

KOWA SL-19 PLUS PORTABLE SLIT LAMP

QUICK MANUAL



Item no. 173696

TELEPHONE +49 7461 96 580 0

www.eickemeyer.com

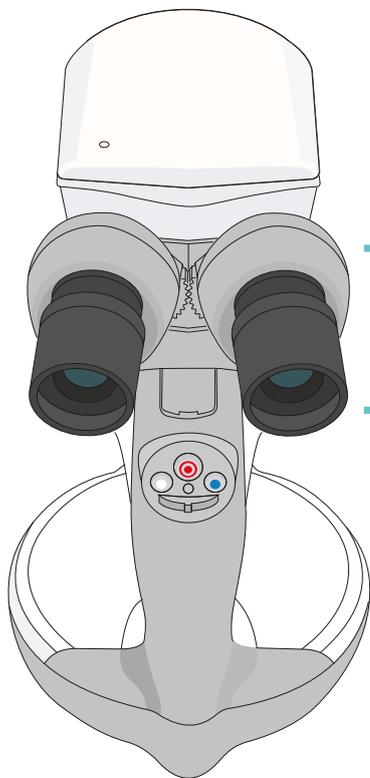
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1. HOW TO USE THE PORTABLE SLIT LAMP

1.1 Adjusting Interpupillary Distance/Diopter



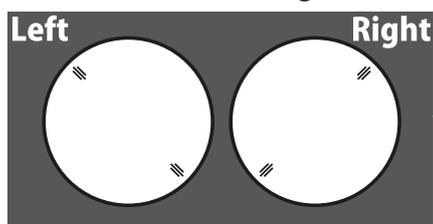
Prism Box

Adjust the interpupillary distance.

Diopter correction scale

Adjust the diopter.

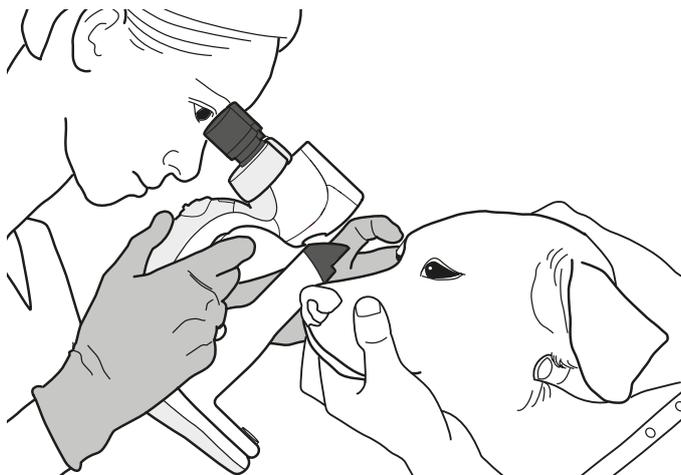
How the left and right reticles appear through the eyepieces



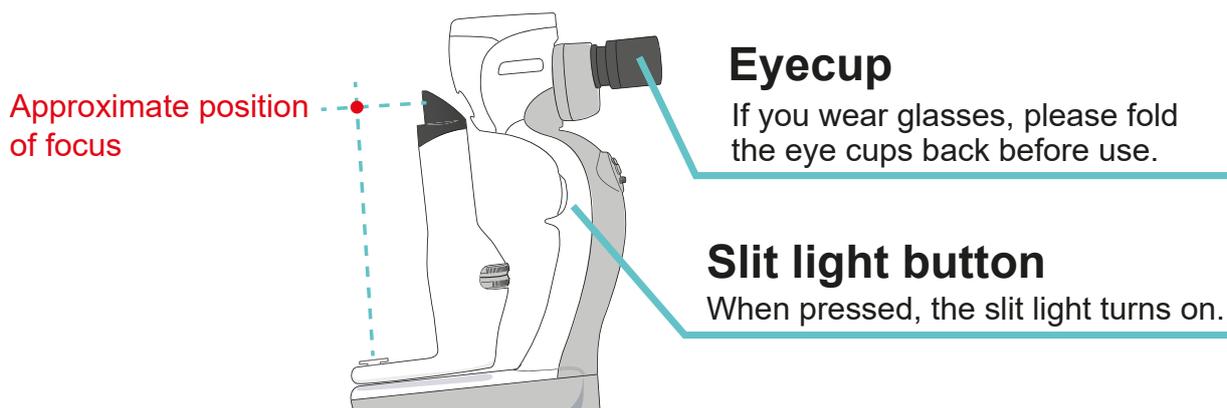
Turn the eyepiece slowly from “+” to “-.”
The reticle becomes clear.

Adjust the interpupillary distance by rotating the prism box left or right to obtain an appropriate field of view through the eyepieces. Turn the diopter correction scale on the eyepiece all the way to the “+” side, then look through the viewfinder with one eye at a time and slowly turn it towards the “-” side. Stop when the reticle becomes clearly visible.

1.2 Observing the Subject



Using the grip, hold the main unit securely in your hand.



Hold the grip firmly with one hand and focus by adjusting the distance between the examined eye and the objective lens. Press the slit light button to activate the slit light.

1.3 Disinfection of this Device

Wipe the device with a soft cloth soaked in rubbing alcohol. Please do not spray rubbing alcohol directly on the device. For more information on cleaning the lens, please refer to „4.4.2 Cleaning the projection prism, the objective lens, the eyepiece and the Barrier Filter B“ in the instruction manual.

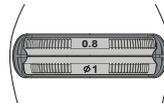
1.4 Mechanical Functions



Slit Dial
Adjust the slit width.

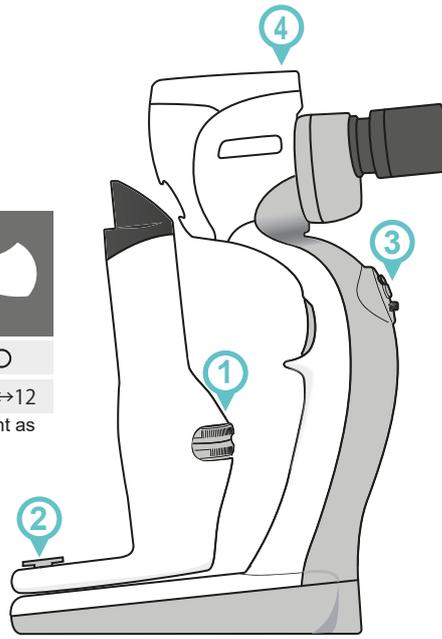
Spot Dial

Adjust the spot diameter and slit length.

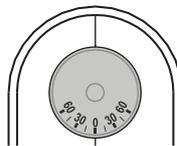


Shape of the light						
Slit Dial	0.1/0.2/0.8	0.1/0.2/0.8	0.1/0.2/0.8	○	○	○
Spot Dial	12	Φ1/Φ5	1.5↔12	12	Φ1/Φ5	1.5↔12

*When the slit dial is ○ and the spot dial is set continuously variable, the shape of the light as shown on the far right of the above table is irradiated, but it is not a malfunction.



Illumination angle scale
Indicates the angle of slit light irradiation.



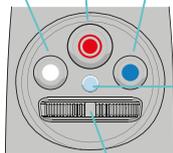
Camera button
Push to start/stop recording.

Blue light button

There are three levels of brightness. If there is no operation for 10 minutes, the light will turn off automatically.

Background light button

There are three levels of brightness. If there is no operation for 10 minutes, the light will turn off automatically.



Main unit indicator

Lights up green when in use. When the battery is low, it flashes orange.

Slit light intensity dial

To adjust the brightness of the slit light, turn the dial to the right to make it brighter, and turn it to the left to make it darker.



Camera indicator

Indicates the status of the camera.

1.5 Replacing Batteries



- When the main unit indicator flashes orange, the batteries need to be replaced.
- Three AA Ni-MH batteries are required for the device.
- Please refer to the instruction manual for details.
- Camera functions do not work properly with alkaline batteries.

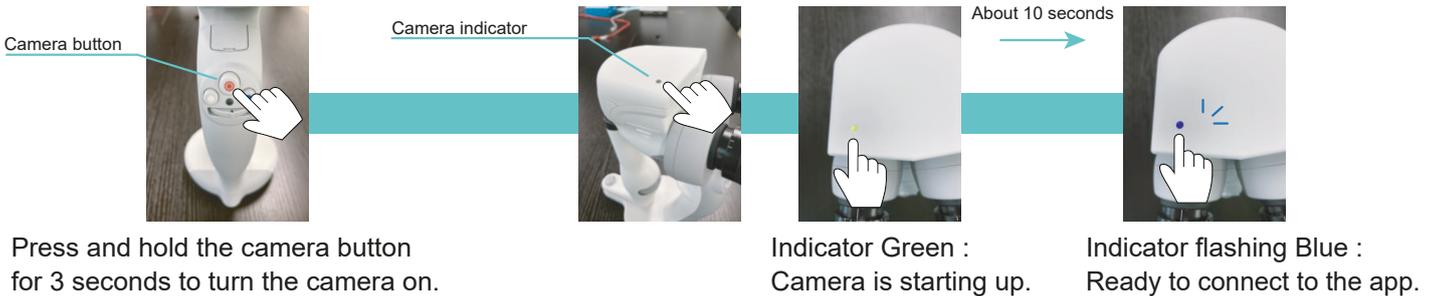
1.6 Troubleshooting

Trouble	What to check	Treatment
Does not light up	Is the battery box connected?	Install the battery box
	Are the batteries connected?	Check the battery polarities (+ and -) and make sure that the battery is firmly seated
	Are the battery polarities (+ and -) correct?	
	Are the slit/spot dial out of place?	Align the slit/spot dial to the right position
	Is the main unit indicator flashing?	Replace the battery
Out of focus	Is the diopter adjustment off?	Adjust the interpupillary distance and diopter again.

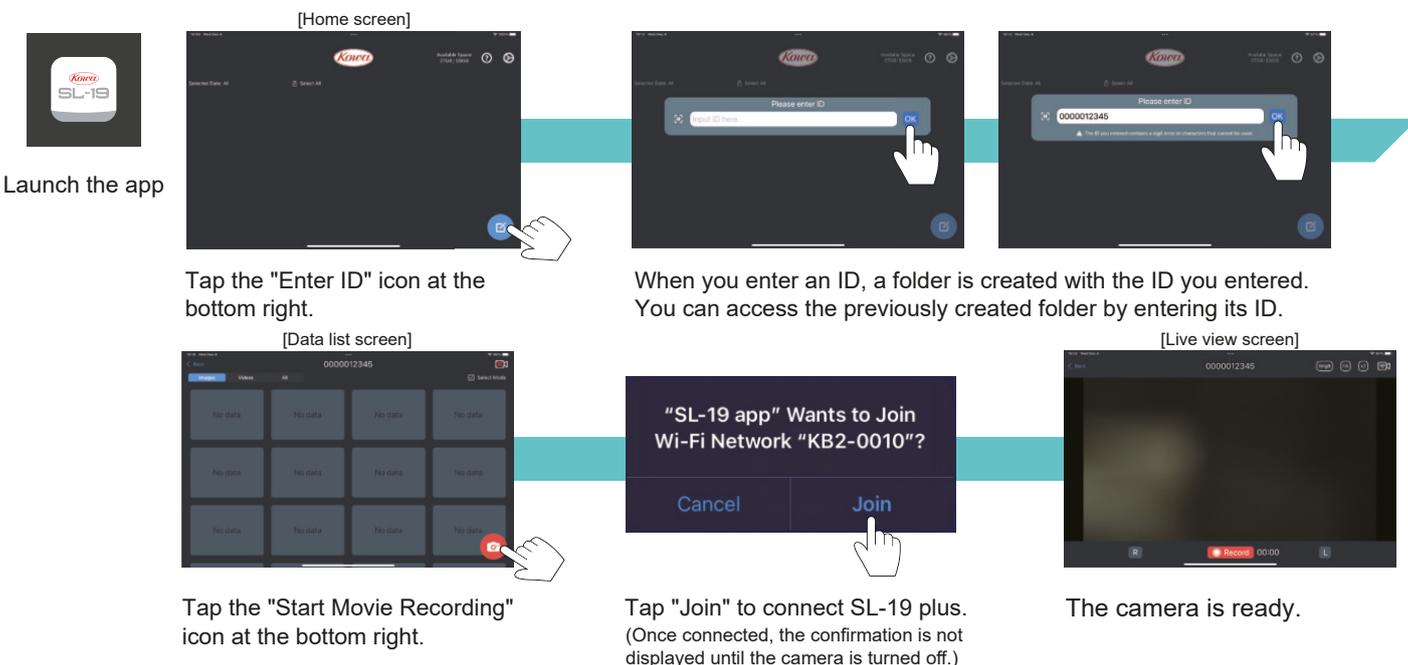
*Please refer to the instruction manual for details.

2. CONNECTING THE CAMERA TO THE APP

2.1 Main Unit



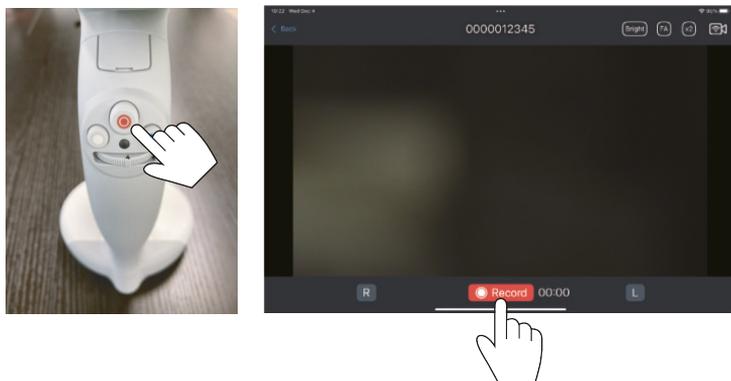
2.2 The App



3. HOW TO USE THE SL-19 APP

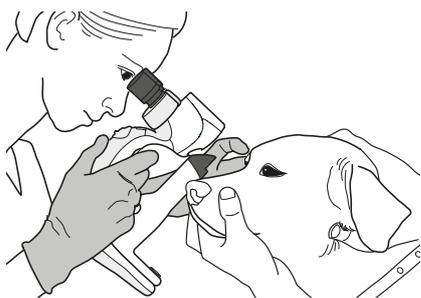
3.1 Recording

Start Recording



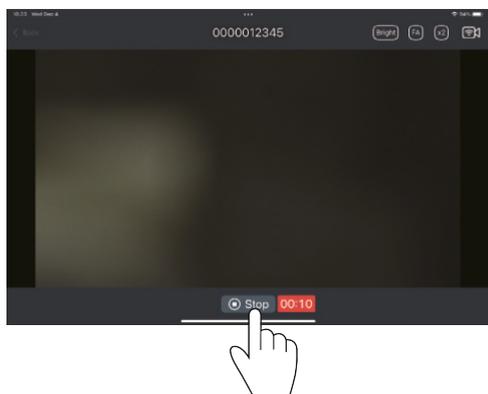
Press the camera button on the main unit or tap "Record" in the app to start recording. The camera indicator lights up purple while recording.

* You can select "R" or "L" to identify which eye to record.

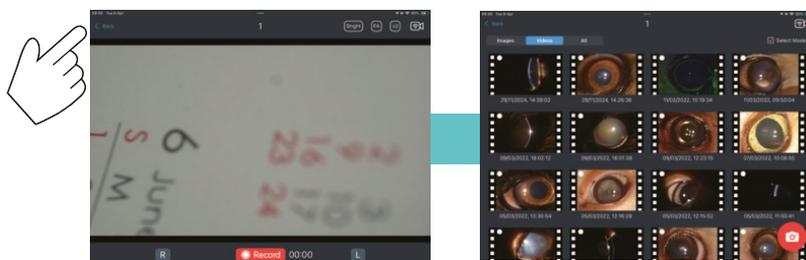


Please observe the subject's eye through the microscope during recording. The recorded movie will closely resemble what you see through the microscope.

Stop Recording



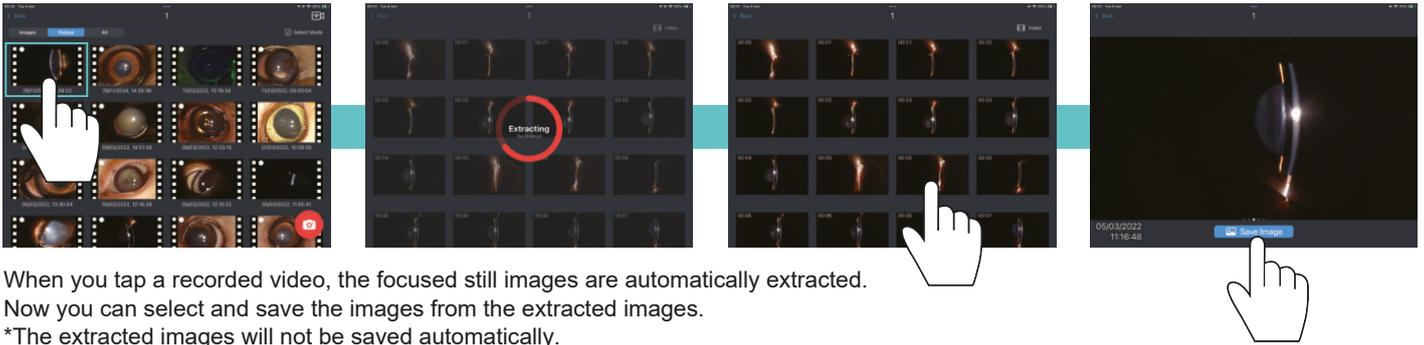
Press the camera button on the main unit again or tap "Stop" in the app to stop recording.



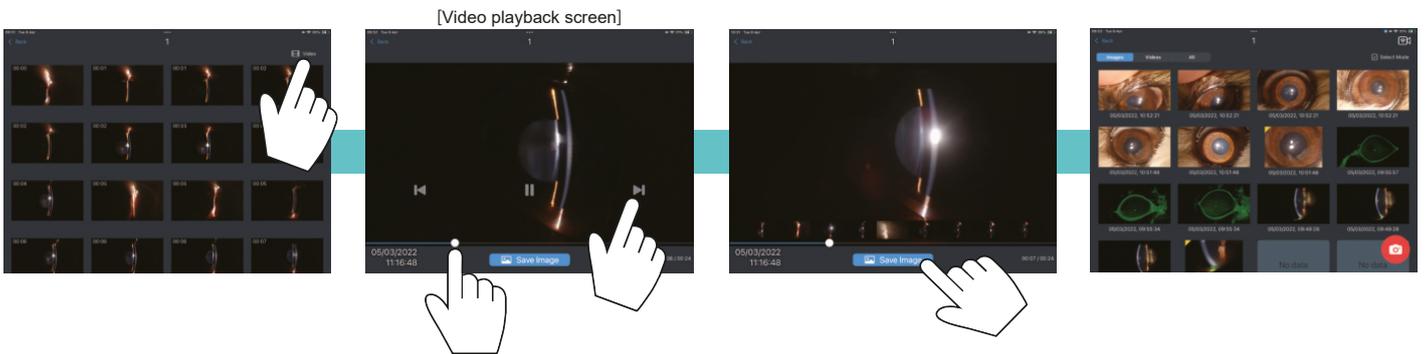
Tap back in the upper left corner to return to the data list screen. The recorded video is saved.

3.2 Extracting Still Images

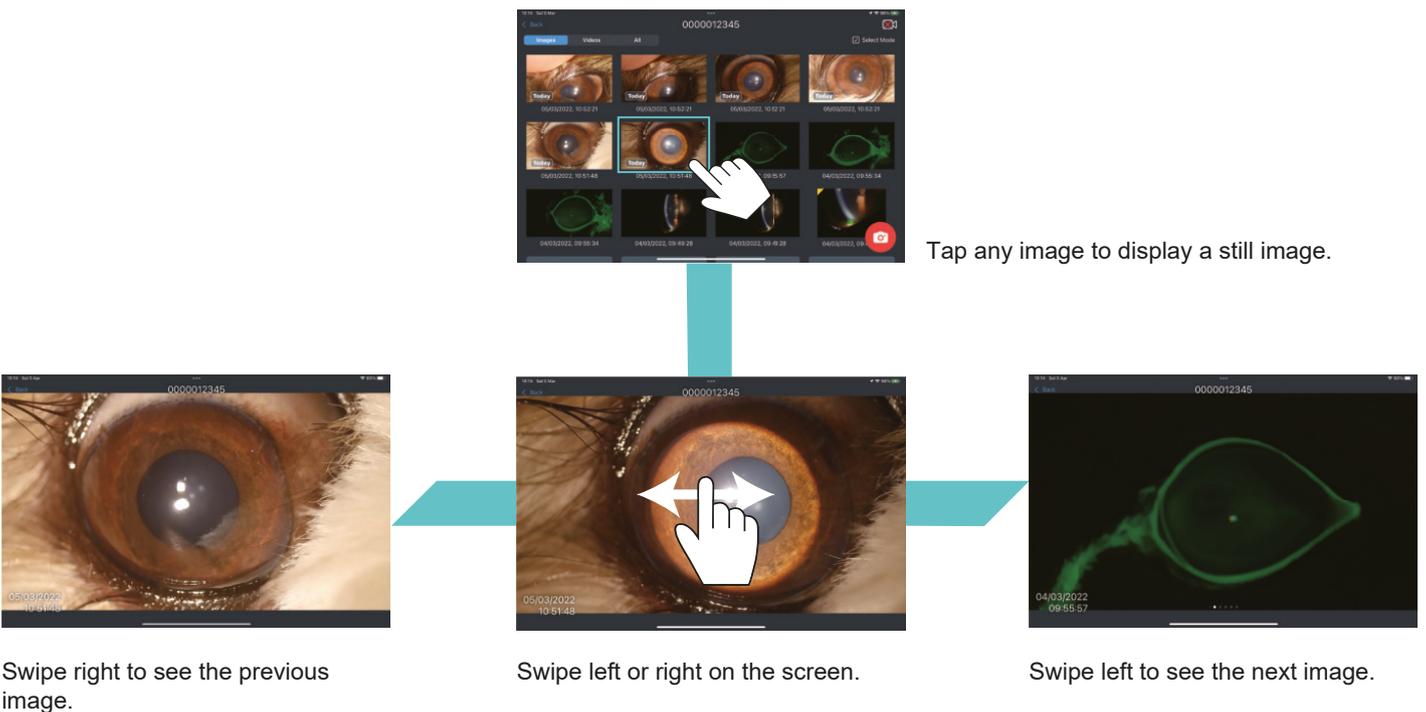
Automatic Extraction



Manual Extraction From Video

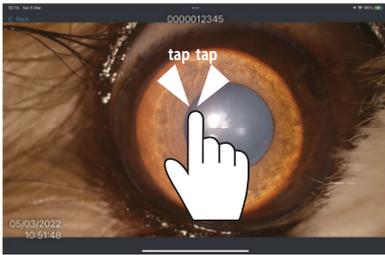


3.3 Browsing Still Images

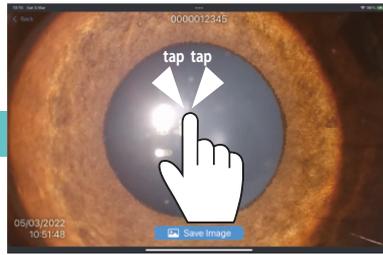


3.4 Zooming In/Out Still Images (1/2)

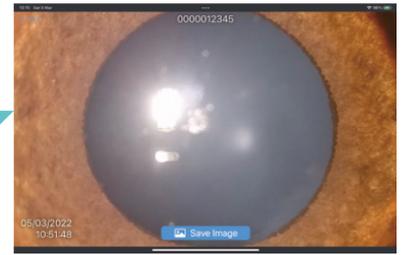
This function can only be carried out with saved still images.



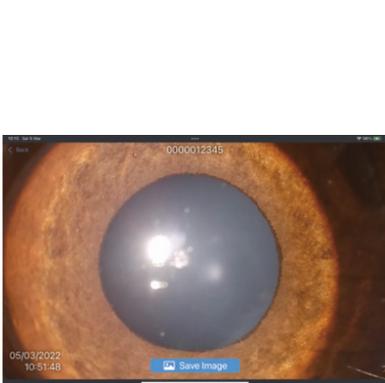
Double-tap on the screen to enlarge the image by 2x.



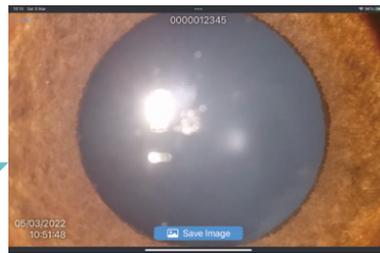
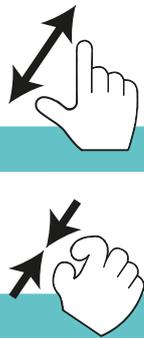
Double-tap on the magnified screen.



The original image is magnified 5x.



Pinch in/out on the screen.



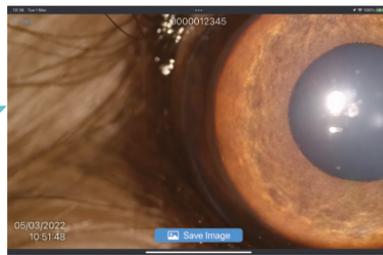
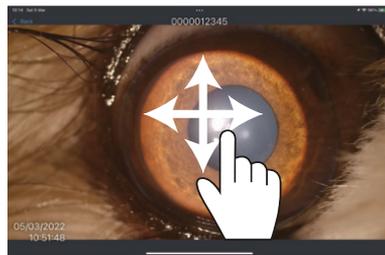
Pinch out to enlarge the image.



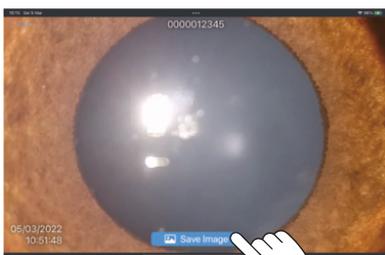
Pinch in to shrink the image.

3.4 Zooming In/Out Still Images (2/2)

Enlarged images can be moved by swiping them.



Saving Enlarged Images



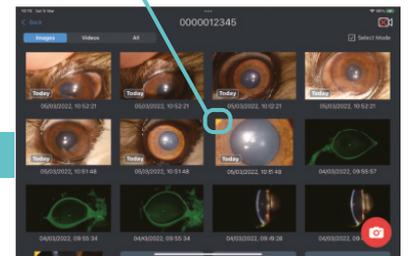
Tap "Save Image" to save the enlarged image currently displayed on the screen.



Tap "Back" to return to the data list screen.

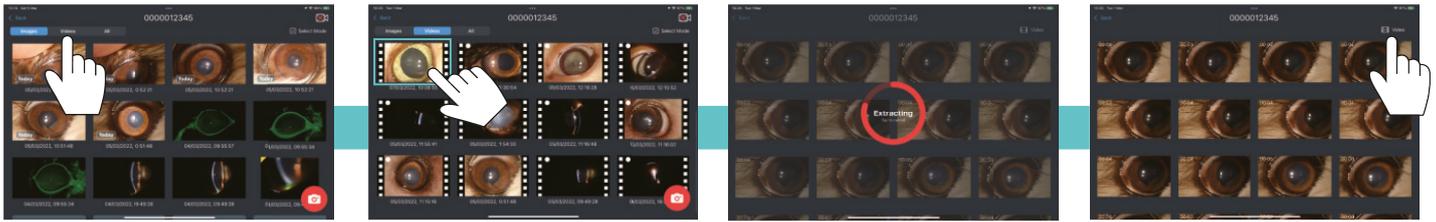
 **POINT** <Enlarged save mark>

Upon saving an enlarged image, the thumbnail will display the "enlarged save mark" as shown.

3.5 Replaying Video and Extracting Still Images (1/2)

Video Display



Tap the Videos tab.

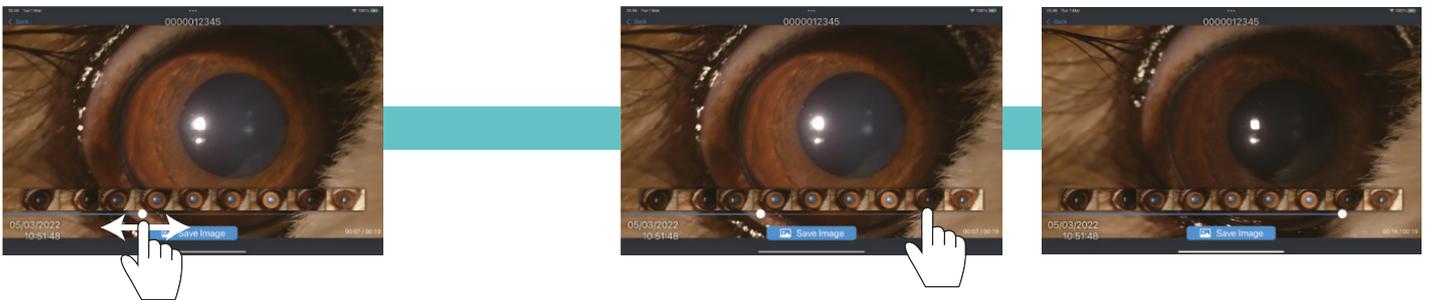
Select the file you want to display.

Image extraction.

Tap the Video button.

 **POINT**
Tap the screen to cancel image extraction.

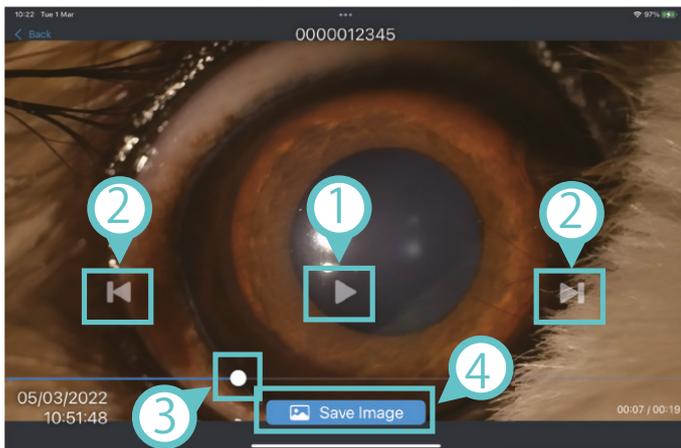
Video Replay – Seek Function



Slide the scrubber to adjust the playback position. While sliding, image thumbnails are displayed at regular intervals

Tap the image thumbnail to display the selected image.

3.5 Replaying Video and Extracting Still Images (2/2)



Movie playback screen

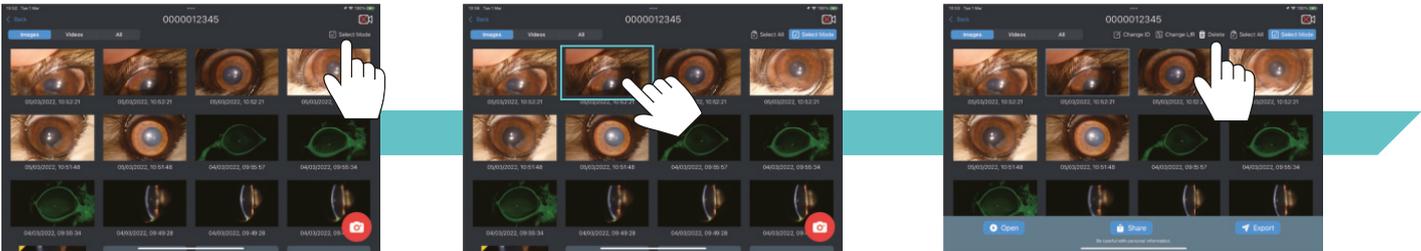
- 1 Start / Stop
- 2 Frame forward/backward
- 3 Slide to adjust the playback position
- 4 Save the displayed frame as an image

3.6 Editing Data (1/6)

Deleting Images

 **Caution** Images cannot be recovered once deleted. Please ensure that all required images have been exported and successfully saved to your local device.

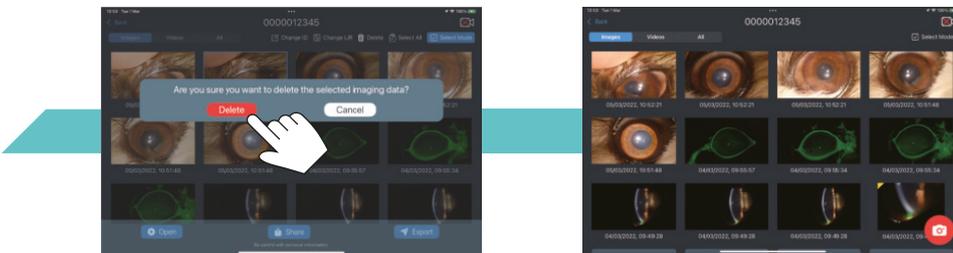
*The original order of images may differ if edits have been made.



Tap "Select Mode".

Select the image to be deleted.

Tap "Delete".



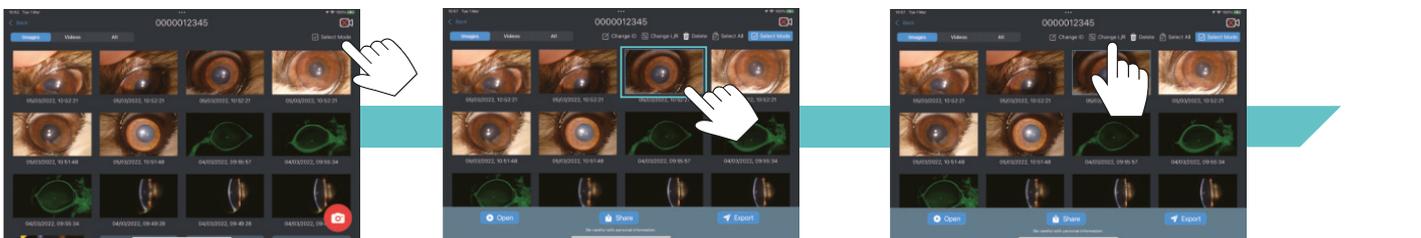
Tap "Delete" to remove the selected image.

3.6 Editing Data (2/6)

Assign/Change L/R Information

Follow these instructions to add or change left and right eye information to an image saved from a video that contains both left and right eyes.

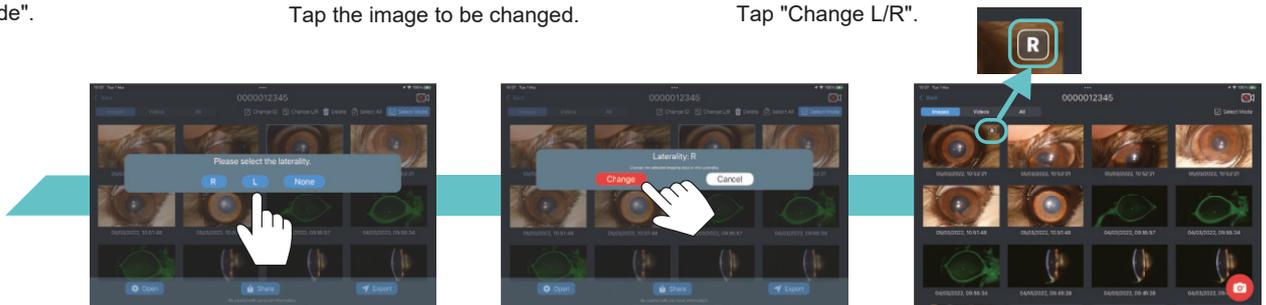
The original order of images may differ if edits have been made.



Tap "Select Mode".

Tap the image to be changed.

Tap "Change L/R".



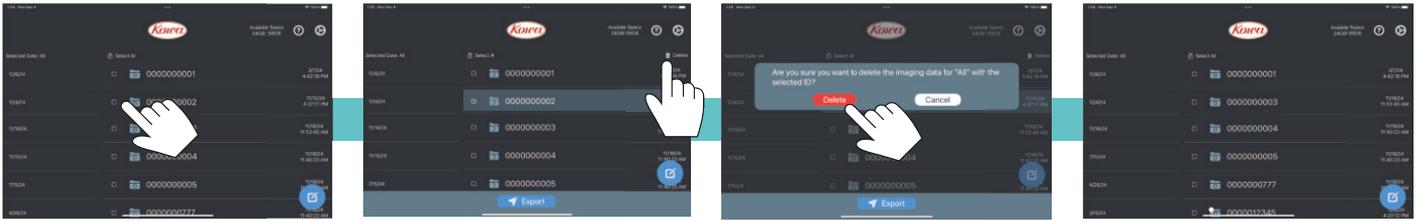
Tap "R", "L", or "None".

Tap "Change".

An icon will appear to indicate a change has been made.

3.6 Editing Data (3/6)

Deleting an ID Folder



Select the check box next to the ID folder you want to delete. Tap "Delete".

Tap "Delete" to remove the selected ID folder.

Bulk Data Deletion (Becomes Available When Free Space is Low)



Caution Images cannot be recovered once deleted. Please ensure that all required images have been exported and successfully saved to your local device.

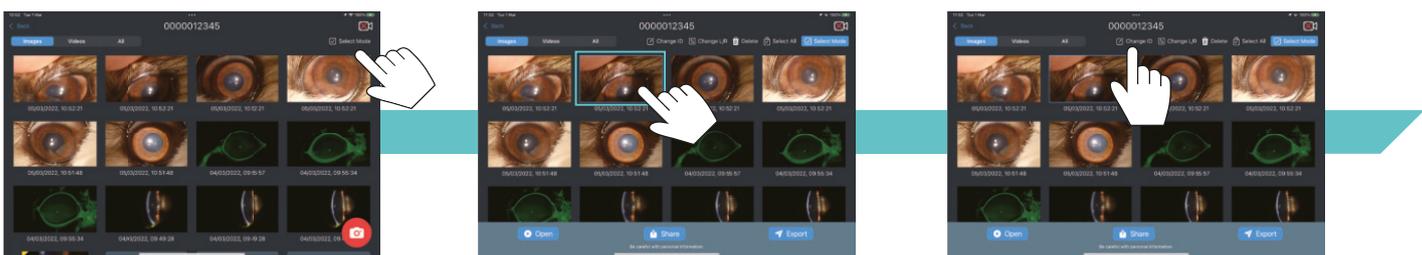
When available storage is below the required threshold a warning message will be displayed.

Tap "Available Space" to select files for deletion.

Tap "Delete" to delete imaging data taken before the specified number of days.

3.6 Editing Data (4/6)

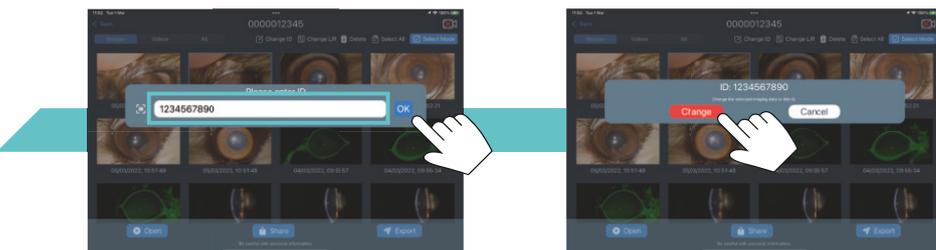
Editing ID



Tap "Select Mode".

Tap the image to change ID.

Tap "Change ID".

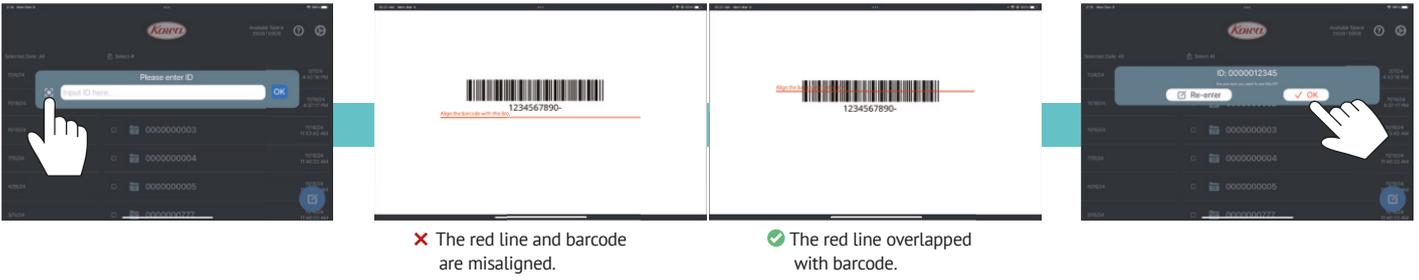


Enter the correct ID and tap "OK".

Confirm the revised ID and tap "Change".

3.6 Editing Data (5/6)

Inputting ID Using Barcodes



Tap the barcode icon.

When the barcode reading screen opens, overlay the barcode on the red line.

Review the imported barcodes. Once you have confirmed they are correct, tap "✓ OK".



POINT

<Character types that can be used in IDs>

* Alphanumeric characters and hyphens. Uppercase and lowercase letters are permitted and are not case sensitive.

Example : sl-19 → SL-19

When the barcode input button is first selected, a pop up message will be displayed requesting access to the camera. Tap "Allow".



Caution

"SL-19 App" Would Like to Access the Camera

This app uses the camera to scan barcodes.

Don't Allow

Allow

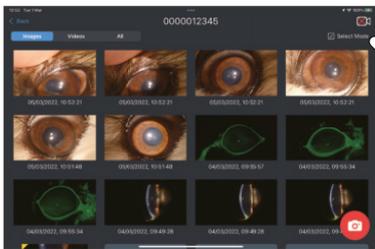


3.6 Editing Data (6/6)

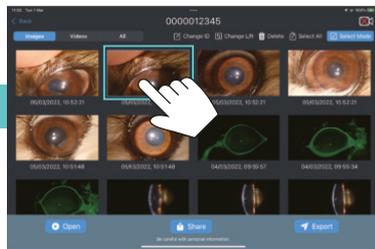
Sharing/Exporting the Data

It is possible to share recorded imaging data with external devices. However, some apps and functions will not be displayed to prevent accidental transfer.

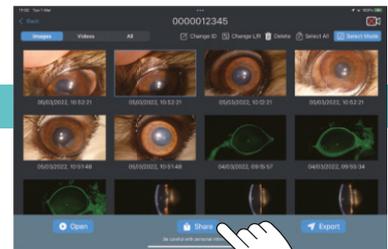
Caution Please be careful when handling recorded imaging data as they may contain personal information.



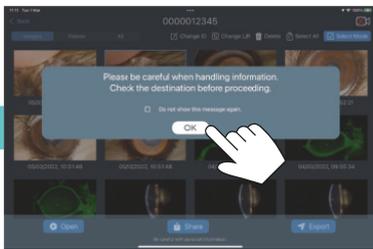
Tap "Select Mode".



Tap the image you want to share.



Tap "Share".



A warning pop-up message will be displayed. Tap "OK" to agree and continue.

If enabling the "Do not show this message again" checkbox, this message will not be shown again.



Select the method you want to use to share the file.

- 1 Compatible apps are displayed.**
 The file is saved to the destination specified.
 File names may change during saving.
 Some settings may need to be adjusted in advance (depending on the selected app).
- 2 "Save to Files"**
 The file will be saved to a selected destination.
 The file name is added in this app.
- 3 "Save Image" (when an image is selected), "Save Video" (when a video is selected)**
 The file will be saved in "Photos" on your local device.
 File names may change during saving.
- 4 "Add to Shared Album"**
 The file will be stored on the iCloud online service.
 File names may change during saving.

For the specifications of the file names added by this app, please refer to the "Export Data Specification" chapter of the other manuals "Export function: Wired LAN" or "Export function: Wireless LAN."

4. HOW TO FINISH THE OPERATION

4.1 Turning Off the Camera and Closing the App

Camera Button

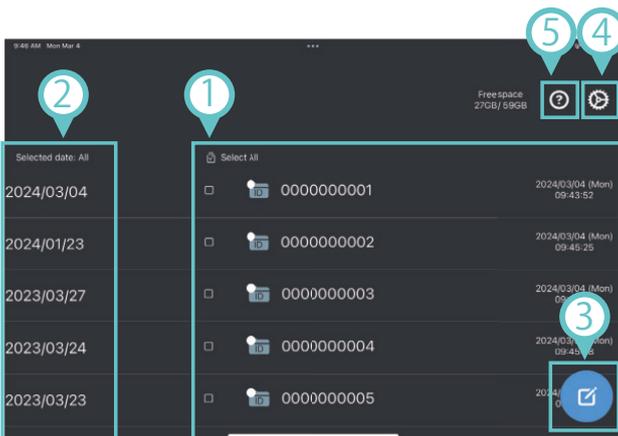


To turn off the camera, press and hold the camera button for 3 seconds. Then the camera indicator turns off.

The app can be closed like an ordinary app.

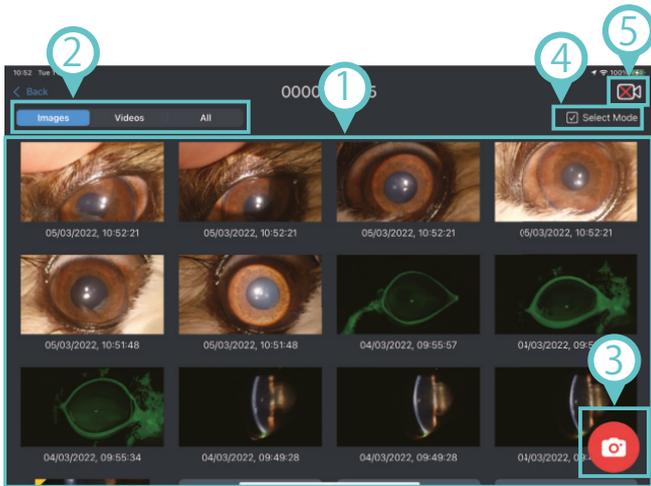
5. OPERATION SCREENS, OTHERS

5.1 Home Screen



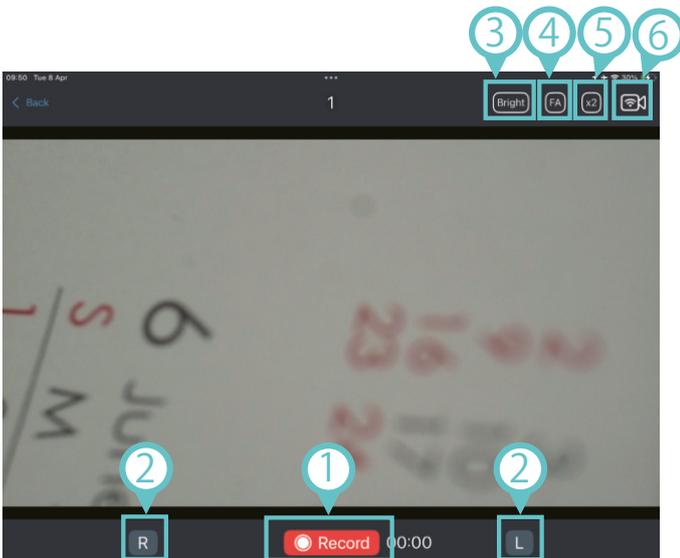
- 1 List of ID folders. Tap to open the selected ID's data list screen.
- 2 Tap to display the ID folders containing the data for that date. Tap the date again to return to displaying data for all periods.
- 3 Tap to enter ID
- 4 Open the settings screen of the app.
- 5 Open manuals for this app.

5.2 Data List Screen



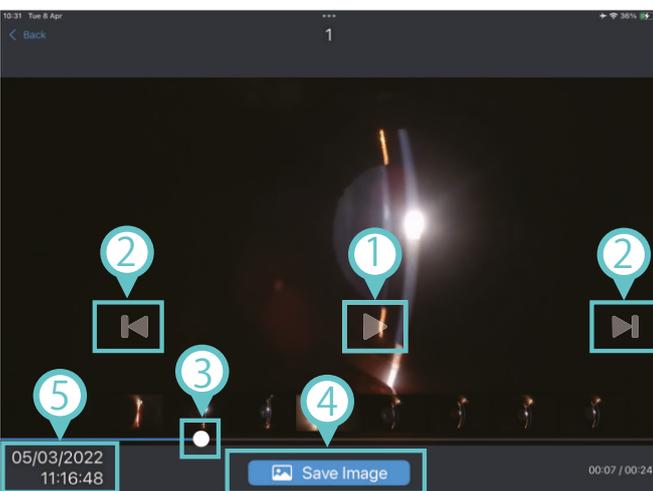
- 1 The recorded data of the selected ID is displayed. Videos are displayed by date, in descending order.
- 2 Change the type of data to be displayed (still images, videos, or all)
- 3 Tap to open the live view screen
If the camera is not connected, it will attempt to establish the connection.
- 4 You will be able to select data. Selected data can be exported, deleted, or edited.
- 5 Indicates the camera connection status. If "x" is displayed, tap the icon to reconnect.

5.3 Live View Screen



- 1 Start recording.
- 2 By selecting the R or L button, you can choose which eye to be recorded.
- 3 Bright mode : Adjust the brightness to allow for observation in low light conditions.
- 4 FA mode : During fluorescence observation, digitally add a color filter to obtain a suitable image.
- 5 Zoom in to 2x magnification.
- 6 Indicates the status of the camera connection. If "x" is displayed, reconnect by tapping.

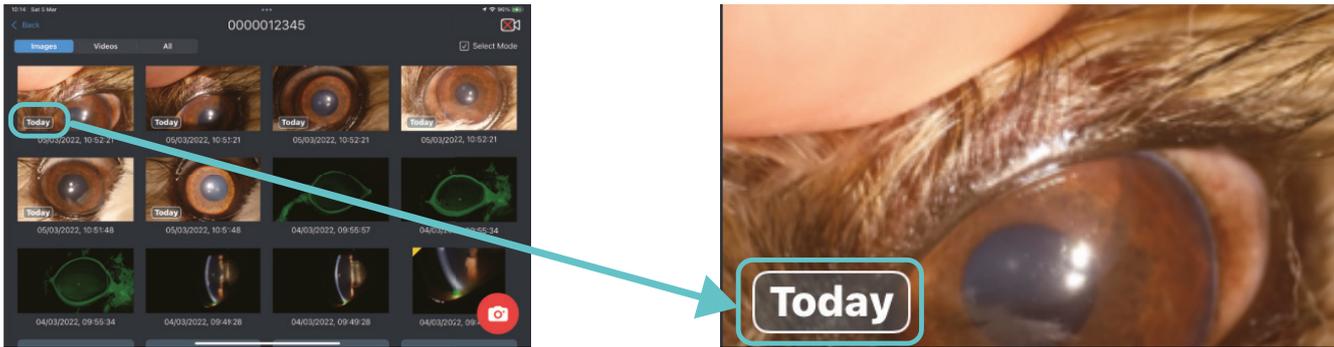
5.4 Video Playback Screen



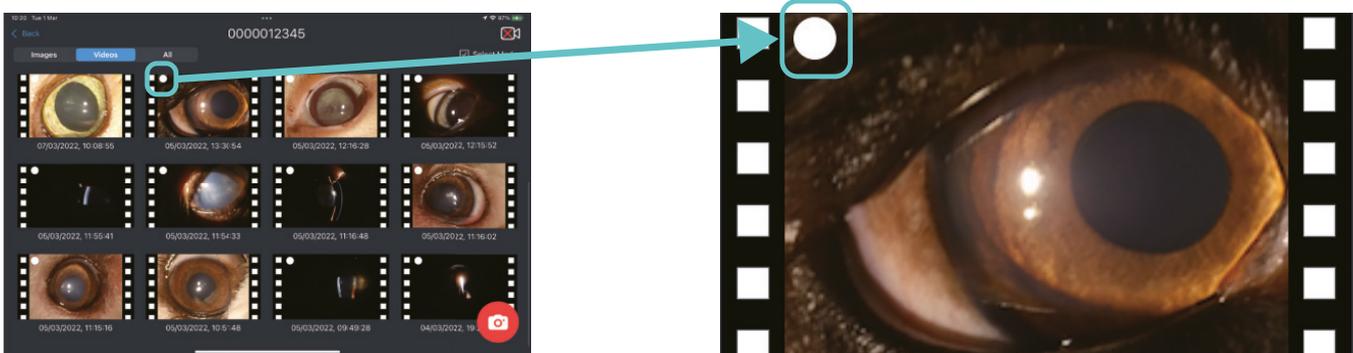
- 1 Stop/start the video.
- 2 Move forward/backward one frame of the video.
- 3 Slide to adjust the playback position of the video.
- 4 Saves the displayed frame as a still image.
- 5 Date and time of when the recording was made.

5.5 About the "Today" Mark and "Unedited Video" Mark

Still images/videos saved on the same day are marked with a "Today" mark in the display list.



For videos that do not have a still image saved, an "Unedited video" mark is displayed in the data list screen. Please be careful not to forget to save your records.



6. PRECAUTIONS

6.1 Precautions for Using the Camera

- The camera will not work properly with alkaline batteries.
- The camera does not have an auto-off function.
- If the diopter is not adjusted well, there will be a difference between the positions where the microscope and the camera are focused.
- Since the live view screen consumes a large amount of battery power from the slit lamp, please refrain from using the live view screen except during medical examinations. We highly recommend an extra set of charged batteries with a battery charger ready to be exchanged during examination.
- For troubleshooting the app, please refer to the "Troubleshooting" manual.

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This document is the manual for SL-AP192 Version 2.0.6
Data of preparation: April 2025

GERMANY

EICKEMEYER KG
Eltastraße 8
78532 Tuttlingen
T +49 7461 96 580 0
F +49 7461 96 580 90
info@eickemeyer.de
www.eickemeyer.de

SWITZERLAND

EICKEMEYER AG
Sandgrube 29
9050 Appenzell
T +41 71 788 23 13
F +41 71 788 23 14
info@eickemeyer.ch
www.eickemeyer.ch

POLAND

EICKEMEYER Sp. z o.o.
Al. Jana Pawła II 27
00-867 Warszawa
T +48 22 185 55 76
F +48 22 185 59 40
info@eickemeyer.pl
www.eickemeyer.pl

ITALY

EICKEMEYER S.R.L.
Via G. Verdi 8
65015 Montesilvano (PE)
T +39 085 935 4078
F +39 085 935 9471
info@eickemeyer.it
www.eickemeyer.it

DENMARK

EICKEMEYER ApS
Solbakken 26, Hammelev
6500 Vojens
T +45 7020 5019
info@eickemeyer.dk
www.eickemeyer.dk

NETHERLANDS

EICKEMEYER B.V.
Doejenburg 203
4021 HR Maurik
T +31 345 58 9400
info@eickemeyer.nl
www.eickemeyer.nl

UNITED KINGDOM

EICKEMEYER Ltd.
3 Windmill Business Village
Brooklands Close
Sunbury-on-Thames
Surrey, TW16 7DY
T +44 20 8891 2007
info@eickemeyer.co.uk
www.eickemeyer.co.uk

CANADA

EICKEMEYER Inc.
617 Douro Street
Suite 205
Stratford, Ont. Canada
N5A 0B5
T +1 519 273 5558
info@eickemeyervet.ca
www.eickemeyercanada.ca