

IDC-1

LucoCam DC Software

User Manual

LUCCOcam

ILLUMINATION

ILLUCO Corporation Ltd.

102-304 SK Ventium, #166 Gosan-ro, Gunpo-si, 15850 Gyeonggi-do, South Korea

TEL: +82-31-429-8825 / FAX: +82-31-429-8825

Homepage: www.illuco.co.kr

E-mail: info@illuco.co.kr

Table of Contents

1. Getting Started
2. Camera
3. Library
4. Image Editing
5. Patient Management
6. Exporting Images
7. Settings
8. Library Transfer and Backup
9. License
10. Uninstall
11. Appendix

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1. Getting Started

1.1 System Requirements

- Operating System: Windows 10 or later
- USB: USB 3.0 port (for camera connection)
- Display: 1280 × 720 or higher recommended
- Disk Space: At least 10 GB of free space (for storing captured images)

1.2 Installation

1. Download the latest **LucoCam DC** installation file from the ILLUCO website. (www.illuco.co.kr)
2. Run the installation file.
3. Agree to the EULA (End User License Agreement).
4. Select the installation path and click the Install button.
5. Once the installation is complete, launch LucoCam DC ().

1.3 Initial Setup (Onboarding)

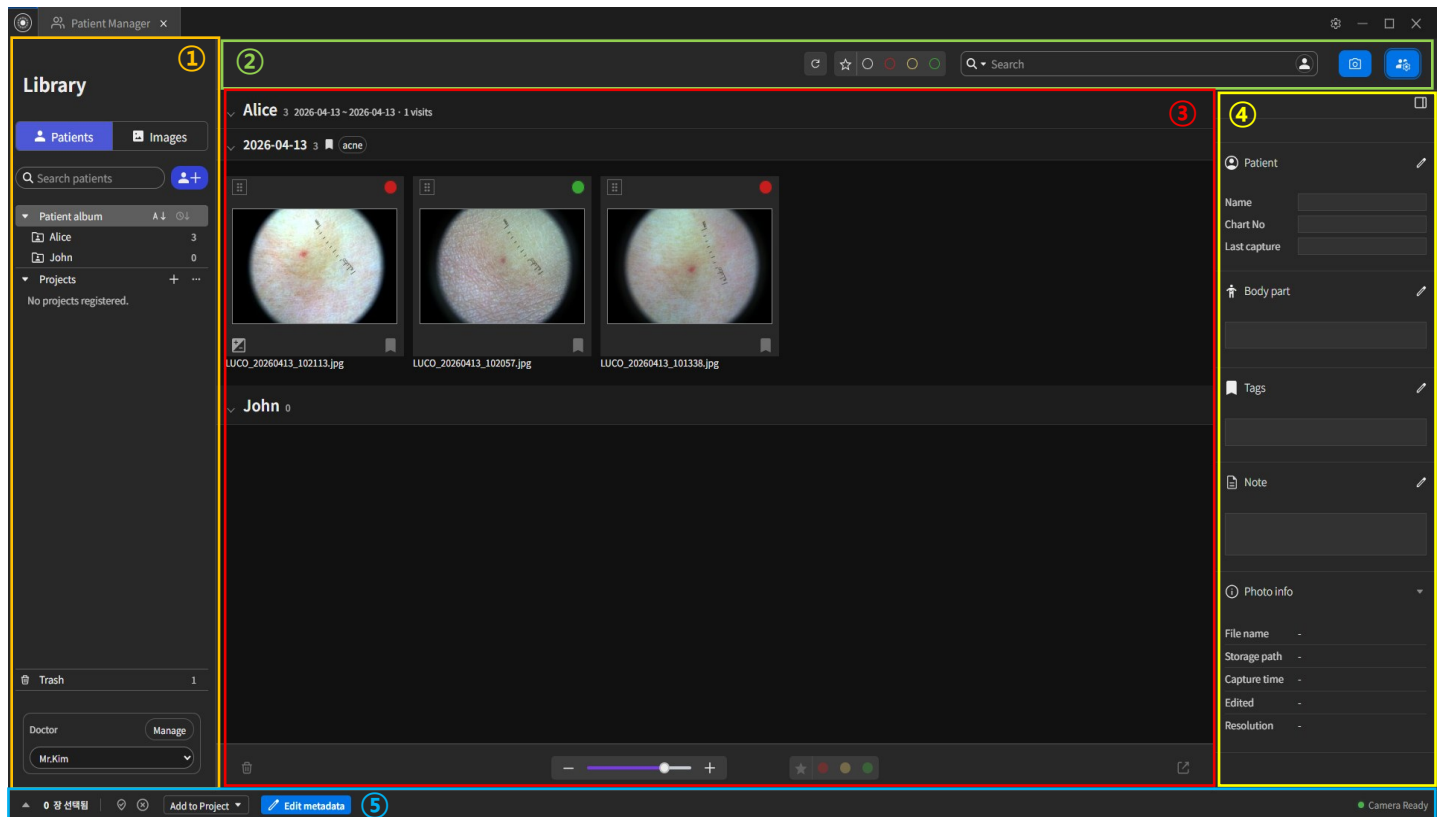
When you run the program for the first time, a 5-step initial setup screen will appear.

Step	Content	Description
1. Language & theme	Select language (Korean/English) and theme (Dark/Light)	Changes are applied immediately upon selection.
2. Library	Select image storage location	Use the Select Folder button to specify a folder on the local disk. Network (UNC) paths are not supported.
3. Profile	Register user profile	Enter the user type (Doctor/Staff) and name. Additional profiles can be added later in Settings after launching the app.
4. Folder rule	Set folder naming rules for captured images	Choose the desired combination such as date, patient name, chart number, or doctor name.
5. Done	Review setup summary	Press <Finish & restart> to restart the application.

If you click **<Start with defaults>**, all settings will be skipped and the application will start with the default configuration.

1.4 Overview of the Screen Layout

LucoCam uses a tab-based interface.



Overview of the Screen Layout

- ① **Navigation Panel** : Manage and organize images into patient and project albums.
- ② **Toolbar Area** : Provides access to key functions such as search, photo tagging, image capture, and patient management.
- ③ **Image Library Area** : Displays and manages captured images for each patient.
- ④ **Information Panel** : Displays patient information and details of the selected image.
- ⑤ **Selection Area (Tray)** : Displays selection status, provides quick access to common actions, and shows the camera connection status.

2. Camera

2.1 Connecting the Camera

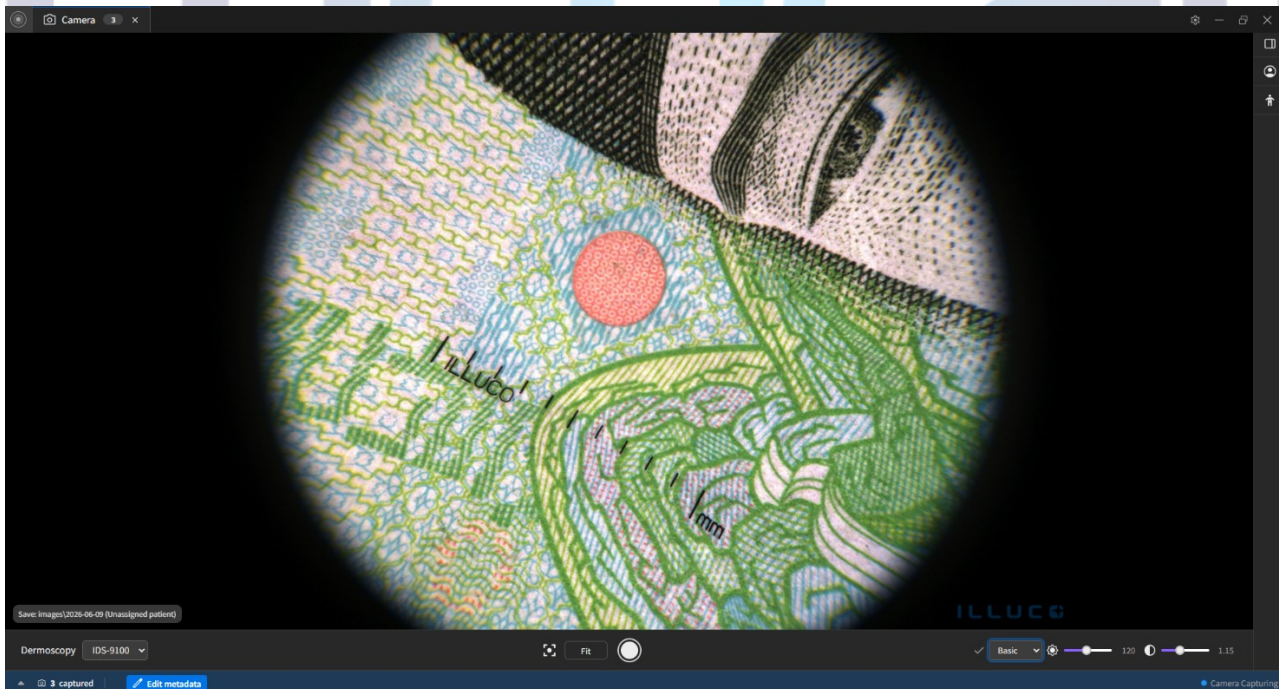
After switching the IDC-1 camera power to ON, connect the camera to a USB 3.0 port (). The camera will be recognized automatically. The camera connection status can be checked in the bottom-right corner of the screen.

Camera Connection Status

-  **Camera Ready** : The camera is connected and ready for use.
-  **Camera Capturing** : The Camera tab is active and live image capture is available.
-  **Camera Not Connected** : Check the USB cable connection and verify that the camera power is turned on.

2.2 Live Preview

You can view the live video feed in the Camera tab ().



- **Resolution:** 3072 × 2048 (original resolution is maintained when capturing)
- **Zoom:** Adjust using the Zoom In (+) / Zoom Out (-) buttons or the wheel (up to 3.0×)
- **Fit to Screen:** Use the Fit button to fit the image to the screen or switch to 1:1 (100%) view
- The ILLUCO logo watermark is displayed at the bottom-right corner of the screen.

2.3 Presets (Basic / Blue)

Preset brightness and gamma combinations are provided according to the shooting purpose.

Preset	Brightness	Gamma	Usage
Basic	120	1.15	Polarization mode shooting
Blue	40	0.85	UV mode shooting

Selecting a preset from the dropdown menu applies it immediately.

- **Brightness Slider:** Can be adjusted manually within the range of 0–255
- **Gamma Slider:** Can be adjusted manually within the range of 0.10–3.00

Manually adjusted values can be saved to the current preset using the Save Preset(✓) button.

Up to 10 custom presets can be added.

2.4 Dermatoscope Selection

When you select the dermatoscope model currently in use, the scale (mm/pixel) is automatically calculated.

Model	mm/Pixel
IDS-9100	0.009709
IDS-1100	0.011364

The selected model information is stored in the image metadata (XMP) during capture and displayed in millimeters (mm) in the measurement function under the Edit tab.

2.5 Capture

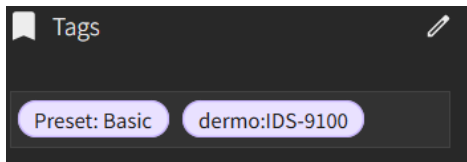
Capture an image by pressing the capture button or clicking the mouse wheel (short press).

Captured images are saved in JPEG format (3072×2048).

EXIF/XMP metadata (camera model, capture time, preset, dermatoscope information, etc.) is automatically recorded.

When the image is captured, the screen briefly flashes and a "Captured" notification is displayed.

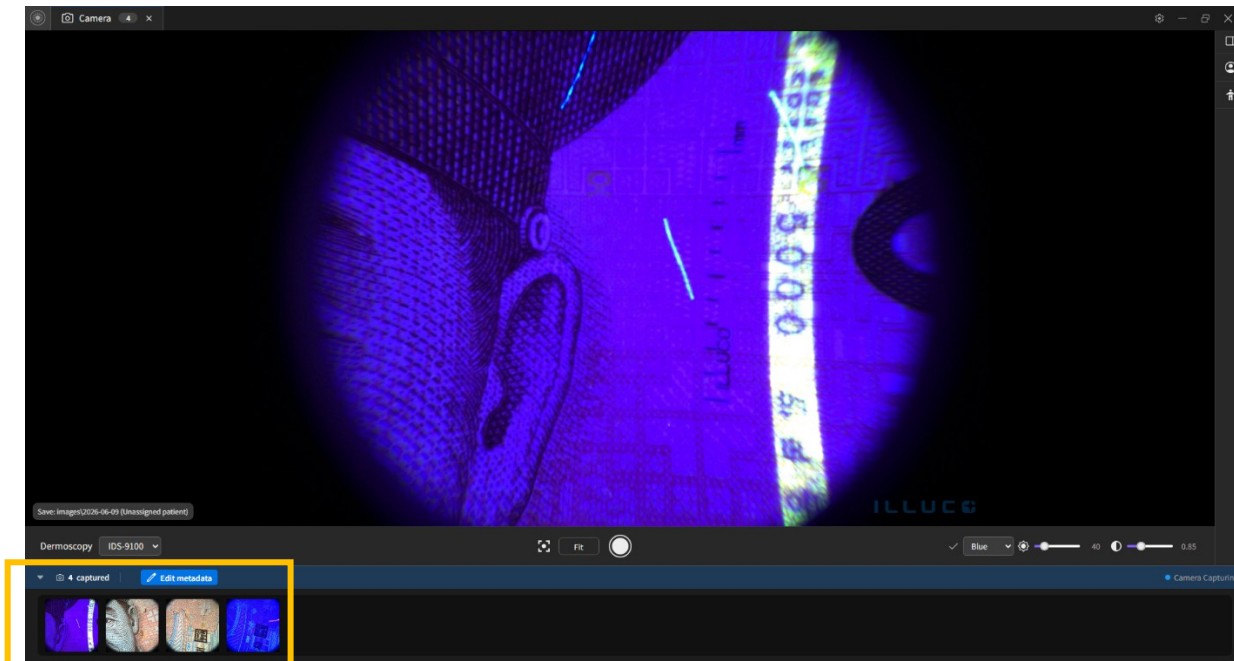
If the options "Record preset as tag on capture" and "Record dermatoscope profile as tag on capture" are enabled in Settings, the corresponding information will be automatically tagged.



2.6 Capture Session

During capture, captured images are added to the bottom selection area (Tray) in real time. Double-clicking a thumbnail in the Tray opens the Capture Session tab, allowing you to immediately review the recently captured images.

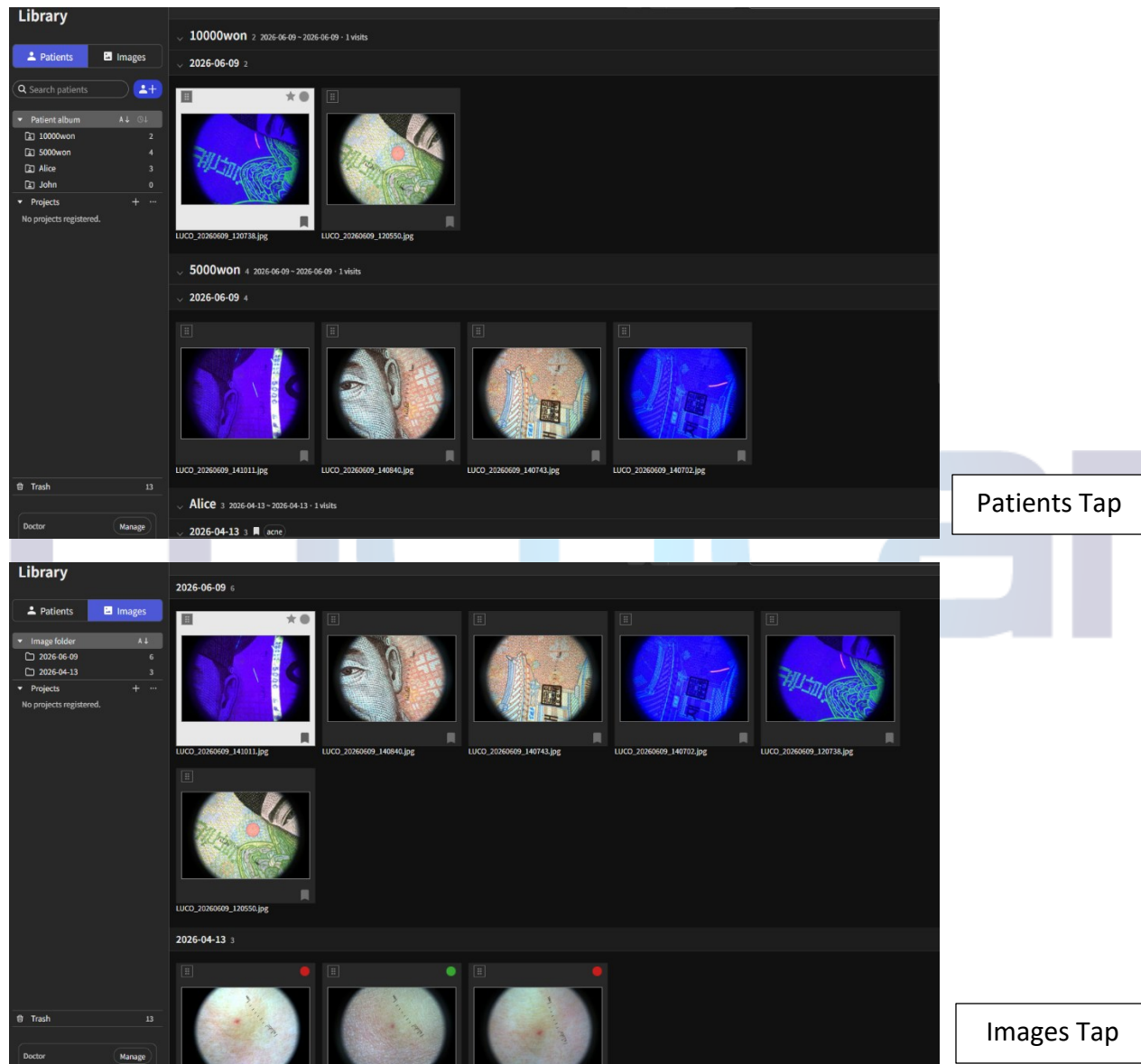
- The Capture Session tab provides the same viewer as the Edit tab.
- When a new capture occurs, the image list is automatically updated.
- When the Camera tab is closed, any open Capture Session tabs are also closed together.



3. Library

3.1 Patient Tab and Image Tab

You can switch between two viewing modes from the left navigation panel in the Library.

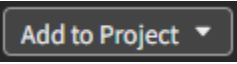


- **Patients Tab:** Displays medical records grouped by patient in chronological order. Images captured for the same patient on the same date are automatically grouped into a single encounter.
- **Images Tab:** Displays images based on the saved folder (directory) structure.

When you click a patient name or folder in the left navigation panel, the corresponding images are displayed in the center gallery.

3.2 Organize into Projects

You can group multiple images into a project for management.

6. Select images in the Library.
7. Click the Organize into Project button in the selection area (Tray). 
8. Select an existing project, or create a new one by entering a project name and description.
9. The selected images are copied to the project.

You can view the created projects in the Projects section of the left navigation panel.

3.3 Search

Clicking the search icon at the top of the gallery will display filter options.

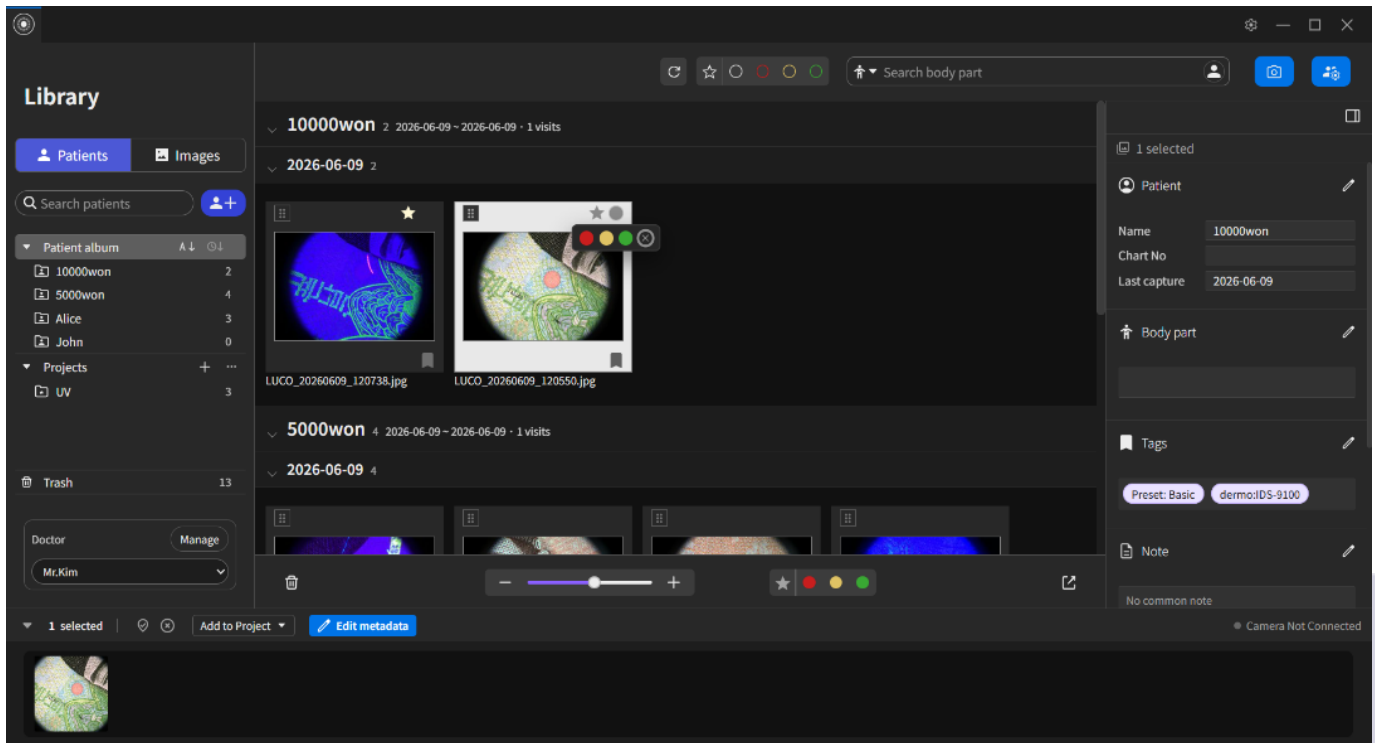
Search Type	Description	Example
Text	Search in file names, tags, and notes	biopsy
Patient	Search by patient name	Hong Gil-dong
Tag	Search multiple tags separated by commas	biopsy, post-op
Body part	Filter by body area	face, back, etc.
Date Range	Single date or date range	2026-03-01~2026-03-12



- All filter conditions operate with AND logic (only images matching all conditions are displayed).
- Applied filters are displayed as chips at the top and can be removed by clicking the X button.

3.4 Favorite filter and Labels

After selecting images, you can apply labels from the top toolbar.

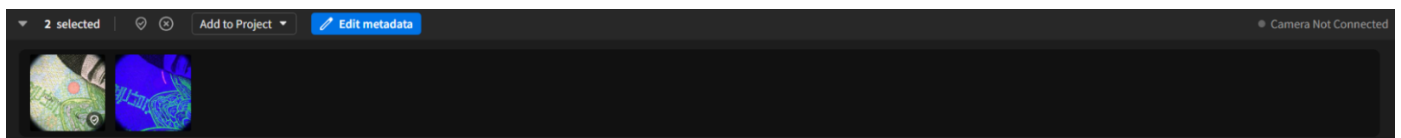


- **Favorite filter (Star☆ Icon):** Mark important images with a star.
- **Label Red / Label Yellow / Label Green:** Classify images using color labels.

Labels can be applied or removed independently and can also be used as filters during searches.

3.5 Selection Area (Tray) and Pin

The selection area (Tray) at the bottom of the screen displays the images currently being worked on.

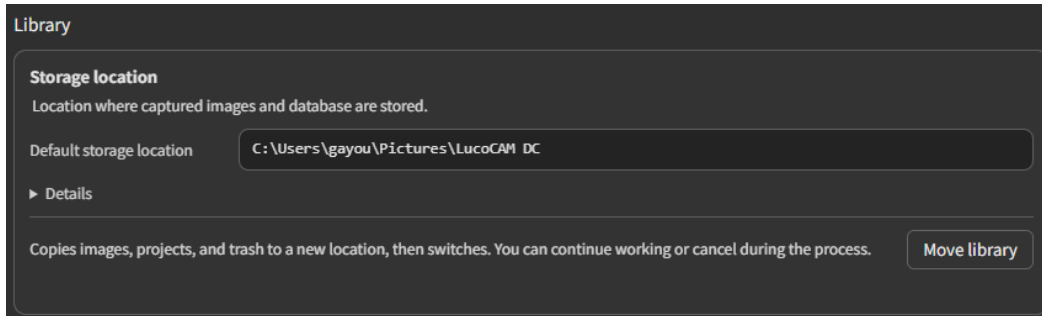


- **Pin:** After selecting images, click the Pin to keep them in the Tray even when moving to another tab.
- **Clear Selection Area:** When clearing the Tray, pinned images will also be unpinned.
- **Collapse/Expand:** You can collapse the selection area to secure more screen space.
- **Double-clicking a thumbnail in the Tray** opens the image in the Edit tab.

3.6 Import

When image files are copied directly into the library folder, they are automatically registered in the database and displayed in the gallery.

- The location of the library folder can be checked under Settings > General > Library > Default Storage Location.



3.7 Trash

Deleted images are not removed immediately but are stored in the Trash.

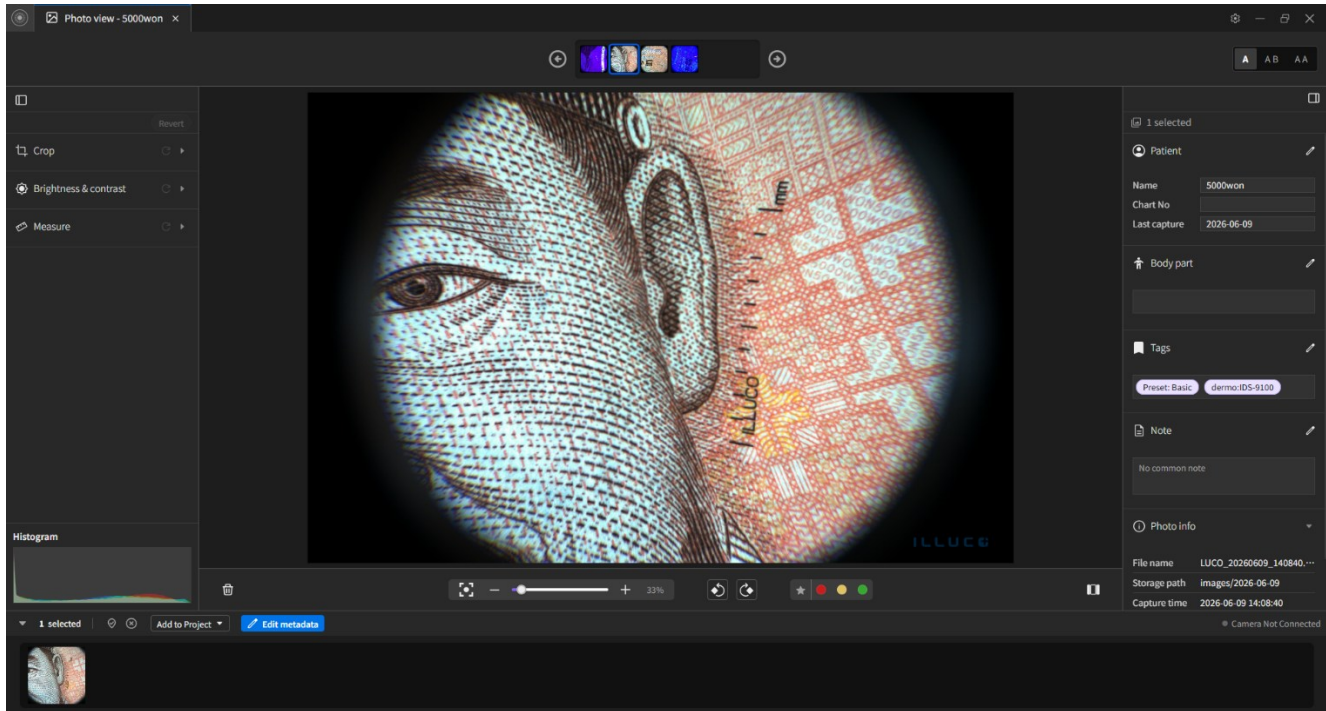
- **Move to Trash:** Select an image and click the Delete button.
- **Restore:** Select an image in the Trash and click the Restore button () to return it to its original location.
- **Permanently Delete:** Clicking the Permanently Delete button () in the Trash will remove the image permanently and it cannot be recovered.

Images in the Trash cannot be opened in the Edit tab. They must first be restored before they can be opened.

4. Image Editing

4.1 Opening the Edit Tab and Navigating Images

Double-click an image in the Library gallery or Selection Area, or press the Enter key to open the Edit tab



- **Top Thumbnail Strip:** Navigate left and right through the current image series.
- **Left Panel:** Editing tools (Crop, Brightness/Contrast, Measurement)
- **Right Panel:** Inspector (Patient, Capture Area, Tags, Note editing)
- **Bottom Bar:** Zoom and rotation controls

The left and right panels can be hidden or shown using the toggle buttons.

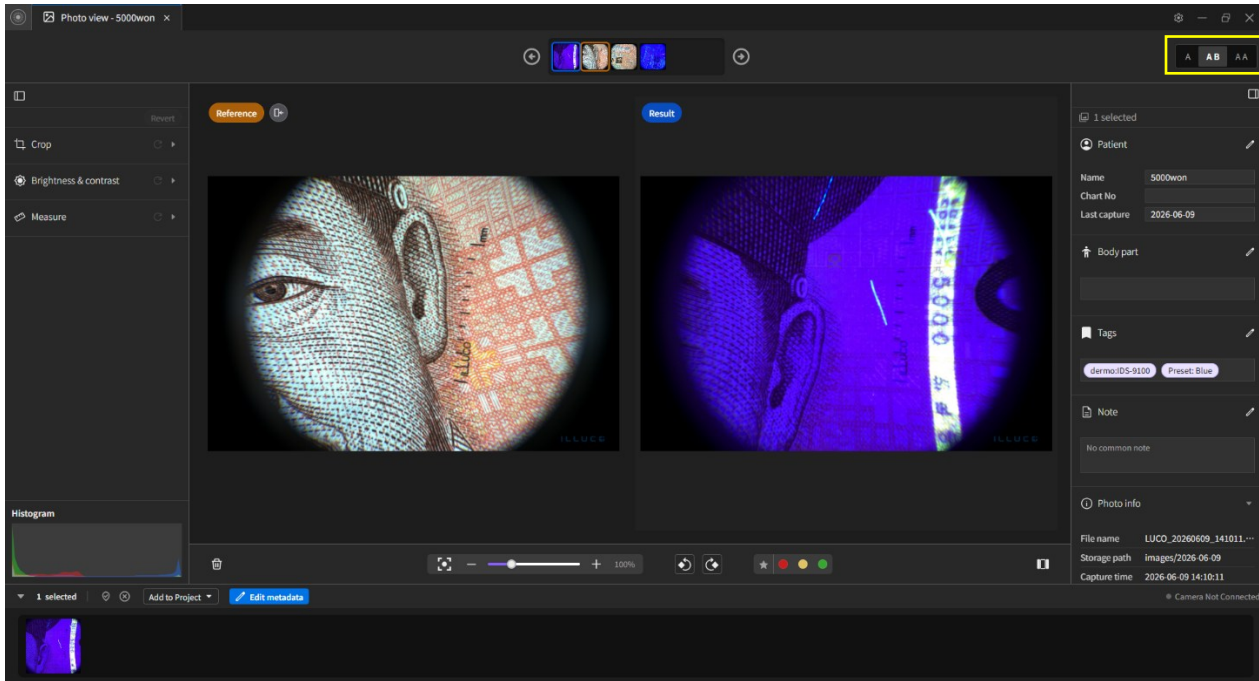
4.2 Fit to Screen, Zoom, and Rotation

Controls are available on the bottom bar

- **Fit to Screen / 100% zoom:** Switch using the toggle button
- **Zoom:** Step-by-step zoom in/out using the - / + buttons or mouse wheel
- **Rotate:** Rotate left / rotate right (in 90 degree increments)

4.3 View Modes (A / AB / AA)

Switch between view modes using the view mode buttons located at the top right.



View Mode AB

Mode	Description
A	Display a single image in full screen
A B	Side-by-side comparison — reference image on the left, image being edited on the right
A A	Compare the same image before and after editing side by side

In AB/AA mode, the left side is for reference (view only), and editing is performed on the right side.

4.4 Crop

Open the Crop section in the left panel.

- Aspect Ratio Selection: Free, 1:1, 4:3, 16:9
- Select an area by dragging, and it is automatically saved.
- You can also directly enter W (Width) / H (Height) values (minimum 10 px).
- Cropping is non-destructive editing — the original file is not modified.

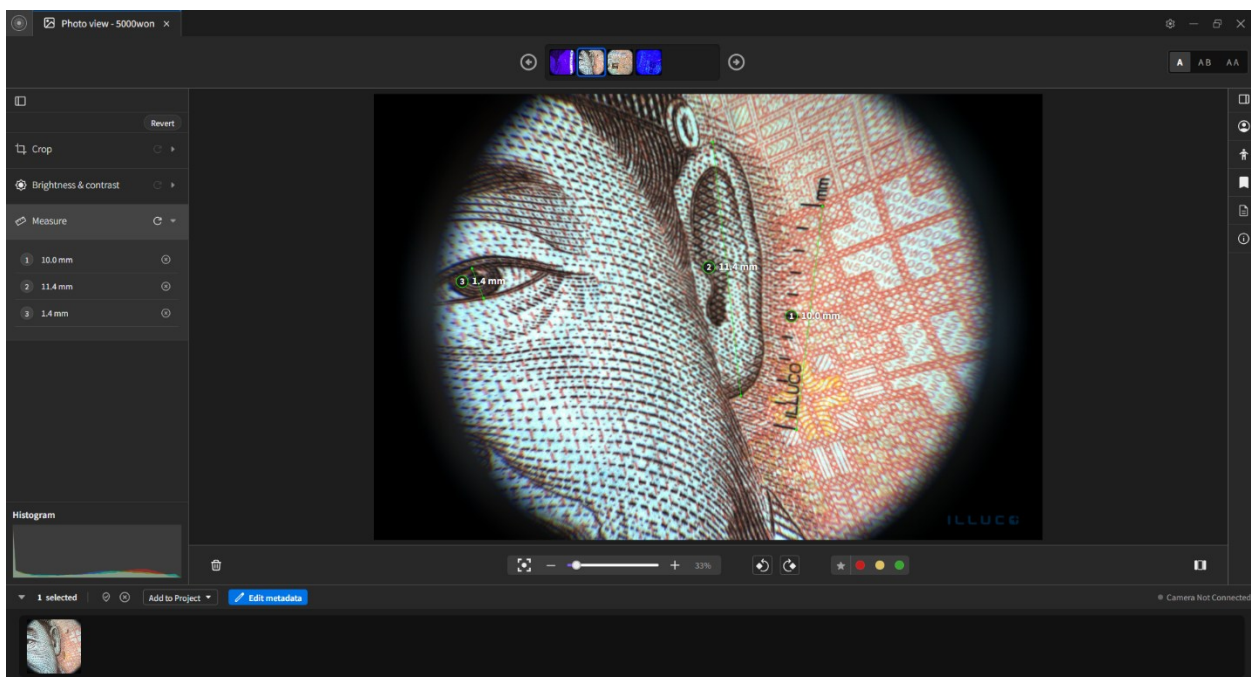
4.5 Brightness & Contrast

Open the Brightness & Contrast section in the left panel.

- Brightness: Range 0–200, default value 100
- Contrast: Range 0–200, default value 100
- You can adjust using the slider, increment/decrement buttons (-/+), or direct numeric input.
- Changes are applied as a real-time preview, and are automatically saved when the slider is released

4.6 Measurement

Open the Measurement section in the left panel.



- Click and drag on the image to define the start and end points for distance measurement.
- Multiple measurement lines can be added, and individual measurements can be deleted from the measurement list.
- Measurement data is saved together with the image and remains available when reopened later.
- Measurement lines cannot be repositioned or resized after creation. If a measurement is incorrect, delete it and measure again.

4.7 Revert Original

Clicking the Revert button at the top of the left panel resets all edits applied to the current image (crop, brightness/contrast, measurement, and rotation). A confirmation dialog will be displayed.

5. Patient Management

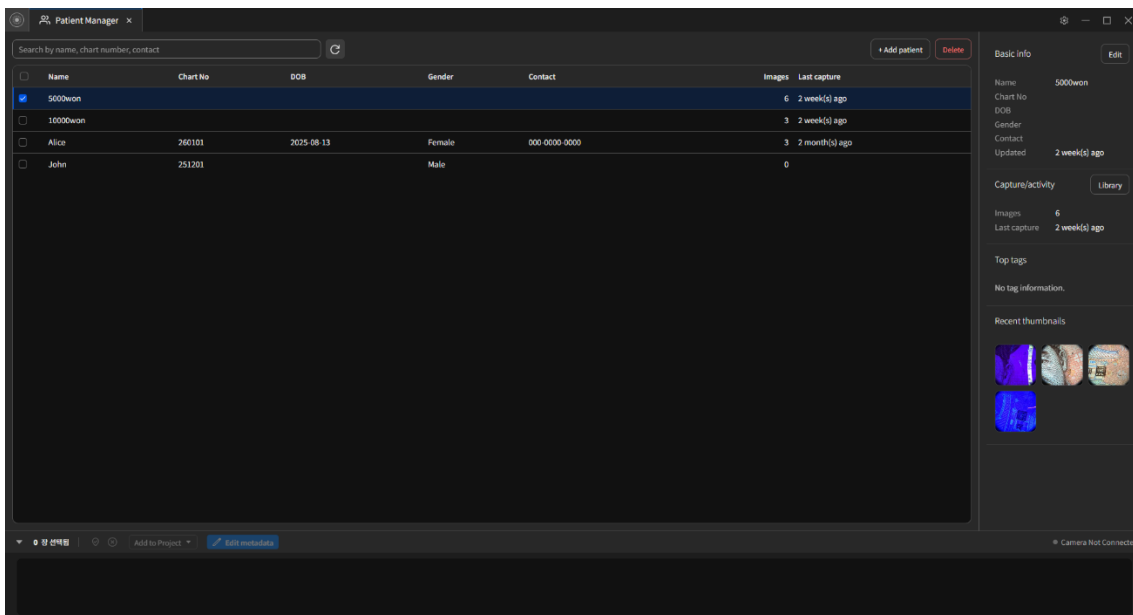
5.1 Adding a Patient

Click the Add Patient button () at the top of the left navigation panel in the Library to enter patient information.

- **Required:** Name
- **Optional:** Chart Number, Date of Birth, Gender, Contact Information

5.2 Patient Management Tab

Clicking the Patient Management button in the top toolbar of the Library opens a dedicated Patient Management tab.



Right Panel (When One Patient Is Selected):

Column	Description
Name	Patient name
Chart Number	Chart Number
Date of Birth	YYYY-MM-DD
Gender	None/Male/Female/Other
Contact	Auto format (XXX-XXXX-XXXX)
Updated	Relative time display (Just now, N minutes ago, etc.)
Library Button	View in Library
Images	Number of captured images

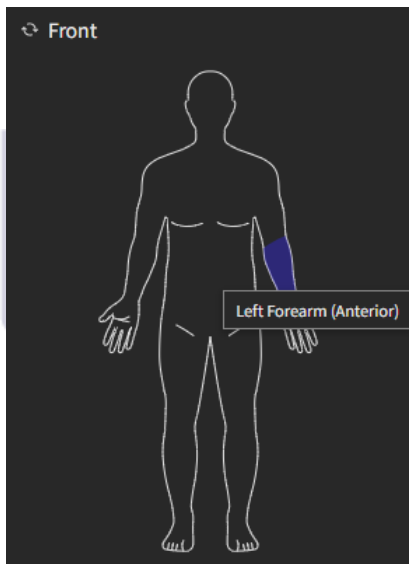
Column	Description
Last Capture	Relative time display (Just now, N minutes ago, etc.)
Top tags	Frequently used tags
Recent thumbnails	View recent images

Deleting a Patient : When deleting a patient linked to images, there are two options

- **Keep Images:** Delete only the patient information and keep the images as “Unassigned”
- **Delete All:** Delete both the patient and all linked images together

5.3 Assigning a Capture Area

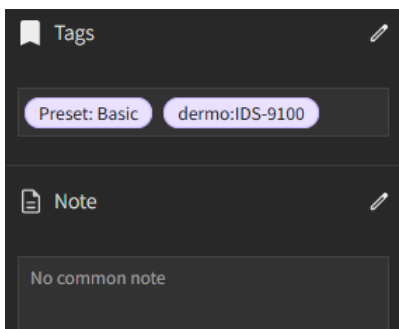
Specify the body part in the Capture Area section of the Inspector on the right side of the Edit tab.



- Select from 16 anterior body areas or 17 posterior body areas.
- You can select an area by clicking directly on the body map.
- Assigned body areas can be used as search filters.

5.4 Tags and Notes

Enter tags and notes in the Inspector on the right side of the Edit tab.



- **Tags:** Free text input with auto-complete suggestions
- **Note:** Free text (up to 2000 characters)
- Changes are saved to the database immediately.

5.5 Batch Edit Metadata

You can edit information for multiple images at once.

1. Select multiple images in the Library.
2. Click the 'Edit Metadata' button.
3. Modify the desired fields:
 - **Patient:** Search and select a patient.
 - **Body Area:** Select from the body map
 - **Tags:** Add / Remove
 - **Note:** Enter text
4. Clicking the Apply button will apply only the modified fields equally to the selected images.

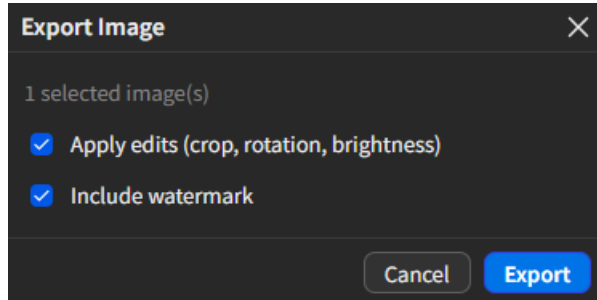


6. Exporting Images

6.1 Start Export

After selecting images in the Library, click the Export button ().

1. Select the export options.
2. Click the Export button.



3. Select the folder where the files will be saved.
4. The progress status will be displayed, and a result message will appear when the export is complete.

6.2 Apply Edits and Watermark Options

Option	Description	Default
Apply Edits	Export the image with applied edits such as crop, rotation, brightness and contrast.	Enabled
Include Watermark	Export the image with the brand watermark included.	Enabled

The selected options will be retained for the next export.

7. Settings

7.1 UI (Language, Theme)

- **Language:** Korean, English
- **Theme:** Dark, Light

7.2 Library

- **Image Storage Location:** Displays the current library path
- **Automatic Folder Classification:** When enabled, captured images are automatically organized according to the selected rules
- **Folder Creation Rules:** Select from Date, Patient Name, Chart Number, and Profile (order can be changed by drag-and-drop)
- To change the library location, use the Library Migration Wizard (see Section 8.1).

7.3 Camera

- **Device:** If multiple cameras are connected, select one from the dropdown menu.
- **USB Bandwidth:** High (3,000 Mbps, recommended) / Medium (2,000 Mbps) / Low (1,000 Mbps)
*If the connection is unstable or video stutters, lower the USB bandwidth setting.
- **Preview FPS limit:** Sets the frame rate of the live preview. The default value is 25 FPS.
*Lower the preview FPS if your PC is slow
- **Capture Presets:** Add/Edit/Delete presets (Brightness 0–255, Gamma 0.10–3.00)
- **Capture Tags:** Automatically tag preset and dermatoscope information during capture

7.4 Profile

- **Current Profile:** Select the currently active doctor/staff profile
- **Add/Delete Profile:** Register profiles by type (Doctor/Staff) and name

7.5 About

- **App Version / Build Information**
- **License Status:** Expiration date, last renewal date
- **Automatic Updates:** Enable/disable with a toggle
- **Check for Updates:** Manually check for updates and download/install them
- When an update is ready, an **Install Now (Restart)** button will be displayed.

8. Library Migration and Backup

8.1 Library Migration Wizard

When you run Change Library in Settings → Move Library, the migration wizard will start.

Step	Screen	User Action
1. Select Path	Displays the current/new library location	Specify the new location by selecting a folder. If the destination is local storage, patient/tag/edit records can also be migrated together.
2. Summary	Check the number and size of files to be moved	Click the Start button
3. Progress	Copy → Verify → Switch → Done automatically	Wait. Cancellation is possible during progress (cannot be canceled after switching).
4. Complete	Displays information about the previous library storage location	Click Restart. Optionally, you can open the previous library.

Even if the migration fails, the original library will be preserved.

8.2 Data Migration When Replacing a PC

1. Old PC: Copy the entire library folder (required: Images/, database/ or db/, .trash/).
2. New PC: Install and run <LucoCam DC>.
3. In the app, select Relocate Library and specify the copied folder.
4. If necessary, integrity verification (synchronization between the DB and file system) will be performed automatically.

9. License

LucoCam uses a **Renew-on-Connect** license policy.

- When a valid IDC-1 camera is connected, the license is automatically renewed.
- The license status can be checked in Settings → Information (expiration date, last renewal date).
- The app can be used without a camera until the expiration date.
- If the license expires, connect the camera and open the Camera tab to renew it.

10. Uninstall

You can remove <LucoCam DC> through **Control Panel** or **Settings → Apps**.

In the uninstaller, you can choose which data to remove.

- Settings files
- Log files
- Cache and thumbnails

Captured images (library folder) are not deleted during uninstallation. If necessary, please delete them manually.

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11. Appendix

11.1 Body Area List

Posterior

Posterior		Anterior	
Code	English Name	Code	English Name
head_post	Back of Head	face	Face
neck_post	Neck (Posterior)	neck_ant	Neck (Anterior)
upperback	Upper Back	chest	Chest
lowerback	Lower Back	abdomen	Abdomen
buttocks	Buttocks	r_upperarm_ant	Right Upper Arm (Anterior)
r_upperarm_post	Right Upper Arm (Posterior)	l_upperarm_ant	Left Upper Arm (Anterior)
l_upperarm_post	Left Upper Arm (Posterior)	r_forearm_ant	Right Forearm (Anterior)
r_forearm_post	Right Forearm (Posterior)	l_forearm_ant	Left Forearm (Anterior)
l_forearm_post	Left Forearm (Posterior)	r_palm	Right Palm
r_dorsumhand	Right Dorsum of Hand	l_palm	Left Palm
l_dorsumhand	Left Dorsum of Hand	r_thigh_ant	Right Thigh (Anterior)
r_thigh_post	Right Thigh (Posterior)	l_thigh_ant	Left Thigh (Anterior)
l_thigh_post	Left Thigh (Posterior)	r_shin_ant	Right Shin (Anterior)
r_calf_post	Right Calf (Posterior)	l_shin_ant	Left Shin (Anterior)
l_calf_post	Left Calf (Posterior)	r_foot_dorsum	Right Dorsum of Foot
r_heel	Right Heel	l_foot_dorsum	Left Dorsum of Foot
l_heel	Left Heel		

11.2 Supported Camera and Dermatoscope Models

Camera: IDC1-MV-CB060-10UC-S (ILLUCO / HIKROBOT)

Dermatoscope: IDS-9100 , IDS-1100