords expire every 60 days. All passwords must follow these rules:

- Must be at least seven characters long.
- Must contain at least three of the following:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Numbers (0 through 9)
 - Non-alphabetic characters (for example: !, \$, #, %)
- Must not contain the user's account name.
- Must not contain two consecutive letters of the user's name.

5.4.3 Manage Backups

On the CLARUS® 700, you can enable data backup each time the system shuts down (Configuring Automatic Backups [▶ 69]). You can also back up data manually at any time (Backing Up Data Manually [▶ 70]).

5.4.3.1 Configuring Automatic Backups

You can save a backup copy of selected data at any time. You can save this data on removable media for import into other applications.

To configure automatic backups:

Prerequisite

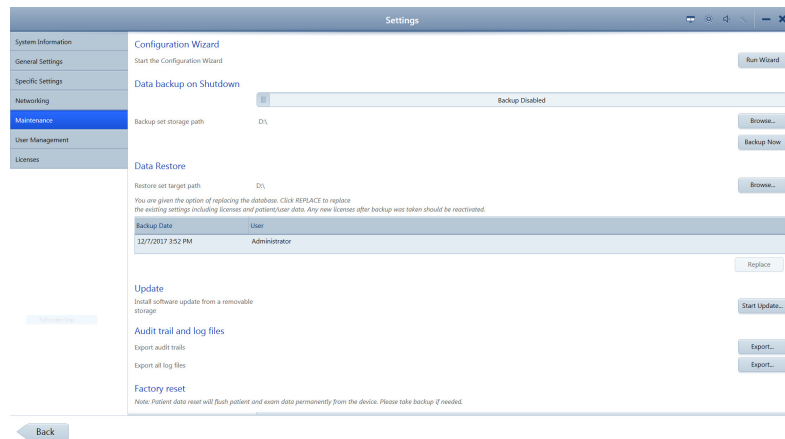
- Settings are open (Opening Settings [▶ 49]).

Action

1. Insert the removable media into the USB port.

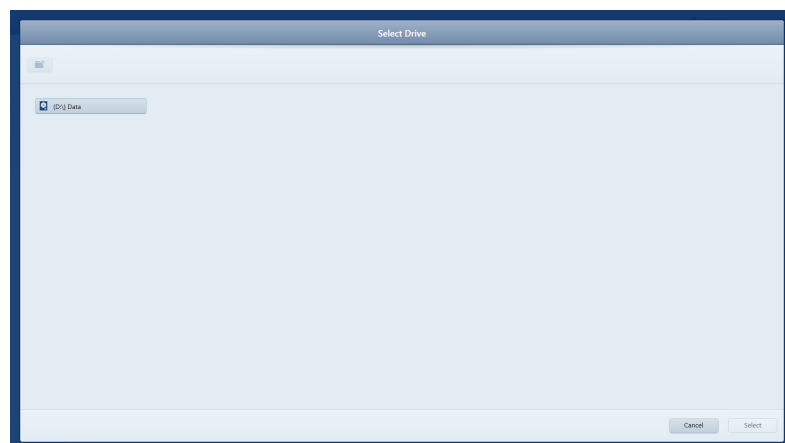
2. Click **Maintenance**.

⇒ The **Maintenance** settings opens.



3. Slide **Data backup on Shutdown** to **Backup Enabled**.

4. Click **Browse**.



5. Navigate to the folder where you want to store the backups and click **Select**.

Result

- ✓ Each time the system shuts down a backup will be saved in the selected folder.

5.4.3.2 Backing Up Data Manually

To back up data manually:

Prerequisite

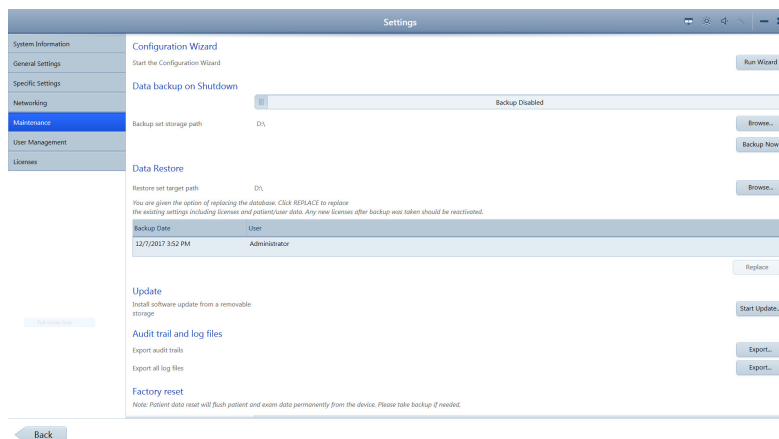
- Settings are open (Opening Settings [▶ 49]).

Action

1. Insert the removable media into the USB port.

2. Click **Maintenance**.

⇒ The **Maintenance** settings opens.



3. Click **Backup Now**.
 - ⇒ A progress bar opens.
 - ⇒ When the backup completes, a confirmation opens.
4. Click **OK**.

Result

- ✓ A new data backup is stored in the folder you configured to store automatic backups. (See Configuring Automatic Backups [▶ 69].)

5.4.3.3 Restoring Data from a Backup

NOTE

Only Administrators can complete this task.

If the CLARUS® 700 instrument has automatic backups enabled or if there is a saved manual backup, you can restore the system with the data from the backup file.

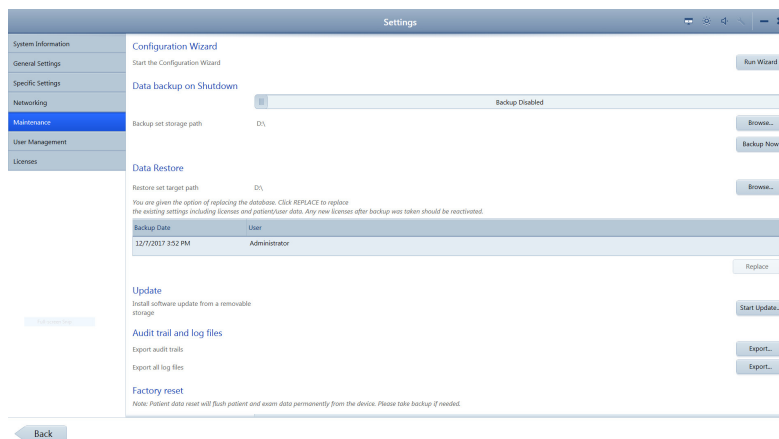
After you restore data, you must restart the instrument.

To restore data from a backup:

- Settings are open (Opening Settings [▶ 49]).
1. Click **Maintenance**.
 - ⇒ The **Maintenance** settings opens.

Prerequisite

Action



2. Under **Data Restore**, select the backup you want to install.

3. Click **Replace**.
⇒ A confirmation opens.
4. Click **Replace**.
⇒ A progress bar opens. When restoration is complete, a restart confirmation opens.
5. Click **Restart**.
✓ The system restarts with the data that existed in the backup.

Result

5.4.4 Log Files

CLARUS® 700 records the following events and identifies them by date, time, and User ID:

- Log on/log off
- Create, modify, delete data
- Import/export data from removable media
- Receipt/transmit data from/to the network
- Remote service activity

A new file is created when the application starts. Events are automatically recorded in 1-5 audit files of 10 Mb each.

The instrument retains up to 100 of the latest log files. When file size limit is reached, the device overwrites existing files (starting with the oldest file).

The default folder for the audit log files is C:\ProgramData\Carl Zeiss Meditec\...\Logs.

NOTE

Save (export) audit log files regularly

to ensure events of consequence can be tracked should you encounter a data error.

- ▶ Log on as Administrator.
- ▶ Click **Tools > Export Audit Log File**.
- ▶ In the Browse folder, browse to the export location.
- ▶ Click **Save**.

⇒ The log is exported as a .zip file with the format:
AuditLog_dd_mm_yyyy_hh_mm.

5.4.5 Data Storage

CLARUS® 700 includes a some storage space on its PC. If you need additional data storage capacity, add external networked storage devices as required.

5.5 Managing Connections

NOTE

When you change any settings, you must navigate out of the settings screen before the changes implement.

- ▶ Restart the instrument after changing any network settings.
- ⇒ You can use the instrument in standalone mode while network is unavailable.
- ⇒ When the instrument reconnects to the network, automatic archiving resumes (if enabled).

NOTE

Synchronize the time settings on all instruments and workstations on the network.

Unsynchronized time settings could cause misidentification of the most recent annotations.

5.5.1 Connecting to a Wireless Printer

NOTE

Connect only to wireless printers recommended).

NOTE

Only Administrators and Doctors can complete this task.

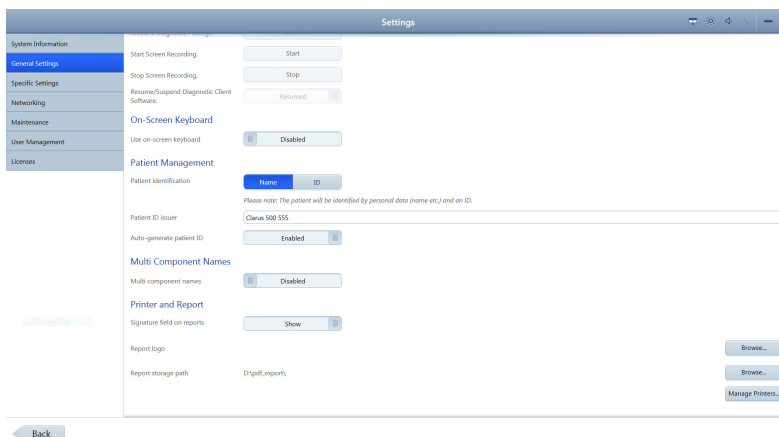
Prerequisite

To connect to a wireless printer:

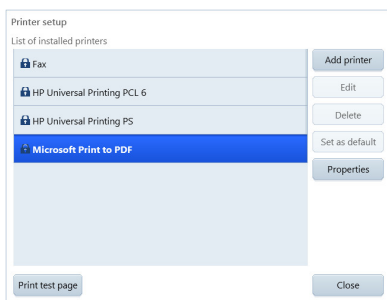
- The CLARUS® 700 instrument and printer are on.
- The printer is configured correctly.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Click **General Settings**.
 - ⇒ The **General Settings** open.



2. Scroll to the bottom.



3. Under **Printer and Report**, click **Manage Printers**.
4. Select the printer you want to connect and click **Add Printer**.
5. To print a test page, select the printer and click **Print test page**.
6. To view the properties of the printer, click **Properties**.

5.5.2 Mapping Networked Drives

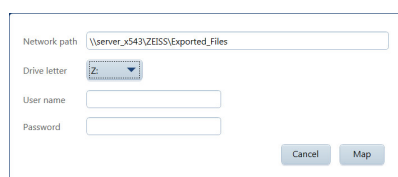
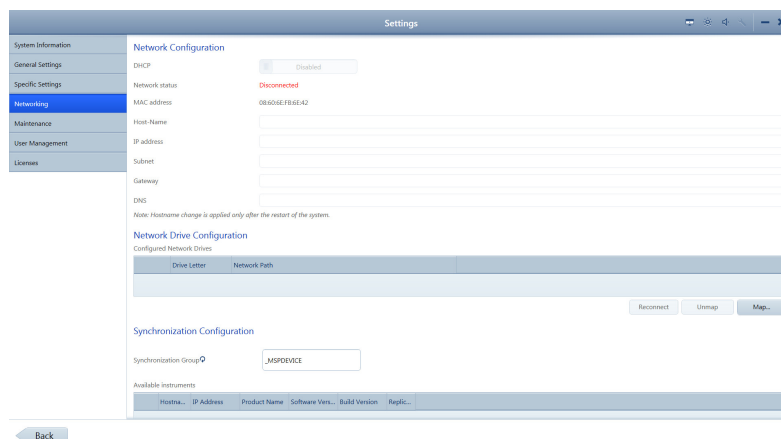
To map a networked drive:

Prerequisite

- Settings are open (Opening Settings [▶ 49]).
- You know the path of the drive you want to map in the format: \\<servername>\<foldername>\<subfoldername>. For example: \\Server_x543\ZEISS\Exported_Files

Action

1. Click **Networking**.
⇒ The **Networking** settings open.



Result

2. Under **Network Drive Configuration**, click **Map...**
3. Type the path and select the **Drive letter**.
4. To save the login credentials, type a **User name** and **Password** for the server.
5. Click **Map**.
✓ The drive is now mapped.

5.5.3 Connecting to a LAN

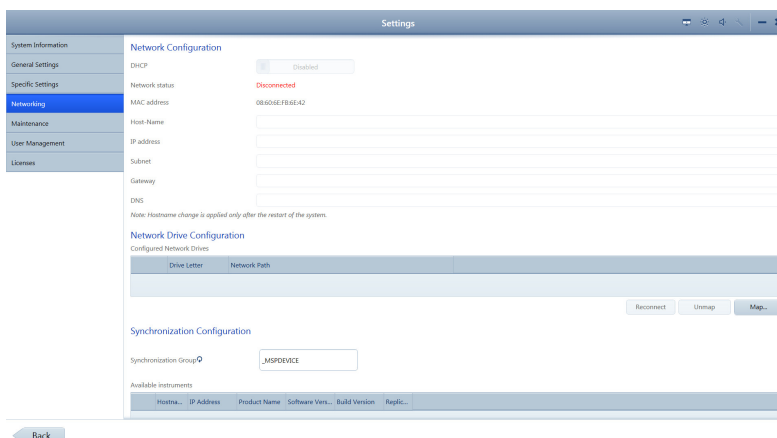
To connect to a LAN:

Prerequisite

- CLARUS® 700 instrument must be connected to the local network using a network cable. Be gentle with the connector when plugging it into the CLARUS® 700 ethernet port.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Click **Networking**.
⇒ The **Networking** settings open.



2. To automatically assign an IP address to the instrument, set **DHCP** to **Enabled**. For a network with static IP addresses, set **DHCP** to **Disabled** and enter the relevant network information.
3. Under **Network Drive Configuration**, click **Map...**
4. Enter the network path for the shared folder you'd like to connect to. The shared folder must be a root directory or a subdirectory of a root directory.
5. Select an unused drive letter.
6. If a password is required for access to the shared folder, enter the username and password. Otherwise, leave these fields blank.
7. Select **Map**.
8. To disconnect a network drive, select the drive, and click **Unmap**
⇒ Successfully mapped drives are indicated with a check mark in a green circle.

Also see about this

📖 Opening Settings [▶ 49]

5.6 Managing Licenses

Your instrument is shipped with the software license installed. The instrument's software license and ten **Review Station** licenses are provided with the instrument. You can install CLARUS® 700 review software on (up to) ten computers to use as **Review Stations**.

After you install software on each **Review Station**, you must activate a license for it.

If you return a license from a **Review Station** computer, you can install and activate the software on a different **Review Station** computer using the same license.

NOTE

Only Administrators can complete this task.

5.6.1 Activating Licenses Online

If the **Review Station** is connected to the intranet, activating a license is simpler.

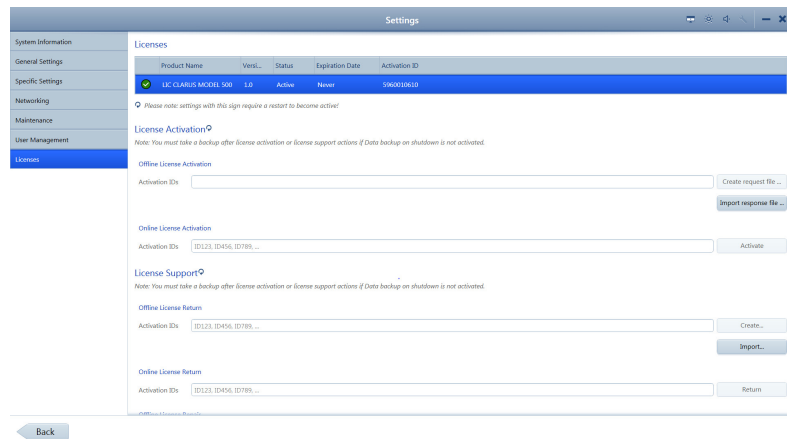
To activate a license online:

Prerequisite

- The **Review Station** is connected to the internet.
- You located the **Activation ID** of the license you want to use for this **Review Station**.

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
⇒ The **License** settings open.



3. For **Online License Activation**, type the activation ID.
4. Click **Create request file**.
5. Click **Activate**.

Result

- The newly activated license appears as *Active* at the top of the license settings page.

5.6.2 Activating Licenses Offline

If the **Review Station** is not connected to the internet, you can activate the license offline. Using this method you exchange a **Request** (XML file) for a **Response** (XML file) with your ZEISS representative.

5.6.2.1 Requesting Licenses Offline

When you request a license, you create an XML license request file and send it to your ZEISS representative.

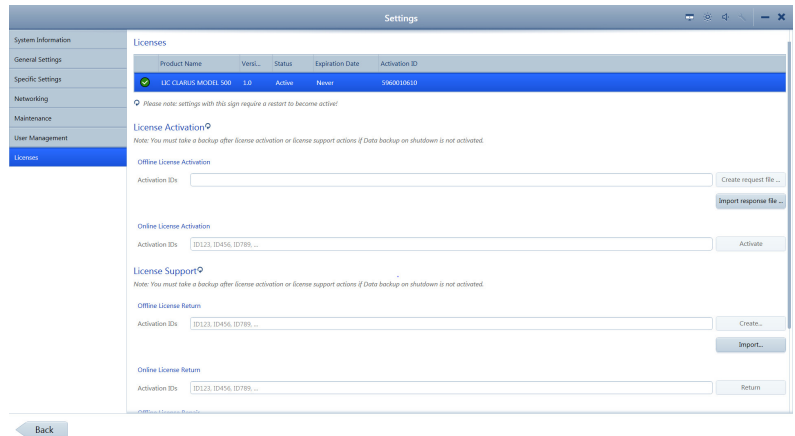
To request a license offline:

Prerequisite

- You located the **Activation ID** of the license you want to use for this **Review Station**.

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
 - ⇒ The **License** settings open.



3. For **Offline License Activation**, type the **Activation ID**.
4. Click **Create request file**.
5. Navigate to the network folder or flash drive location where you want to save the request file.
6. Click **Save**.
7. From a computer connected to the internet, send the XML file to your ZEISS representative.

5.6.2.2 Activating Licenses Offline

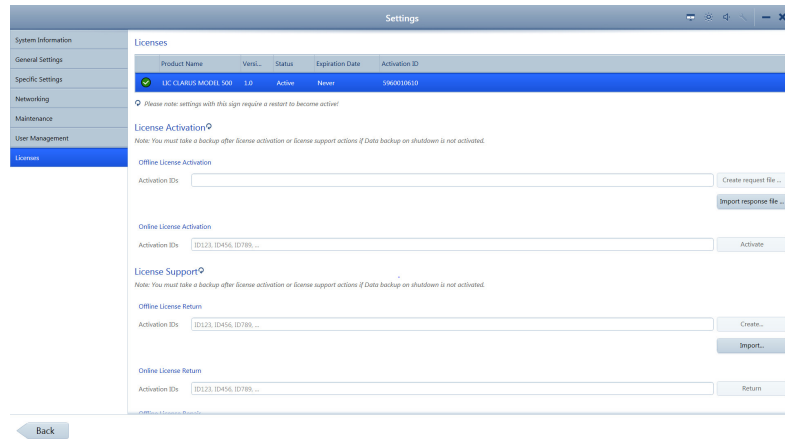
To activate a license offline:

Prerequisite

- You sent the request file for this license to your ZEISS representative.
- Your ZEISS representative returned a response file for this license.
- You saved the response file on the network or a flash drive to install on the **Review Station**.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
 - ⇒ The **License** settings open.



3. For **Offline License Activation**, click **Import Response file**.
4. Navigate to the flash drive or network folder where the response file is located.
5. Select the response file and click **Activate**.

Result

- ✓ The newly activated license appears as **Active** at the top of the license settings page.

5.6.3 Returning Product Licenses

For each CLARUS® 700 instrument there are ten licenses for **Review Stations**. If you want to move a license from one **Review Station** computer to another, you must:

1. Deactivate (return) the license on the original **Review Station** computer.
2. Activate the license on the new **Review Station** computer.

5.6.3.1 Returning Licenses Online

If the **Review Station** is connected to the intranet, deactivating a license is a simple, one-step process.

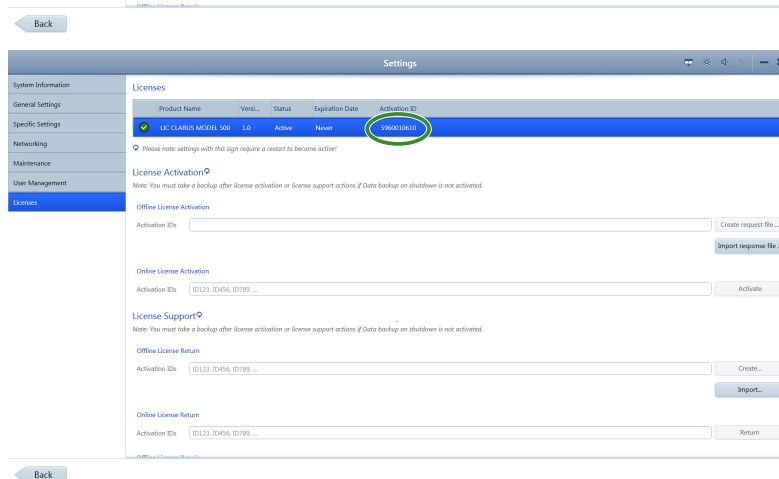
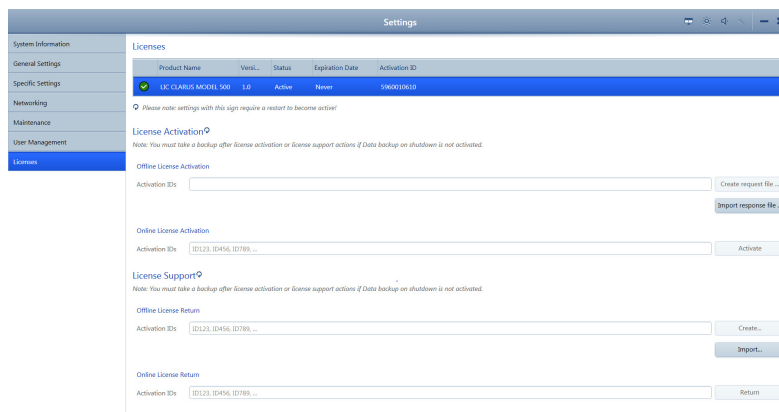
To deactivate a license online:

Prerequisite

- The **Review Station** is connected to the internet.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
 - ⇒ The **License** settings open.



3. For **Online License Return**, type the active **Activation ID** listed at the top of the page.

4. Click **Return**.

✓ The license no longer appears as *Active* at the top of the license settings page.

Result

5.6.3.2 Returning Licenses Offline

If the **Review Station** is not connected to the internet, you can activate the license offline. Using this method you exchange a **Request** (XML file) for a **Response** (XML file) with your ZEISS representative.

5.6.3.2.1 Requesting License Return

When you deactivate a license, you create an XML file and send it to your ZEISS representative.

To deactivate a license offline:

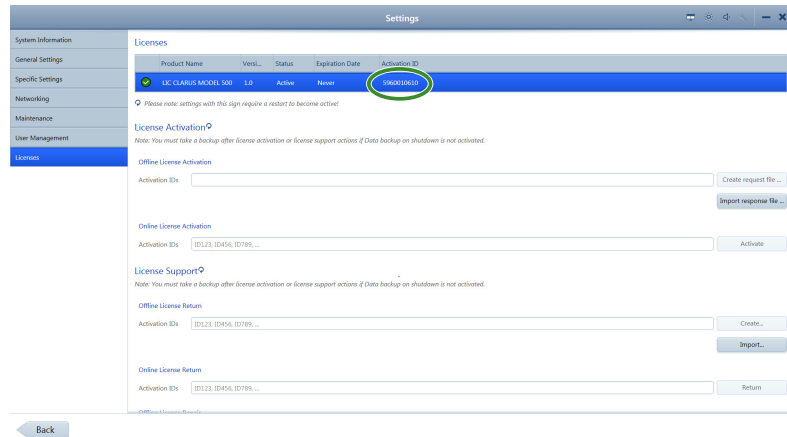
☑ Settings are open (Opening Settings [▶ 49]).

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.

Prerequisite

Action

⇒ The **License** settings open.



3. For **Offline License Return**, type the active **Activation ID** listed at the top of the page.
4. Click **Create**.
5. Navigate to the network folder or flash drive location where you want to save the request file.
6. Click **Save**.
7. From a computer connected to the internet, send the XML file to your ZEISS representative.

5.6.3.2.2 Returning the License

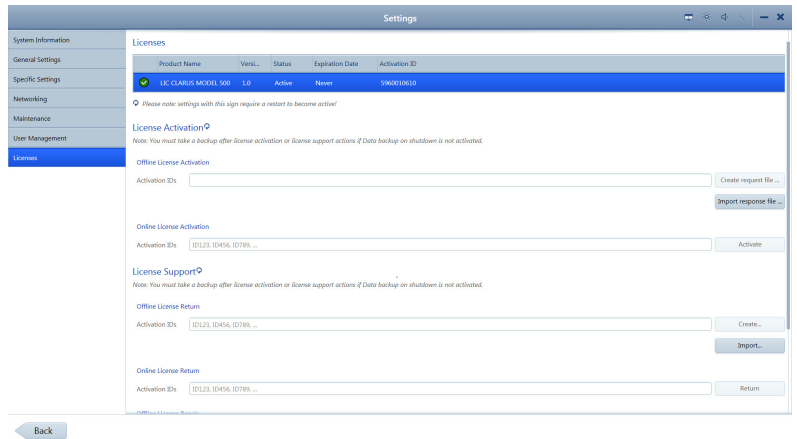
To deactivate a license offline:

Prerequisite

- You sent the deactivation request file for this license to your ZEISS representative.
- Your ZEISS representative returned a deactivation response file for this license.
- You saved the response file on the network or a flash drive to install on the **Review Station**.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
⇒ The **License** settings open.



3. For **Offline License Return**, click **Import**.
4. Navigate to the flash drive or network folder where the response file is located.
5. Select the response file and click **Select**.

Result

- ✓ The license no longer appears as *Active* at the top of the license settings page.

5.6.4 Repairing Product Licenses

If a license becomes corrupted, you may need to repair it. Connect the **Review Station** to the intranet to repair the license.

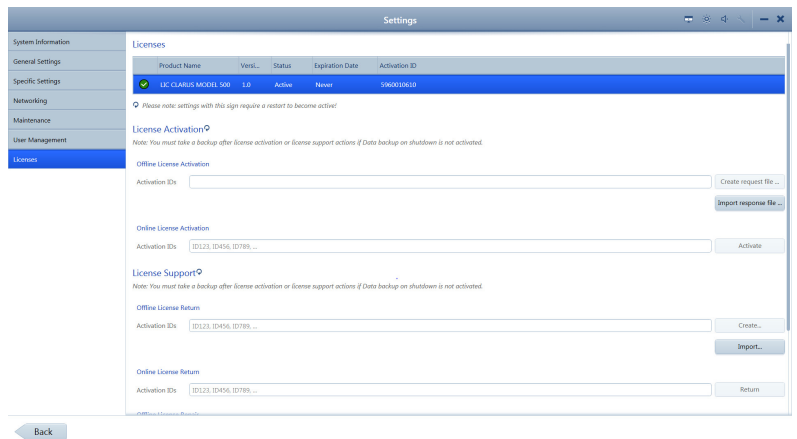
To repair a license online:

Prerequisite

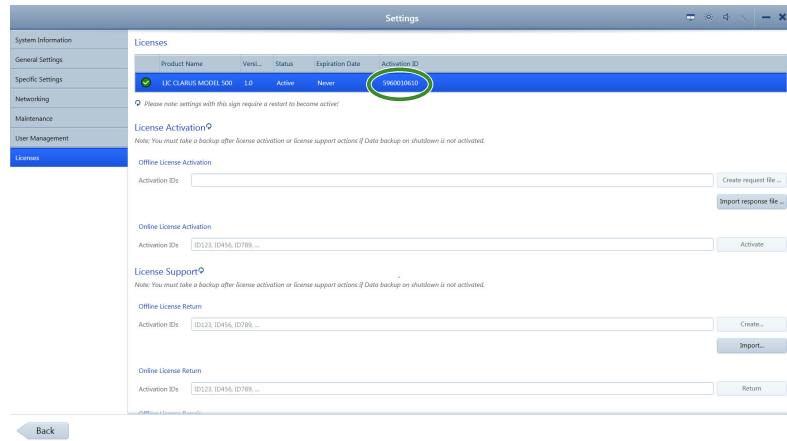
- The **Review Station** is connected to the internet.
- You located the **Activation ID** of the license you want to use for this **Review Station**.
- Settings are open (Opening Settings [▶ 49]).

Action

1. Login to the CLARUS® 700 application on the **Review Station** as an Administrator.
2. Click **Licenses**.
⇒ The **License** settings open.



3. Write down the **Activation ID** of the active license.



4. Scroll down to the bottom of the page.
5. For **Online License Repair**, type the activation ID.
6. Click **Repair**.
 - ✓ The active license is properly restored.

Result

5.7 Configuring Local Settings

Local settings include information about your clinic such as address, local language and local time zone.

To configure local settings:

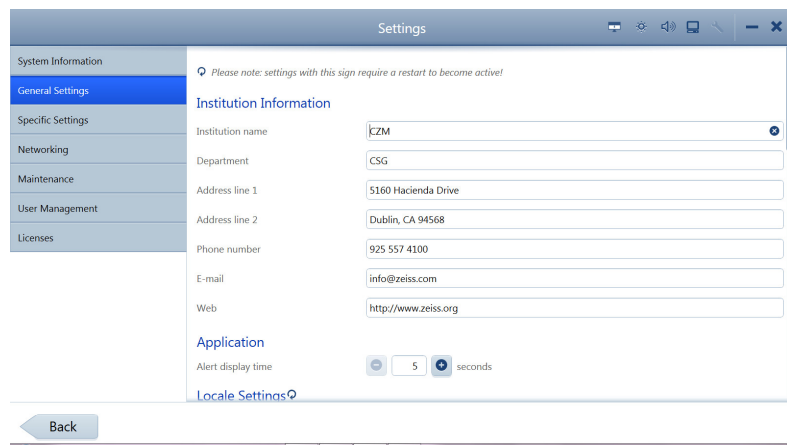
- Settings are open (Opening Settings [▶ 49]).

1. Click **General Settings**.

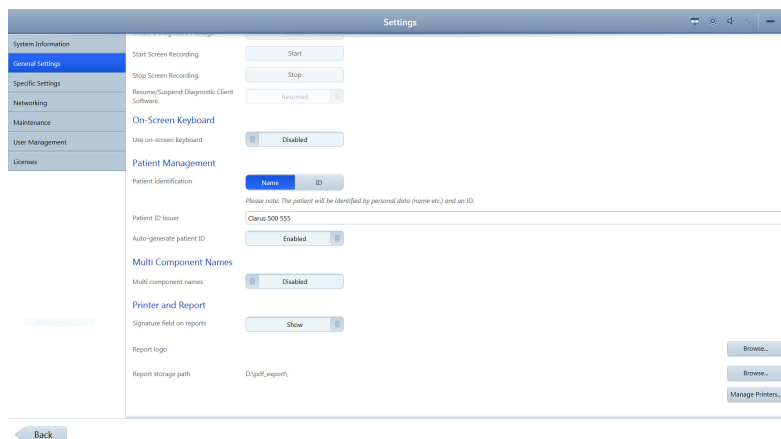
⇒ The **General Settings** open.

Prerequisite

Action



2. For **Institution Information**, complete the form for your clinic.
3. For **Alert display time**, select the number of seconds you want system or instrument alerts to display.



4. For **Locale Settings**, select the language and date formats.
5. Scroll to set additional general settings.
6. For **System Date and Time**, select the appropriate settings.
7. To display the onscreen keyboard, slide **On-Screen Keyboard to Enabled**.
8. For **Patient Management**, select **Name** or **ID** as patient data identifier.
9. Select the method for patient ID assignment. If you select CLARUS® 700, the instrument assigns unique IDs for patients.
10. If your language requires **Multi-Component Names**, **Enable** multi-component names and select the appropriate type.

5.8 Configuring Report Settings

You can add your logo and a signature field to reports. You can also set the path for storing reports and manage printers.

To configure the report settings for automatic export, refer to: [Configuring Export Settings \[▶ 63\]](#).

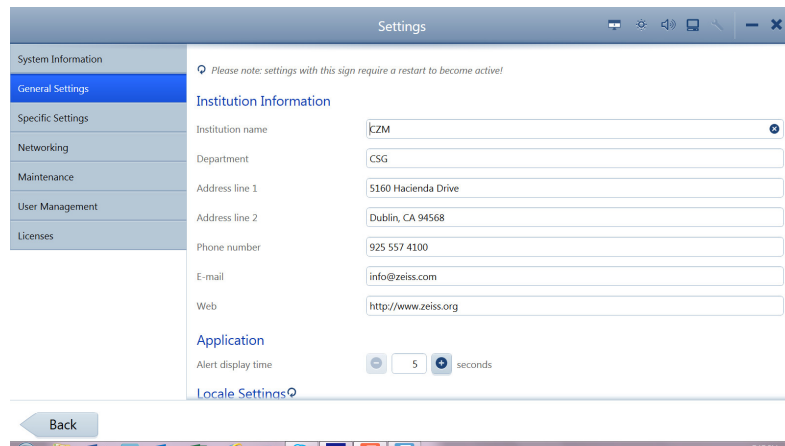
To configure report settings:

- Settings are open (Opening Settings [▶ 49]).

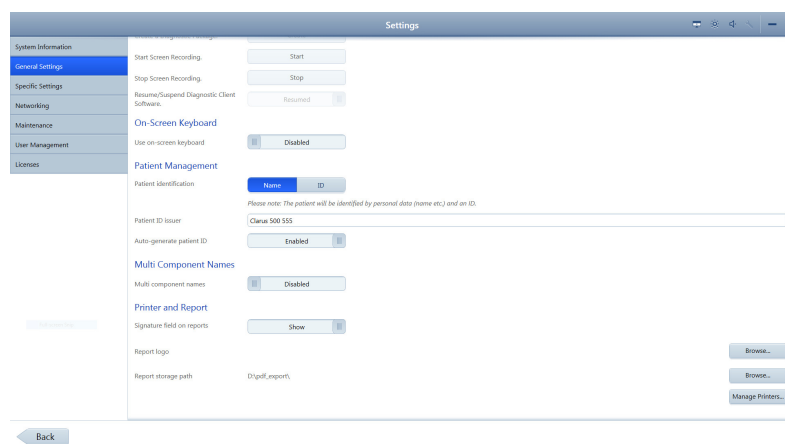
1. Click **General Settings**.
 - ⇒ The **General Settings** open.

Prerequisite

Action



2. Scroll to the bottom.



3. To enable a signature field on reports, slide **Signature field on reports** to **Show**.
4. To add a logo to reports, click **Browse...** next to **Report logo** and navigate to the logo file and select it.
5. To set a path to store reports, click **Browse...** next to **Report storage path**.

5.9 Configuring Acquisition Settings

You can add your logo and a signature field to reports. You can also set the path for storing reports and manage printers.

To configure acquisition settings:

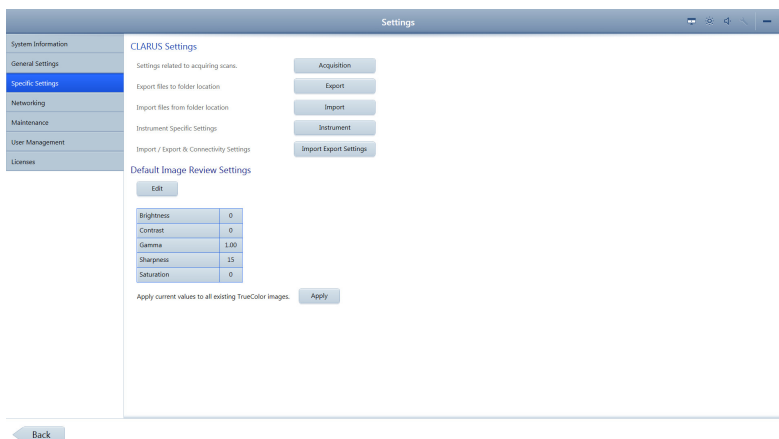
- ☑ Settings are open (Opening Settings [▶ 49]).

1. Click **Specific Settings**.

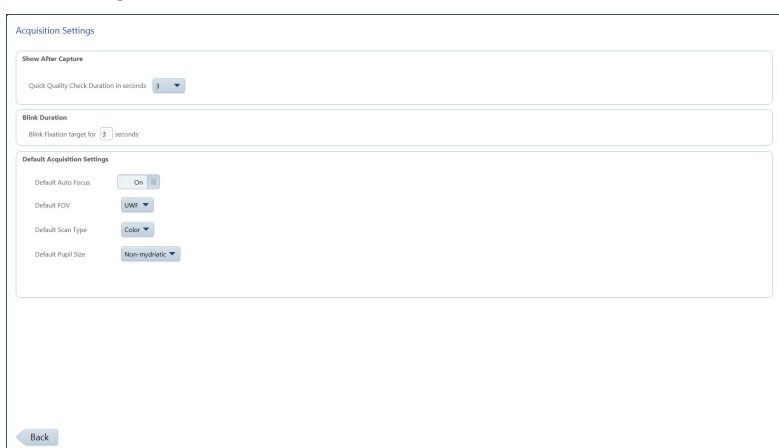
⇒ The **Specific Settings** panel opens.

Prerequisite

Action



2. Click **Acquisition**.



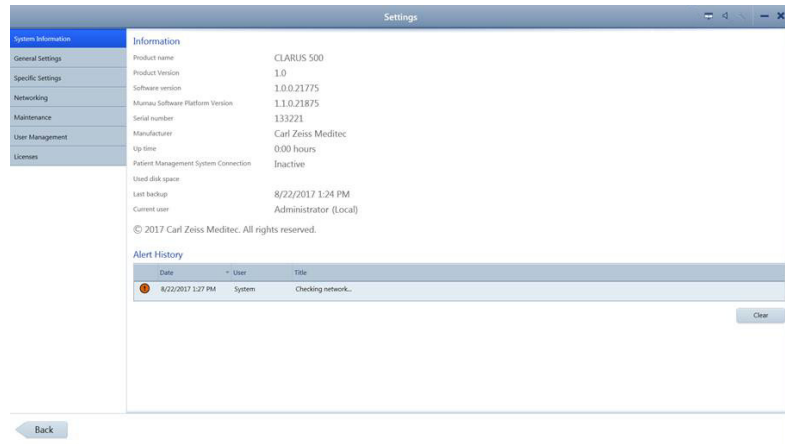
3. To change **Quick Quality Check Duration**, select the number of seconds you want the image preview to remain on-screen.
4. To change the **Blink Duration** for the fixation target, type a number of seconds you want the target to blink.
5. To turn **Auto Focus** off globally, move the **Default Auto Focus** slider to **Off**.

5.10 Clearing Alert History

Prerequisite
Action

To clear alert history:

- Settings are open (Opening Settings [▶ 49]).
1. Click **System Information**.



2. Under **Alert History**, click **Clear**.
⇒ The alerts are removed.

5.11 System Administration

NOTE

Only Administrators can complete this task.

This section contains detailed configuration information for system administrators. Only system administrators should make changes to these settings.

5.11.1 Windows Patches and Updates

Automatic Windows updates are disabled. Windows patches and updates are distributed with CLARUS® 700 software after they are tested and approved for use.

5.11.2 Data Safety

5.11.2.1 Auto-lock

After 15 minutes of inactivity, the CLARUS® 700 screen locks and the user must log in again.

5.11.2.2 Anti-Malware

When configuring anti-malware applications, ensure that updates and full system scans do not occur when data acquisition could be in progress.

5.11.2.3 User Names and Passwords

NOTE

Passwords for Tech Support users are unique for each system.

Zeiss instruments initially have three user names and passwords. Initial passwords are shown in the table below. Change these passwords before using the instrument.

User Name	Type	Password	Purpose
Zeiss	Administrator	November171846	Instrument User
ZeissAdmin	Administrator	November171846	Instrument Administration
Technical Support	Administrator	<unique>	Zeiss Technical Support

Table 6: Initial User Names and Passwords

5.11.3 Networking

5.11.3.1 Network Controllers and IP Addressing

NOTE

The CLARUS® 700 instrument is not compatible with networks using IPv4 addressing in the range of 192.168.111.0 to 192.168.111.254.

The CLARUS® 700 instrument contains two network controllers; Internal Network and External Network.

5.11.3.1.1 Internal Network Ports

NOTE

Do not rename the Internal Network.

Internal Network is for instrument use only with the following assignments:

- Static IPv4 address: 192.168.111.2
- Subnet mask: 255.255.255.0

5.11.3.1.2 External Network Ports

The **External Network** is for CLARUS® 700 connectivity and automatically picks up an IP address.

5.11.3.2 Required Network Ports

The network ports listed in this section are required for proper operation of the CLARUS® 700 instrument.

5.11.3.2.1 Required Internal Network Ports

- Internal Communication Port: TCP 80
- Internal Communication Port: TCP 22

5.11.3.2.2 Required External Network Ports

Service	TCP	UDP
Database inbound	18081	

Service	TCP	UDP
Database outbound	18082	
Database inbound/outbound (open port visible externally)	3346	
Peer to Peer broadcast inbound/outbound		54183
Distributed Data Service inbound/outbound	54187	

Table 7: External Network Ports

5.11.3.2.3 Required External Network Ports for EMR and FORUM

NOTE

In remote desktop environment each instance of the review software must have a unique DICOM port.

For instructions on how to change the port number for **DICOM Configuration**, refer to: Managing Connections [▶ 73].

Service	TCP	UDP
DICOM outbound	11119	
FORUM outbound	8080	
DICOM inbound	11112	
FORUM inbound The first available port in this range will be used.	8081 ~ 8101	
DNS (AutoConnect for instruments outbound)		5353

Table 8: External Network Ports for EMR / FORUM

5.11.3.3 Additional Network Ports

The following network ports are not required to operate the instrument. These ports facilitate instrument configuration and maintenance.

Service	TCP	UDP
Remote service (outbound)	80	
DHCP		67 - 68
TCP/IP MS Networking	445	
NTP		123
NETBIOS Name Service (UDP open port visible externally)	137	137
NETBIOS Datagram Service	138	138
NETBIOS Session Service	139	139

Table 9: Additional Network Ports

5.11.4 Windows 10 System Administration

NOTE

Only Administrators can complete this task.

This section contains detailed configuration information for system administrators. Only system administrators should make changes to these settings.

5.11.4.1 Enhanced Security Windows Firewall Rules

Enhanced security disables the following Windows firewall rules:

Disabled Firewall Rules

AllJoyn Router (TCP-In)
 AllJoyn Router (TCP-Out)
 AllJoyn Router (UDP-In)
 AllJoyn Router (UDP-Out)
 Cast to Device functionality (qWave-TCP-In)
 Cast to Device functionality (qWave-TCP-Out)
 Cast to Device functionality (qWave-UDP-In)
 Cast to Device functionality (qWave-UDP-Out)
 Cast to Device SSDP Discovery (UDP-In)
 Cast to Device streaming server (HTTP-Streaming-In)
 Cast to Device streaming server (RTCP-Streaming-In)
 Cast to Device streaming server (RTP-Streaming-Out)
 Cast to Device streaming server (RTSP-Streaming-In)
 Cast to Device UPnP Events (TCP-In)
 Cortana
 Delivery Optimization (TCP-In)
 Delivery Optimization (UDP-In)
 DIAL protocol server (HTTP-In)
 Microsoft.AccountsControl
 Microsoft.LockApp
 Microsoft.Windows.ContentDeliveryManager
 Microsoft.Windows.ParentalControls
 Microsoft.Windows.Apprep
 Network Discovery (WSD Events-In)
 Proximity sharing over TCP (TCP sharing-In)
 Proximity sharing over TCP (TCP sharing-Out)
 Remote Assistance (DCOM-In)
 Remote Assistance (PNRP-In)
 Remote Assistance (RA Server TCP-In)
 Remote Assistance (SSDP TCP-In)
 Remote Assistance (SSDP UDP-In)
 Remote Assistance (TCP-In)
 SmartScreen
 Windows.ShellExperience
 Windows Spotlight
 Wireless Display (TCP-In)
 Wireless Display (TCP-Out)
 Wireless Display (UDP-Out)
 Wireless Display Infrastructure Back Channel (TCP-In)

5.11.4.2 Enhanced Security Services

Enhanced security disables the following services:

Disabled Security Services

AllJoyn Router Service
Application Layer Gateway Service
Bluetooth Handsfree Service
Bluetooth Support Service
BranchCache
Connected Devices Platform Service
Connected User Experiences and Telenetry
Downloaded Maps Manager
Fax
Function Discovery Resource Publication
Geolocation Service
HomeGroup Listener
HomeGroup Provider
Infrared Monitor Service
Internet Connection Sharing (ICS)
Microsoft iSCSI Initiator Service
Microsoft Storage Spaces SMP
Microsoft Windows SMS Router Service
Network Connection Broker
Phone Service
Program Compatibility Assistant Service
Quality Windows Audio Video Experience
Retail Demo Service
Shell Hardware Detection
Telephony
Touch Keyboard and Handwriting Panel Service
Windows Camera Frame Server
Windows Event Collector
Windows Image Acquisition (WIA)
Windows Insider Service
Windows Media Player Network Sharing Service
Windows Mobile Hotspot Service
Work Folders Xbox Live Auth Manager Xbox Live Game Save Xbox Live
Networking Service

5.11.4.3 Enhanced Security Group Policy

Policy	Setting
Access Credential Manager as a trusted caller	No One
Access this computer from the network	Administrators
Account lockout duration	60 minute(s)
Account lockout threshold	30 invalid logon attempt(s)
Accounts: Administrator account status	Disabled
Accounts: Guest account status	
Accounts: Limit local account use of blank passwords to console logon only	Enabled
Accounts: Rename administrator account	LocalAdmin
Accounts: Rename guest account	Not Used
Act as part of the operating system	No One
Adjust memory quotas for a process	Administrators, Local Service, Network Service
Allow all trusted apps to install	Disabled
Allow Basic authentication	
Allow Cortana	
Allow indexing of encrypted files	
Allow log on locally	Administrators, Users
Allow Microsoft accounts to be optional	Enabled
Allow Telemetry	Enabled 0 - Off (Enterprise Only)
Allow unencrypted traffic	Disabled
Allow user control over installs	
Allow users to connect remotely by using Remote Desktop Services	
Allow Windows to automatically connect to suggested open hotspots, to networks shared by contacts, and to hotspots offering paid services	
Always install with elevated privileges	
Always prompt for password upon connection	Enabled
Apply UAC restrictions to local accounts on network logons	

Policy	Setting
Audit Policy: Account Logon: Credential Validation	Success and Failure
Audit Policy: Account Management: Other Account Management Events	
Audit Policy: Account Management: Security Group Management	
Audit Policy: Account Management: User Account Management	
Audit Policy: Detailed Tracking: Process Creation	Success
Audit Policy: Logon-Logoff: Account Lockout	
Audit Policy: Logon-Logoff: Logoff	
Audit Policy: Logon-Logoff: Logon	Success and Failure
Audit Policy: Logon-Logoff: Special Logon	Success
Audit Policy: Object Access: Removable Storage	Success and Failure
Audit Policy: Policy Change: Audit Policy Change	
Audit Policy: Policy Change: Authentication Policy Change	Success
Audit Policy: Privilege Use: Sensitive Privilege Use	Success and Failure
Audit Policy: System: IPsec Driver	
Audit Policy: System: Other System Events	
Audit Policy: System: Security State Change	Success
Audit Policy: System: Security System Extension	Success and Failure
Audit Policy: System: System Integrity	
Audit: Audit the access of global system objects	Disabled
Audit: Audit the use of Backup and Restore privilege	Enabled
Audit: Force audit policy subcategory settings (Windows Vista or later) to override audit policy category settings	
Audit: Shut down system immediately if unable to log security audits	Disabled
Back up files and directories	Administrators
Boot-Start Driver Initialization Policy Choose the boot-start drivers that can be initialized	Enabled Good, unknown and bad but critical
Change the system time	LOCAL SERVICE, Administrators
Configure Automatic Updates	Disabled
Configure Offer Remote Assistance	

Policy	Setting
Configure registry policy processing Do not apply during periodic background processing Process even if the Group Policy objects have not changed	Enabled TRUE TRUE
Configure Solicited Remote Assistance Maximum ticket time (units) Maximum ticket time (value) Method for sending email invitations Permit remote control of this computer	Enabled Hours 1 Simple MAPI Allow helpers to remotely control the computer Enabled
Configure Windows SmartScreen	Disabled
Create a pagefile	Administrators
Create a token object	No One
Create global objects	Administrators, SERVICE, LOCAL SERVICE, NETWORK SERVICE
Create permanent shared objects	No One
Create symbolic links	Administrators
Debug programs	
Deny access to this computer from the network	NT AUTHORITY \Local Account,GUESTS
Deny log on locally	Guests
Deny log on through Remote Desktop Services	NT AUTHORITY \Local Account,GUESTS
Detect compatibility issues for applications and drivers	Enabled
Devices: Allow undock without having to log on	
Disallow Autoplay for non-volume devices	
Disallow Digest authentication	
Disallow WinRM from storing RunAs credentials	
Do not allow drive redirection	
Do not allow passwords to be saved	
Do not display network selection UI	
Do not enumerate connected users on domain-joined computers	

Policy	Setting
Do not preserve zone information in file attachments	Disabled
Domain member: Digitally encrypt or sign secure channel data (always)	Enabled
Domain member: Digitally encrypt secure channel data (when possible)	
Domain member: Digitally sign secure channel data (when possible)	
Domain member: Disable machine account password changes	Disabled
Domain member: Maximum machine account password age	30 day(s)
Domain member: Require strong (Windows 2000 or later) session key	Enabled
Don't allow SmartScreen Filter warning overrides	Disabled
Enable computer and user accounts to be trusted for delegation	No One
Enable insecure guest logons	Disabled
Enable local admin password management	Enabled
Enable RPC Endpoint Mapper Client Authentication	
Enable screen saver	
Enforce password history	24 password(s)
Enumerate administrator accounts on elevation	Disabled
Enumerate local users on domain-joined computers	
Force shutdown from a remote system	Administrators
Generate security audits	Local Service, Network Service
Hardened UNC Paths Hardened UNC Paths: Hardened UNC Paths: = *\NETLOGON" RequireMutualAuthentication = 1 RequireIntegrity = 1	Enabled
Impersonate a client after authentication	Administrators, SERVICE, Local Service, Network Service
Include command line in process creation events	Enabled
Increase scheduling priority	Administrators
Interactive Logon: Do not display last user name	Disabled
Interactive logon: Machine account lockout threshold	10 invalid logon attempts
Interactive logon: Machine inactivity limit	900 seconds

Policy	Setting
Interactive logon: Number of previous logons to cache (in case domain controller is not available)	10 logon(s)
Interactive logon: Prompt user to change password before expiration	5 day(s)
Interactive logon: Require Domain Controller authentication to unlock workstation	Disabled
Interactive logon: Require smart card	
Interactive logon: Smart card removal behavior	No Action
Load and unload device drivers	Administrators
Lock pages in memory	No One
Manage auditing and security log	Administrators
Maximum password age	60 days
Microsoft network client: Digitally sign communications (if server agrees)	Enabled
Microsoft network client: Send unencrypted password to third-party SMB servers	Disabled
Microsoft network server: Amount of idle time required before suspending session	15 minute(s)
Microsoft network server: Digitally sign communications (if client agrees)	Enabled
Microsoft network server: Server SPN target name validation level	Accept if provided by client
Minimize the number of simultaneous connections to the Internet or a Windows Domain	Disabled
Minimum password age	1 day(s)
Minimum password length	7 character(s)
Minimum PIN length	Enabled
Minimum PIN length	6
Modify an object label	No one
Modify firmware environment values	Administrators
MSS: (AutoAdminLogon) Enable Automatic Logon (not recommended)	Disabled
MSS: (DisableIPSourceRouting IPv6) IP source routing protection level (protects against packet spoofing) DisableIPSourceRoutingIPv6	Enabled Highest protection, source routing is completely disabled
MSS: (DisableIPSourceRouting) IP source routing protection level (protects against packet spoofing) DisableIPSourceRouting	
MSS: (EnableICMPRedirect) Allow ICMP redirects to override OSPF generated routes	Disabled

Policy	Setting
MSS: (NoNameReleaseOnDemand) Allow the computer to ignore NetBIOS name release requests except from WINS servers	Enabled
Network access: Allow anonymous SID/Name translation	Disabled
Network access: Do not allow anonymous enumeration of SAM accounts	Enabled
Network access: Do not allow anonymous enumeration of SAM accounts and shares	
Network access: Do not allow storage of passwords and credentials for network authentication	
Network access: Let Everyone permissions apply to anonymous users	Disabled
Network access: Restrict anonymous access to Named Pipes and Shares	Enabled
Network access: Sharing and security model for local accounts	Classic - local users authenticate as themselves
Network security: Allow Local System to use computer identity for NTLM	Enabled
Network security: Allow LocalSystem NULL session fallback	Disabled
Network Security: Allow PKU2U authentication requests to this computer to use online identities	
Network Security: Configure encryption types allowed for Kerberos	RC4\AES128\AES256\Future types
Network security: LAN Manager authentication level	Send NTLMv2 response only. Refuse LM & NTLM
Network security: Do not store LAN Manager hash value on next password change	Enabled
Network security: Force logoff when logon hours expire	Disabled
Network security: LDAP client signing requirements	Negotiate signing
Network security: Minimum session security for NTLM SSP based (including secure RPC) clients	Require NTLMv2 session security, Require 128-bit encryption
Network security: Minimum session security for NTLM SSP based (including secure RPC) servers	
No auto-restart with logged on users for scheduled automatic updates installations	Enabled
Notify antivirus programs when opening attachments	
Password must meet complexity requirements	
Password protect the screen saver	

Policy	Setting
Perform volume maintenance tasks	Administrators
Prevent enabling lock screen camera	Enabled
Prevent enabling lock screen slide show	Disabled
Prevent the usage of OneDrive for file storage	Enabled
Profile single process	Administrators
Recovery console: Allow automatic administrative logon	Disabled
Recovery console: Allow floppy copy and access to all drives and all folders	
Replace a process level token	Local Service, Network Service
Require a Password When a Computer Wakes (On Battery)	Enabled
Require a Password When a Computer Wakes (Plugged In)	
Require secure RPC communication	
Reset account lockout counter after	60 minute(s)
Restrict Unauthenticated RPC clients RPC Runtime Unauthenticated Client Restriction to Apply:	Enabled Authenticated
Restore files and directories	Administrators
Screen saver timeout	Enabled
Set client connection encryption level Encryption Level	Enabled High Level
Set the default behavior for AutoRun Default AutoRun Behavior	Enabled Do not execute any autorun commands
Shutdown: Allow system to be shut down without having to log on	Enabled
Shutdown: Clear virtual memory pagefile	Disabled
Sign-in last interactive user automatically after a system-initiated restart	
Specify the maximum log file size (KB) (Application Log) Maximum Log Size (KB)	Enabled 32768
Specify the maximum log file size (KB) (Security Log) Maximum Log Size (KB)	Enabled 196608
Specify the maximum log file size (KB) (System Log) Maximum Log Size (KB)	Enabled 32768
Store passwords using reversible encryption	Disabled
System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing	

Policy	Setting
System objects: Require case insensitivity for non-Windows subsystems	Enabled
System objects: Strengthen default permissions of internal system objects (e.g. Symbolic Links)	
System settings: Use Certificate Rules on Windows Executables for Software Restriction Policies	Disabled
Take ownership of files or other objects	Administrators
Turn off access to the Store	Enabled
Turn off app notifications on the lock screen	
Turn off Automatic Download and Install of updates	
Turn off Autoplay Turn off Autoplay on	Enabled All drives
Turn off Data Execution Prevention for Explorer	Disabled
Turn off downloading of print drivers over HTTP	
Turn off heap termination on corruption	
Turn off Internet download for Web publishing and online ordering wizards	Enabled
Turn off Microsoft consumer experiences	
Turn off Password Manager	Disabled
Turn off printing over HTTP	
Turn off the offer to update to the latest version of Windows	Enabled
Turn off the SmartScreen Filter	
Turn off toast notifications on the lock screen	
Turn off Windows Update device driver searching	
Turn on convenience PIN sign-in	Disabled
Turn on PowerShell Script Block Logging Log script block invocation start / stop events:	Enabled TRUE
Untrusted Font Blocking Mitigation Options	Enabled Block untrusted fonts and log events
Use a hardware security device	Enabled
Use enhanced anti-spoofing when available	
User Account Control: Admin Approval Mode for the Built-in Administrator account	
User Account Control: Allow UIAccess applications to prompt for elevation without using the secure desktop	Disabled

Policy	Setting
User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode	Elevate without prompting
User Account Control: Behavior of the elevation prompt for standard users	Prompt for credentials
User Account Control: Detect application installations and prompt for elevation	Enabled
User Account Control: Only elevate executables that are signed and validated	Disabled
User Account Control: Only elevate UIAccess applications that are installed in secure locations	Enabled
User Account Control: Run all administrators in Admin Approval Mode	Disabled
User Account Control: Switch to the secure desktop when prompting for elevation	
User Account Control: Virtualize file and registry write failures to per-user locations	Enabled
WDigest Authentication (disabling may require KB2871997)	Disabled
Windows Firewall: Domain: Apply local connection security rules	Yes
Windows Firewall: Domain: Apply local firewall rules	
Windows Firewall: Domain: Display a notification	No
Windows Firewall: Domain: Inbound connections Inbound Connections	Enabled Block
Windows Firewall: Domain: Logging: Log dropped packets	Yes
Windows Firewall: Domain: Logging: Log successful connections	
Windows Firewall: Domain: Logging: Name	%SYSTEMROOT%\System32\logfiles\firewall\domainfw.log
Windows Firewall: Domain: Logging: Size limit (KB)	16384 KB
Windows Firewall: Domain: Outbound connections	Allow
Windows Firewall: Private: Apply local connection security rules	Yes
Windows Firewall: Private: Apply local firewall rules	
Windows Firewall: Private: Display a notification	No
Windows Firewall: Private: Inbound connections Inbound Connections	Enabled Block
Windows Firewall: Private: Logging: Log dropped packets	Yes
Windows Firewall: Private: Logging: Log successful connections	

Policy	Setting
Windows Firewall: Private: Logging: Name	%SYSTEMROOT%\System32\logfiles\firewall\privatefw.log
Windows Firewall: Private: Logging: Size limit (KB)	16384 KB
Windows Firewall: Private: Outbound connections	Allow
Windows Firewall: Public: Apply local connection security rules	Yes
Windows Firewall: Public: Apply local firewall rules	
Windows Firewall: Public: Display a notification	No
Windows Firewall: Public: Inbound connections Inbound Connections	Enabled Block
Windows Firewall: Public: Logging: Log dropped packets	Yes
Windows Firewall: Public: Logging: Log successful connections	
Windows Firewall: Public: Logging: Name	%SYSTEMROOT%\System32\logfiles\firewall\publicfw.log
Windows Firewall: Public: Logging: Size limit (KB)	16384 KB
Windows Firewall: Public: Outbound connections	Allow

Table 10: Table Title

6 Operation

NOTE

Application updates can slow the system and impact CLARUS® 700 application performance.

Anti-virus software and other applications perform periodic update installations automatically, which use system resources that impact the performance of other applications.

- ▶ If the CLARUS® 700 application seems to be running slowly, check whether other applications (for example, anti-virus software) is installing updates.
- ▶ Wait until the installations are complete or allow more time for system and application response while the installation is in progress.

6.1 Safety During Operation

⚠ CAUTION!

Improper operator training

could lead to poor scan quality, damage to system components, or inadvertent patient safety compromise.

- ▶ Train all operators fully.
- ▶ Ensure all personnel are familiar with the information contained in the Safety and Certifications chapter.
- ▶ Ensure that routine maintenance has been properly carried out in conformance with the Maintenance Schedules described in the Maintenance chapter.

NOTE

Make sure that patients and instrument operators do not bump or pull on the low-voltage electronic cables attached to the underside of the table.

Disturbing the cables can cause connections to detach and interfere with proper instrument operation.

For lens cleaning instructions, refer to: Cleaning the Front Lens [▶ 157].

6.2 Preparing the Device

To prepare the device:

Action

1. Wipe the chin rest and forehead rest with an alcohol pad, and allow the assembly to dry. (See Cleaning the Chinrest and Forehead Support [▶ 161].)
2. Carefully read and understand any instructions provided by the officiating physician or researcher.

6.2.1 Retrieving Images from FORUM in Advance

NOTE

Prepare the instrument before patients arrive (prior evening recommended) to avoid a delay while patients are present.

When you select a patient for image acquisition, all of the patient's existing images download from FORUM onto the CLARUS® 700 instrument. While download is in progress, the instrument cannot acquire new images.

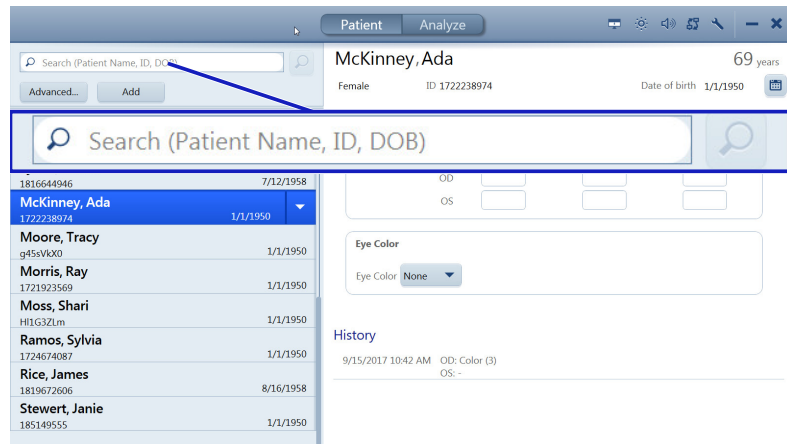
Action

1. At the end of each day, identify which patients are scheduled for CLARUS® 700 imaging the following day.
2. On the CLARUS® 700, select the first patient's name and allow any saved images to download.
3. Repeat the previous step for each of tomorrow's patients.

When patients arrive, their images have already downloaded onto the instrument and you can acquire new images without delay.

6.2.2 Finding a Patient

To find a patient:



Action

1. In the **Search** bar, type the first name, last name, patient ID, or a scan date of the person you want to find.
2. Click the **Search** tool.
3. To refine your search criteria, click **Advanced**.

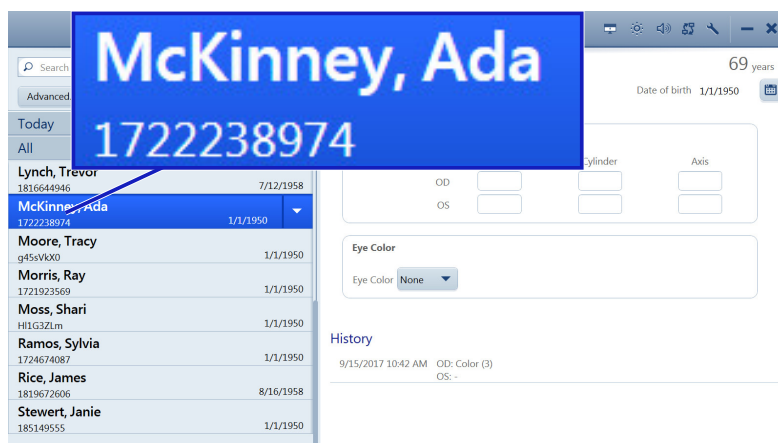
6.2.3 Selecting the Patient

Finding a patient's name can vary depending on the systems you use.

- If you use an EMR system:
 - The patient's name might be listed under **Today**

- If the patient is not listed under **Today**, search for their name or ID (See Finding a Patient [▶ 102]).
- If the patient is not in the database, add the patient's information. (See Adding a Patient [▶ 51]).
- If you do not use an EMR system:
 - Search for the patient's name or ID **Search** (See Finding a Patient [▶ 102]).
 - If the patient is not in the database, add the patient's information. (See Adding a Patient [▶ 51]).

To select a patient:



Action

1. Find the patient's name using the list or search and select the patient's name.
2. Click **Acquire**.

6.3 Preparing the Patient

NOTE

Keep the front of the lens clean.

The quality of image capture is affected by the cleanliness of the front lens.

- ▶ Avoid touching the lens with anything but approved cleaning equipment.
- ▶ Use the protective cover to keep dust off the lens when the device is not in use.

For complete instructions on cleaning the lens, refer to: Cleaning and Disinfection [▶ 157]

6.3.1 Dilating the Patient's Eyes (Optional)

Tip: If you typically dilate patients' eyes, you can change the default acquisition setting to Myd. See: Configuring Acquisition Settings [▶ 84].

The minimum pupil size for CLARUS® 700 is 2.5 mm, which is typically achieved without dilation.

6.3.2 Lifting the Patient's Eyelid (Optional)

Because the patient's eye is very close to the acquisition head, you might need to re-position the computer screen or reach around the instrument to lift a patient's eyelid.

The option you use can also depend on whether you are scanning the patient's right or left eye.

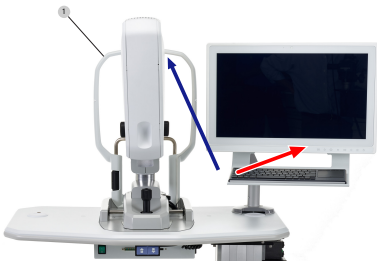
6.3.2.1 Option 1: Reach Between

This method works better if the operator cannot comfortably reach around the acquisition head. However, with the computer screen moved to provide access, the operator has a more limited view of the screen.

To lift the eyelid by reaching between:

1. Swing the computer aside to allow access the patient's eye.
2. Reach between the acquisition head and the computer to access the back of the patient support.
3. Rest your hand against the back of the forehead rest and lift the patient's eyelid.

Action



6.3.2.2 Option 2: Reach Around

This method provides the operator a consistent view of the computer screen. However, some operators may not be able to comfortably reach the patient's eyelid.

To lift the eyelid by reaching around:

1. Reach around the acquisition head to access the back of the patient support.
2. Rest your hand against the back of the forehead rest and lift the patient's eyelid.

Action



6.3.3 Positioning the Patient

CAUTION!

Pinch hazard for hands and fingers.

- ▶ Keep operator and patient hands and fingers away from crosstable during alignment and image capture.

To position the patient:

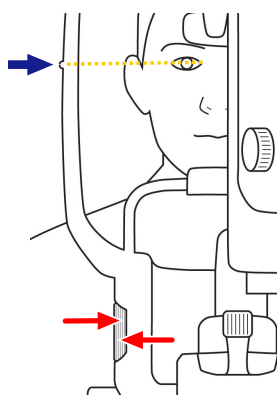
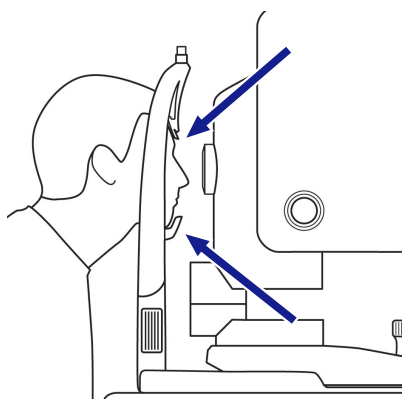
Action

1. Adjust the table (and patient chair, if needed) until the patient can comfortably reach the headrest and chin rest.

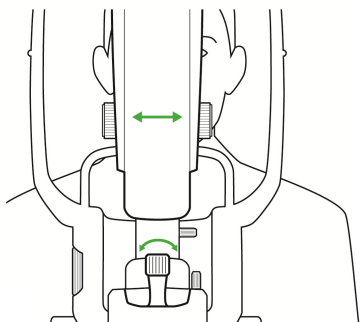


2. To move the table up, press and hold the up arrow (1).
3. To move the table down, press and hold the down arrow (2).
4. Ask the patient to:

- ⇒ Sit comfortably with feet flat on the ground.
- ⇒ Lean forward slightly, grasping the table handles if needed for stability.
- ⇒ Rest their chin in the chin rest.
- ⇒ Rest their forehead against the forehead rest.



5. Adjust the chin rest up or down as needed until align the patient's canthus to the canthus marker on the patient support.



6. Swing the acquisition head left to image the patient's right eye or right to image the patient's left eye.

6.3.4 Aligning and Focusing on the Patient's Eye

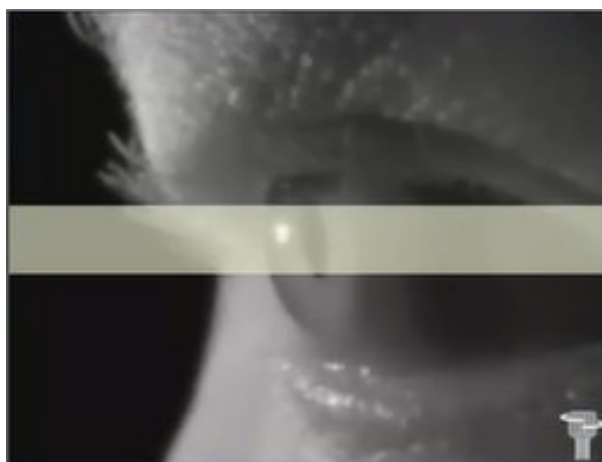
In addition to the preview image, two images of the iris help to align the eye.

The top iris image is used for vertical alignment. The height of the band is the minimum pupil size required. If the pupil is smaller than the transparent band, you can change the pupil setting to **Non-Myd**, or dilate the patient's pupils.

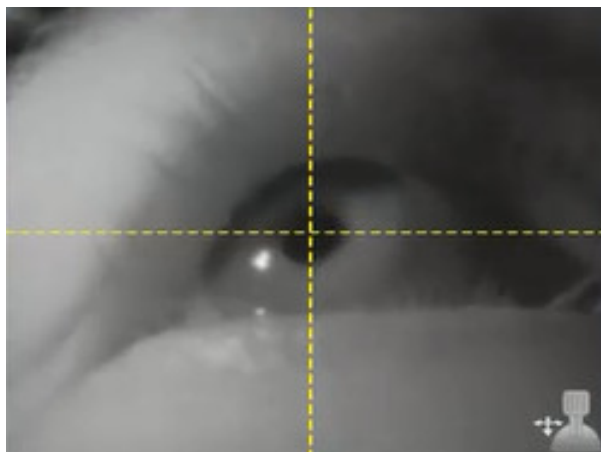
To align and focus on the patient's eye:

1. Push the acquisition head closer to the patient.
2. Twist the joystick to move the acquisition head up or down until the patient's pupil is aligned with the band.

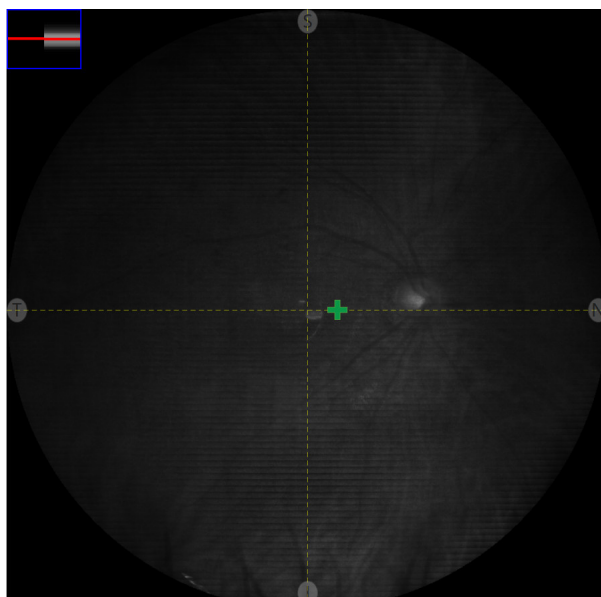
Action



3. If the patient's pupil is smaller than the transparent band, change the setting to **Non-Myd** or dilate the patient's pupil (Dilating the Patient's Eyes (Optional) [▶ 103]).
4. Slide the instrument front to back and side-to-side until the patient's pupil is centered on the yellow cross hairs on the bottom iris image.



⇒ When the pupil is aligned, a live view of the fundus appears in the live IR preview window.



5. Ensure that the image is in focus. If needed, manually focus the image (Manually Focusing the Image [▶ 124]).
6. Make fine adjustments as needed to eliminate any shadows showing in the IR preview window.
7. If either alignment is not centered, repeat these steps until they are centered.

NOTE


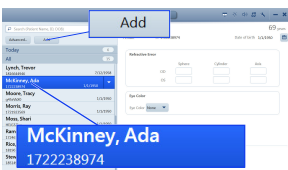

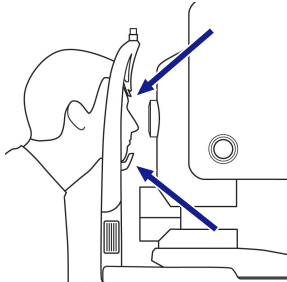
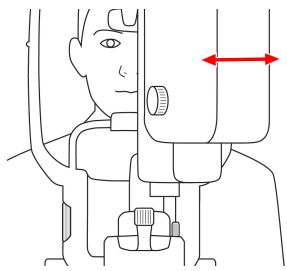
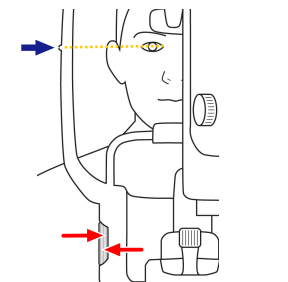

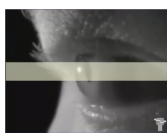
If the acquisition head drifts after you align it, you can set the lock to secure it in place.



6.4 Acquire Images

6.4.1 About Acquisition

In general, scan acquisition steps are:

	 <p>Select or add the patient and click Acquire.</p>		
<p>Turn on the instrument and log in.</p>	<p>Raise or lower the chair or table for the patient's size and comfort as needed.</p>	<p>Clean the instrument and ask the patient to sit comfortably, lean forward, and place their head against the chin rest and head rest.</p>	
			
<p>Swing the acquisition head to center the patient's eye.</p>	<p>Ensure that the patient can see the internal fixation target.</p>	<p>Adjust the joystick to center the yellow bar with the patient's pupil.</p>	
	<p>Raise or lower the chin rest to align the patient's eye with the instrument's alignment notch.</p>		

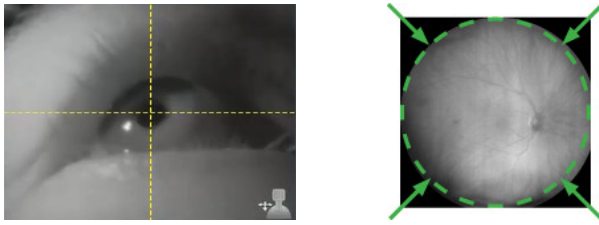

 <p>Move the instrument forward or back and right or left as needed until the yellow lines cross at the patient's pupil and the patient's eye is centered. You might need to adjust joystick and move the instrument together to obtain proper alignment for all three views.</p>	 <p>Click Capture.</p>
--	---

Table 11: Scan Acquisition Overview

Depending on the type of scan you are capturing, there might be additional required steps. Refer to the complete instructions for the type of scan you are capturing.

- Capturing a Widefield Image [▶ 113]
- Capturing an Ultra-widefield Image (2-Image Montage) [▶ 114]
- Capturing an AutoMontage Image (4-Image Montage) [▶ 115]
- Capturing a Montage Image (2-6 Images) [▶ 117]
- Capturing a Fluorescein Angiography (FA) Image Series [▶ 120]
- Capturing a Stereo Image [▶ 118]
- Capturing an External Eye Image [▶ 119]

Also see about this

- 📄 Capturing a Fluorescein Angiography (FA) Image Series [▶ 120]


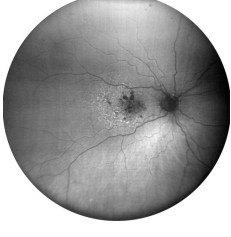
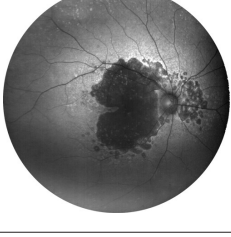
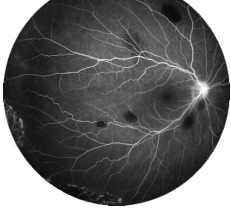
6.4.1.1 Scan Types

6.4.1.1.1 CLARUS 700 Scan Types

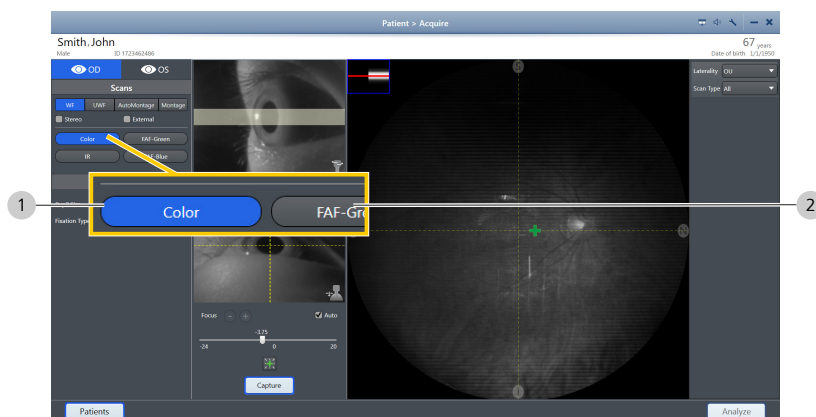
Tip: You can choose which scan type is pre-selected for acquisition. See: [Configuring Acquisition Settings \[84\]](#).



Figure 12: CLARUS® 700 Scan Types

1		<p>Color</p> <p>High resolution, color images of the fundus appear similar in color to direct observation (ophthalmoscopy). You can also view a monochrome image of each composite color (red, green, and blue).</p>
2		<p>FAF-Green</p> <p>Fundus autofluorescence with green excitation. The eye is illuminated with light at a wavelength that stimulates the natural fluorescence of lipofuscin. A monochrome image is generated.</p>
3		<p>FAF-Blue</p> <p>Fundus autofluorescence with blue excitation. The eye is illuminated with light at a wavelength that stimulates the natural fluorescence of lipofuscin. A monochrome image is generated.</p>
4		<p>FA</p> <p>FA image series captured by illuminating the eye with blue LED light at a wavelength that stimulates fluorescence of the injected sodium fluorescein dye.</p>

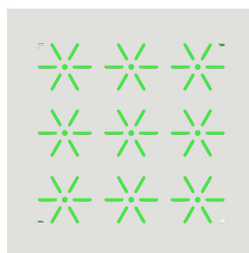
6.4.1.1.2 Additional Imaging Options



1		Stereo Image
2		External Image

6.4.1.2 Internal Fixation Targets

The internal fixation target set positions include 9 fixed points to steer a patient's gaze:



- Central
- Temporal
- Nasal
- Superior
- Inferior
- Superotemporal
- Superonasal
- Inferonasal
- Inferotemporal

You can override the preset fixation targets and choose any location within the patient's field of view. (See: Manually Positioning the Internal Fixation Target [▶ 124].)

If the patient is unable to see the fixation target, you can blink the fixation target to help the patient to see it. (See: Blinking the Fixation Target [▶ 123].)

Internal fixation targets adjust to any point within the 90 degree circular FOV.

6.4.1.2.1 Internal Fixation Target Preset Positions

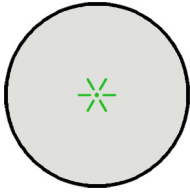
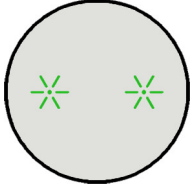
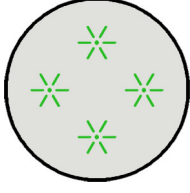
	<p>Widefield (WF) Central</p>
	<p>Ultra widefield Nasal, Temporal</p>
	<p>AutoMontage Nasal, Temporal, Superior, Inferior</p>

Table 12: Preset Internal Fixation Targets for Scans

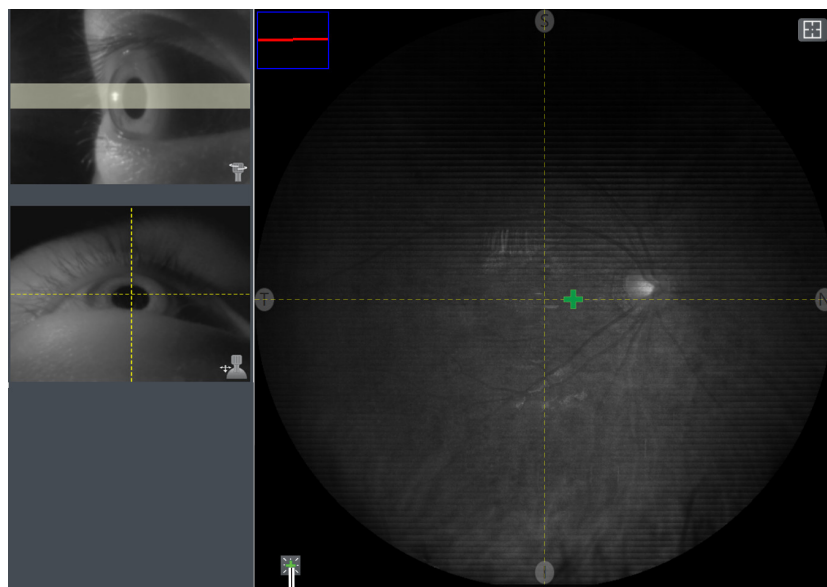
6.4.1.2.2 Tips to Help Patients Find Fixation Targets

Tip: You can globally change the duration of target blinking (see: **Configuring Acquisition Settings** [▶ 84]).



Some patients have difficulty seeing the internal fixation target. When the target is on the side (nasal / temporal), it can appear as though the internal fixation target is outside the acquisition head. When a patient cannot see the fixation target, you can help them locate it using the tips below.

1. Describe the target (a green star pattern).
2. Pull acquisition head towards you and realign the instrument (Aligning and Focusing on the Patient's Eye [▶ 106]).
3. Blink the **fixation target (1)** (Blinking the Fixation Target [▶ 123]).



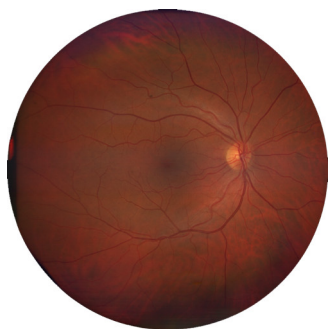
1

4. For temporal fixation targets, swivel the acquisition head slightly towards the center.
5. Increase the duration of fixation target blinks (Configuring Acquisition Settings [▶ 84]).
6. Have the patient follow the fixation target from the center position to the side:
 - Manually position the **fixation target (1)** towards the center (Manually Positioning the Internal Fixation Target [▶ 124]).
 - When the patient sees the centered target, ask them to follow the target as you manually reposition it to the side.
7. If the patient still cannot see the internal fixation target, use the external fixation target (Using the External Fixation Target [▶ 125]).

6.4.2 Capturing a Widefield Image

NOTE

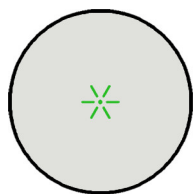
If the patient cannot see the fixation target, refer to: Tips to Help Patients Find Fixation Targets [▶ 112].



When you capture a widefield (**WF**) image, CLARUS® 700 takes one image with a fixation target preset near the center.

If the patient cannot see the fixation target, you can:

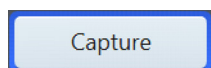
- Blink the fixation target: Blinking the Fixation Target [▶ 123]
- Change the fixation target: Manually Positioning the Internal Fixation Target [▶ 124]
- Use the external fixation target: Using the External Fixation Target [▶ 125]



Prerequisite



Action



To capture a WF image:

- The device is prepared. (See Preparing the Device [▶ 101].)
 - The patient is prepared. (See Preparing the Patient [▶ 103].)
1. Under **Scans**, select **WF**.
 2. Select the scan type. For more information, refer to: Scan Types [▶ 110].
 3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
 4. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
 5. The instrument automatically focuses the image. To manually adjust focus, refer to: Manually Focusing the Image [▶ 124].
 6. Instruct the patient to blink and then open their eyes wide.
 7. Click the joystick button or click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
 8. Repeat adjustments and scans as needed until all images are acquired.

Also see about this

-  Manually Focusing the Image [▶ 124]

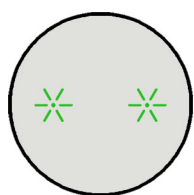
6.4.3 Capturing an Ultra-widefield Image (2-Image Montage)

NOTE

If the patient cannot see the fixation target, refer to: Tips to Help Patients Find Fixation Targets [▶ 112].



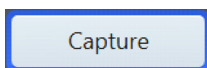
When you capture an ultra-widefield (UWF) image, CLARUS® 700 takes two widefield images and stitches them together for a wider view of the retina.



The fixation targets for these images are preset at temporal and nasal.

Prerequisite

Action



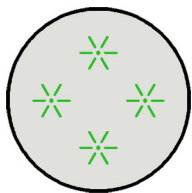
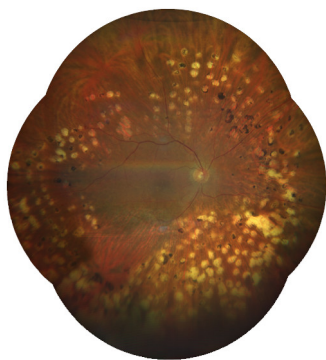
To capture an UWF image:

- The device is prepared. (See Preparing the Device [▶ 101].)
- The patient is prepared. (See Preparing the Patient [▶ 103].)
- 1. Under **Scans**, select **UWF**.
- 2. Select the scan type. For more information, refer to: Scan Types [▶ 110].
- 3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
- 4. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
- 5. The instrument automatically focuses the image. To manually adjust focus, refer to: Manually Focusing the Image [▶ 124].
- 6. Instruct the patient to blink and then open their eyes wide.
- 7. Click the joystick button or click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
 - ⇒ The internal fixation target advances to the next position in the sequence.
- 8. Recheck adjustments and focus for the second scan in the series, and click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
 - ⇒ If the images montage successfully, each thumbnail displays a green checkmark.
 - ⇒ If an image did not montage successfully, the thumbnail displays a yellow exclamation point.
- 9. To delete and retake the image, refer to: Deleting or Replacing an Image [▶ 126].

6.4.4 Capturing an AutoMontage Image (4-Image Montage)

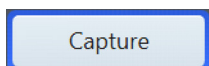
NOTE

If the patient cannot see the fixation target, refer to: **Tips to Help Patients Find Fixation Targets** [▶ 112].



Prerequisite

Action



When you capture an AutoMontage image, CLARUS® 700 takes four widefield images and stitches them together for a wider view of the retina.

CLARUS® 700 saves the montage image and each of the four individual images.

If you do not complete all four scans, CLARUS® 700 saves the completed scans as individual wide field scans and completes the montage showing the images that you captured.

The fixation targets for these images are preset.

To capture an AutoMontage image:

- The device is prepared. (See Preparing the Device [▶ 101].)
- The patient is prepared. (See Preparing the Patient [▶ 103].)
- 1. Under **Scans**, select **AutoMontage**.
- 2. Select the scan type. For more information, refer to: Scan Types [▶ 110].
- 3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
- 4. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
- 5. The instrument automatically focuses the image. To manually adjust focus, refer to: Manually Focusing the Image [▶ 124].
- 6. Instruct the patient to blink and then open their eyes wide.
- 7. Click the joystick button or click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
- 8. Ask the patient to relax while the you review the scan.
 - ⇒ The internal fixation target advances to the next position in the sequence.
- 9. **Next Scan:** confirm alignment and focus for the next scan in the series, and click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
 - ⇒ The internal fixation target advances to the next position in the sequence.
- 10. Repeat **Next scan** steps until all four scans are complete.
 - ⇒ If the images montage successfully, each thumbnail displays a green checkmark.

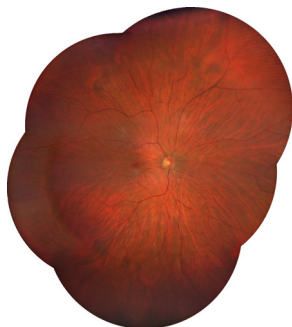
⇒ If an image did not montage successfully, the thumbnail displays a yellow exclamation point.

11. To delete and retake the image, refer to: [Deleting or Replacing an Image](#) [▶ 126].

6.4.5 Capturing a Montage Image (2-6 Images)

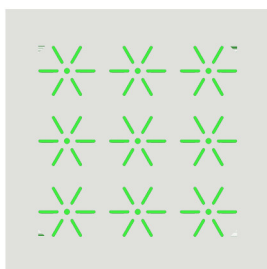
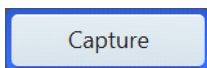
NOTE

If the patient cannot see the fixation target, refer to: [Tips to Help Patients Find Fixation Targets](#) [▶ 112].



Prerequisite

Action



When you capture a custom **Montage** image, CLARUS® 700 takes a series of widefield images and stitches them together. You can decide how many images to include in the montage. For each image, you can choose any internal fixation target location or have the patient focus on the external fixation target (Using the External Fixation Target [▶ 125]).

To capture a Montage image:

- The device is prepared. (See [Preparing the Device](#) [▶ 101].)
 - The patient is prepared. (See [Preparing the Patient](#) [▶ 103].)
1. Under **Scans**, select **Montage**.
 2. Select the scan type. For more information, refer to: [Scan Types](#) [▶ 110].
 3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
 4. Using the touchscreen or mouse, select a fixation target (1) in the **Preview** panel.
 5. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
 6. The instrument automatically focuses the image. To manually adjust focus, refer to: [Manually Focusing the Image](#) [▶ 124].
 7. Instruct the patient to blink and then open their eyes wide.
 8. Click the joystick button or click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
 9. **Next Scan:**
 - ⇒ Select a different fixation target location (see: [Manually Positioning the Internal Fixation Target](#) [▶ 124]).
 - ⇒ Confirm alignment and focus for the next scan in the series.
 - ⇒ Click **Capture**.
 - ⇒ A preview of the captured image appears for several seconds and is added to the selection bin.

10. Repeat **Next scan** steps for each scan in the series (2-6 total).
11. When you are finished taking scans, click **End Montage**.
 - ⇒ If the images montage successfully, each thumbnail displays a green checkmark.
 - ⇒ If an image did not montage successfully, the thumbnail displays a yellow exclamation point.
12. To delete and retake the image, refer to: Deleting or Replacing an Image [▶ 126].

6.4.6 Capturing a Stereo Image

NOTE

Capture the right offset image first and the left offset image second.

The stereo image can look inside-out if the images are captured in reverse order.

A stereo image is comprised of two separate images of the same eye, offset to produce a stereoscopic pair.

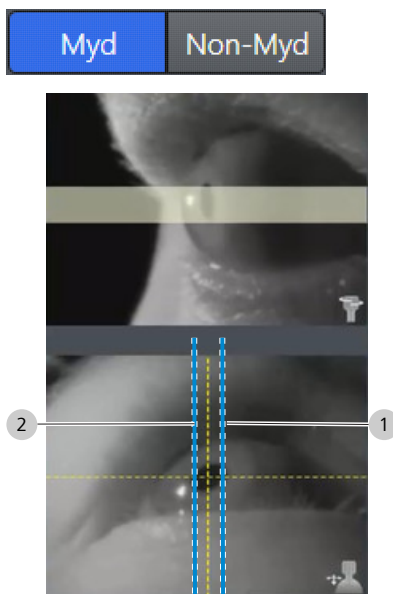
A pair of images of the same eye created as a stereo pair are stored the pair using *Stereometric Relationship* IOD in DICOM. In the **Review** screen, stereoscopic pairs display as linked viewports for simultaneous pan and zoom.

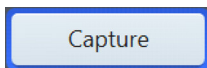
To capture a stereo image:

- The device is prepared. (See Preparing the Device [▶ 101].)
 - The patient is prepared. (See Preparing the Patient [▶ 103].)
1. Under **Scans**, check **Stereo**.
 2. Select the scan type. For more information, refer to: Scan Types [▶ 110].
 3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
 4. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
 5. The instrument automatically focuses the image. To manually adjust focus, refer to: Manually Focusing the Image [▶ 124].
 6. Adjust the alignment for the first stereo image (1) offset to the *right* side of the pupil.
 7. Instruct the patient to blink and then open their eyes wide.

Prerequisite

Action





8. Click the joystick button or click **Capture**.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
9. Adjust the alignment for the second stereo image (2) offset to the *left* side of the pupil.
 - ⇒ An image preview appears for a few seconds for you to verify image quality and the image is added to the selection bin.
10. Ask the patient to relax while the you review the images.

6.4.7 Capturing an External Eye Image

NOTE

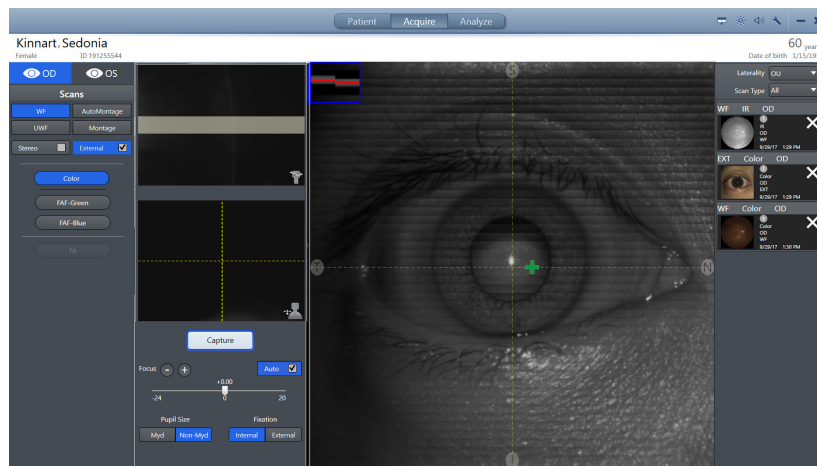
Auto focus turns off to capture an external eye image. Make sure you must turn on Auto focus after acquiring an external eye image.

Capturing external eye images allows you to store a photograph of the eye along with the retinal images. Each external image is stored as an individual image.

To capture an external eye image:

- The device is prepared. (See Preparing the Device [▶ 101].)
- The patient is prepared. (See Preparing the Patient [▶ 103].)

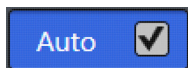
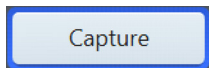
Prerequisite



Action

1. Under **Scans**, check **External**.
2. Straighten the acquisition head until the eye is directly in front of it.
3. Move the instrument all the way back.
4. Slowly move the instrument forward until the patient's eye appears in the **Preview** screen as you want it to appear in the image.
5. Use the joystick to manually focus the image.

6. Instruct the patient to look straight ahead. The fixation target may not be visible; it is not necessary for the patient to focus on the fixation target to acquire this image.
7. Instruct the patient to blink.
8. Click the joystick button or click **Capture**.
9. Repeat adjustments and scans as needed until all images are acquired.
10. Check **Auto**.
⇒ Auto focus is enabled for future image captures.



6.4.8 Capturing a Fluorescein Angiography (FA) Image Series

NOTE This scan is only available for CLARUS® 700 instruments.

NOTE If the patient cannot see the fixation target, refer to: **Tips to Help Patients Find Fixation Targets [▶ 112]**.



Before you take angiography scans, carefully review the dye injection procedures (Injecting Dye for Angiography Scans [▶ 122]). The timing of scans is an important component of angiography scan acquisition. When you acquire an FA series, you can choose the timing for capturing scans and which types of scans to capture (WF, UWF, AutoMontage, Montage).

Angiography Timers

NOTE When you begin an FA series for a patient, a timer for that patient begins. You can begin an FA series for another patient before finishing the series for the first patient. Each patient's timer remains visible on all screens throughout their FA series captures.

You can capture an FA series for one, two or three patients concurrently.

Tip: The patient's timer automatically starts when you capture the first image.

CLARUS® 700 provides timers for each patient's scan series. Each patient has their own unique timer, so you can scan another patient's eyes while the first patient waits for the dye to progress through their system.



All screens show concurrent timers for all active patients so that you can time each of their scans with the dye's transit properly. Start the timer when you begin to inject the dye. The timer shows you how much time has elapsed since the start of the injection.

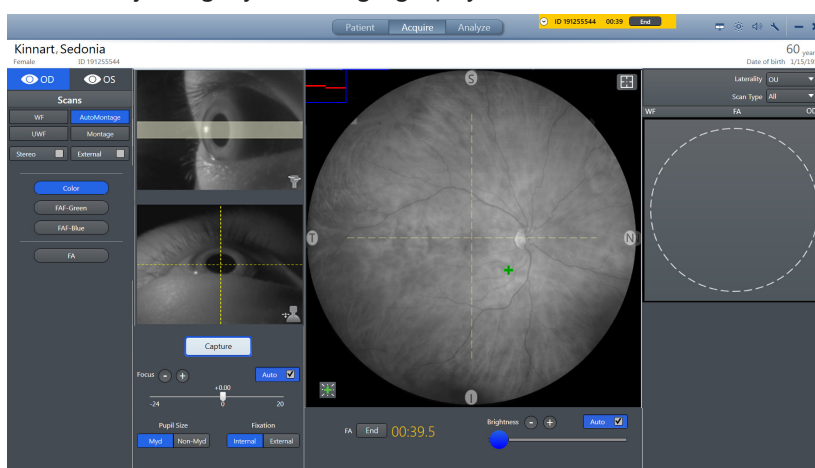
Figure 13: Multiple Timer Example

Each patient's timer runs for the duration of their visit. CLARUS® 700 saves the timer information with the images. When you export angiography images, the timer information is burned into the image.

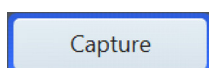
To capture an FA image:

Prerequisite

- The device is prepared. (See Preparing the Device [▶ 101].)
- The patient is prepared. (See Preparing the Patient [▶ 103].)
- You have read and understand the dye injection procedure. (See: Injecting Dye for Angiography Scans [▶ 122].)



Action



1. Select **WF**.
 - ⇒ The first series of scans are typically captured in fast succession, which works best with WF. However, you can select other fields of view throughout the series as needed (see: Field of View Options).
2. Under **Scans**, select **FA**.
3. Under **Settings**, select **Myd** if the patient's pupil is dilated and **Non Myd** if the patient's pupil is not dilated.
4. Instruct the patient to look inside the lens, focus on the green fixation target and blink naturally.
5. The instrument automatically focuses the image. To manually adjust focus, refer to: Manually Focusing the Image [▶ 124].
6. Begin the injection process and start the image capture series. See: Injecting Dye for Angiography Scans [▶ 122] and Example of Image Capture Timing.
7. Instruct the patient to blink and then open their eyes wide.
8. Click the joystick button or click **Capture**.
 - ⇒ The image is added to the selection bin.
9. If needed, recheck adjustments and focus for the next scan in the series, and click **Capture**.
 - ⇒ The image is added to the selection bin.

10. Repeat adjustments and scans as needed until all images are acquired.

6.4.8.1 Injecting Dye for Angiography Scans

⚠ WARNING!

Before you inject a patient with dye, read and follow the dye manufacturer's instructions carefully and completely to protect operator and patient safety throughout the injection process.

⚠ CAUTION!

Injected dye can have side effects for some patients.

Adverse patient reactions to dye can interfere with FA image series completion or require a second FA image series (including dye injection).

- ▶ Read all dye manufacturer's documentation carefully.
- ▶ Heed all information regarding dye side effects and contraindications.
- ▶ If repeating an FA image series, consult the manufacturer's documentation regarding contraindications before additional dye injections.

Fluorescein Angiography (FA) is a dye tracing technique for examination of retina and choroid vasculature. After you inject the patient with sodium fluorescein, the retina illuminates with blue light and CLARUS® 700 captures the fluorescent green light that the dye emits.

To inject dye for FA:

- You are acquiring an FA scan and you reach the step: *Inject Sodium Fluorescein*.
- The patient and CLARUS® 700 instrument are prepared and aligned.
- The syringe is filled per dye manufacturer's instructions.
- The timer is displayed and ready to start.

Prerequisite

NOTE

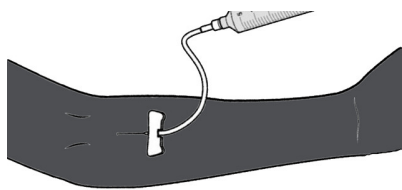
The dye injection steps are provided only as a summarized guideline to help you coordinate the injection and scan capture process.

- ▶ Always read and follow all dye manufacturer's instructions and safety requirements.

Action

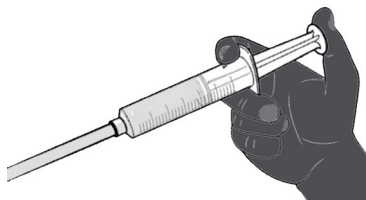


1. Position the patient's arm on the arm rest.
2. Apply a tourniquet, prepare the injection site, and locate a vein according to the dye manufacturer's instructions.
3. Insert a butterfly needle into the vein according to the dye manufacturer's instructions.



4. Attach a syringe with sodium fluorescein (FA dye) according to the dye and syringe manufacturer's instructions.
5. Inject FA dye (about 5 cc, 10% concentration, at about 1 cc per second).

⇒ **WARNING! Refer to the manufacturer's instructions for precise measurement, side effect, and contraindication information.**



6. On the CLARUS® 700, **Start** FA the timer.
7. Capture images as the dye circulates through the retinal and choroidal vasculature.

6.4.9 Common Acquire Tasks

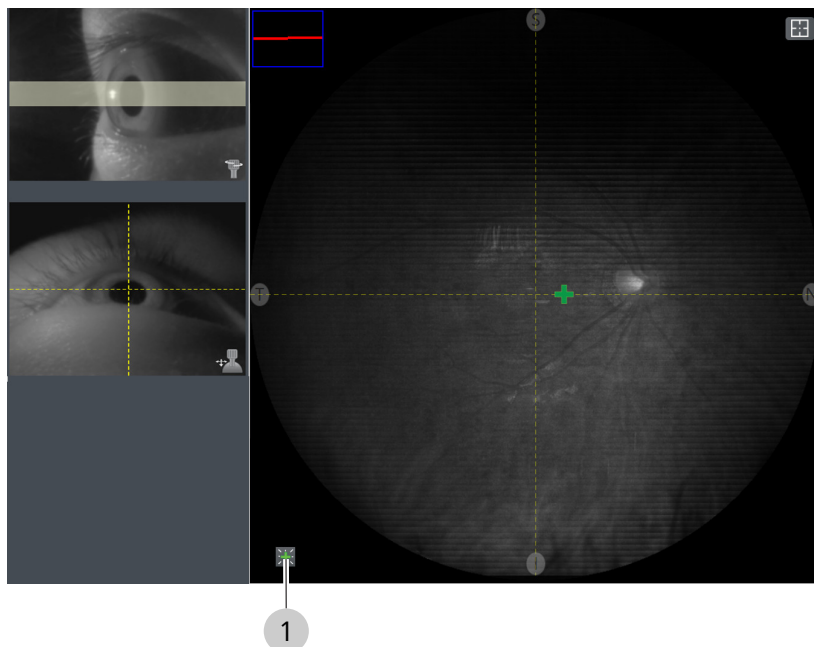
6.4.9.1 Blinking the Fixation Target

If the patient is having trouble seeing the internal fixation target, you can blink the target to make it easier for them to see. To change the blink settings, refer to: Configuring Acquisition Settings [▶ 84].

To blink the fixation target:

Prerequisite

- A patient is being prepared for **Scan Acquisition** and cannot see the fixation target.



Action

1. Click the blink button (1).

Result

- ✓ The internal fixation target blinks several times.

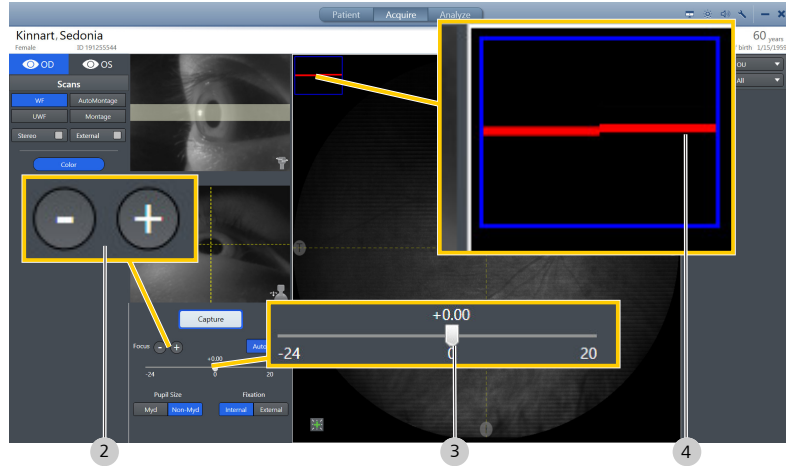
6.4.9.2 Manually Focusing the Image

Prerequisite

Action

To focus the image manually:

- You reached the focus step in a **Scan Acquisition** task.
 - You want to manually focus the image.
1. Uncheck **Auto**.
 2. Turn the focus knob on the acquisition head (1) or use (+ and -) (2) or the focus slider (3) on the screen to manually adjust focus.



3. Use the focusing guides (4) in the upper left corner of the **IR Preview** panel, to aid in focus.

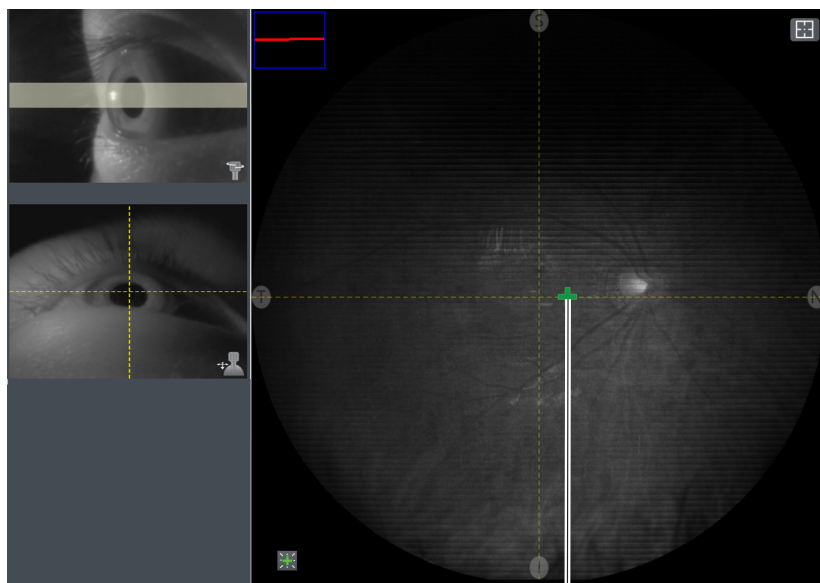
6.4.9.3 Manually Positioning the Internal Fixation Target

You can place the internal fixation target anywhere on the screen using the touchscreen or the mouse.

Prerequisite

To manually position the internal fixation target:

- A patient is being prepared for **Scan Acquisition** and you want to change or set the internal fixation target.



1

Action

1. In the **IR Preview** panel, double-click (or press the touchscreen and hold) to select a position for the internal fixation target (1).

Result

- ✓ The internal fixation target moves to your selected location in both the **Preview** panel and the patient's FOV.

6.4.9.4 Using the External Fixation Target

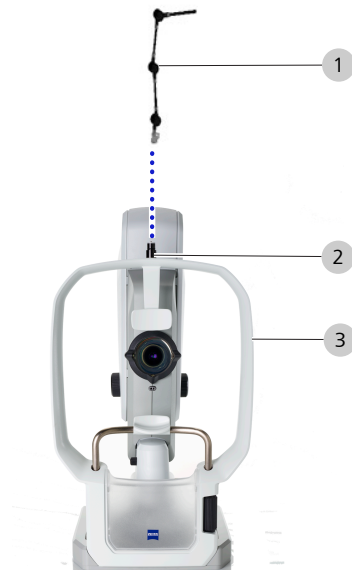
The external fixation target is a light you can position to guide the patient's gaze. The external fixation target is in the accessory kit. Use this target when the patient cannot see the internal fixation target.

To install the external fixation target:

Action



1. Remove the external fixation target from the accessory kit.
2. Install the external fixation target (1) onto mount (2) on the patient support (3).



3. Position the target where you want the patient to focus.

6.4.9.5 Checking Scan Quality

Tip: To increase or decrease the amount of time that the preview appears on-screen, refer to: **Configuring Acquisition Settings** [▶ 84].

Once data acquisition is complete, an image preview displays. Review all scans carefully. If possible, retake scans that do not pass the acceptance criteria (Deleting or Replacing an Image [▶ 126]).

To check scan quality:

1. Check that the focus is sharp and clear.
2. Ensure that the image is illuminated uniformly.
3. Ensure that there are few to no artifacts that cast shadows on the image.

Action

Result

- ✓ If image quality is degraded, contact ZEISS customer service (<https://www.zeiss.com/>).

6.4.9.6 Deleting or Replacing an Image

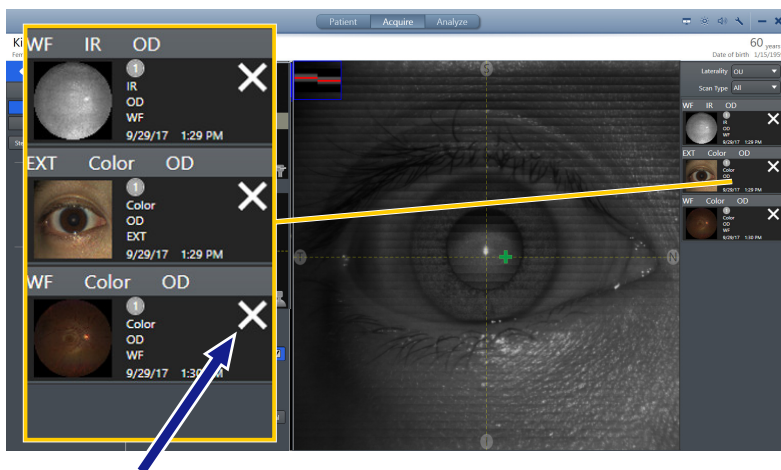
To delete or replace an image:

Prerequisite

- You reached the image check step in a **Scan Acquisition** task.
- You want to delete or replace an image.

Action

1. In the selection bin, locate the image you want to recapture.



2. Click on the **X** to delete the image.
⇒ A confirmation opens.
3. To delete and recapture the image, click **Delete & Recapture**.
4. To delete the image, click **Delete**.

6.5 Analyze Images

You can run the CLARUS® 700 application on review stations concurrently with other ZEISS instrument applications.

There are two **Analyze** modes: **Proof** and **Review**.

Proof allows you to sort and select images.

Review allows you to view, compare, and annotate images.

6.5.1 About Image Analysis

In general, image analysis steps are:

<p>Select the patient and click Analyze.</p>	<p>Using the Proof sheet, move the image(s) you want to analyze into the selection bin and click Review. You can filter and sort images different ways to help you find the images you want to analyze.</p>	<p>In Review, select the number of images you want to view and scroll through the images.</p>
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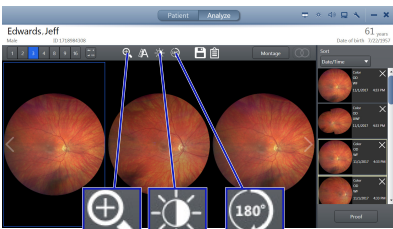
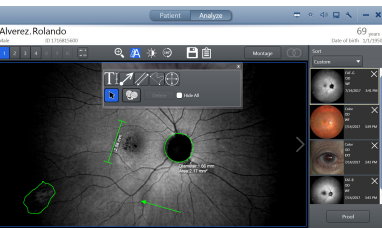
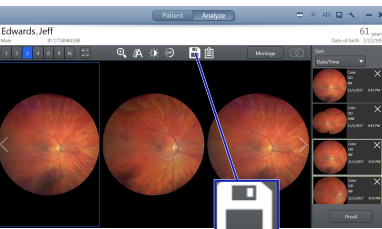
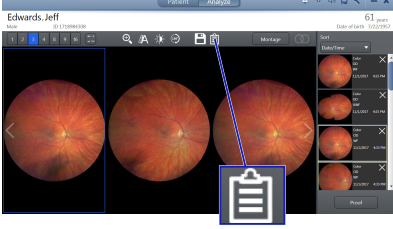
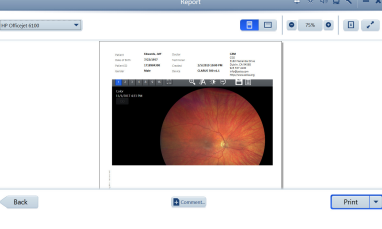
		
<p>Select an image and zoom in; adjust contrast, brightness, gamma, sharpness, saturation, and rotation as needed.</p>	<p>Annotate the image (add measured line, circle, freeform shape, and text) and duplicate annotations as needed.</p>	<p>Save your changes.</p>
		
<p>Create a report.</p>	<p>Save and print a report.</p>	

Table 13: Image Analysis Overview

6.5.2 Proof

Proof shows an overview of all images for the patient. Using the Proof Sheet, you can filter images by scan type, date of acquisition, laterality and favorite status.

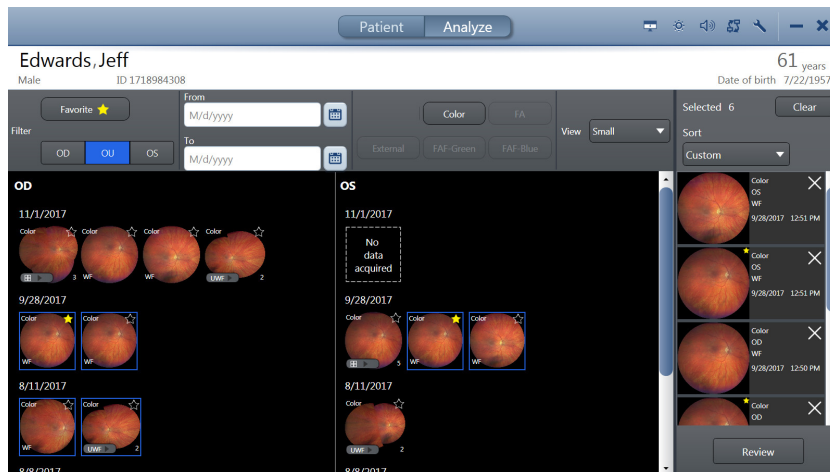


Figure 14: Analyze > Proof Screen

6.5.3 Review

Review shows the images selected in Proof. **Review** allows you to annotate and edit scans, save them and print a report.

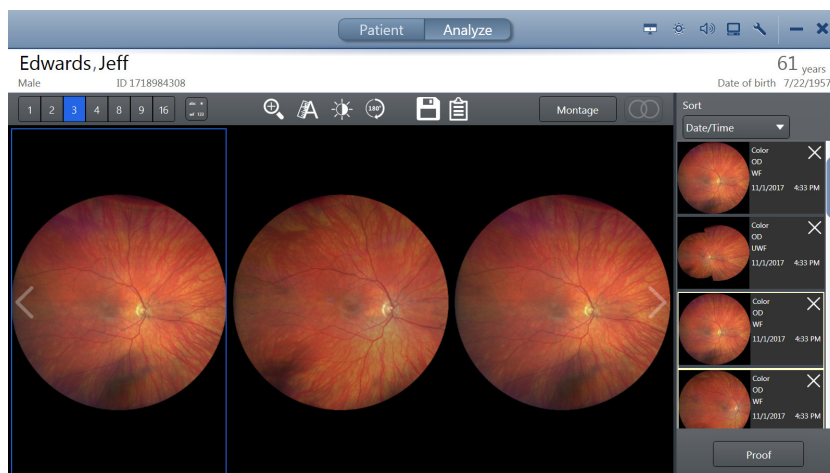


Figure 15: Analyze > Review Screen

6.5.4 Analyze an FA Image Series

The FA image series is a set (stack) of images that you can view, analyze, adjust, and export together.

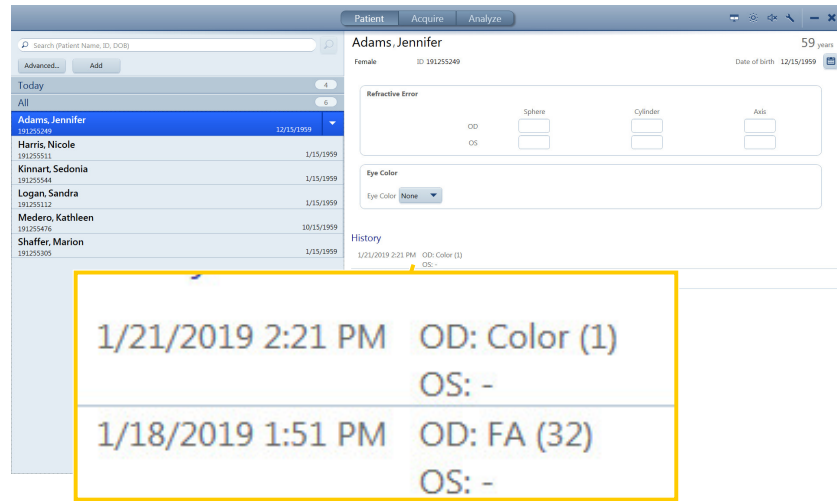


Figure 16: Patient History Example for an FA Stack

When you select a patient with an FA scan stack, the history details show how many FA images were captured for each eye.

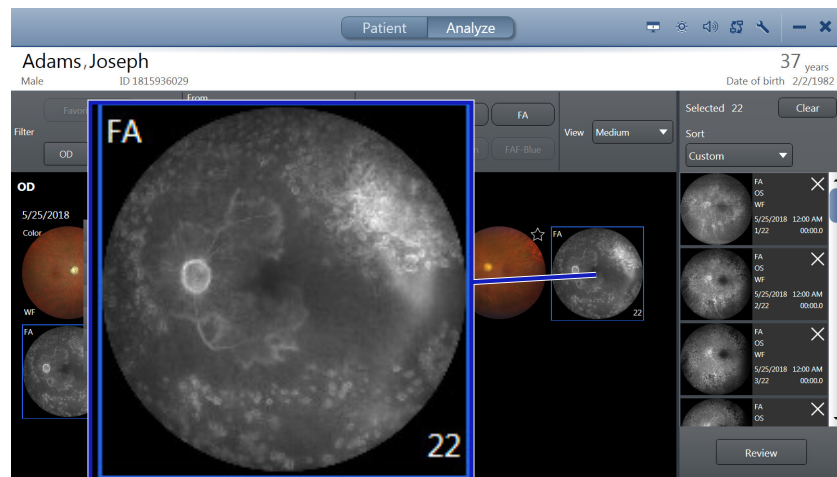


Figure 17: FA Image Stack Example

In the analysis **Proof** sheet, the total number of images in the stack displays below the stack.

Time stamps are burned into the images when you export the series.

FA Image Brightness Adjustment

An FA editing tool for image adjustment locks the relative differences between the images while allowing you to adjust the overall brightness for the set.

When you adjust brightness for one image, the rest of the images in the set adjust also. You can override this setting and adjust individual images, if needed.



If the stack includes images of both eyes, CLARUS® 700 automatically selects both. For example, if you select the OS stack, the corresponding OD stack is also selected.

6.5.4.1 Analyzing FA Images

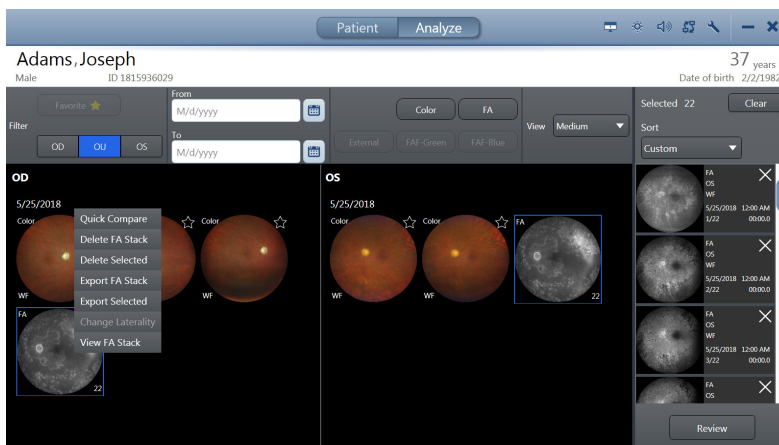
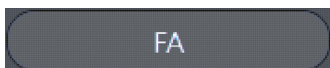
To analyze the FA image series:

Prerequisite

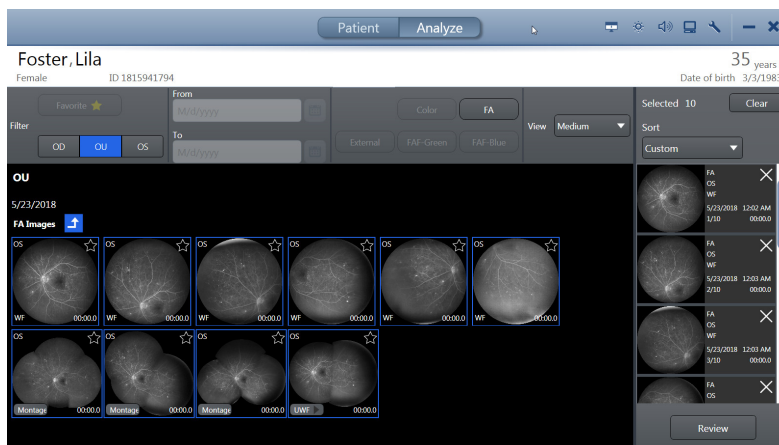
- The patient's record contains acquired images.
- Proof Sheet** is open (Opening the Analyze Window [▶ 132]).

Action

1. Select an FA image.
 - ⇒ All images in the stack are selected (OD and OS, if both were captured).
2. To mark favorite images, click on the image's star (see: Sorting and Selecting Images [▶ 133]).
3. To filter the images to display only FA images, click **FA**.



4. Right-click on an FA image stack.
 - ⇒ A menu opens.
5. To export all or some of the images in the stack, click **Export FA Stack** or **Export Selected** (see: Exporting Data [▶ 58]).
6. To delete all images in the stack, click **Delete FA Stack**.
7. To compare the FA stack to an earlier FA stack, click **Quick Compare**.
8. To view all of the images in the stack, select **View FA Stack**.

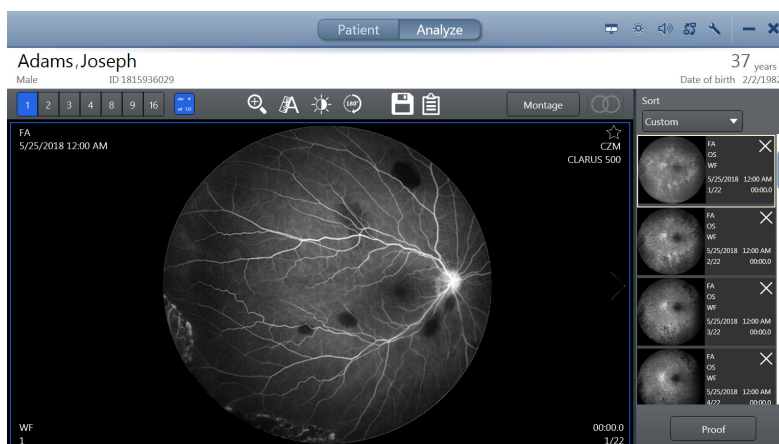


⇒ All FA images captured during the series (OD and OS) appear in the main view.

9. To view smaller or larger thumbnails of the images, select **View** and choose an image size.

10. Click **Review**.

⇒ The FA stack opens in **Review**.



11. To hide or show image details, click the **Details** tool (see: Hiding or Showing Image Details [▶ 134]).

12. To edit the images, refer to: Editing Images [▶ 135].

13. To create a montage, refer to: Manually Creating a Montage [▶ 149].

14. To locate the ONH, refer to: Locating the Optic Nerve Head [▶ 150].

15. Save your changes (Saving Edited Images [▶ 151]).

16. To create a report, refer to: Creating a Report [▶ 152].

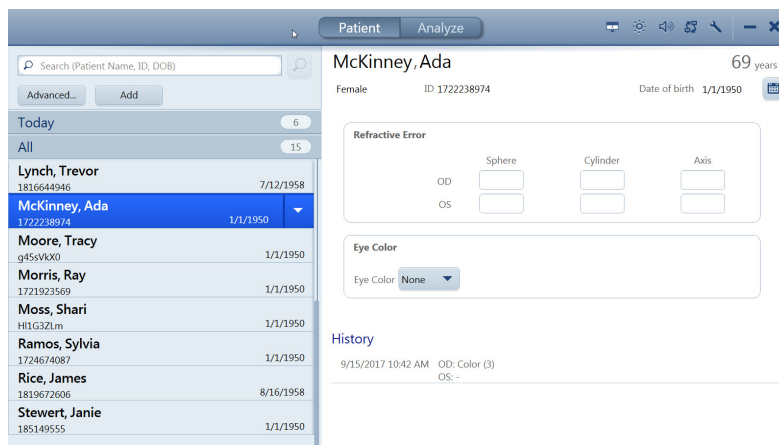
6.5.5 Opening the Analyze Window

You can analyze that patient's images by clicking **Analyze**.

To open the Analyze window:

1. Select the patient (Selecting the Patient [▶ 102]).

Action



2. Click **Analyze**.

6.5.6 Sorting and Selecting Images

Proof allows you to find and select images you want to include in **Review**.

To find the images to include in the **Review**, you can sort and filter in the following ways:

- Laterality
- Scan type
- Date and time acquired

Tip: Double-click on an image to open a larger view of the image.

Prerequisite

To sort and select images:

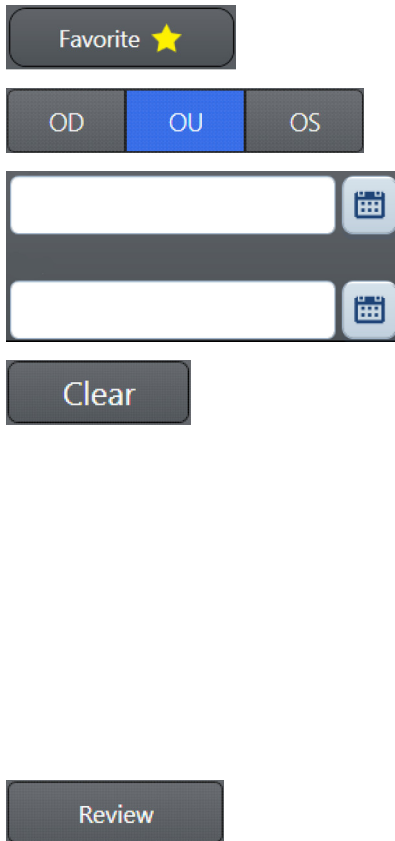
- The patient's record contains acquired images.
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).



Action

1. In the main panel(s) (1), click on the image(s) you want to include in review.

- ⇒ Thumbnails of the selected image(s) appear in the selection bin (2).
- 2. To view larger or smaller images in the main panel, select a **View** size (3).
- 3. To mark an image as a favorite, click on the image's star in the view panel (4).
 ⇒ The star turns yellow.
- 4. To filter images to show only favorites, click **Favorites** (5).
- 5. To filter images by laterality, click on **OD**, **OU** or **OS** (6).
- 6. To filter images acquired within a certain date range, choose a **From** and **To** (7) date.
- 7. To filter images by scan type, click on a scan type (8).
- 8. To deselect all images, click **Clear** (9).
- 9. To change the order of an image in the selection bin (2), click an image and drag it up or down to its new location.
 ⇒ The sort selector indicates a **Custom** sort.
- 10. To sort selected images by date, choose **Sort > Date/ Time** (10).
- 11. To sort selected images by laterality, choose **Sort > Laterality** (10).
- 12. To sort selected images by scan type, choose **Sort > Scan Type** (10).
- 13. When the images for analysis are in the selection bin (2), click **Review** (11).



6.5.7 Hiding or Showing Image Details

You can turn on or off the image details that appear in the corners of each image in the main view.

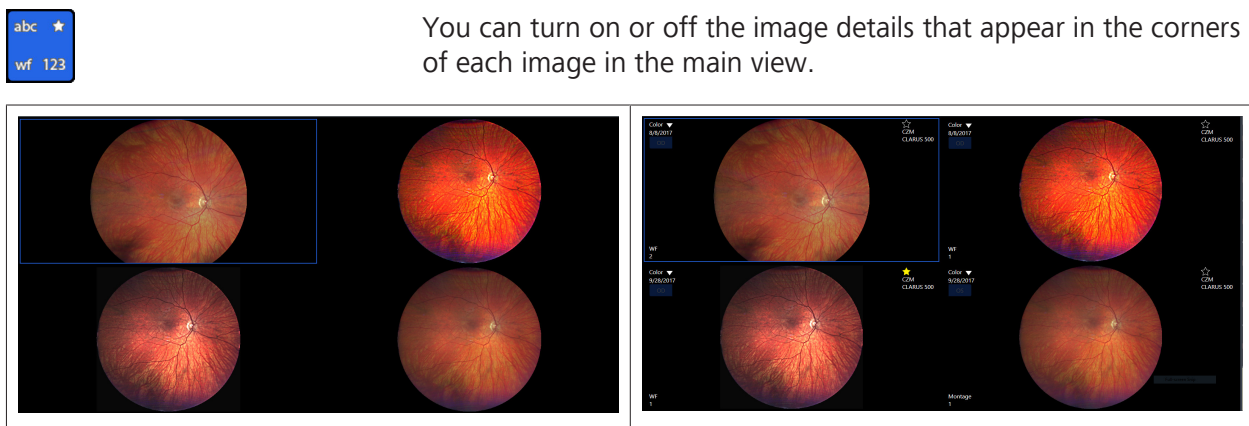


Table 14: Hide / Show Image Details

To hide or show image details:

Prerequisite

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).

Action

1. Click the image details button.
 - ⇒ The button toggles between hiding and showing details.

6.5.8 Editing Images

Tip: Images outlined in blue are selected.

To edit images, select one or more images in the viewport and use the editing toolbar.

To apply the same edits to multiple images, select multiple images before you begin to edit.

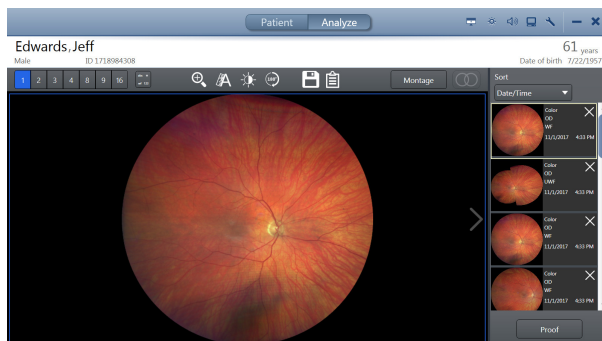
6.5.8.1 Choosing How Many Images to View

You can scroll through the selected images one at a time. You can also scroll through selected images with multiple images in the viewport (2, 3, 4, 8, 9, or 16 at a time).



Use the viewport numbers to decide how many of the images from the selection bin to include in the view panel.]

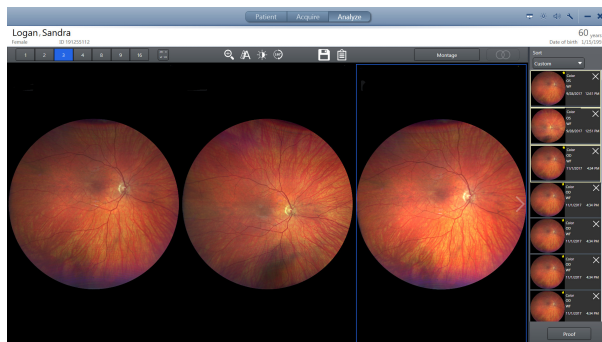
1-Up



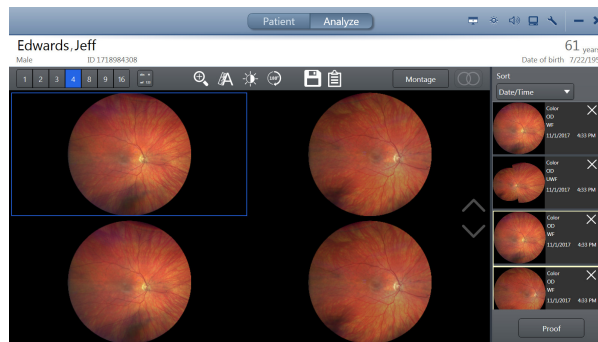
2-Up



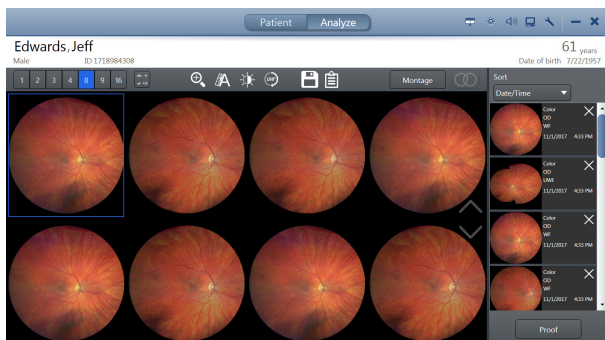
3-Up



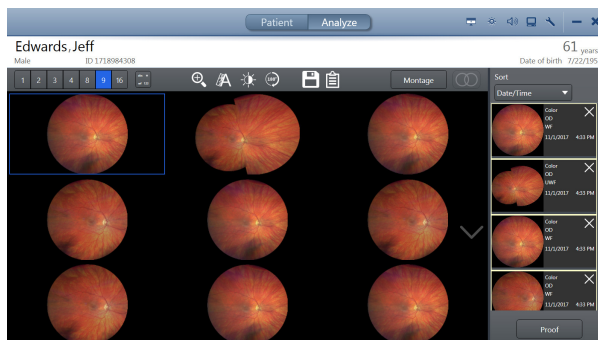
4-Up



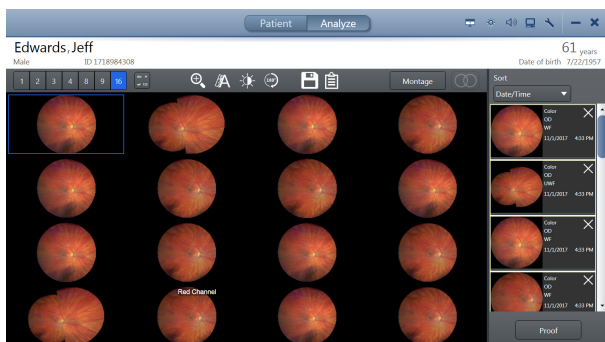
8-Up



9-Up



16-Up



Prerequisite

To choose how many images to view:

- Multiple images are selected (Sorting and Selecting Images [▶ 133]).
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).

Action



1. To view 1 image at a time, click **1**.
2. To view 2 images at a time, click **2**.
3. To view 3 images at a time, click **3**.
4. To view 4 images at a time, click **4**.
5. To view 8 images at a time, click **8**.
6. To view 9 images at a time, click **9**.
7. To view 16 images at a time, click **16**.

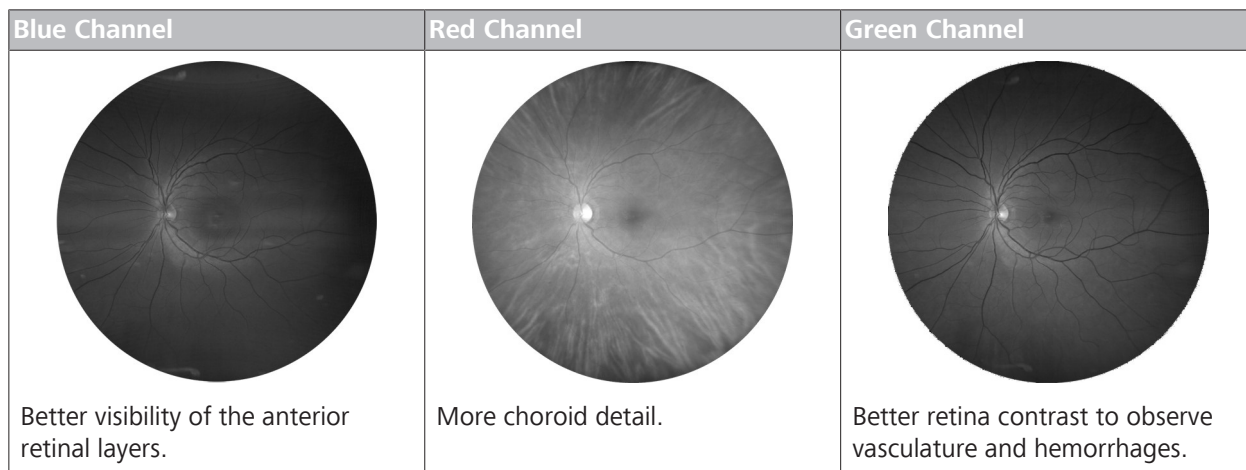
To scroll through the next set of images, scroll down.

6.5.8.2 Viewing Separate Color Channels of a Full Color Image

NOTE

You can adjust the brightness and contrast for each color channel separately.

The color image is made up of three channel colors: blue, red, and green.



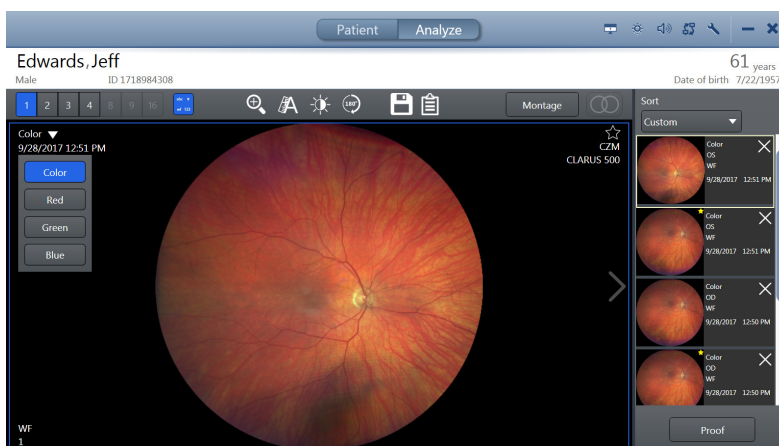
When analyzing a true color image, you can also view each color channel individually.

Prerequisite

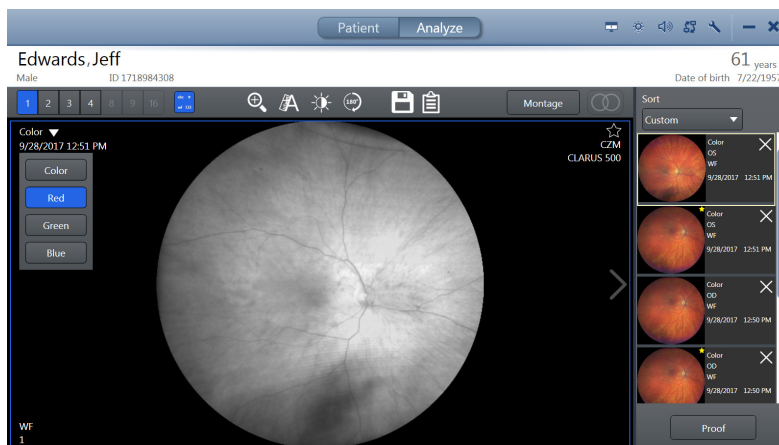
- True color image(s) exist in the patient record (Scan Types [▶ 110])
- True color image(s) are selected for review (Sorting and Selecting Images [▶ 133])
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).

Action

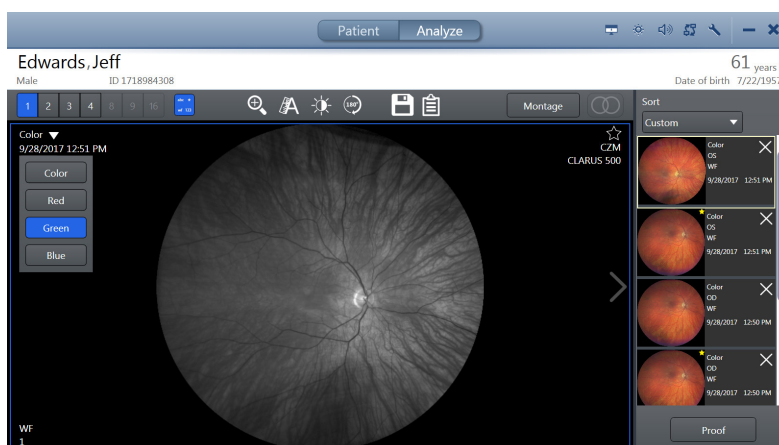
1. Click on a true color thumbnail image in the selection bin.
⇒ A larger view of the image appears in the preview.



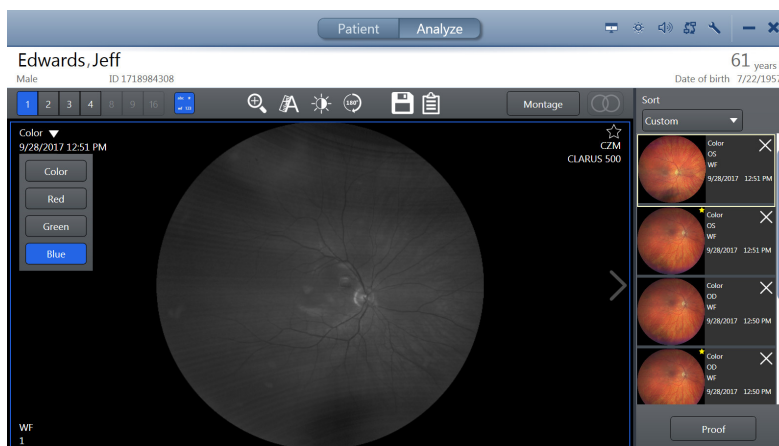
2. To view the red channel image, click **Color > Red**.
⇒ The red channel image opens.



3. To view the green channel image, click **Color > Green**.
⇒ The green channel image opens.



4. To view the blue channel image, click **Color > Blue**.



⇒ The blue channel image opens.

6.5.8.3 Zooming In or Out

To zoom in or out:

Prerequisite

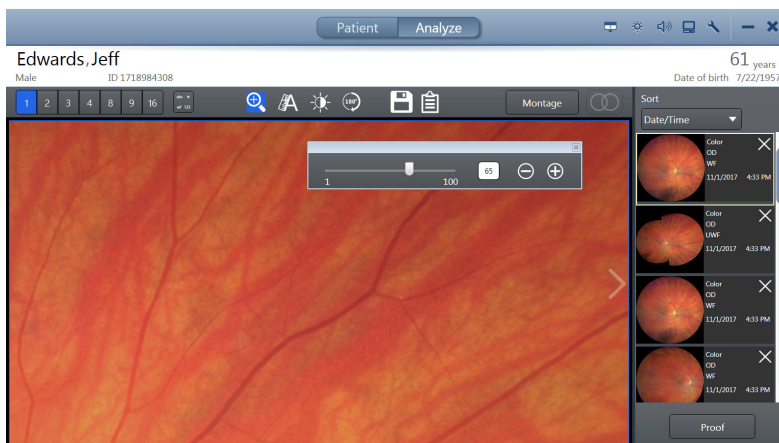
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).



Action

Image(s) are selected (Sorting and Selecting Images [▶ 133])

1. Select the image you want to adjust.
⇒ The selected image is outlined in blue.
2. Click the zoom adjustment icon.
⇒ The zoom adjustment panel opens.



3. Zoom and pan the image until you see the area of the image you want to save.
4. Close the zoom adjustment panel.

6.5.8.4 Annotating Images

Most annotations must be inside the image or field of view to save them on an image. The caliper tool for indicating measurement can stretch beyond the image borders.

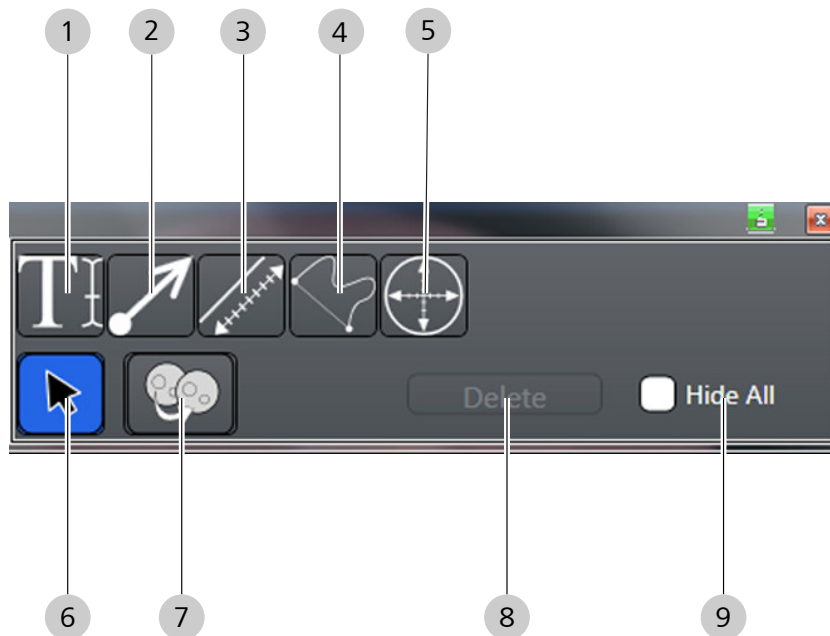







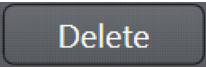
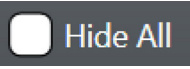


Figure 18: Annotation Panel

1		Adds text annotations to the image
2		Draws an arrow on the image
3		Draws a line and adds the measurement (in mm or μm) to the image
4		Draws a freehand shape and adds the area enclosed by the shape (in mm^2) to the image

5		Adds a circle and its area (in mm ²) or diameter (in mm) to the image
6		Selects an annotation so that it can be moved, edited, or deleted
7		Copies annotations from one image onto another image
8		Removes the selected annotation(s)
9		Hides all annotations

6.5.8.4.1 Selecting the Annotation Tool

You can draw any length arrow or multiple arrows on the image to identify something specific on the image. You can add text to arrows to label what you are identifying on the image. After you place arrows on the image, you can resize, move or delete them.

To select the Annotation tool:

- The **Analyze** window is open (Opening the Analyze Window [▶ 132]).
- 1. Select the **Annotations** tool.
 - ⇒ The annotations tools panel opens.

Prerequisite

Action



6.5.8.4.2 Adding Text to Images

You can add text labels to an image to identify findings. After you place text labels on an image, you can edit, move, or delete them.

To add text to images:

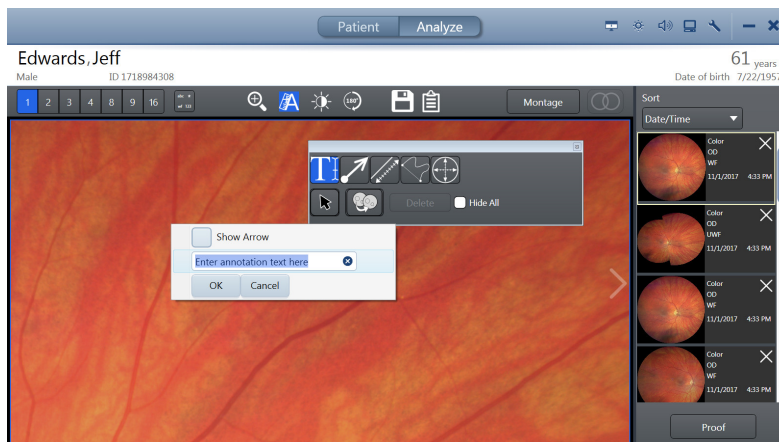
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).
- 1. Select the **Text** tool.

Prerequisite

Action



2. Touch or click on the starting point for the text.
⇒ The text insert tool opens.



3. Type your text annotation.
4. If you want an arrow to appear with the text, click **Show Arrow**.
5. Click **OK**.
6. Close the annotations panel.
7. Save your changes (Saving Edited Images [▶ 151]).
✓ The text annotation appears on the image.

Result

6.5.8.4.3 Adding Arrows to Images

You can draw any length arrow or multiple arrows on the image to identify something specific on the image. You can add text to arrows to label what you are identifying on the image. After you place arrows on the image, you can resize, move or delete them.

To add arrows to images:

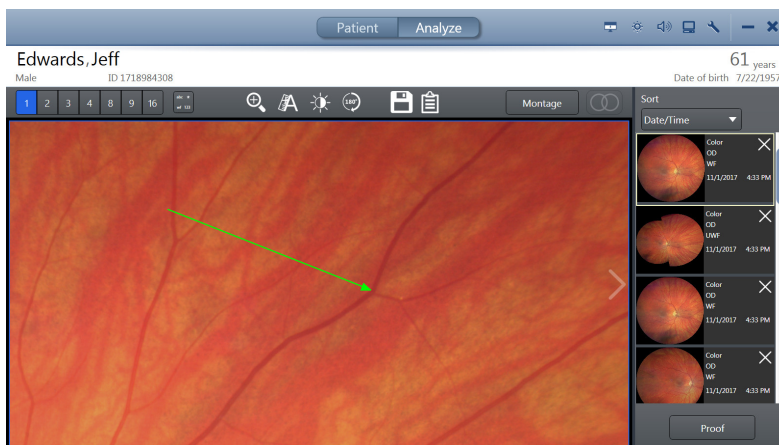
- ☑ The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- ☑ The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Prerequisite

Action



1. Select the **Arrow** tool.
2. Point to the location in the image where you want to begin to draw the line with an arrow.



3. Touch or click on the appropriate starting point and drag to the area you want the arrow to point.
 4. Close the annotations panel.
 5. Save your changes (Saving Edited Images [▶ 151]).
- ✓ The arrow appears on the image.

Result

6.5.8.4.4 Adding Measurements to Images

When you draw caliper lines on an image, the review software calculates the measurement. After you draw caliper lines, you can edit, move or delete them.

To add measurements to images:

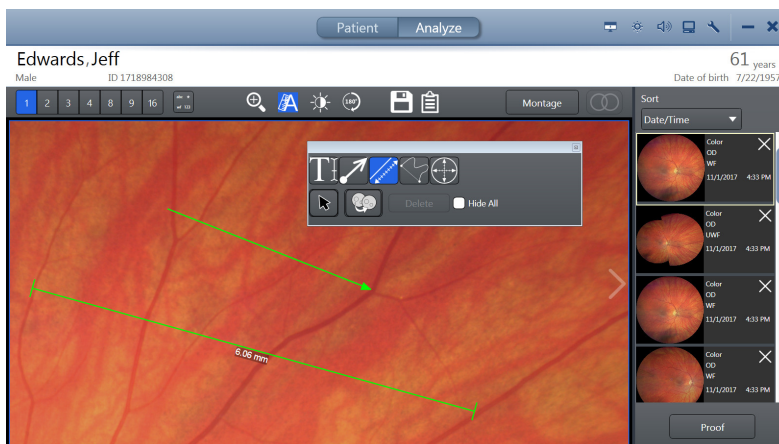
Prerequisite

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Action



1. Select the **Caliper** tool.
2. Touch or click on the appropriate starting point on the image and drag to the appropriate end point.



3. Close the annotations panel.
4. Save your changes (Saving Edited Images [▶ 151]).

Result

- ✓ When you finish drawing the caliper line, the review software calculates its length.

6.5.8.4.5 Circling an Area of an Image

To circle an area of an image:

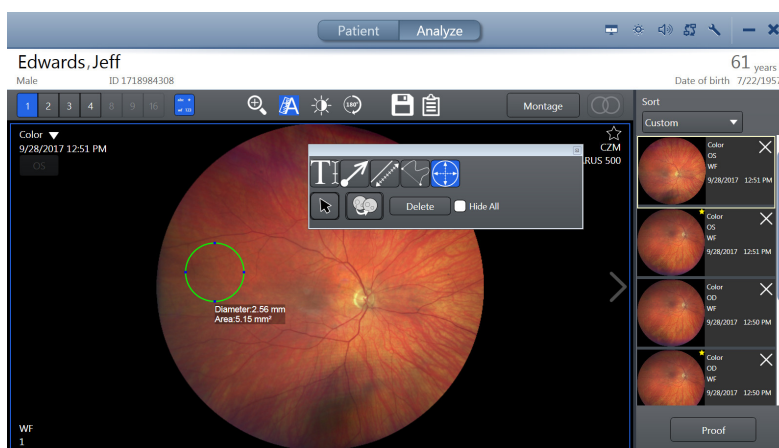
Prerequisite

- ✓ The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- ✓ The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Action



1. Select the **Circle** tool.
2. Touch or click on the appropriate starting point and drag around the area of the image you want to emphasize.



3. Close the annotations panel.
4. Save your changes (Saving Edited Images [▶ 151]).

Result

- ✓ When you finish drawing the circle, the review software calculates the area.

6.5.8.4.6 Drawing a Freehand Shape in an Image

The **Freehand** tool allows you to draw any shapes around findings you want to emphasize. After you place shapes on the image, you can move or delete them.

To draw a freehand shape:

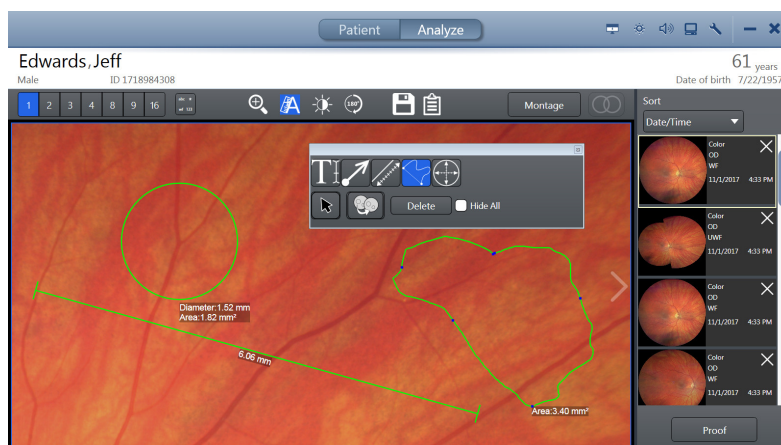
Prerequisite

- ✓ The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- ✓ The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Action



1. Select the **Freehand** tool.
2. Touch or click on the appropriate starting point on the image and draw around the area of interest.



⇒ When you connect to the starting point, the review software calculates the area of your shape.

3. Close the annotations panel.
4. Save your changes (Saving Edited Images [▶ 151]).

6.5.8.4.7 Copying and Pasting Annotations

NOTE

Copy Annotation registers the images to each other in order to copy to the appropriate location. This process will only work well for good quality images where the images are of the same eye over the same portion of the eye.

If the registration between images is poor, the annotations may be copied to the wrong part of the image.

- ▶ You can select the annotation and move it to the correct location.

To copy and paste annotations:

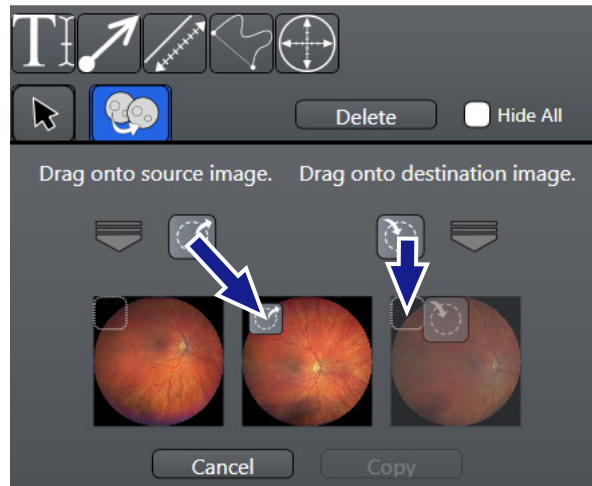
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Prerequisite

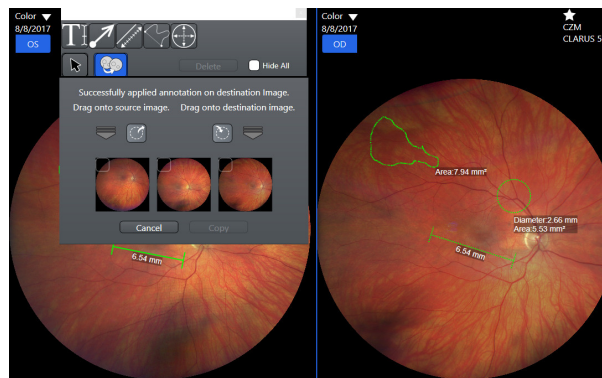
Action



1. Click on the copy tool.
 - ⇒ The copy & paste annotations panel opens showing thumbnails of the selected images. The thumbnails in the panel are in the same configuration as the larger images in **Preview**.



2. In the **Copy / Paste** panel:
 - ⇒ Drag the source icon onto the thumbnail that has annotations.
 - ⇒ Drag the destination icon onto the thumbnail to receive duplicate annotations.
3. Click **Copy**.



- ⇒ The annotations appear on both images. The copy displays dashed lines.
4. Close the annotations panel.
 5. Save your changes (Saving Edited Images [▶ 151]).

6.5.8.4.8 Hiding Annotations in an Image

Hide All temporarily hides all annotations on the image allowing you to see the original image only.

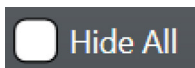
To hide annotations:

Prerequisite

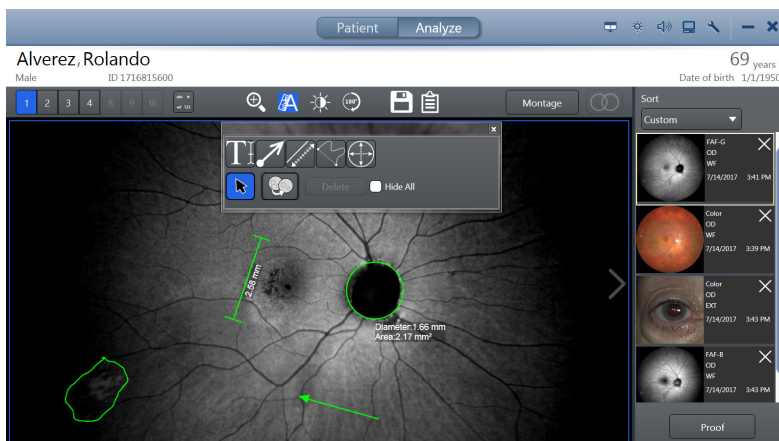
- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- The **Annotation** panel is open (Selecting the Annotation Tool [▶ 141]).

Action

1. Select the image you want to view without annotations.



⇒ The selected image is outlined in blue.



2. Check **Hide All**.

⇒ Annotations are temporarily hidden from view.



3. To view the annotations again, uncheck **Hide All**.
4. Close the annotations panel.
5. Save your changes (Saving Edited Images ▶ 151).

6.5.8.4.9 Deleting Annotations

You can select any annotation from the image or select multiple annotations and delete them together.

To delete annotations:

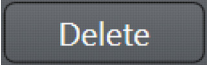
Prerequisite

- The **Review** screen is open (Opening the Analyze Window ▶ 132).
- The **Annotation** panel is open (Selecting the Annotation Tool ▶ 141).

Action



1. Click on the selection tool.
2. Select annotation(s) to delete.
 - ⇒ The **Delete** button becomes active.



3. Click **Delete**.
4. Close the annotations panel.
5. Save your changes (Saving Edited Images [▶ 151]).

6.5.8.5 Adjusting Image Brightness

Tip: You can set defaults for image brightness, contrast, gamma, sharpness and saturation. Refer to: **Configuring Acquisition Settings** [▶ 84]



FA Image Brightness Adjustment

An FA editing tool for image adjustment locks the relative differences between the images while allowing you to adjust the overall brightness for the set.

When you adjust brightness for one image, the rest of the images in the set adjust also. You can override this setting and adjust individual images, if needed.

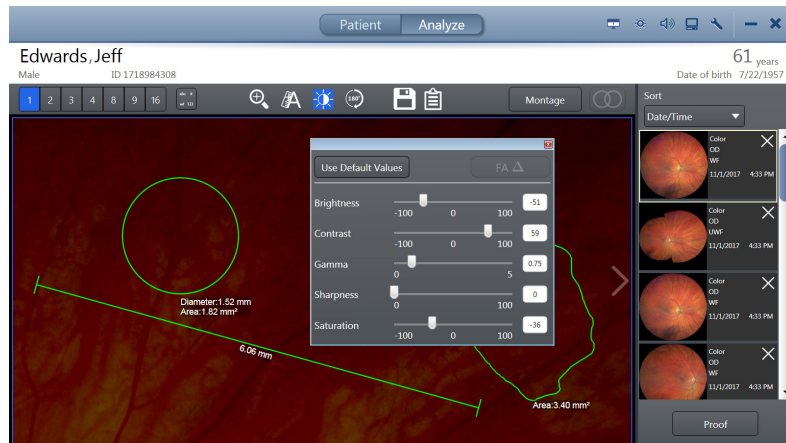
Prerequisite

Action



To adjust image brightness:

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
 - Image(s) are selected (Sorting and Selecting Images [▶ 133])
1. Select the image you want to adjust.
⇒ The selected image is outlined in blue.
 2. Click the brightness adjustment tool.
⇒ The brightness adjustment panel opens.



3. Adjust the settings until the image enhanced as you want to save it.
4. Close the brightness adjustment panel.

Also see about this

- Analyze an FA Image Series [▶ 130]

6.5.8.6 Rotating Images

Each time you click the rotate image tool, the image rotates 180°.

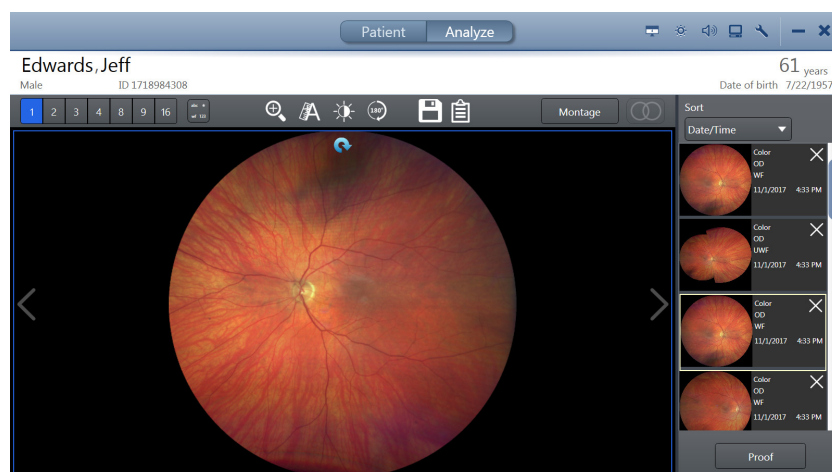
Prerequisite

Action



To rotate an image:

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
 - Image(s) are selected (Sorting and Selecting Images [▶ 133])
1. Select the image you want to rotate.
 2. Click on the rotate tool.



6.5.9 Manually Creating a Montage

You can select from two to six images of the same eye to create a montage image.

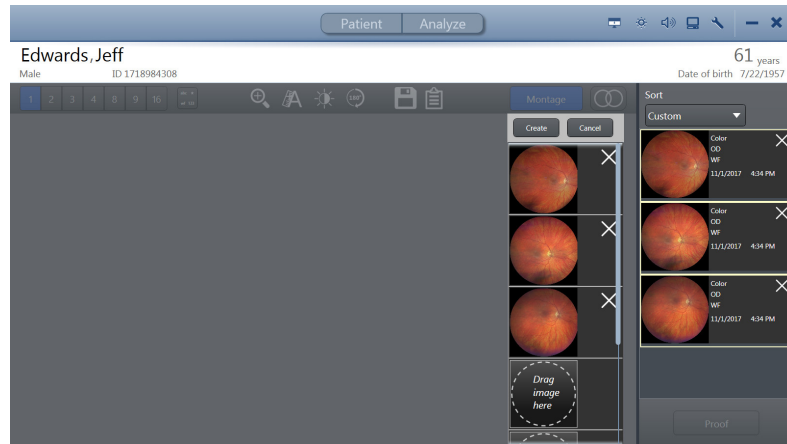
Montage works best when the ONH is identified. CLARUS® 700 automatically detects the ONH for most images. You can override the detected ONH location by selecting the ONH manually. You can also set the ONH location for images that CLARUS® 700 could not detect. Refer to: Locating the Optic Nerve Head [▶ 150]

To create a montage manually:

Prerequisite

Action

- The **Analyze > Review** screen is open.
 - Two to six images of the same eye are selected (Sorting and Selecting Images [▶ 133]).
1. Click **Montage**.
 - ⇒ The montage bin opens.



2. Drag each thumbnail image want to include in the montage into a slot in the Montage bin.
3. Click **Create**.
 - ⇒ A progress bar appears as the montage image forms.
4. When the montage image completes, click **Save**.

6.5.10 Locating the Optic Nerve Head

The CLARUS® 700 calculates the ONH location for you. You can adjust the location if needed.

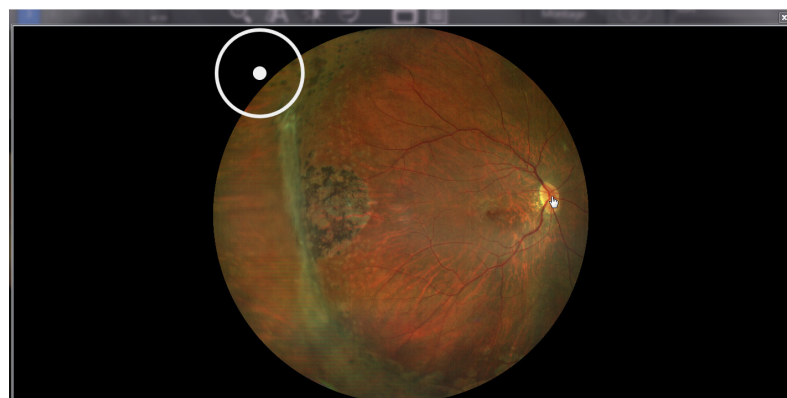
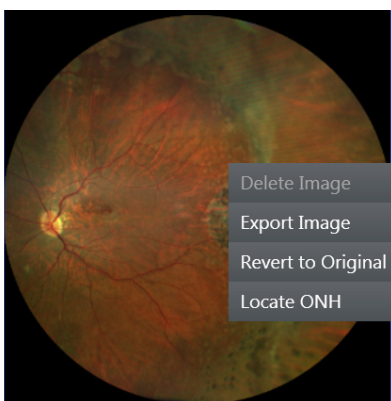
The options available for images can vary depending on the scan type, whether you imported the images, and whether you are viewing images on the instrument or a review station.

To find the optic nerve head:

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
1. Right-click on the image.
 - ⇒ A menu opens.
 2. Select **Locate ONH**.
 - ⇒ The image opens showing the ONH location indicator.

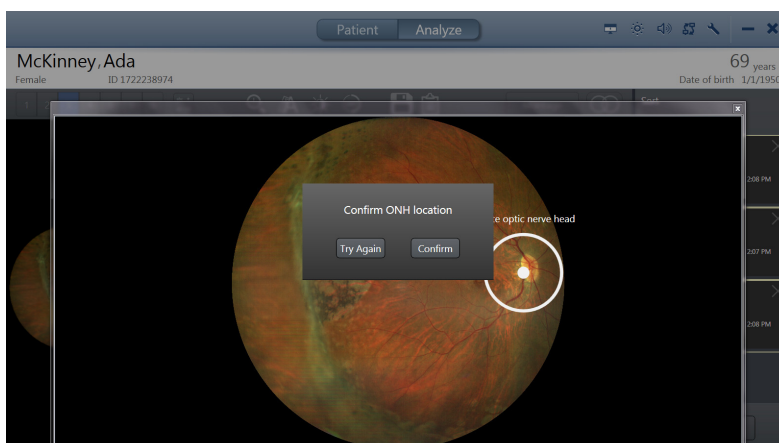
Prerequisite

Action



3. Click on the center of the ONH.
 - ⇒ The ONH indicator moves to the location you selected.

⇒ A confirmation opens.



4. Click **Confirm**.

6.5.11 Viewing Stereo Images

Stereo image pairs can be viewed in stereo mode. When you view image pairs in stereo mode, viewports are linked, so that pan and zoom apply to both images.

When Stereo Mode is selected, all non-stereo images are filtered out of the selection bin and only 2-up and 4-up viewing options are available for viewing the selected Stereo pairs.

To view stereo images:

- The **Review** screen is open.
- 1. Click the **Stereo** tool.
 - ✓ Only stereo image pairs appear in the selection bin.

Prerequisite

Action



Result

6.5.12 Saving Edited Images

You can save the original image with the edits and annotations you made or you can save a copy of the edited image. The thumbnail identifies images that were edited.

If you did not make any changes to an image you select to save, no changes or copies of the image are made.

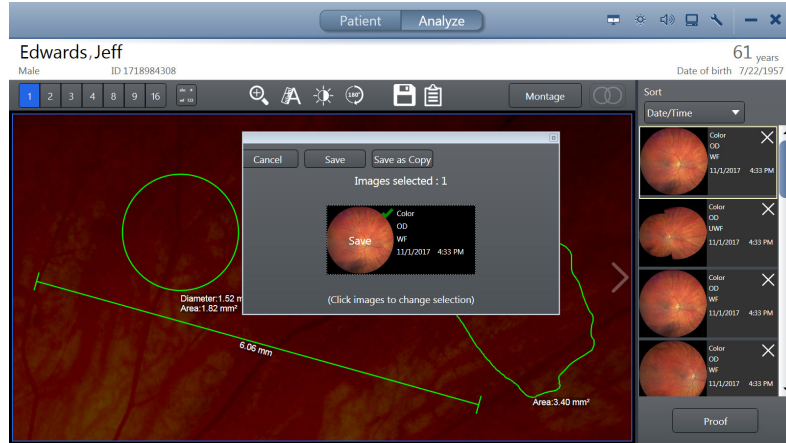
To export images to a folder location, refer to: Exporting a Montage from Montage Review [▶ 61].

To save an edited image:

- The **Review** screen is open (Opening the Analyze Window [▶ 132]).
- Edits and annotations are made (as required) on image(s).
- 1. Click the **Save** tool.

Prerequisite

Action



⇒ Images that you edited or annotated are automatically selected and identified to **Save**.

2. To deselect an image, click on its thumbnail.
⇒ **Save** changes to **Discard Edits**.
3. To save the original image(s) with your editing and annotations, click **Save**.
4. To save a copy of the image with the editing and annotations, click **Save as Copy**.
⇒ The new copy appears in the selection bin.

6.5.13 Creating a Report

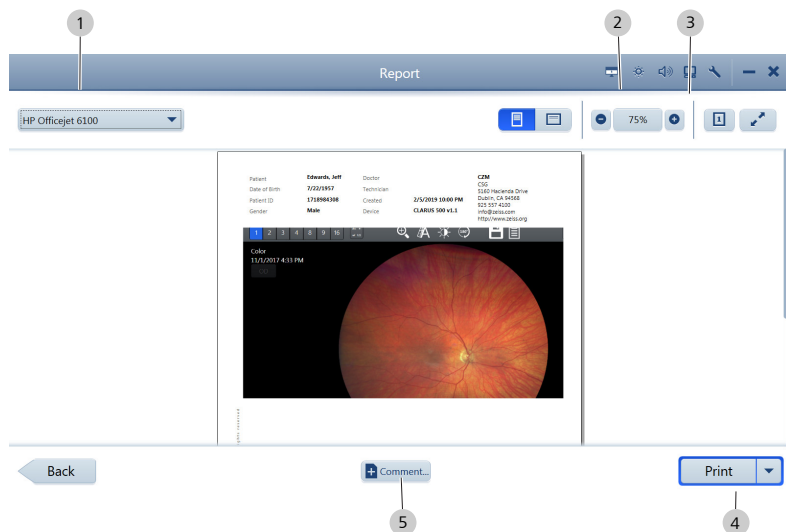
For information about configuring reports, refer to: Configure Reports [▶ 83].

To create a report:

- The review screen is open.
1. Click the **Reports** tool.
⇒ A report preview opens.

Prerequisite

Action



2. Select the type of document for the report (1).
3. Select landscape or portrait orientation (2).
4. If you want to change the image size, zoom in or zoom out (3).
5. To add a comment to the report:
Click **Comment** (5).
Type your comments and click **Add Comment**.
6. Select **Print**, **Save**, or **Save & Print** (4).

Empty page, for your notes

7 Shutdown

CAUTION!

This instrument's optics are sensitive to environmental dust.

Keep the lens and the instrument covered when not in use:

- ▶ Cover the lens with the lens cap after capturing images.
- ▶ Cover the instrument with the dust cover after daily instrument shutdown.

The windows password must be updated every 60 days.

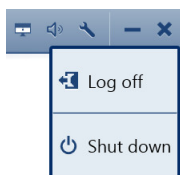
Shut down and restart the instrument regularly. On startup, the instrument prompts you when it is time to update the windows password.

7.1 Logging Off

Action

To log off:

1. Select the X in the upper right corner.



2. Select **Log off**.

7.2 Shutting Down

CAUTION!

Do not use the power switch to shut down the system

or you could interrupt automatic archiving or interrupt operating system updates.

Each time you shut down the system, all shutdown activity completes (if set) and CLARUS® 700 retains a log of the actions completed. Activities that can be set to run each time the system shuts down include:

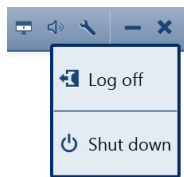
- Export images and patient data to DICOM (Configuring Export Settings [▶ 63])
- Automatic backups (Configuring Automatic Backups [▶ 69])

Do not switch off the power until the CLARUS® 700 application and Windows have both shut down completely.

To shut down the system:

Action

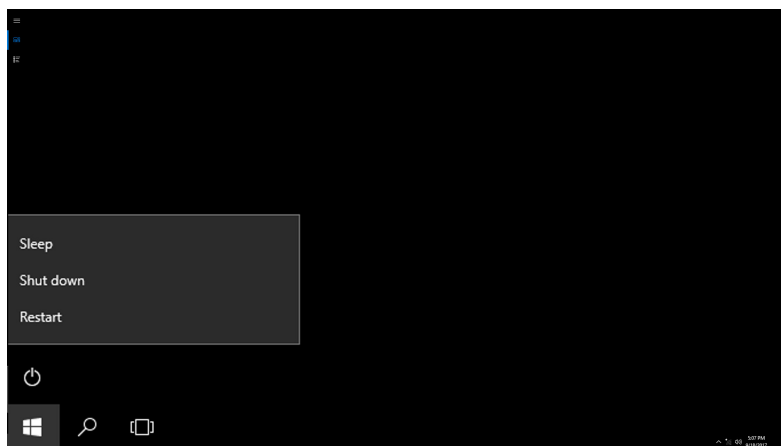
1. To exit the application, click on the X in the upper right corner.



2. Select **Shut down**.

⇒ The application closes and automatic shutdown tasks run.

3. When application shutdown is complete, click the Windows icon on the desktop (lower left corner) and select **Shut down**.



⇒ Shutdown also turns off the CLARUS® 700 acquisition head.

4. Cover the instrument with the dust cover.



8 Cleaning and Disinfection

8.1 Safety During Cleaning

CAUTION!

Cleaning lenses too frequently

can damage optic surfaces.

- ▶ Clean optics only when necessary.
- ▶ Keep the protective cover on the instrument when not in use.

8.2 Cleaning Agents

Cleaning Agent	Use
Distilled water, 70% isopropyl alcohol in water, mild, ammonia-free glass cleaner, or alcohol wipes	instrument covers, chinrest, and forehead rest
Volk LensPen® cleaning pen	front lens
Optical cleaning set, Safebuds, or cotton ball sticks	front lens
Microfiber cloth	front lens

8.3 Cleaning the Front Lens

NOTE

Using harsh cleaning agents

may damage the device.

- ▶ Use only the recommended cleaning materials.

8.3.1 Removing Fluid Splashes

The most common cause of minor fluid contamination is from the patient's tears splashing onto the lens when the patient blinks. These drops show up in images as light spots.

Action

1. Start in the center of the lens surface and wipe in widening circles with the felt end of the LensPen, applying gentle pressure.
2. If the bright spots remain after repeated wiping, refer to Removing Severe Contamination [▶ 158].

8.3.2 Removing Minor Dust Accumulation

Action

1. Use the brush side of the LensPen or the brush provided in the cleaning set to quickly remove dust or other loose particles.

2. If dust remains, start in the center of the lens surface and wipe in widening circles with the felt end of the LensPen, applying gentle pressure.
3. After using the felt tip, replace the protective cap and rotate it three or four times.

8.3.3 Removing Severe Contamination

More serious contamination may result from patients sneezing or touching the lens with their nose or fingers. This causes distinct bright areas on the image.

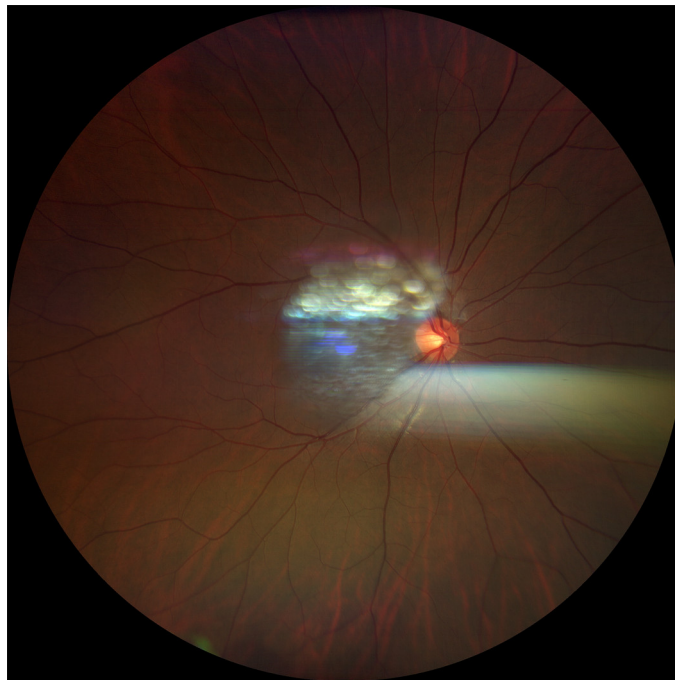


Figure 19: Fundus Image with Fingerprint Contamination

Action

1. Using moist disposable cloths or microfiber cloths, cotton ball sticks, or Safebuds sprayed with cleaning fluid, start in the center of the lens surface and wipe in widening circles. Do not allow your fingers to touch the lens surface as you clean.
2. Repeat as needed, using a clean portion of the cloth each time.
3. Verify that smudges and streaks have been removed by breathing on the lens.
4. Use the felt end of the LensPen to remove any remaining residue.
5. To verify that cleaning has been successful, take a photograph in a darkened room. Check the resulting image for bright spots.

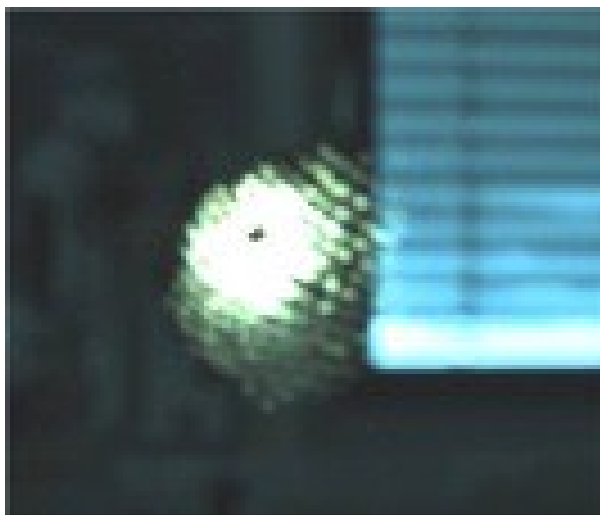


Figure 20: Residual Bright Spots after Cleaning

8.4 Cleaning the Front Window Lens

8.4.1 Cleaning Heavy Contamination

Fingerprints, oil, or water spots should be cleaned immediately. Skin acids attack coatings and glass, and can leave permanent stains. Cleaning with solvents alone tends to redistribute grime. These contaminants must be lifted from an optical surface with soap or other wetting agent. The optic is then rinsed in water and the water removed with alcohol. Acetone helps speed drying and helps eliminate streaks from forming.

Action

1. Blow off dust.
2. Using a soap-saturated lens tissue placed around a swab, wipe the optic gently in a figure-eight motion.
3. Repeat as necessary.
4. Repeat this procedure with distilled water.
5. Repeat again with alcohol.
6. Repeat once more with acetone.

8.4.2 Brush Cleaning Method

This technique is ideal for cleaning smaller optics, including lenses, and involves holding a folded lens tissue with a hemostat to brush the surface clean.

NOTE

Edges on mounted optics

are often hard to reach.

- ▶ Wrap a lens tissue around a swab.
- ▶ Soak the covered swab in acetone.
- ▶ Brush around the edge of the lens and then across the middle using a continuous figure-eight stroke.
- ▶ Repeat if necessary.

Action

1. Fold a lens tissue so as not to touch the part of the tissue that will make contact with the optic. The fold should be about as wide as the optic.
2. Hold the tissue with hemostats parallel to and near the fold.
3. While holding the optic, using tweezers if necessary, blow off any dust.
4. Soak the tissue with acetone.
5. Brush the fold in the tissue across the surface of the optic using light pressure.
6. Repeat as necessary until the optic is clean, making sure new lens tissue is exposed with each wipe.

8.4.3 Wipe Cleaning Method

For heavier cleaning of lenses and mirrors, this method involves wiping an optic with a lens tissue by hand.

Action

1. Blow off dust.
2. Fold a lens tissue as with the brush method.
3. Apply acetone to the tissue.
4. Holding the lens tissue in your hand with the fold near the tip of your fingers, apply uniform pressure while gently wiping across the surface of the optic.
5. Repeat as necessary until the optic is clean, making sure new lens tissue is exposed with each wipe.

8.4.4 Dust Cleaning

Dust on optics can be very tightly bound by static electricity. Blowing removes some dirt; the remainder can be collected by the surface tension of a wet alcohol swab. Acetone helps promote rapid drying of the optic to eliminate streaks.

Action

1. Blow off dust.
2. If any dust remains, twist lens tissue around a swab, soak in alcohol, and wipe the optic in one direction with a gentle figure-eight motion.
3. Repeat as necessary.
4. Repeat the steps above, using acetone.

8.5 Cleaning the Chinrest and Forehead Support

NOTE

Do not spray cleaner directly on the chin rest or forehead support.

Action

- ▶ Before each use, wipe the chinrest and forehead support with a non-acetone based spray or disinfectant wipe.

8.6 Peripherals and Table

NOTE

Do not spray cleaner directly on the peripherals or instrument table.

Action

1. Regularly dust or wipe down the instrument table.

8.7 Cleaning the PC Screen

NOTE

Do not spray cleaner directly on the touch screen.

Action

1. Turn OFF the instrument before cleaning the touch screen.
2. Wipe gently with a cloth that has been sprayed with a mild glass cleaner containing no ammonia.

Empty page, for your notes

9 Troubleshooting

9.1 Safety During Troubleshooting

CAUTION!

Reconfiguring system components on the table, or adding non-system devices or components to the table, or replacing original system components with substitutes not approved by ZEISS

could result in failure of the table height adjustment mechanism, instability of the table, tipping and damage to the instrument, and injury to operator and patient.

- ▶ Do not reconfigure system components on the table, nor add non-system devices or components to the table, nor replace original system components with substitutes not approved by ZEISS.

CAUTION!

Attempting to carry out activities not specifically endorsed by ZEISS

may void your warranty and could result in damage to the instrument.

- ▶ Read the user documentation.
- ▶ Follow directions carefully.
- ▶ Do not make upgrades, or carry out repairs or modifications, without specific guidance and instruction from ZEISS or an authorized ZEISS representative.

CAUTION!

Using a non-approved or incorrectly connected device

could invalidate the system safety approval.

- ▶ Follow all indications in this user document to ensure that all connections are approved and correctly configured.

WARNING!

Unqualified personnel

may injure themselves or cause damage to the instrument.

- ▶ Only trained, qualified personnel may use this device.
- ▶ This device may be used only for its intended purpose.
- ▶ Only ZEISS authorized personnel may perform maintenance or repair procedures not described in this manual.

9.2 Error Messages

9.2.1 System Startup Errors

Message / Fault	Cause	Solutions
Last shutdown was not executed correctly, Do not use the power switch to shut down the system or you could interrupt automatic archiving or interrupt operating system updates.	System was shut down incorrectly by turning off power to the instrument instead of shutting down the computer. If you shut down the system by turning off power, the system could be in the process of installing updates. Incomplete installations can cause problems with the operating system and review software.	▶ Always shut down the system using the computer.

9.2.2 Import Error Messages

Message / Fault	Cause	Solutions
Component error occurred while importing exam data.	System Malfunction	▶ Call for service.
Database error occurred while importing exam data.		
Error occurred while importing exam data.		
Mapper not found error occurred while importing exam data.		
Network error occurred while importing exam data.		
Path : '{0}' does not contain dcm files.		

9.2.3 Export Error Messages

Message / Fault	Cause	Solutions
Connectivity exception occurred while exporting the exam.	System Malfunction	► Call for service.
Connectivity exception occurred while exporting the exam.		
Export process is stopped due to Incorrect IOD data.		
Network data validation exception occurred while exporting the exam.		
Network exception occurred while exporting the exam.		
Number of exams that failed to be exported.		
Path : '{0}' does not contain dcm files.		

9.2.4 Networking Error Messages

Message / Fault	Cause	Solutions
Connectivity exception occurred while exporting the exam.	System Malfunction	► Call for service.
Connectivity exception occurred while exporting the exam.		
Mapper not found error occurred while importing exam data.		
Network data validation exception occurred while exporting the exam.		
Network error occurred while importing exam data.		
Network exception occurred while exporting the exam.		
Path : '{0}' does not contain dcm files.		

Message / Fault	Cause	Solutions
Error NR-10: Internal network communication cannot be established. Please restart the instrument.	Could not establish a connection after 3 attempts to reset the network.	<ul style="list-style-type: none"> ▶ Shut down the instrument. See: Shutdown [▶ 155]. ▶ Re-start the instrument. See: Daily Startup [▶ 47].
Error NR-11: Network controller <NetName>was not disabled. Please restart the instrument.	Could not disable the network adapter.	
Error NR-12: Internal network communication cannot be established. Please restart the instrument.	Could not re-establish a network connection.	
Error NR-13: An error occurred while copying the Clarus shortcut. Please restart the instrument.	Error copying the shortcut to the desktop.	

9.2.5 Montage Error Messages

Message / Fault	Cause	Solutions
Montage could not be created with selected images.	System Malfunction	▶ Call for service.
Path : '{0}' does not contain dcm files.		
There is not enough space for Montage, please remove some images from Montage Bin.		

9.2.6 Other Error Messages

Message / Fault	Cause	Solutions
Imager Initialization Failed	System Malfunction	<ul style="list-style-type: none"> ▶ Continue in review mode or Reboot. ▶ Call for service.
The system has encountered an error and must be rebooted before acquiring additional scans. All work has been saved.		▶ If the problem persists, call for service.
Mapper not found error occurred while importing exam data.		▶ Call for service.
Path : '{0}' does not contain dcm files.		
You have exceeded the maximum thumbnails limit of {0} in selection bin.		▶ Remove existing thumbnails from selection bin to add new thumbnails.

9.3 Information Messages

Message / Fault	Cause	Solutions
Amount of time for export (hh:mm:ss:ms).	Provides estimate of time it takes to export file.	▶ N/A
Amount of time for import (hh:mm:ss:ms).	Provides estimate of time it takes to import file.	
Are you sure you want to delete the selected thumbnail?	Confirms that you want to delete the selected thumbnail.	<ul style="list-style-type: none"> ▶ Click Yes to delete the selected image. ▶ Click No to return without deleting the image.
Click images to change selection.	Suggests optional action.	▶ N/A
Click images to save or discard edits.	Suggests optional action	
De-identify patient data.	Confirms to hide patient information such as name, date of birth, ID.	▶ Click OK .
Delete context menu item in proofsheets.	Confirms that you want to remove an item from the proof sheet.	
Delete selected annotations?	Confirms that you want to delete the annotations.	<ul style="list-style-type: none"> ▶ Click Yes to delete the selected annotations. ▶ Click No to return without deleting the annotations.
Failed to save the log file.	Indicates that the log file did not save successfully	▶ Re-save the log file.
Exporting exams in progress...	Indicates the progress of an exported exam.	▶ N/A
Imager Initialization Succeeded	Indicates completion of successful startup.	
Images that are part of a UWF or montage image cannot be deleted.	Informs you that an individual image you are trying to delete is part of a montage, so it cannot be delete.	▶ Click OK .

Message / Fault	Cause	Solutions
Import all patient tests from external usb media.	Confirms that you want to import all tests stored on the USB stick.	<ul style="list-style-type: none"> ▶ Click YES to import . ▶ Click NO to cancel import.
Importing exams in progress...	Indicates the progress of an imported exam.	▶ N/A
Log file saved successfully.	Indicates that the log file saved successfully	▶ Click OK .
Number of exams selected for export.	Indicates the number of exams selected for export.	▶ N/A
Number of exams successfully exported.	Indicates the number of exams exported.	
Please select 4 thumbnails.	Prompts you to select the appropriate number of thumbnail images from the stack.	▶ Click OK .
Select auto import folder path.	Prompts you to select the folder for imported images.	▶ Browse to the folder you want to use for imported images.
Select what you would like to do with this thumbnail:	Message requires decision about thumbnail.	▶ Select Delete , Cancel/Delete , or Replace .
Set the export mode.	Message requires that the export mode be set.	▶ Set the export mode either Session, Daily, or other choice.
Source and destination images are both required in order to copy annotations.	When copying annotations, informs you when either or both a source and destination for the annotations is missing.	▶ Click OK . and select a source image and a destination image for copying annotations.

Message / Fault	Cause	Solutions
Tests will be merged with current database.	Confirms that you want to save the scans in the database.	▶ Click OK .
Transfer Completed	Informs you that your files transferred successfully.	
You are about to delete all edits made to image.	Confirms that you want to delete your edits.	
You have created a montage image. Do you wish to save or discard this image?	When attempting to select something else, informs that you created a montage image, but did not save it.	▶ Click Save or Discard .
You have unsaved edits.	Informs that you created a montage image, but did not save it.	▶ Click OK .
You have unsaved edits which will be discarded if you leave this screen. Discard before exit ?	Confirms that you want to exit without saving.	
Quick Compare	Shows all scans of same laterality and scan type as the right-clicked image.	▶ N/A


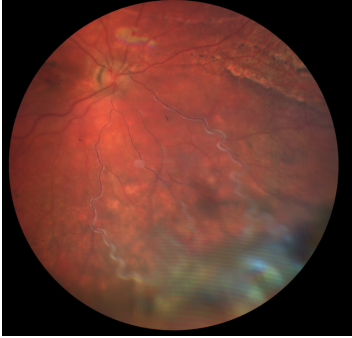
Table 15: Information Messages

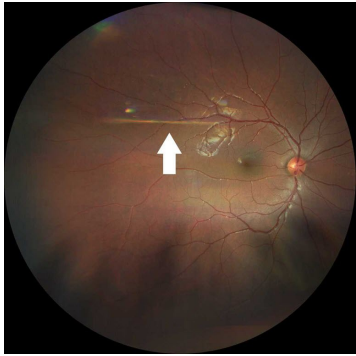
9.4 Installation Troubleshooting

Fault	Cause	Solution
Unexpected software shutdown when clicking on the patient's name.	Antivirus applications may falsely identify CLARUS® 700 installation files as a potential threat and cause the CLARUS® 700 Review application installation to fail.	<ul style="list-style-type: none"> ▶ Temporarily suspend on-access virus scanning during the installation of CLARUS® 700 Review application. ▶ Call for service.
Review software does not launch properly.	Antivirus software may falsely identify and quarantine binaries required for the CLARUS® 700 Review application. If required files have been quarantined, the CLARUS® 700 Review application will fail to launch properly.	▶ Configure Antivirus software to exclude "C:\Program Files\CZM\CLARUS" and "C:\ProgramData\Carl Zeiss Meditec\Review" folders from on-access and on-demand scanning.

Table 16: Review Application Installation Troubleshooting

9.5 Image Quality Troubleshooting

Problem	Cause	Solution
Fundus AutoFluorescence images look grainy.		<ul style="list-style-type: none"> ▶ Turn on the image controls. ▶ Reduce sharpening to 0. ▶ Reduce gamma slightly.
A color montage image saved in PNG format appears white or washed out.		<ul style="list-style-type: none"> ▶ Adjust the gamma setting to . ▶ Re-save the image.
AutoFocus is not working properly.	Auto focus may not work properly for some non-mydratic eyes.	<ul style="list-style-type: none"> ▶ Focus manually using the backlit focus knob.
The stereo image appears to be an "inside-out" 3D image.	If you capture the stereo images in reverse, the stereo image in the viewer appears to be "inside-out".	<p>The image viewer always displays the first image captured in the stereo pair as the right image and second image as the left image.</p> <ul style="list-style-type: none"> ▶ Capture the right image first. ▶ Capture the left image second.
Central Reflux 	Light reflecting from the cornea back to the sensor.	<ul style="list-style-type: none"> ▶ If possible, dim the lights in the room. ▶ For pupils larger than 3.5mm, use mydratic mode.
Edges Not Focused 	The patient has an irregularly-shaped eye.	<ul style="list-style-type: none"> ▶ Adjust the fixation target until the area of interest is in the center of the image. ▶ Manually adjust the focus optimize image clarity.

Problem	Cause	Solution
<p>Horizontal Rainbow</p> 	<p>Acquisition head is too close to the patient's eye causing reflection of the cornea.</p>	<ul style="list-style-type: none"> ▶ Move the acquisition head further back (away from the patient).

9.6 Connection Troubleshooting

Fault	Cause	Solution
<p>The instrument name does not appear in FORUM after auto-connecting.</p>		<ul style="list-style-type: none"> ▶ Navigate away from the System AET Administration screen and re-access it.
<p>The Analyze button is disabled.</p>	<p>If images were acquired before enabling DICOM mode, the Analyze button might be disabled even though exams exist.</p>	<ul style="list-style-type: none"> ▶ Select a different patient . ▶ Re-select the first patient.

Table 17: Review Application Installation Troubleshooting

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10 Specifications

10.1 Electrical Specifications

External Power Supply	100 - 240 V~, 50 / 60 Hz, 4 A max
Fuse	T 4.0 A, L 250 V
Electrical Class per IEC 60601-1	Class I

Table 18: Electrical Specifications

10.2 Instrument Specifications

Imaging Modes	<ul style="list-style-type: none"> ■ Reflectance images (true color) ■ Fluorescein angiography (FA) ■ Live IR preview image ■ Fundus autofluorescence with blue or green excitation (FAF-B, FAF-G) ■ Stereo images ■ External eye images
Mode of Operation	Continuous
Working Distance	25 mm, cornea to glass
Device Group (ANSI Z80.36, ISO 15004-2)	Group 1
Service Life	7 years
Data Ports	2 network, 4 USB3 (2 USB2) Display Port v HDMI 2 RS232
Storage	≥ 2 TB
Screen Resolution	1920 x 1080
Gigabit LAN port	RJ45, bandwidth ≥ 125 MB/s
Touchscreen	PCAP

Table 19: Instrument Specifications

10.3 Dimensions and Weight

Dimensions (W x D x H)	362 mm x 546 mm x 676 mm
Instrument Table Dimensions (W x D x H)	916 mm x 615 mm x 711 - 925 mm
Acquisition Device Weight	20.9 kg
At-Instrument Computer Weight	8.5 kg
Instrument Table Weight	38 kg

10.4 Ambient Requirements

Temperature	10°C to 35°C
Relative Humidity	30% to 90%, non-condensing
Atmospheric Pressure	800 hPa to 1060 hPa

Table 20: Ambient Requirements for Operation

Temperature	-10°C to 55°C
Relative Humidity	10% to 95%, non-condensing
Atmospheric Pressure	700 hPa to 1060 hPa

Table 21: Ambient Requirements for Storage

Temperature	-40°C to 70°C
Relative Humidity	10% to 95%, non-condensing
Atmospheric Pressure	500 hPa to 1060 hPa

Table 22: Ambient Requirements for Transport

10.5 Fundus Camera Specifications

Field of view <ul style="list-style-type: none"> ■ Widefield ■ Ultra-widefield 	<ul style="list-style-type: none"> ■ 90° ■ 135°
Ametropia Compensation	+20 D to -24 D
Pixel Pitch on the Fundus	7.3 µm/pixel
Resolution (zones defined in ISO 10940): <ul style="list-style-type: none"> ■ Center ■ Middle ■ Periphery 	<ul style="list-style-type: none"> ■ 60 lp/mm at central field (0°) ■ 40 lp/mm at 23° FOV ■ 25 lp/mm at 45° FOV
Sensor: <ul style="list-style-type: none"> ■ Color Imaging ■ Fluorescence Imaging 	<ul style="list-style-type: none"> ■ 3 x 12 megapixels ■ 12 megapixels monochrome

Table 23: Fundus Camera Specifications

10.6 Laser Classification

Class 1 laser product

11 Legal Notices

Software Copyright

The software program ("Software") included with your CLARUS® 700 is a proprietary product of Zeiss and in certain instances contains material proprietary to Microsoft Corporation and other third party licensors, suppliers and vendors.

These proprietary products are protected by copyright laws and international treaty. You must treat the Software like any other copyrighted material.

Copyright ©2019 Carl Zeiss Meditec, Inc. All rights reserved.

End User Software License Agreement

Upon initial configuration of your CLARUS® 700, you will be presented with an End User Software License Agreement (the "EULA"), which you must accept in order to use the Software.

The EULA is a legal contract between You and Carl Zeiss Meditec, Inc., which governs Your use of the Software. If you do not agree with the terms and conditions of the EULA and do not agree to be bound by the EULA, do not use the Software.

If You have any questions concerning the EULA, contact Carl Zeiss Meditec, Inc., Attention: Customer Service, 5160 Hacienda Drive, Dublin, CA 94568. Telephone 800-341-6968.

Acknowledgment

You acknowledge that you have read all the provisions in this Chapter, including End User Software License Agreement, understand them, and agree to be bound by their terms and conditions.

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12 Accessories and User-Replaceable Parts

This section contains parts lists for this instrument, instructions for ordering parts and instructions for returning defective parts.

WARNING!

Using parts that are not authorized by ZEISS

may compromise device safety during operation.

- ▶ Use only accessories authorized by ZEISS.
- ▶ In the U.S., call 800–341–6968. Outside the U.S., contact your local Zeiss distributor. You can find the ZEISS contact partner for your country on our website: www.zeiss.com.

NOTE

The procedure for returning defective parts from International operations differs somewhat from that for U.S. domestic operations

These differences are noted in the instructions.

- ▶ Please follow the instructions carefully.

NOTE

Part numbers are subject to change

- ▶ When ordering, confirm all part numbers with your ZEISS Representative.

12.1 Parts Orders

12.1.1 U.S. Domestic Parts Ordering

NOTE

Overnight shipping costs are much higher; only request overnight shipping for time-sensitive delivery requirements.

Follow established procedures to order spare parts.

To order parts shipped overnight, contact the parts department:

- 1-800-341-6968 (domestic toll-free)
- 1-925-557-4843 (domestic)
- 1-925-557-4652 (domestic fax)

12.1.2 International Service Operations

Customers are billed for all shipping charges (including customs fees).

For International service operations, use the ordering procedures established for your area that meet the requirements of the Carl Zeiss Meditec International Parts department.

12.2 Accessory Kit Parts List (Replaceable Parts)



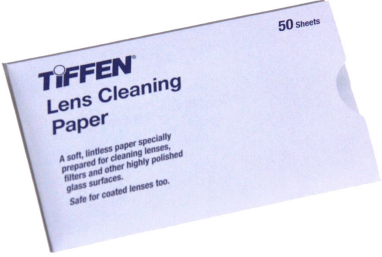




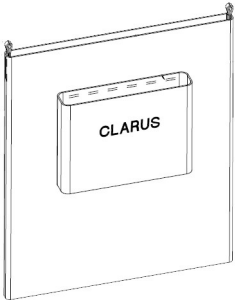
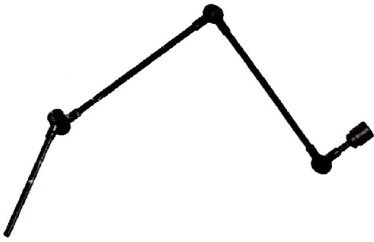




Image	Part Number	Quantity	Description
	2660021166733	1	DUST COVER CLARUS
	2660100007672	1	LENS CLEANER
	2660100007673	1	LENS WIPES
	2660021121819	1	CABLE NETWORK CAT5E SNAGLESS BOOT
	2660021165915	2	SCR M6X1 X16 THUMB
	2660021167011	1	BRACKET ACCESSORY BAG
	2660100022511	1	POWER CORD 120V

Image	Part Number	Quantity	Description
	2660021147390	1	WIRELESS MOUSE
	2660021168669	1	ASSEMBLED WEIGHT LABEL
CLARUS® 700 only. <i>Image Not Available</i>			PATIENT ARM REST

12.3 Additional Replaceable Parts

Image	Part Number	Description
	2660021167501	Accessory bag
	2660021167244 3197519005000	Fixation Device (External) Occluding Sleeve for Fixation Device
	3013509052000	Fixation Lamp (Red)
	2660021165748	Ocular Lens Cover

	Part Number	Description
	2660021158754	Ethernet CAT5E Shielded 1.5 m/59 in
	2660021140192	USB Display Port Cable 2 m/79 in

12.4 Returning Defective Parts

Receiving returned parts helps us to:

- Evaluate defects and analyze root cause.
- Rebuild and return servicable parts to stock.

12.4.1 Equipment Return Authorization

You must obtain a **Return Material Authorization (RMA)** from Carl Zeiss Meditec before returning equipment for repair.

The **RMA** number must accompany each return shipment to Carl Zeiss Meditec.

To obtaining an **RMA** number, follow the established procedures for your area of operations.

12.4.2 Packing for Shipment

NOTE

Carl Zeiss Meditec does not supply replacement shipping containers for vendor-supplied components such as monitors, printers, keyboards, and computers.

Always retain the original shipping containers for instruments and use the original shipping containers to pack instrument subassemblies for shipment.

If you cannot locate the original shipping container, contact the Carl Zeiss Meditec parts department for a replacement.

13 Decommissioning

13.1 Safety During Decommissioning

 CAUTION!**Attempting to decommission your system**

may result in damaged equipment and danger to personnel.

- ▶ Never attempt to decommission a ZEISS system or device. Only ZEISS approved field service representatives are qualified to safely decommission your system.
 - ▶ Contact your ZEISS Representative to set up an appointment for system/device decommissioning.
-

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14 Packaging and Transport

14.1 Safety During Transport

CAUTION!

Packaging and transport by non-ZEISS personnel

could result in damage, loss, or non-compliance within the country of transit.

- ▶ Allow only change to Zeiss approved representative to prepare the instrument and associated components for transport.
- ▶ Allow only ZEISS-approved personnel to transport the instrument and associated components.

14.2 Instrument Disposal

The device contains electronic components with integrated batteries.

- ▶ Dispose of the device and integrated batteries correctly, in accordance with national legislation.



The device specified on the delivery note must not be disposed off via household waste or communal disposal companies according to the applicable EU guidelines valid at the time the device was placed on the market.

- ▶ For more information about the disposal of the device, please contact the ZEISS contact partner in your country.
- ▶ If you want to sell on the device or its components: Inform the purchaser that they must dispose of the device according to the regulations valid at that time.

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15 Disposal

15.1 Packaging Disposal

- Keep instrument packing material in the event of a relocation or repair.
- If you want to dispose of the packing material: Dispose of packing material by sending it for recycling through an acknowledged collection system.

15.2 Device Disposal

The device contains electronic components with integrated batteries.

- Dispose of the device and integrated batteries correctly, in accordance with national legislation.



The device specified on the delivery note must not be disposed of via household waste or communal disposal companies according to the applicable EU guidelines valid at the time the device was placed on the market.

For more information about the disposal of the device, please contact the ZEISS contact partner in your country.

If you want to sell the device or its components: Inform the purchaser that they must dispose of the device according to the regulations valid at that time.

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Glossary

DHCP

a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway.

DICOM

DICOM (Digital Imaging and Communications in Medicine) is an open standard for the archiving and exchange of information within medical image management.

DNS

a hierarchical decentralized naming system for computers, services, or other resources connected to the Internet or a private network. (The Internet's equivalent of a phone book.)

EMR

Any electronic medical records system, including FORUM, whether DICOM-compatible or not

ePDF

a DSC-conforming PostScript document with additional restrictions intended to be usable as a graphics file format.

ETDRS grid

macular grid used to measure area and proximity of macular edema to the macular center (fovea) and aids in evaluating the changes in vision in patients with diabetic retinopathy.

FA

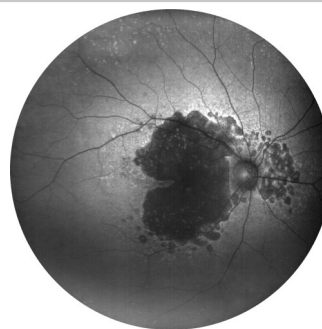


Fluorescein angiography. The patient is injected with fluorescein-sodium and then the patient's eye is illuminated with light at different wavelengths, which causes the fluorescein-sodium to fluoresce. A series of monochrome images is taken.

FAF

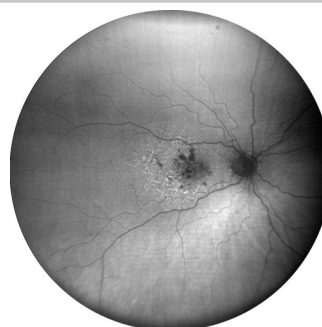
Fundus Autofluorescence. A type of fundus imaging in which the eye is illuminated with light at a wavelength that stimulates the natural fluorescence of lipofuscin.

FAF-Blue



Fundus autofluorescence with blue excitation

FAF-Green



Fundus autofluorescence with green excitation

FORUM

A software product for managing, archiving, and viewing patient data, images, and reports from computerized diagnostic instruments or documentation systems.

FOV

Field of View: the measure that indicates how much of the eye can be imaged in a capture. Field of view can be measured from the pupil, as described in ISO 10940, or it can be measured from the center of the eye.

IOD

Information Object Definitions

JPEG

a commonly used method of lossy compression for digital images, particularly for those images produced by digital photography.

JPEG2000

an image compression standard and coding system created by the Joint Photographic Experts Group committee in 2000 with the intention of superseding their original discrete cosine transform-based JPEG standard (created in 1992) with a newly designed, wavelet-based method.

LEDs

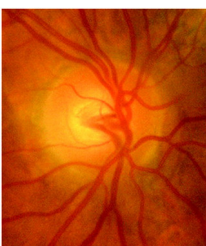
a two-lead semiconductor light source.

NETBIOS

a program that allows applications on different computers to communicate within a local area network (LAN).

NTP

a networking protocol for clock synchronization between computer systems over packet-switched, variable-latency data networks.

Optic Nerve Head (ONH)

The circular area in the back of the inside of the eye where the optic nerve connects to the retina.

PACS

a medical imaging technology used for storing, retrieving, presenting and sharing images produced by various medical hardware modalities, such as X-ray, CT scan, MRI and ultrasound machines.

PDF

a file format that provides an electronic image of text or text and graphics that looks like a printed document and can be viewed, printed, and electronically transmitted.

Peripheral device / equipment

Equipment that is connected to the device but is not part of the system, such as a printer.

PNG

a raster graphics file format that supports lossless data compression.

Proof

A screen that presents thumbnails of all images associated with a patient record.

Selection bin

The list of thumbnails of the images that have been selected from the Proofsheets.

Stereo image

An image that simulates a three-dimensional image by placing two images side-by-side that were taken from slightly different angles.

TCP/IP

a suite of communication protocols used to interconnect network devices on the internet.

TIFF

a computer file format for storing raster graphics images, popular among graphic artists, the publishing industry, and photographers. TIFF is widely supported by scanning, faxing, word processing, optical character recognition, image manipulation, desktop publishing, and page-layout applications.

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Instructions for Use

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