

# DS-L3

## Quick Reference

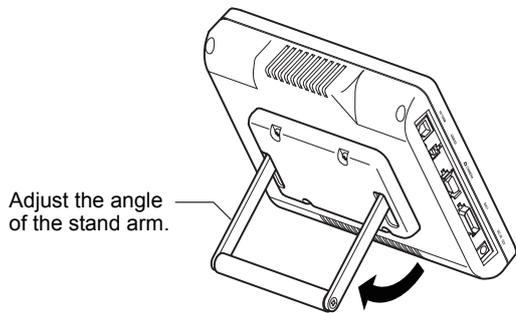
DS Camera Head DS-Fi2 / DS-Fi1 / DS-Vi1  
 DS Cooled Camera Head DS-Qi1Mc / DS-Fi1c / DS-Ri1

### Setup and Startup of DS-L3

This section describes procedures for installation, connection, and startup of the DS-L3 based on the standard configuration.

#### 1 Set the DS-L3 at the desired position.

Install the DS-L3 on a level surface of a desk, etc., with its stand arm open, and adjust the stand arm angle.

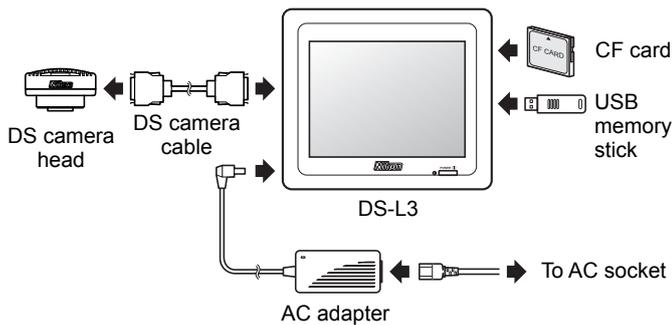


Adjust the angle of the stand arm.

Using the stand arm

#### 2 Connect the DS-L3 with peripheral devices.

Connect a DS camera head and the AC adapter to the DS-L3, and insert a CF card or USB memory stick.



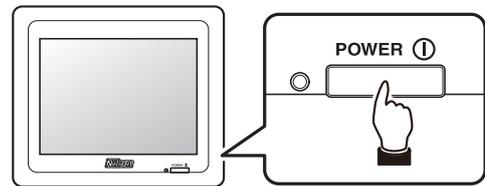
Connecting the DS-L3 and peripheral devices

Note: When plugging the power cord, be sure that:

- all other connections are setup; and
- the power cord is connected directly to the AC socket (100-240 VAC).

#### 3 Switch on the power to the DS-L3.

Push the POWER switch on the front of the DS-L3 to turn it on.



Operating the POWER switch

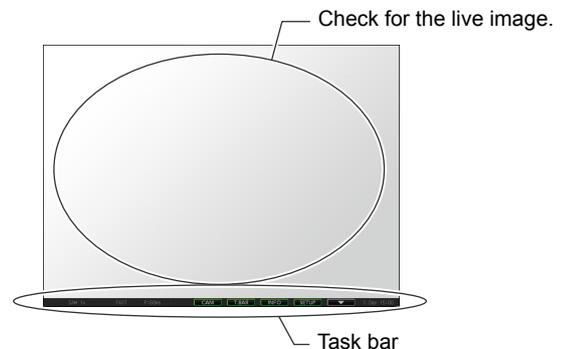
When the power is on, the POWER indicator lights up, and the start screen is displayed on the monitor for a few seconds.



Start screen

#### 4 Check the monitor for the live image.

After the start screen, the task bar and the live image from the DS camera head are shown on the monitor.



Live image on the monitor

Note: The live image may be unclear depending on the settings or conditions of the optical device.

# Basic Capture Operation

This section describes a simple procedure to capture and view an image.

## 1 Open the [CAMERA MENU: CAMERA] screen.

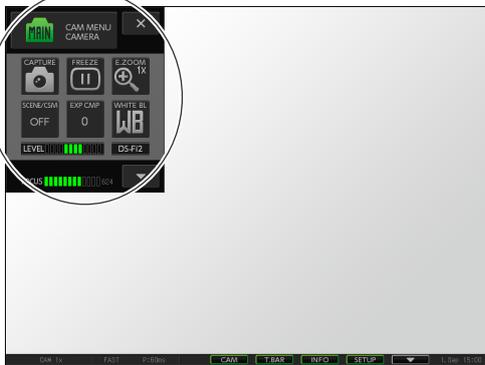
[CAMERA MENU] is used for image capture operation.



**Open the [CAMERA MENU: CAMERA] screen.**  
Press the [CAM] button on the task bar to open the [CAMERA MENU] screen.



[CAMERA MENU: CAMERA] screen



Displaying [CAMERA MENU]

## 2 Specify a save drive, a folder, and a recording mode.



**1 Open the [CAMERA MENU: SHOT/REC] screen.**  
Press the menu selection button to open the submenu and select [SHOT/REC].

**2 Specify a storage media and a folder.**  
Press the [DRIVE] button and select the desired storage media and the folder.

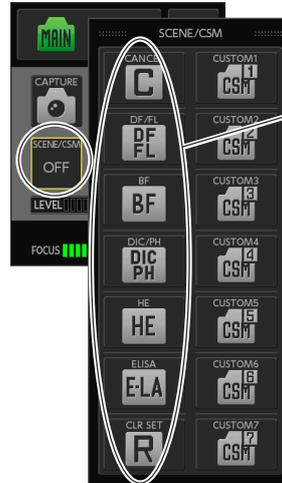
**3 Specify a recording mode.**  
Press the [REC MODE] button and select the desired image source, image size, and file type.

[CAMERA MENU: SHOT/REC] screen

Note: For details of the setup procedure, see “8.3.4 Setting Items of the [CAMERA MENU: SHOT/REC] Screen” in the “Camera Operation” instruction manual.

## 3 Select a scene mode.

Select a scene mode for the subject.



**Select a scene mode.**  
Press the [SCENE/CSM] button and select the desired mode.

Selecting a scene mode (on any [CAMERA MENU] screen)

Note: Scene mode options shown on the [SCENE/CSM] submenu depends on the setting for the [SCENE SELECT] button of the [SETUP MENU: MAIN] screen.

### [ IND ]

	<b>Wafer / IC chip</b>	Suitable for capturing a wafer or IC chip.
	<b>Metal / ceramic</b>	Suitable for capturing a metal specimen or ceramic or plastic subject.
	<b>Circuit board</b>	Suitable for capturing a high-contrast subject such as a circuit board or metal.
	<b>FPD (Flat Panel Display)</b>	Suitable for capturing the color filters for flat display devices.

### [ BIO ]

	<b>Dark field / fluorescence</b>	Suitable for capturing a dark subject. The camera gain (sensitivity) is improved for focusing to reduce time to display. When used with the [E MODE] button, noise in the acquired image data is minimized.
	<b>Bright field</b>	Used for general stained specimens.
	<b>Differential interference contrast / phase contrast</b>	Contrast is enhanced for differential interference and phase contrast photography.
	<b>HE staining *</b>	This mode is provided for photographing of HE stained specimen. It is optimized for color reproduction specific to HE.
	<b>Enzyme labeled antibody method *</b>	This mode is provided for photographing of ELISA (Enzyme labeled antibody method). It is optimized for color reproduction specific to DAB.

Note: Scene modes marked with an asterisk are available when a halogen lamp is used for the light source.

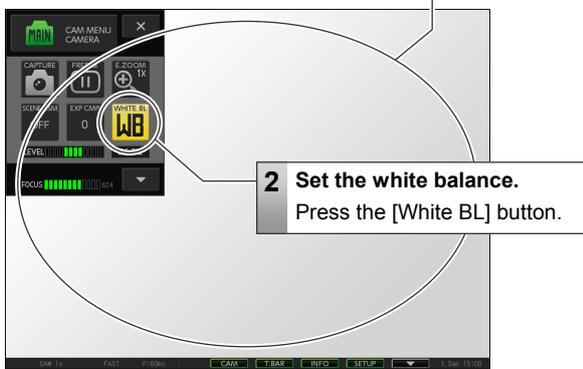
### [ OTHERS ]

	<b>Asbestos</b>	This mode is used to photograph the asbestos specimens.
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# Basic Capture Operation <contd.>

## 4 Set the white balance. (for a color DS camera head only)

- 1 Prepare an evenly white subject such as a sheet of paper.**  
Prepare an evenly white subject such as a sheet of paper, and place it so that the entire photographing scope is covered by the subject.



[CAMERA MENU] screen (same appearance for all menus)

Note: When the white balance setting is done, a “WB COMPLETED” message is displayed.

## 5 Check the subject with the live image.

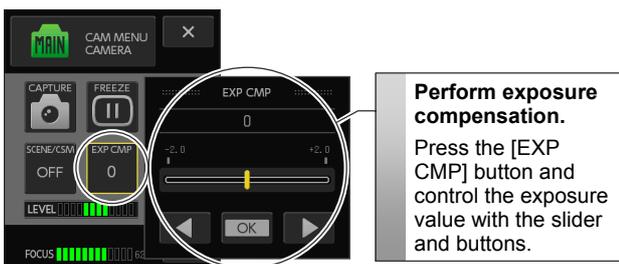
Adjust the layout and focus.



[CAMERA MENU] screen (same appearance for all menus)

## 6 Perform exposure compensation.

To adjust the brightness of the subject, use the exposure compensation control shown by pressing the [EXP CMP] button. Exposure can be controlled within the range of  $\pm 2.0$  and by  $1/3$ . Press the [OK] button to finish the setting.



Setting the exposure compensation  
(on any [CAMERA MENU] screen)

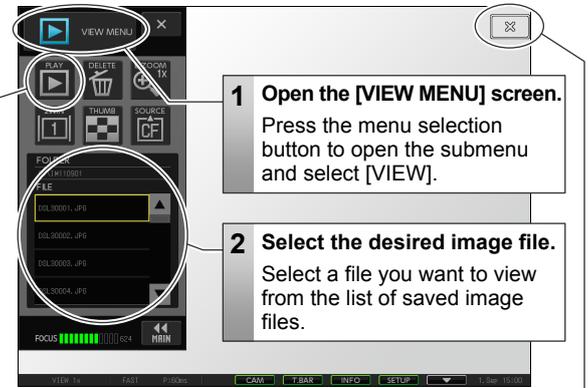
## 7 Capture an image.

Press the [CAPTURE] button to save the displayed image. You hear a capture sound when capturing an image. When the image file is saved, “SAVED 1/1” is displayed on the task bar.



[CAMERA MENU] screen (same appearance for all menus)

## 8 View the saved image.



- 3 View the image.**  
Press the [PLAY] button to view the selected image.

- 4 Stop image viewing.**  
Press the [X] button on the top right to stop viewing the selected image and return to the live image.

[VIEW MENU] screen

# Annotation (Scales and Text Comment)

This section describes how to overlay scales and annotations with text or straight/curved lines to the image.

## 1 Open the [TOOL MENU] screen.

[TOOL MENU] is used for annotation operation.



**1 Open the [CAMERA MENU: CAMERA] screen.**  
Press the [CAM] button on the task bar to open the [CAMERA MENU] screen.



**2 Open the [TOOL MENU] screen.**  
Press the menu select button to open the submenu, and select [TOOL].

[CAMERA MENU]



You can access the following buttons from [TOOL MENU]:

**Scales**

- XY measurement
- X scale (cross scale)
- Scale
- Cross hairs
- Grid

**Annotation**

- Text
- Straight line
- Pen
- Marker

[TOOL MENU]

Displaying the [TOOL MENU] screen

## 2 Select a registered calibration setting.



**Select a calibration setting.**  
Press the [CALIB] button to open the submenu and select the desired calibration setting.

Note: When a scale is displayed on a replayed image, the unit is always the pixel regardless of the setting.

Specifying a calibration setting ([TOOL MENU] screen)

Note: For details of calibration registration, see “11.2.4 Registering Calibration Values” in “Camera Operation” instruction manual.

## 3 Specify the unit.



**1 Open the [TOOL SET: MAIN] screen.**  
Press the [TOOL SET] button on the [TOOL MENU] screen to open the submenu and select [MAIN].



Note: When a scale is displayed on a replayed image, the unit is always the pixel regardless of the setting.

**2 Specify the unit.**  
Press the [UNIT] button on the [TOOL SET: MAIN] screen to open the submenu and select the desired unit.

**3 Return to [TOOL MENU].**  
After selecting the unit, press the [TOOL] button to return to the [TOOL MENU] screen or press the [X] button to close the [TOOL SET: MAIN] screen.

[TOOL SET: MAIN]

Specifying the unit ([TOOL SET: MAIN] screen)



# Measurement

This section describes how to measure a length, angle, diameter or circumference of a circle, or polygon area, etc. on the monitor.

## 1 Open the [TOOL BAR] screen.

[TOOL BAR] is used for measurement.



**Open the [TOOL BAR] window.**  
Press the [T.BAR] button on the task bar to open [TOOL BAR].

Single-row button display



Press to show the lower row of buttons.

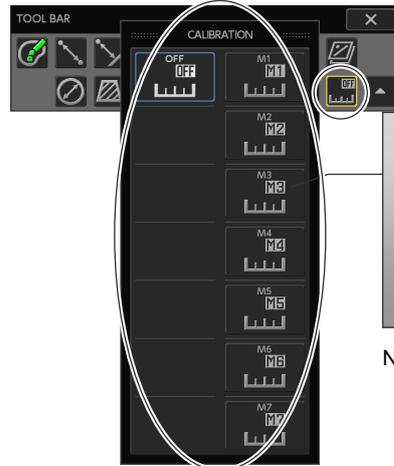
Two-row button display



Press to hide the lower row of buttons.

**Switching [TOOL BAR] display**

## 2 Select a registered calibration setting.



**Select a registered calibration setting.**

Press the calibration button in the lower row of [TOOL BAR] to open the submenu and select the desired calibration setting.

Note: When measurement is performed for a replayed image, values are always shown in pixels regardless of the setting.

**Specifying a calibration setting ([TOOL BAR] screen)**

Note: For details of calibration registration, see “11.2.4 Registering Calibration Values” in “Camera Operation” instruction manual.

## 3 Specify the unit.



**1 Open the [TOOL SET: MAIN] screen.**  
Press the [TOOL SET] button on the [TOOL MENU] screen to open the submenu and select [MAIN].

Note: When measurement is performed for a replayed image, values are always shown in pixels regardless of the setting.



**2 Specify the unit.**  
Press the [UNIT] button on the [TOOL SET: MAIN] screen to open the submenu and select the desired unit.

**3 Return to [TOOL MENU].**  
After selecting the unit, press the [TOOL] button to return to the [TOOL MENU] screen or press the [X] button to close the [TOOL SET: MAIN] screen.

[TOOL SET: MAIN]

**Specifying the unit ([TOOL SET: MAIN] screen)**

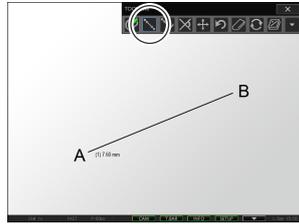
# Measurement <contd.>

## 4 Use the [TOOL BAR] buttons to perform measurement on the monitor.

Note: Color for drawing can be selected from black, red, yellow, green, blue, or white.

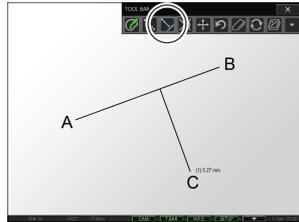
### Distance between two points

Measures the distance between the two points (e.g., A-B) specified on an image.



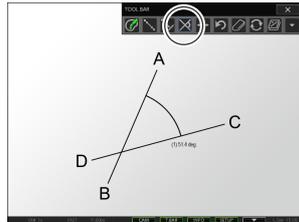
### Perpendicular line

Measures the length of a perpendicular line drawn from a point (e.g., c) to a reference line (e.g., A-B) drawn between two points on an image.



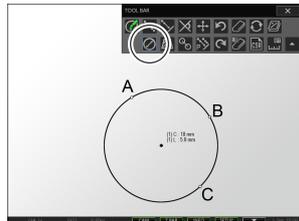
### Angle

Measures the angle between two straight lines (e.g., A-B and C-D) drawn on the screen.



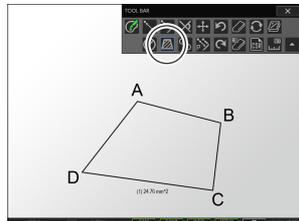
### Diameter and circumference

Measures the diameter and circumference of a circle drawn with three points (e.g., A, B, C) on the circumference.



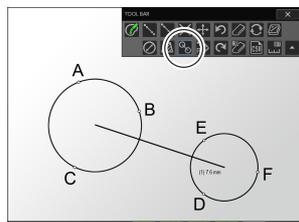
### Polygon area

Measures the area of a polygon (e.g., A-D) drawn on the screen. To define the polygon after specifying the points, press the [AREA MEASUREMENT] button.



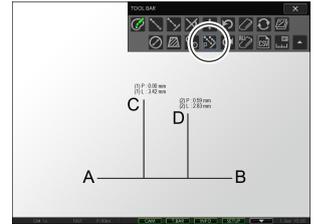
### Distance between two circle centers

Measures the distance between centers of two circles (e.g., A-C, D-F) each drawn with three points on circumference.



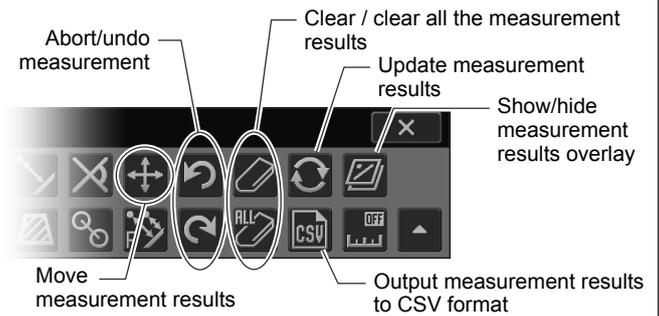
## Pitch length

Measures the length of several perpendicular lines drawn from desired points (e.g., C, D) to a reference line drawn between the two points (e.g., A-B) and distance between points (pitch distance).



## 5 Operate the measurement results.

Use buttons on the [TOOL BAR] for the following operations.

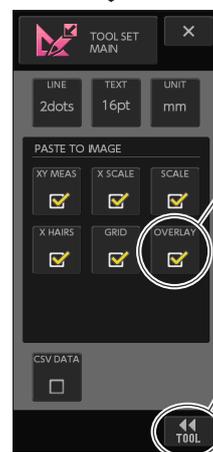


Operating measurement results ([TOOL BAR] screen)

## 6 Configure to paste measurement results to the image.



**1 Open the [TOOL SET: MAIN] screen.**  
Press the [TOOL SET] button on the [TOOL MENU] screen to open the submenu and select [MAIN].



Note: An image can be captured or printed with measurement results overlaid just as displayed on the monitor, if they are set to be output by selecting with the checkmark.

**2 Paste measurement results to the image.**  
Put a checkmark to the [OVERLAY] checkbox. (This applies to overlaying the annotations.)

**3 Return to [TOOL MENU].**  
After the settings is done, press the [TOOL] button to go back to the [TOOL MENU] screen or press the [X] button to close the [TOOL SET: MAIN] screen

[TOOL SET: MAIN]

([TOOL SET: MAIN] screen)

# Initial Settings

This section describes the initial setting procedure in minimal steps. Perform the procedure when you use the DS-L3 for the first time.

## 1 Open the [SETUP MENU: MAIN] screen.

[SETUP MENU] is used for initial settings.



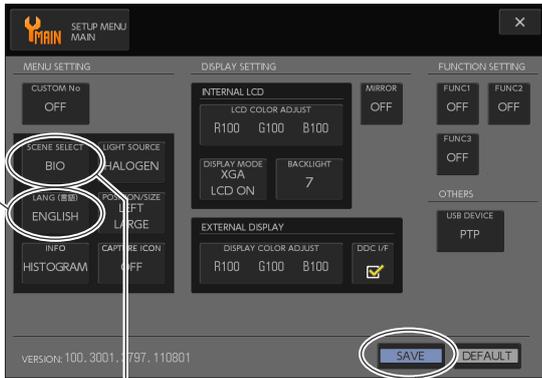
Open the [SETUP MENU] screen.  
Press the [SETUP] button on the task bar to open [SETUP MENU] screen.

Displaying [SETUP MENU]

## 2 Select a language and a scene mode.

### 1 Select a language.

Press the [LANG] button and select the desired language from [ENG] (English) and [日本語] (Japanese).



### 2 Select the desired scene mode.

Press the [SCENE SELECT] button to open the submenu and select a scene mode from [BIO], [IND], and [OTHERS].

### 3 Save the settings.

Press the [SAVE] button to apply the settings.

[SETUP MENU: MAIN] screen

## 3 Open the [SETUP MENU: ADDITIONAL] screen.

Open [SETUP MENU: ADDITIONAL].

Press the menu select button to open the submenu and select [ADD].



Switching the setup menu

## 4 Set the current date and image save destination.

### 1 Set the current date and time.

Specify the current date and time in two digits in the [DATE/TIME SET] area.



### 2 Specify the save destination.

Select the save destination from [SAVE TO MEDIA] and [SAVE TO SERVER] in the [CAPTURE FUNCTION] area. [SAVE TO MEDIA] is selected by default.

### 3 Save the settings.

Press the [SAVE] button to apply the settings.

[SETUP MENU: ADDITIONAL] screen

## 5 Close the [SETUP MENU] screen.

Quit [SETUP MENU].

Press the [X] button to close [SETUP MENU].



Closing the [SETUP MENU] screen