ASTRO

High-Definition View Finder

DF-3512-A

Instruction Manual

Ver. 1.04

Astrodesign Inc.

Safety Precautions (Always Observe)

Always observe the following precautions. Failure to do so can result in fires, electric shock, serious injury or death, and damage to property.

Warning Indications and Their Meanings

This manual uses the following warning indications. Before reading this manual, make sure that you understand the meaning of these indications.

Warning

⚠ **Warning**	Failure to heed this warning can result in fires, electric shock, serious injury or death.
⚠ **Caution**	Failure to heed this caution can result in personal injury due to electric shock or other accidents, and damage to the product and other property in the vicinity.

Symbols

● Caution symbols

Fire   Electric shock   High temperatures   Finger injury hazard

● Symbols for forbidden actions

Forbidden   Do not disassemble

● Symbols for required actions

Required actions

⚠ Warning Fire Electric shock

About Handling the Product

Forbidden

Do not throw or subject to strong shocks
Doing so can result in cracks, overheating, and fire.

Do not use where there is a risk of fire or explosions
Doing so can result in fires.

Do not allow water or foreign objects inside the product
Doing so can result in fires and electric shock.
If water or foreign objects should get inside, immediately turn the product off and contact your dealer or an Astrodesign sales representative.

Do not disassemble

Do not disassemble, repair, or modify
Doing so can result in fires and electric shock.

⚠ Caution

About Handling the Product

🚫 **Forbidden**

Do not place any objects on top of the product
Doing so can result in a failure.

Do not leave the lens section of the view finder in locations where it is subject to strong light, such as sunlight
Sunlight could be focused through the lens in the device and cause fires.

Do not look into the eyepiece if the lens is pointing at the sun or a bright light source
Doing so can result in damage to your eyes.

Do not use in the following environments
Doing so can result in a failure.
- Locations in which the surrounding temperature is outside the range of 0 to 40℃[*1]
- Locations in which the surrounding humidity is outside the range of 30 to 80% RH
- Locations near air conditioning equipment in which there are sudden temperature changes or condensation
- Locations subject to direct sunlight[*2]
- Locations with corrosive gases or very dirty locations
- Locations in which strong magnetic fields are generated
- Locations in which the product may be splashed with water, oil, chemicals, etc.
- Locations in which vibration is transferred through the floor

[*1]: If the surface temperature of the OLED panel exceeds 65℃, a screen whiteout may occur.

[*2]: If the product is exposed to direct ultraviolet rays for a long time, the display quality may degrade. For example, the polarizing plate may become brown and the contrast may drop.

About the organic electroluminescence panel

*Due the nature of OLED displays, the screen may have a few defective pixels (always lit or never lit). This is normal and not a malfunction.

If the Unit Malfunctions or Trouble Occurs

Stop using the product, turn off the power switch, unplug the DC power cable, and contact your local dealer or an Astrodesign sales representative.

Before Operation

Introduction

Thank you for purchasing the DF-3512-A High-Definition View Finder.

This Instruction Manual (called "this manual" below) explains how to use the DF-3512-A High-Definition View Finder and provides information that you should know before use. Be sure to read this manual and use the DF-3512-A correctly.

Keep this manual in a safe place for later reference.

Conventions

For conciseness, this manual uses the following shorter descriptions for some terms.

Item	Term used in this manual
DF-3512-A	This product

Supplied Items

Your package should include the following items. If any item is missing or damaged, contact your local dealer or an Astrodesign sales representative.

Item	Number
DF-3512-A (main unit)	1
Camera connection cable	1
DF-3512-A Instruction Manual (this manual)	1

! Important

• Always use the items supplied in the package. Use of accessories other than the supplied items may damage the product.

Contents

Chapter 1 About the Product

This chapter explains the features of the product and the names and functions of its parts.

1.1 Product Features

This product is a full high-vision electronic view finder for ultra high-resolution cameras (4K/8K cameras etc.) and hi-vision cameras.

The product has the following features.

- **Supports high speed 4K cameras from Vision Research**
  The DF-3512-A can be attached to high speed 4K cameras from Vision Research.

- **Supports multiple formats**
  This product supports a variety of video formats including 60i, 24sF, 50i etc.

- **High-definition/High-response OLED panel**
  This product uses a highly-responsive 1920 x 1080 OLED panel capable of displaying full HD resolution images.

- **Focus function**
  Allows you to set camera focus functions such as enlarge, mark, peaking, etc.

- **Shortcut function**
  Allows you to assign frequently used menu functions to three buttons on the operation panel.

1.2 Names and Functions of Parts

The product's names and functions are as follows.

1.2.1 Overview
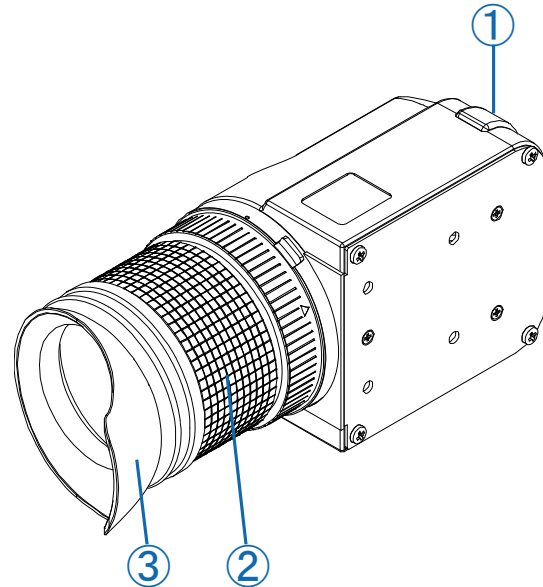
① **Tally lamp**
Switches on when a camera's tally signal is being input. For the lamps on/off settings, see "Tally Settings" in "3.3 Settings Menu List".
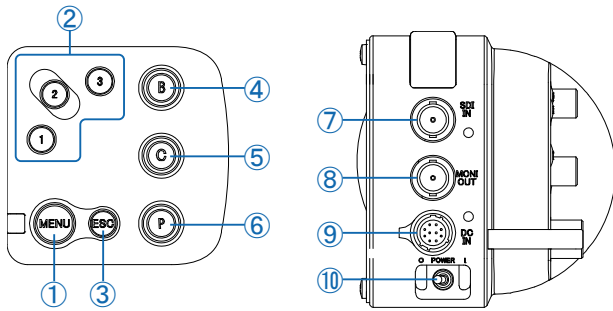
② **Visibility adjustment ring**
Adjusts the image to the photographer's visibility. For details, see "2.2.2 Adjusting the visibility".

③ **Eye cup**
Blocks out exterior light.

1.2.2 Operation section

① **MENU encoder**

Displays the menu screen and used to make menu settings. For details, see "3.2 Basic Operations on the Menu Screen".

② **Buttons [1] to [3]**

Performs the menu function assigned to each button. For details, see "4.1 Assigning Menu Items to Buttons [1] to [3] for the Function Section".

③ **ESC button**

Closes the menu screen and used to make menu settings.

④ **Volume for brightness adjustment**

Adjusts the brightness of the displayed image. For details, see "2.2.2 Adjusting the screen".

⑤ **Volume for contrast adjustment**

Adjusts the contrast of the displayed image. For details, see "2.2.2 Adjusting the screen".

⑥ **Volume for peaking adjustment**

Adjusts the peaking strength. For details, see "2.2.2 Adjusting the screen".

⑦ **SDI IN (connector input) terminal**

Connects the cable for a camera (for image signal input).

For details on the connection method, see "2.1 Attaching to a Camera".

⑧ **MONI OUT (monitor output) terminal**

Connects the cable for a monitor.
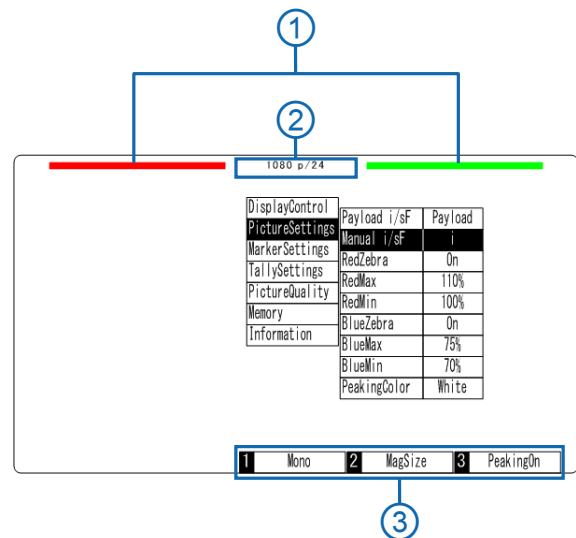
⑨ **DC IN (DC power input) terminal**

Connects the cable for the DC power supply.
Connects the tally signal (R, G).

⑩ **POWER switch**

Switches the product on or off.

1.2.3 Display

The following menu screen and indicators appear on the display.

For details on changing the menu screen display and settings, see "Chapter 3 Changing the Screen Display and Settings".

① **Box tally display**

When the Tally Display in Tally Settings is set to ON, and the tally R signal is GND, a red box tally is displayed on the left.

When the Tally Display in Tally Settings is set to ON, and the tally G signal is GND, a green box tally is displayed on the right.

② **Display input signal format**

Displays the format of the signal being input. "NO SIGNAL" is displayed when no video signal is being input. For details, see "5.2 Error List".

③ **Display assigned menu**

Displays the menu assigned to buttons [1] to [3]. For details, see "4.1 Assigning Menu Items to Buttons [1] to [3] for the Function Section".

Chapter 2 Preparations and Basic Operations

This chapter explains how to attach this product to a camera and make adjustments.

2.1 Attaching to a Camera

1 Attach this product to a camera.

For details on attaching, see the documentation supplied with the camera you are using.

2 Connect the camera to this product with the BNC cable.

Connect the supplied camera connection cable.

BNC cable
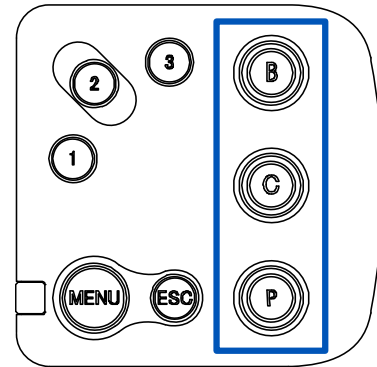(for image signal input)

Supplied camera connection cable
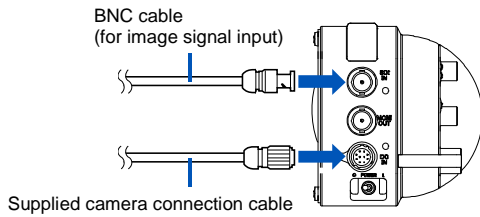
• Removing

● Disconnect the cables.

2.2 Adjusting the Screen

2.2.1 Adjusting the screen

Adjust the screen brightness, contrast, and peaking using the adjustment volumes of the operation section.

B Volume for brightness adjustment

Turn the knob left or right to adjust the brightness of the displayed image.

MEMO

• Adjustment results do not affect the camera's output signal.

C Volume for contrast adjustment

Turn the knob left or right to adjust the contrast of the displayed image.

MEMO

• Adjustment results do not affect the camera's output signal.

P Volume for peaking adjustment

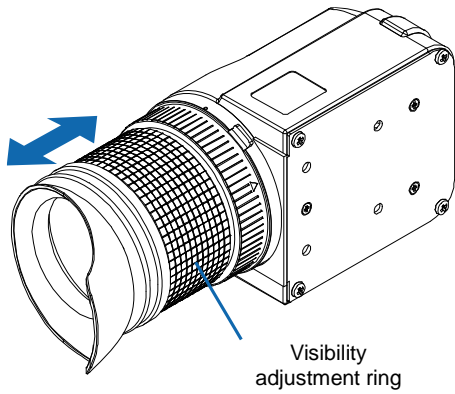Turn the knob left or right to adjust the peaking strength in the image.

MEMO

• To adjust peaking, you need to turn on Peaking On in Display Control from the menu beforehand.

2.2.2 Adjusting the Visibility

Rotate the visibility adjustment ring to find the optimum image display.

Visibility
adjustment ring

The eyepiece moves in and out as you rotate the ring.

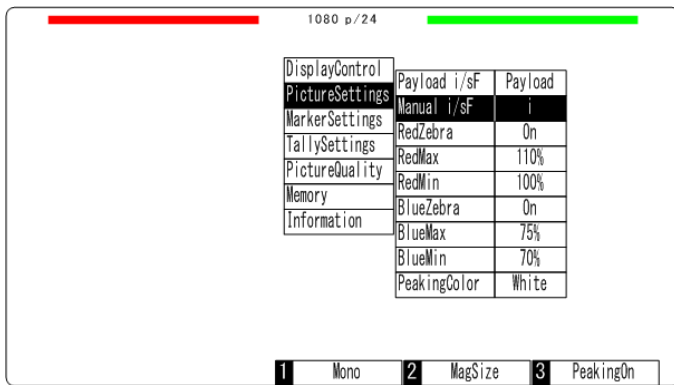# Chapter 3 Changing the Screen Display and Settings

This chapter explains how to change the screen display and settings. Make settings from the menu screen.

3.1 Displaying the Menu Screen

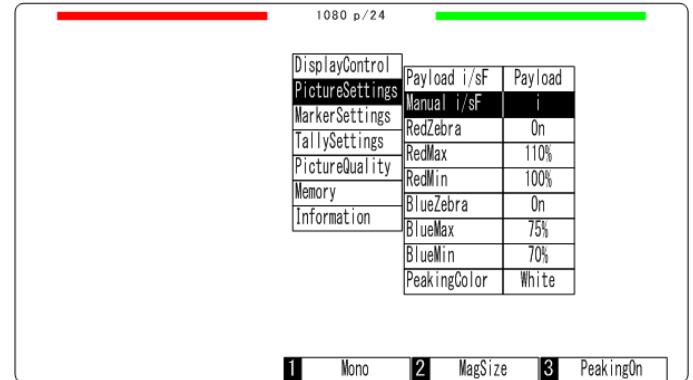**1** Press MENU encoder of the operation section.
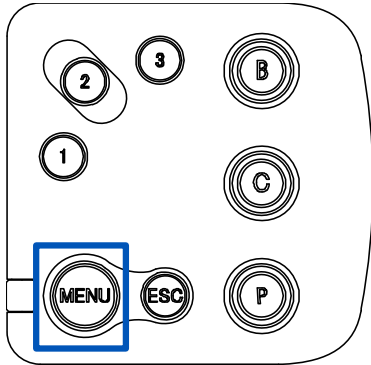
The menu screen is displayed.

• To close the menu screen

1 Press the ESC button.

3.2 Basic Operations on the Menu Screen

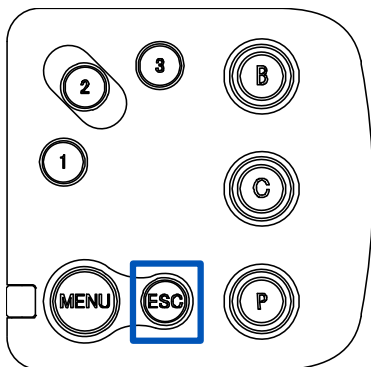This section describes the basic operations for the menu screen.

1 Display the menu screen.

2 Turn the MENU encoder left or right, and then select the menu item you want to set.

3 Press the MENU encoder to confirm the setting.

3.3 Settings Menu List

This section shows the functions that can be configured from the menu screen.

Display Control

Sets the display method except for image display information.
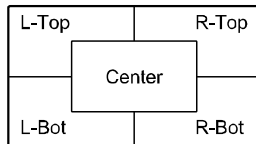The setting items are as follows.

Setting item 1	Setting item 2	Content (initial value: underlined)
Format Displays format information for the input signal.	Off, On	Off: Does not display format information for the input signal. On: Displays format information for the input signal.
Camera Info. Displays supplemental information output from the camera. (*For future use)	Off, On	Off: Does not display supplemental output information. On: Displays supplemental output information.
Marker On Switches between showing and hiding the markers.	Off, On	Off: Does not display any markers. On: Displays all the markers.
Flip Screen Switches between flipping and not flipping the input image.	Off, On	Off: Does not flip the input image. On: Flips the input image.
Zebra Switches between showing and not showing the zebra pattern on the input image.	Off, On	Off: Does not display a zebra pattern on the input image. On: Displays a zebra pattern on the input image.
Mono Switches between displaying and not displaying the input image in monochrome.	Off, On	Off: Displays the input image in color. On: Displays the input image in monochrome.
Blue Only Switches between displaying and not displaying only the blue components in the input image.	Off, On	Off: Displays the input image in color. On: Displays only the blue components in the input image.
Peaking On Switches between showing and hiding peaking.	Off, On	Off: Does not display peaking. On: Displays peaking.
Mag Size(*) Magnifies the displayed image.	Off, x2, x4	Off: Does not magnify the displayed image. x2: Magnifies the displayed image by two. x4: Magnifies the displayed image by four.
Mag Position(*) Sets the display position for the magnified image.	Center, L-Top, R-Top, L-Bot, R-Bot	Center: Magnifies the image at the center of the display. L-Top: Magnifies the image at the top-left of the display. R-Top: Magnifies the image at the top-right of the display. L-Bot: Magnifies the image at the bottom-left of the display. R-Bot: Magnifies the image at the bottom-right of the display.

(*)
Magnifies the input image by 2 or 4 times.
You can also set the display position for the magnified image.

Size
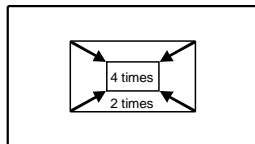
Position

Picture Settings

Configures settings for image displays on this product.
The setting items are as follows.

Setting item	Setting item 2	Content (initial value: underlined)
Payload i/sF Sets automatic or manual for the input signal display method.	Payload, Manual	Payload: Set automatically. Manual: Set manually.
Manual i/sF Sets the input image display method during manual configuration.	i, sF	i: Displays using the interlace method. sF: Displays using the segment frame method.
Red Zebra Switches between showing and not showing the red zebra pattern. (Only available when Zebra is set to On)	Off, On	Off: Does not display a red zebra pattern. On: Displays a red zebra pattern.
Red Max Sets the maximum red zebra pattern display level.	110% to -7%	
Red Min Sets the minimum red zebra pattern display level.	109% to 100% to -8%	
Blue Zebra Switches between showing and not showing the blue zebra pattern. (Only available when Zebra is set to On)	Off, On	Off: Does not display a blue zebra pattern. On: Displays a blue zebra pattern.
Blue Max Sets the maximum blue zebra pattern display level.	110% to 75% to -7%	
Blue Min Sets the minimum blue zebra pattern display level.	109% to 70% to -8%	
Peaking Color Switches the peaking display color.	White, Red, Yellow	White: Displays the peaking in white. Red: Displays the peaking in red. Yellow: Displays the peaking in yellow.

Marker Settings

Configures the display settings for the product's markers.
The setting items are as follows.

Setting item	Setting item 2	Content (initial value: underlined)
Marker Color Sets the marker display color.	White, Red, Yellow, Black	White: Displays the markers in white. Red: Displays the markers in red. Yellow: Displays the markers in yellow. Black: Displays the markers in black.
Center Switches between showing and hiding the center marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the center marker. On: Displays the center marker.
Frame Switches between showing and hiding the frame marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the frame marker. On: Displays the frame marker.
1.33:1 Switches between showing and hiding the 1.33:1 aspect ratio guide marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the 1.33:1 aspect ratio guide marker. On: Displays the 1.33:1 aspect ratio guide marker.
1.88:1 Switches between showing and hiding the 1.88:1 aspect ratio guide marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the 1.88:1 aspect ratio guide marker. On: Displays the 1.88:1 aspect ratio guide marker.
2.35:1 Switches between showing and hiding the 2.35:1 aspect ratio guide marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the 2.35:1 aspect ratio guide marker. On: Displays the 2.35:1 aspect ratio guide marker.
2.39:1 Switches between showing and hiding the 2.39:1 aspect ratio guide marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the 2.39:1 aspect ratio guide marker. On: Displays the 2.39:1 aspect ratio guide marker.
1.85:1 Switches between showing and hiding the 1.85:1 aspect ratio guide marker. (Only available when Marker On is set to On)	Off, On	Off: Does not display the 1.85:1 aspect ratio guide marker. On: Displays the 1.85:1 aspect ratio guide marker.
Marker Mask Switches between using and not using a mask for the areas outside the marker display range. (Only available when Marker On is set to On)	Off, On	Off: Does not use a mask. On: Uses a mask.

Tally Settings

Sets the tally lamp.

The setting items are as follows.

Setting item	Setting item 2	Content (initial value: underlined)
Tally Select Selects the tally input signal method. (*For future use)	Ancillary, Signal	Ancillary: Inputs using Ancillary. Signal: Inputs using Signal.
Tally LED Switches between turning on and turning off the tally lamp.	Off, On	Off: Turns off the tally lamp. On: Turns on the tally lamp.
Tally Display Switches between showing and hiding the BOX tally in the display screen.	Off, On	Off: Turns off the BOX tally. On: Turns on the BOX tally.

Picture Quality

Sets the picture quality for this product.
The setting items are as follows.

Setting item	Content (initial value: underlined)
Luminance Sets the display luminance for the OLED display.	1 to 3 to 5
Temperature Sets the color temperature.	5500K, 6500K, 9300K
Offset G Adjusts the luminance. (G components)	-50% to 0% to 50%
Offset B Adjusts the luminance. (B components)	-50% to 0% to 50%
Offset R Adjusts the luminance. (R components)	-50% to 0% to 50%
Gain G Adjusts the contrast. (G components)	0% to 100% to 200%
Gain B Adjusts the contrast. (B components)	0% to 100% to 200%
Gain R Adjusts the contrast. (R components)	0% to 100% to 200%
Gamma G Sets the gamma. (G components)	1.60 to 2.20 to 2.80
Gamma B Sets the gamma. (B components)	1.60 to 2.20 to 2.80
Gamma R Sets the gamma. (R components)	1.60 to 2.20 to 2.80
Black Insertion Sets the ratio of black insertion applied to the display image.	0%, 10%, 20%, 30%

Memory

This function allows you to store up to six menu settings, and then load them when needed.

The setting items are as follows.

Setting item	Setting item 2	Content (initial value: underlined)
Load	User1 to User6	Loads the settings registered to that number.
Save	User1 to User6	Select the number to which you want to save the settings.
Delete	User1 to User6	Select the number from which you want to delete the settings.
Boot Select	User1 to User6, Last Memory	Select the settings loaded when power-up.

Information

Checks the version of this product.

The setting items are as follows.

| Setting item	Content (initial value: underlined)
FPGA Ver.	Displays the hardware version.
Firmware Ver.	Displays the software version.
Factory Default	Returns all menu settings to default settings (factory settings).

！ Important

• When settings have been returned to default settings, they cannot be restored.

Chapter 4 Useful Functions

4.1 Assigning Menu Items to Buttons [1] to [3] for the Operation Section

You can assign functions to buttons [1] to [3] on the menu screen in the operation section panel.

1 Configure the settings on the menu screen.

2 Press and hold down the button to which you want to assign the function on the menu screen for at least three seconds.
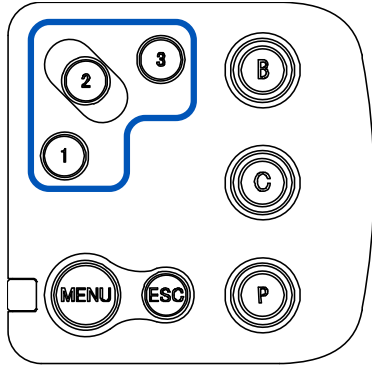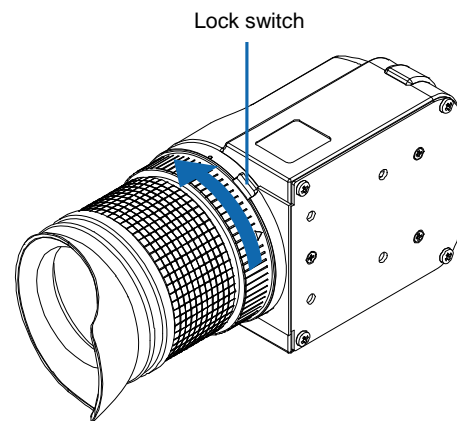

> **MEMO**
>
> • The following functions cannot be assigned.
>   − Picture Settings
>   Red Max
>   Red Min
>   Blue Max
>   Blue Min
>   − Picture Quality
>   Luminance
>   Offset (G, B, R)
>   Gain (G, B, R)
>   Gamma (G, B, R)
>   − Memory
>   Load
>   Save
>   Delete
>   Boot Select
>   − Information
>   FPGA Ver.
>   Firmware Ver.
>   Factory Default
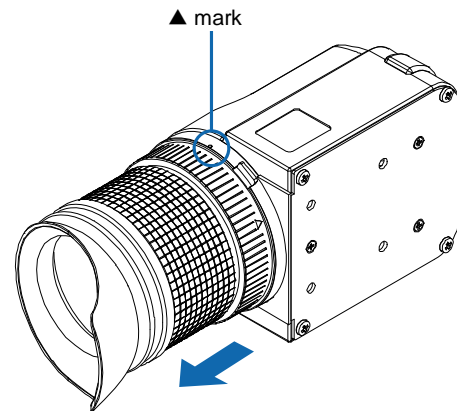
4.2 Removing and Installing the Eyepiece

The following section explains how to remove and attach the eyepiece.

Removing the eyepiece

1 Press the lock switch on the product, and rotate the eyepiece in the direction indicated by the arrow.

Lock switch

2 Align the red mark on the side of the product with the ▲ mark on the eyepiece, and then carefully pull out the eyepiece.

▲ mark

> **MEMO**
>
> When rotating the eyepiece, make sure you rotate the large section with the ▲ mark.

Reattaching the eyepiece

1 Align the red mark on the side of the product with the ▲ mark on the eyepiece.

2 Rotate the eyepiece in the opposite direction to the arrow shown in step 1 from "Removing the eyepiece".

3 Rotate the eyepiece until the lock switch clicks.

Chapter 5 Troubleshooting

This chapter describes troubleshooting methods to use when the product is not operating normally.

5.1 When the Product is Not Operating Normally

When the product is not operating normally, refer to the following chart, and then carry out the appropriate solution.

If the problem is not resolved, contact your local dealer or an Astrodesign sales representative.

Problem	Check point	Solution
No images are displayed.	1) Is the camera operating? 2) Is the camera cable connected correctly?	1) Check that the camera is operating normally. 2) Check that the camera cable is connected correctly. For details on connecting to this product, see "2.1 Attaching to a Camera". For details on connecting to the camera, see the documentation provided with the camera.

MEMO

• Due to the nature of OLEDs, the following effects may occur, but they are not malfunctions.
  − Changes in response time, brightness, and color due to the surrounding temperature
  − Brightness irregularities, vertical lines, and minute spots can be seen
  − Optical characteristics (brightness, display irregularities, etc.) change depending on the operation time (particularly in low temperature environments)
  − Changes in display color depending on the viewing angle can be seen
  − Afterimages occur if static patterns are displayed for a long time

5.2 Error List

Error Message	Content	Solution
NO SIGNAL	No display image signal is being input.	1) Check that the camera is operating normally. 2) Check that the camera cable is connected correctly. For details on connecting to this product, see "2.1 Attaching to a Camera". For details on connecting to the camera, see the documentation provided with the camera.

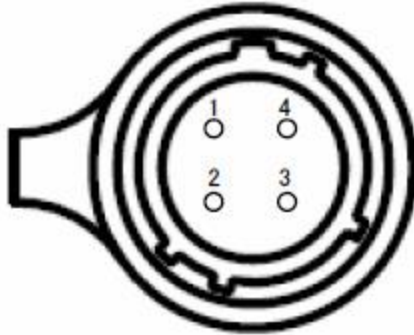## 5.3 If the Unit Malfunctions or Trouble Occurs

Stop using the product, and contact your local dealer or an Astrodesign sales representative.

Damaged OLED displays will be repaired or exchanged for a fee, even during the warranty period.

Chapter 6 Product Specifications
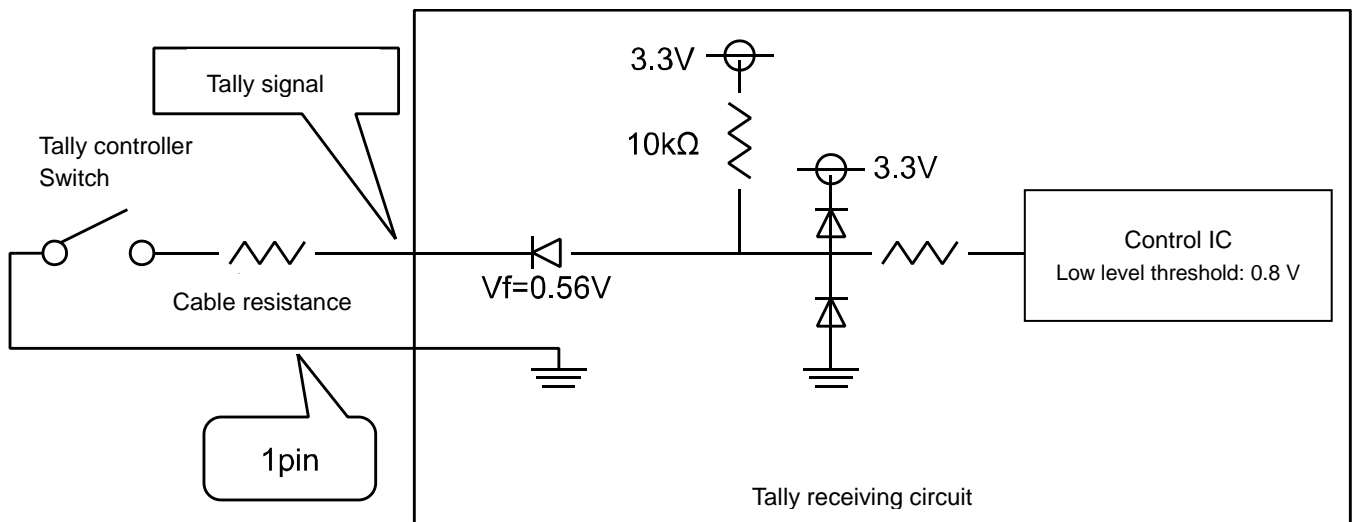
This chapter explains the product specifications.

6.1 DC-IN (DC power input) terminal

DC IN terminal pin arrangement

Pin numbers and names, function list

Pin number	Name	Function
1	GND	Grand terminal
2	TALLY R	Tally input terminal (red)
3	TALLY G	Tally input terminal (green)
4	DC IN	Power supply terminal (DC 9-32V)

* Make sure the cable resistance is 50Ω or less.

6.2 Input Format

Format		Frame Rate (Hz)	Active Line Per Frame	Total Line Per Frame	Line Frequency (kHz)	Samples Per Active Line	Samples Per Total Line	Scanning *1	*2
1080i/60	1080i/59.94 1080sF/29.97	30/1.001	1080	1125	33.72	1920	2200	i sF	①
	1080i/60 1080sF/30	30	1080	1125	33.75	1920	2200	i sF	
1080p/30	1080p/29.97	30/1.001	1080	1125	33.72	1920	2200	p	①
	1080p/30	30	1080	1125	33.75	1920	2200	p	
1080sF/25 (1080i/50)	1080sF/25 1080i/50	25	1080	1125	28.13	1920	2640	sF i	①
1080p/25	1080p/25	25	1080	1125	28.13	1920	2640	p	①
1080sF/24	1080sF/23.98	24/1.001	1080	1125	26.97	1920	2750	sF	①
	1080sF/24	24	1080	1125	27.00	1920	2750	sF	
1080p/24	1080p/23.98	24/1.001	1080	1125	26.97	1920	2750	p	①
	1080p/24	24	1080	1125	27.00	1920	2750	p	
720p/60	720p/59.94	60/1.001	720	750	44.96	1280	1650	p	②
	720p/60	60	720	750	45.00	1280	1650	p	
720p/50	720p/50	50	720	750	36.00	1280	1980	p	②
720p/30	720p/29.97	30/1.001	720	750	22.48	1280	3300	p	②
	720p/30	30	720	750	22.50	1280	3300	p	
720p/25	720p/25	25	720	750	18.75	1280	3960	p	②
720p/24	720p/23.98	24/1.001	720	750	17.98	1280	4125	p	②
	720p/24	24	720	750	18.00	1280	4125	p	

*1 Scanning skip signal
   i = Interlace
   sF = Segmented Frame
   p = Progressive

* 2 Standard
   ① Conforms to SMPTE 274 ② Conforms to SMPTE 296

6.3 Input Signals

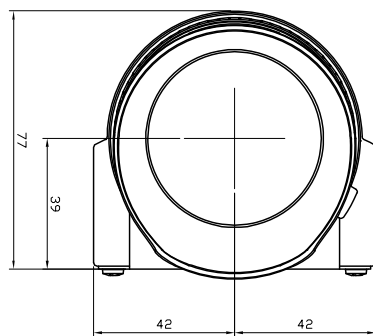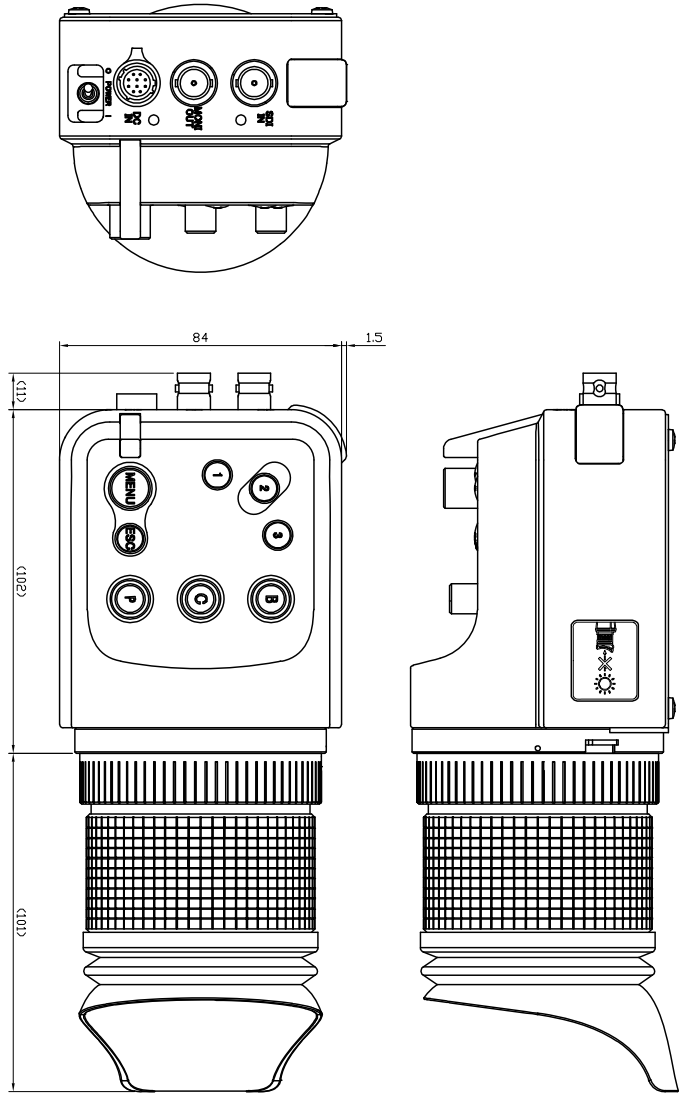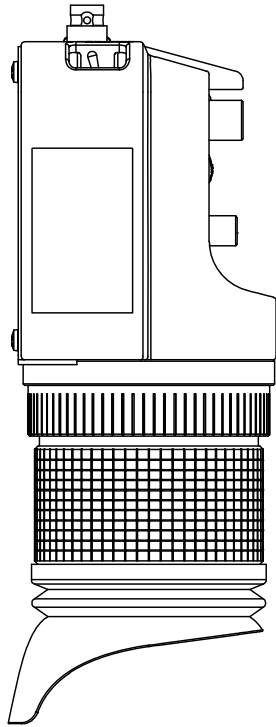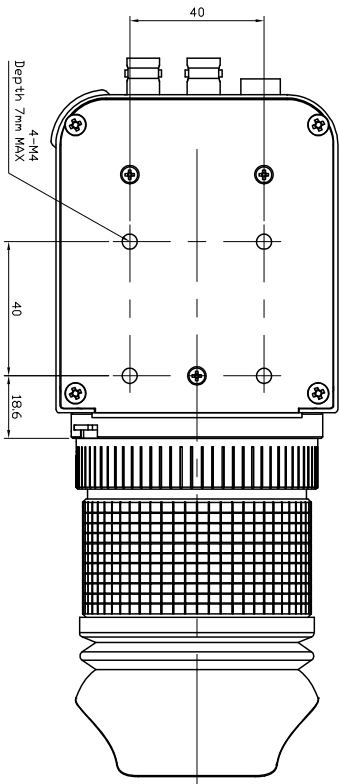| SDI input specification	Specification
HD-SDI input	・ Conforms to SMPTE 292 ・ Field frequency: Auto tracking of 60.00/59.94[Hz] etc as well as auto tracking of the input format are available

6.4 Display Method

Item	Specification
Display color	8 bit
Contrast ratio	1000:1 or higher
Brightness	88cd/m2
Resolution	1920 (H) x 1200 (V) Pixels
Frame rate	60 Hz

6.5 General Specifications

Item	Specification
Operating temperature range	0 to 40℃
Storage temperature range	-10 to 60℃
Operating humidity range	20 to 80% RH (ambient temperature 0 to 40℃ without condensation)
Storage humidity range	10 to 90% RH (ambient temperature 0 to 40℃ without condensation)
Rated voltage	DC 9-32V
Power consumption (main unit)	6W (TYP)
External dimensions	77 x 85.5 x 214 mm
Weight	0.8 kg

6.6 External Diagram

DF-3512-A   **Instruction Manual** Ver. 1.04

D0437C   2014.6