DS-L4
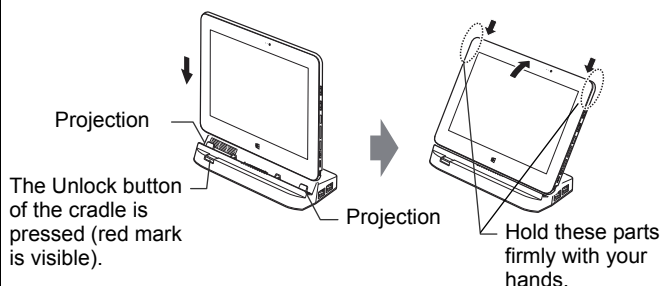## Quick Reference

Installation and Startup of the DS-L4

The following describes the installation and connection procedures of the DS-L4 in standard configuration, and how to start the DS-L4.

1 Connect the DS-L4 to the cradle.

Connect the DS-L4 to the cradle.

Projection

The Unlock button of the cradle is pressed (red mark is visible).

Projection

Hold these parts firmly with your hands.

2 Connect the DS-L4 and peripheral devices.

Connect a microscope camera and AC adapter to the DS-L4, and insert a microSD card and USB memory drive into the DS-L4.
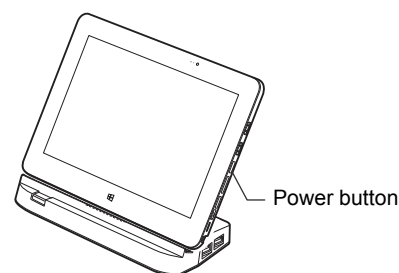
microscope camera

MicroSD card

USB 3.0

(DS-L4 top-right connector)

USB 2.0

USB memory drive

To an AC outlet

AC adapter
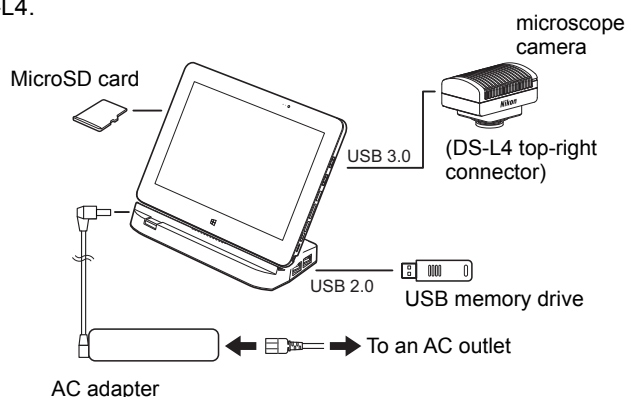
Note: The microscope camera must be connected to the USB 3.0 connector. The USB 3.0 connector is at the top-right of the DS-L4.

Note: Connect the power cord after all other connections are completed. Connect the plug of the power cord to an AC outlet directly.

3 Turn on the DS-L4 power.
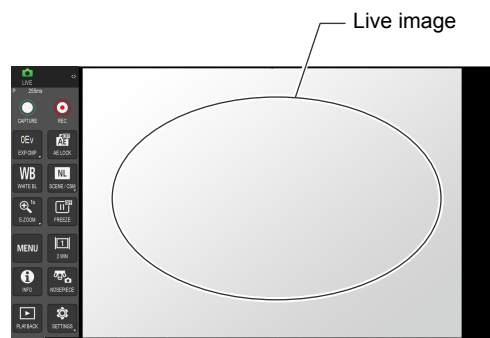
Press the power button to turn on the power.

Power button

When the DS-L4 is turned on, the startup screen is displayed for a few seconds. Then, the display turns black before the live screen appears.

Nikon
DS-L4

4 Turn on the microscope camera.
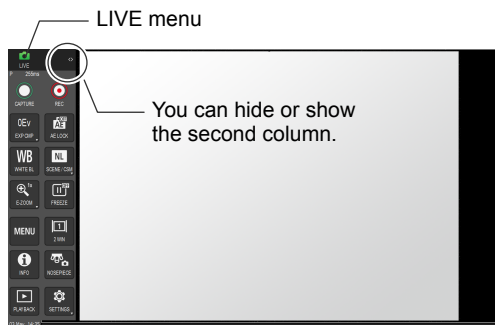
5 Confirm that a live image is displayed.

Live image

Note: Depending on the condition of the optical device, it may be difficult to confirm that a live image is displayed.

Basic Operations of Capturing

The following describes simple operations for capturing and replaying images.

1 Make sure that the LIVE menu is displayed.

Use the LIVE menu to perform operations related to capturing live images.

LIVE menu

You can hide or show the second column.

2 Set the save-destination drive and folder, and the recording mode.

1 Open the [CAMERA MENU: SHOT/REC] screen.

Hides/shows the tabs.
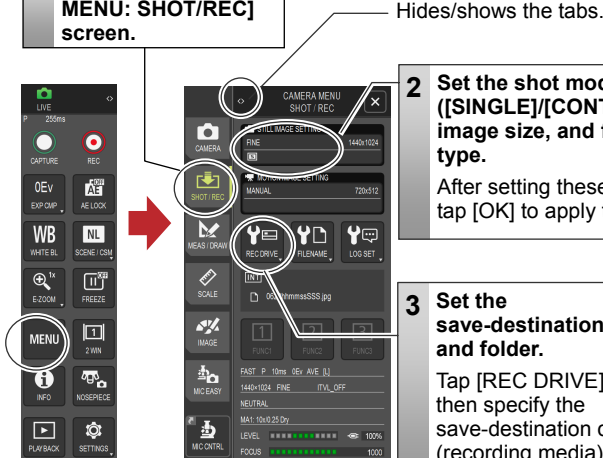
2 Set the shot mode ([SINGLE]/[CONT]), image size, and file type.

After setting these items, tap [OK] to apply them.

3 Set the save-destination drive and folder.

Tap [REC DRIVE], and then specify the save-destination drive (recording media) and folder.

Note: For details on setting these items, refer to "8.2.3 Setting items of the [CAMERA MENU: SHOT/REC] Screen" in the "Camera Operation" instruction manual for the DS-L4.

3 Select a scene mode.

Select a scene mode that is suitable for the subject.

Select a scene mode.
In the LIVE menu, tap [SCENE/CSM], and then select the desired scene mode.

Note: The scene modes displayed in the [SCENE/CSM] submenu change according to the type of scenes selected with [SCENE SELECT] in the [DS SETUP: MAIN] screen.

[IND]

WAFER/IC	**WAFER/IC**	Suitable for a wafer or IC chip.
METAL	**METAL**	Suitable for a metal, ceramic, or plastic specimen.
CIR.BOARD	**CIR.BOARD**	Suitable for high-contrast objects such as circuit boards and metal components.
FPD	**FPD (Flat Panel Display)**	Suitable for the color filters of flat display devices.

[BIO]

BF	**BF**	Suitable for general stained specimens.
HE	**HE***	Suitable for photographing of specimens stained with hematoxylin and eosin (HE). The color reproducibility in this mode is optimized for HE-stained specimens.
E-LA	**ELISA***	Suitable for photographing of specimens for which the ELISA (enzyme-linked immunosorbent assay) method is applied. Color reproducibility in this mode is optimized for DAB (diamino benzidine).

*: Available only when the light source is a halogen lamp.
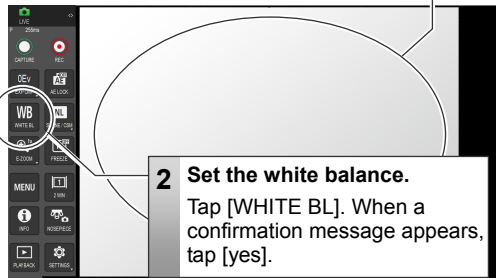
[OTHERS]

ASBESTOS	**ASBESTOS**	Suitable for photographing of asbestos specimens.

2

4 Set the white balance (only for color microscope cameras).

1 Prepare a sheet of white paper or similar object.

Prepare an evenly white object, such as a sheet of paper, and adjust the camera position so that the object covers the entire view of the camera.
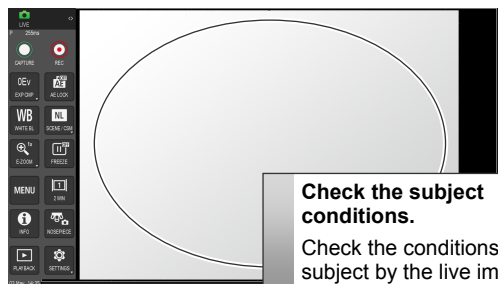
2 Set the white balance.

Tap [WHITE BL]. When a confirmation message appears, tap [yes].

Note: When the setting is completed, a message appears, notifying you that white balance was set.

5 Check the subject conditions of a live image.

Adjust the layout and focus.

Check the subject conditions.

Check the conditions of the subject by the live image.

6 Perform exposure compensation.

To adjust the brightness of the subject, tap [EXP CMP].

Exposure compensation

Tap [EXP CMP], and then use the slider or buttons to set the desired exposure compensation value. Tap [OK] to commit the operation.

Note: When the exposure mode is set to [M] (manual), [EXP CMP] is not displayed. In this case, adjust exposure by tapping [EXP TIME] or [CAM GAIN].

7 Capture an image.

To save the image that is displayed, tap [CAPTURE].

Capture an image.
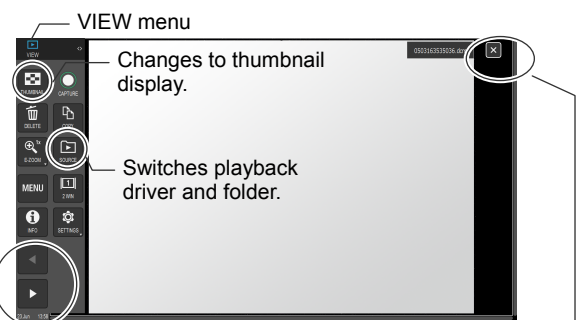
Tap [CAPTURE] to save an image.

Note: You can also configure settings to capture an image by clicking a mouse button. Assign the capture function to a mouse button from [SETTINGS] > [DS SETUP] > [MAIN] > [CAPTURE USING THE MOUSE].

8 Replay a saved image.

1 Replay an image (in a full frame).

Tap [PLAYBACK].

VIEW menu

Changes to thumbnail display.

Switches playback driver and folder.

2 Replay the next or previous image.

You can replay the next or previous image by swiping the screen to the left or right.

3 Stop replaying an image.

When you tap [x] in the top right of the screen, image playback stops, and the live image is displayed again.

Preparation for Using the Scale, Annotation, and Measurement Functions

Before you display scales or perform measurement, you must set the correct calibration setting. You can also set whether to embed scales, annotations, and measurement results in an image to be saved.

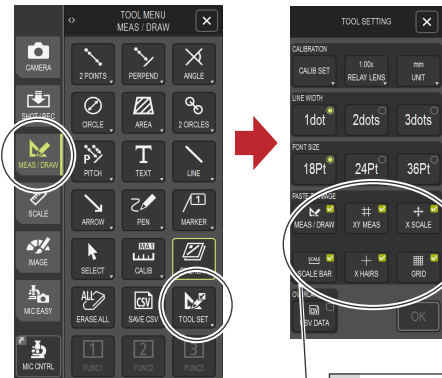## 1 Select a registered calibration setting (setting of the length in an image).
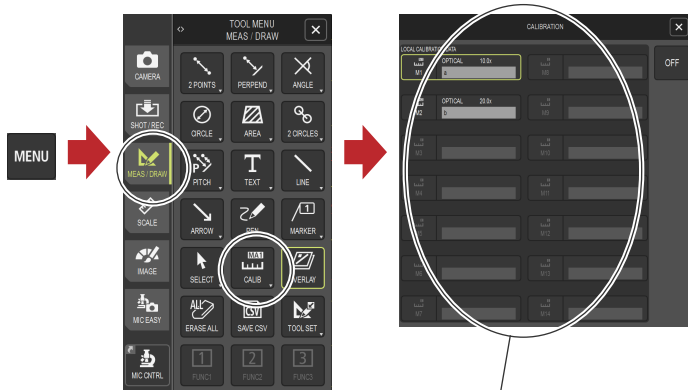
Select a calibration setting.

Tap [CALIB], and then, from the submenu that appears, select the desired calibration setting.

Note: The [CALIB] button is available in the [TOOL MENU: SCALE] menu and in the submenu of measurement and drawing tools.

Note: For details on registering calibration settings, refer to "Chapter 10. Preparation for Using the Scale, Annotation, and Measurement Functions" in the "Camera Operation" instruction manual for the DS-L4.

2 Set the unit of values.

Set the unit of values.

Tap [UNIT] in the [TOOL SET] screen, and then, from the submenu that appears, select the desired unit.

You can also open the screen for setting the unit from [TOOL MENU: SCALE] > [TOOL SET].
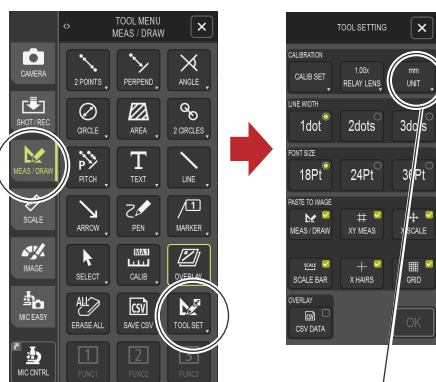
3 Paste items to an image.

Select the types of information to be embedded in an image, and tap [OK].

When you capture an image, the image is saved with the selected items (such as scales and annotations) embedded.

Note: This setting is also available from [TOOL MENU: SCALE] > [TOOL SET].

Display of Scales

1 Display the [TOOL MENU: SCALE] screen.


2 Show or hide scales.

Tap the button of a scale type to show (or hide) the type of scales.

Change the color of scales.
Scales can be displayed in black, red, yellow, green, blue, or white.

3 Use scales.

⊞ [XY MEAS]

Displays a pair of horizontal bars and a pair of vertical bars that can be used to measure horizontal (X) and vertical (Y) distance. You can move the bars and measurement values to any positions by using the [SELECT] tool.
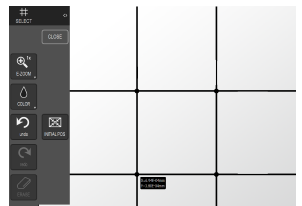
✛ [X SCALE]

Displays the horizontal (X) and vertical (Y) scales. You can move these scales separately to measure the sizes of the subject by using the [SELECT] tool.
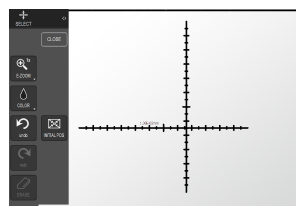

⊟ [SCALE BAR]

Displays a simple scale bar on the screen. You can move the scale to any position and change its length to measure the approximate size of a subject by using the [SELECT] tool.
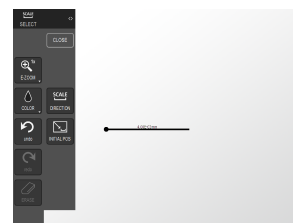
Orientation of the scale bar can be switched (between horizontal and vertical).
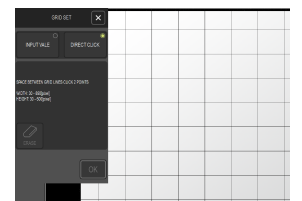

✛ [X HAIRS]

Displays cross-hairs with concentric circles. The [X HAIRS SET] screen can be used to change the cross-hairs settings. You can move the cross-hairs and concentric circles by using the [SELECT] tool.
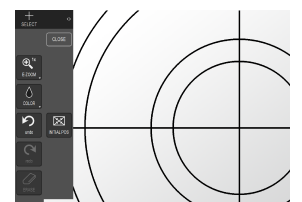
▦ [GRID]

Displays a grid (grid lines). You can use the [GRID SET] menu to set the spacing of grid lines by entering a numeric value or by specifying two points on the screen.

Measurement and Annotation Functions

You can measure, for example, a length, angle, circle diameter, and the area of a polygon on the screen.

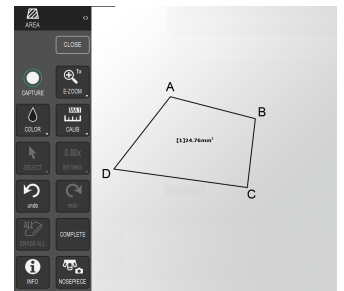## 1 Display the [TOOL MENU: MEAS/DRAW] screen.

2 Add measurement results/annotations.

Measurement

[2 POINTS]

You can measure the length between the two points (A-B in the example) specified on an image.

[PERPEND]

After drawing a reference line between two points (A-B in the example), you can measure the length of a perpendicular line drawn from another point (C in the example) to the reference line on an image.

Tap [COMPLETE] to terminate measurement using the current base line.

[ANGLE]

You can measure an angle between two straight lines (A-B and C-D in the example) drawn on the screen.

[CIRCLE]

You can measure the diameter of a circle whose circumference passes through three points (A-C in the example) on the screen.
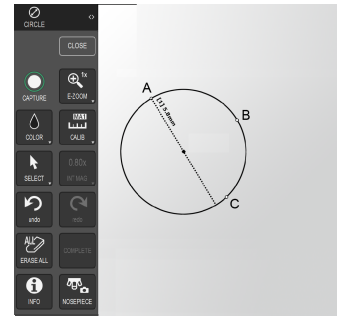
[AREA]

Draw a polygon (A-D in the example) on the screen. Tap [COMPLETE] to measure its area.
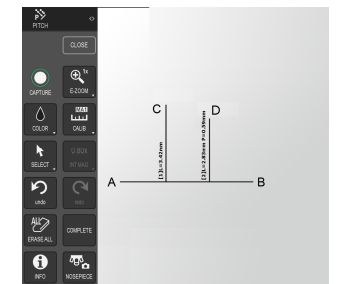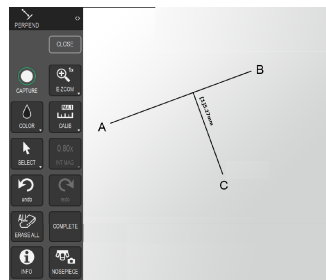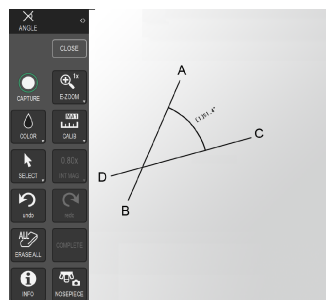

[2 CIRCLES]

You can measure the distance between the centers of two circles, each drawn with three points on their circumference (A-C and D-F in the example).
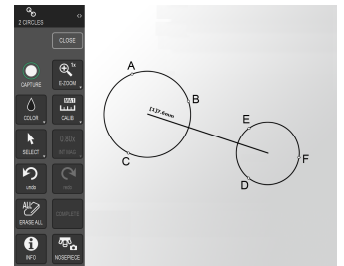
[PITCH]

You can measure the length of several perpendicular lines drawn from desired points (C and D in the example) to a reference line (A-B in the example) and distance between points (pitch distance).

Tap [COMPLETE] to terminate measurement using the current base line.
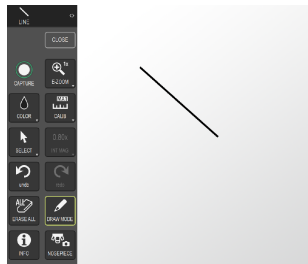

6

Annotations

T [TEXT]

You can add alphanumeric text at any position on the screen.
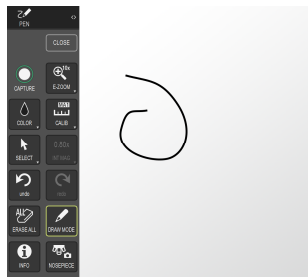

Enter text at any position.
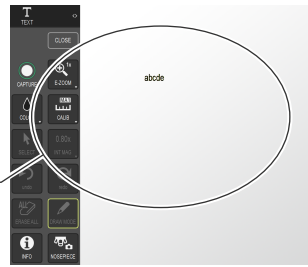
＼ ↘ [LINE]/[ARROW]

You can draw a straight line or arrow on the screen.

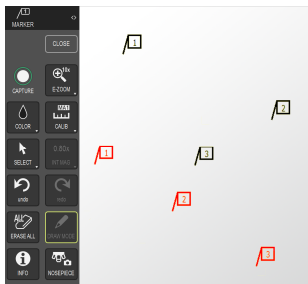

[PEN]

You can draw any line freehand on the screen.

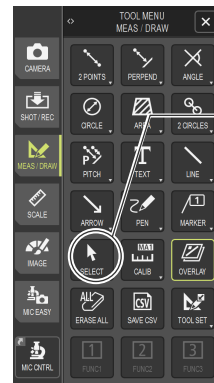

[MARKER]

You can add numbered markers at any points on the screen so that the number of points can be counted. Sequential numbers are assigned to markers for each color.

### 3 Edit measurement results and annotations.

Use the [SELECT] tool.

Tap [SELECT], and then tap a measurement result or annotation displayed on the screen. You can then move scale lines or annotations.

Note: The line thickness and font size settings for the measurement result, scales, and annotations can be changed from [TOOL MENU: MEAS/DRAW] (or [TOOL MENU: SCALE]) > [TOOL SET] > [LINE WIDTH]/[FONT SIZE].

Turning Off the Power

To turn off the DS-L4 power, tap [SHUT DOWN].
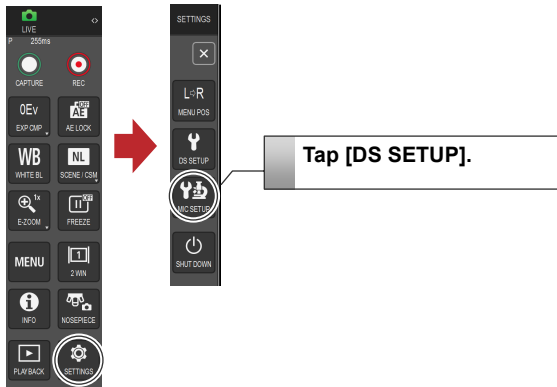

Tap [SHUT DOWN].
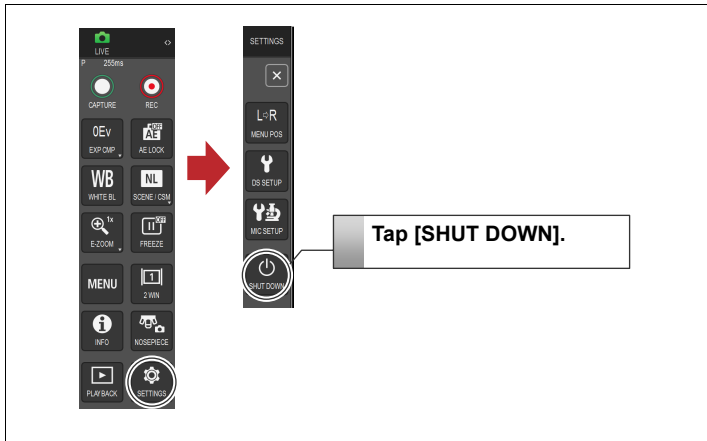
Initial Settings

The following describes how to specify the minimum initial settings that must have been specified before using the DS-L4 for the first time.
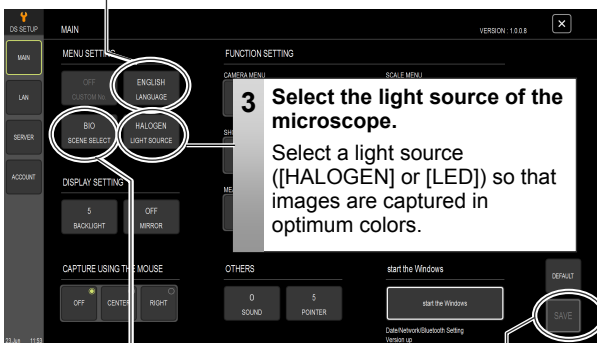
1 Display the [DS SETUP] menu.

Use the [DS SETUP] menu to specify the initial settings.

Tap [DS SETUP].

2 Select the display language and type of scene mode.

1 Select the display language.
Tap [LANG], and then select the language (English or Japanese).

3 Select the light source of the microscope.
Select a light source ([HALOGEN] or [LED]) so that images are captured in optimum colors.
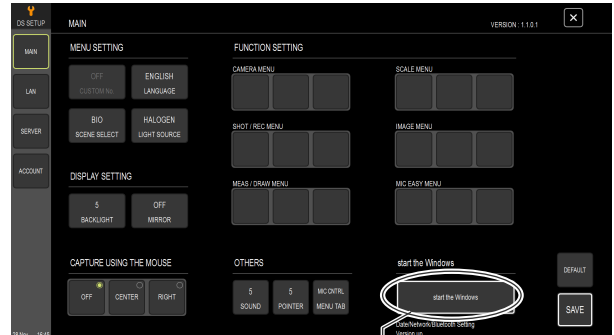
2 Select the type of scene modes.
Tap the [SCENE SELECT] button, and then select [IND], [BIO], or [OTHERS] as the type of scene modes.

4 Save the settings.
After specifying the settings, tap the [SAVE] button.

3 Set the date and time.

Set the date and time in Windows.

1 Tap [start the Windows].
When a confirmation message appears, select [Yes].
The DS-L4 application terminates, and the Windows login window appears.

2 Select "DSL4Adm" as a Windows administrator, and enter "root" as the password.
If the on-screen keyboard for entering a password does not appear, tap the password entry field.
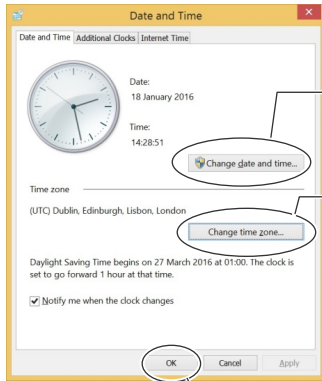
3 On the desktop, double-tap the DS-L4 Administration Tool icon to start it.

4 When a confirmation message "Do you want to allow the following program from an unknown publisher to make changes to this computer?" appears, tap [Yes].
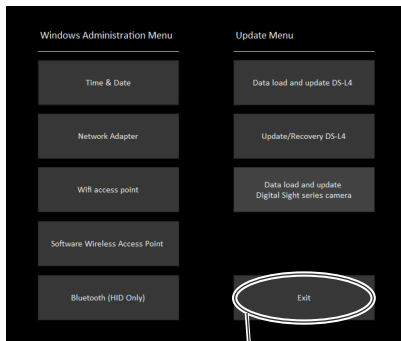

5 Tap [Time & Date].
When a confirmation message appears, select [OK].
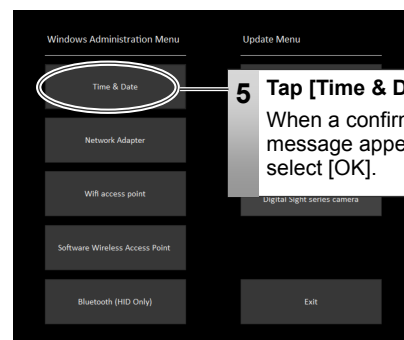
Initial Settings (continuation)

6 Tap [Change date and time], and then set the date and time.

7 Tap [Change time zone], and then set the time zone.

8 Tap [OK].

9 In Administration Tool, tap [Exit].

10 Display the charms, and tap [Settings], [Power], and then [Restart] to restart the DS-L4.

Swipe from the right end to the center of the screen to display the charms bar.

(If you are using a mouse, the charms bar appears at the right side of the screen when you position the mouse pointer at the top or bottom right corner of the screen.)

Note: After restarting the DS-L4, it may take about a minute for the login screen (or the live image with a menu) to appear. Wait for a while.

Note: For details on how to set the date, and Bluetooth-related and other items, refer to "Chapter 13. Changing Settings" in the "Camera Operation" instruction manual for the DS-L4.

Detailed instruction manual of this product can be downloaded from the following URLs:

https://www.nikon-instruments.jp/eng/download/manual/DS-L4

QR code

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