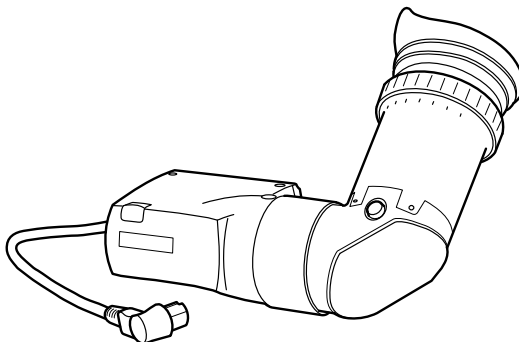


User's Guide

3922 496 49001 March 2016 v3.1



LDK 5302/60

2-inch HD viewfinder

Declaration of Conformity

We, Grass Valley Nederland B.V., Bergschot 69, 4817 PA Breda, The Netherlands, declare under our sole responsibility that this product is in compliance with the following standards:

- EN60065 : Safety
- EN55103-1: EMC (Emission)
- EN55103-2: EMC (Immunity)

following the provisions of:

- a. the Low Voltage directive 2006/95/EC
- b. the EMC directive 2004/108/EC

FCC Class A Statement

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications.

It has been tested and found to comply with the limits for a class A digital device pursuant to part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this product in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Copyright

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Trademarks

Grass Valley, LDX Series and derivatives are trademarks of Belden Inc. or Grass Valley. All other tradenames referenced are service marks, trademarks, or registered trademarks of their respective companies.

Website

Visit the Grass Valley public website to download the latest user's guide updates and additional information about your broadcast product: www.grassvalley.com

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End-of-life product recycling



Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive and in the United States from the Environmental Protection Agency, individual state or local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight, however you are responsible for the removal of the equipment from your facility and packing the equipment ready for pickup.

For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the US and Canada please call 800-547-8949 or 530-478-4148. Ask to be connected to the EH&S Department. In addition, information concerning Grass Valley's environmental policy can be found at:

www.grassvalley.com/about/environmental-policy

Packing for return

If a unit is being returned to Grass Valley for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, model number, full serial number and the return number which will be supplied by your Grass Valley service centre.

If the original packing is not available or can no longer be used contact your regional Grass Valley service representative to have a return package provided.

Important information

Read this information carefully before installing this equipment and retain them for future reference. Read and comply with the warning and caution notices that appear in the manual. Any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Safety Summary

This information is intended as a guide for trained and qualified personnel who are aware of the dangers involved in handling potentially hazardous electrical/electronic equipment. It is not intended to contain a complete list of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation of this equipment involves risks both to personnel and equipment and must be performed only by qualified personnel exercising due care.

During installation and operation of this equipment, local building safety and fire protection standards must be observed.

Whenever it is likely that safe operation is impaired, the apparatus must be made inoperative and secured against any unintended operation. The appropriate servicing authority must then be informed. For example, safety is likely to be impaired if the apparatus fails to perform the intended function or shows visible damage.

The unit is protected according to IEC 60529 IPX54 (dust-protected and resistant to splashing water).

Warnings

Warnings indicate danger that requires correct procedures or practices to prevent death or injury to personnel.

- Do not modify this equipment;
- Do not use any accessories other than those recommended by the manufacturer;
- There are no user serviceable parts inside. Refer servicing to qualified personnel only or contact your local Grass Valley representative;

Cautions

Cautions indicate procedures or practices that should be followed to prevent damage or destruction to equipment or property.

- Do not subject the unit to severe shocks or vibration;
- Do not expose the unit to extremes of temperature;
- To prevent risk of overheating, ventilate the product correctly;

Wichtige Hinweise

Lesen Sie bitte diese Hinweise genau bevor Sie diese Apparatur installieren und erhalten Sie Sie für künftiges Nachslagen. Beachten und Lesen Sie alle mit "Achtung" und "Vorsicht" gekennzeichneten Warnhinweise.

Änderungen haben zur Folge, dass die Garantie ungültig wird und der Benutzer für etwaige durch die veränderte Ausrüstung verursachte Störungen haftbar gemacht werden könnte.

Sicherheit (Zusammenfassung)

Diese Informationen sind als Leitfaden für qualifiziertes Fachpersonal gedacht, das die Gefahren beim Umgang mit potenziell gefährlicher elektrischer/elektronischer Ausrüstung kennt. Es handelt sich dabei nicht um eine vollständige Zusammenstellung aller Sicherheitsvorkehrungen, die beim Gebrauch dieser oder anderer elektronischer Geräte zu beachten sind.

Die Montage, Wartung und Instandsetzung dieser Ausrüstung ist mit Risiken für Personal und Ausrüstung verbunden und darf nur von qualifiziertem Personal vorgenommen werden, wobei mit der nötigen Sorgfalt vorzugehen ist.

Beim Einbau und Betrieb dieser Ausrüstung müssen die örtlichen Gebäudesicherheits- und Brandschutzvorschriften beachtet werden.

Wenn eine Beeinträchtigung des sicheren Betriebs wahrscheinlich ist, muss das Gerät außer Betrieb gesetzt und gegen ungewollten Betrieb gesichert werden. Dann muss der zuständige Kundendienst benachrichtigt werden. Eine Beeinträchtigung der Sicherheit ist zum Beispiel dann wahrscheinlich, wenn das Gerät nicht wie vorgesehen funktioniert oder einen sichtbaren Schaden aufweist.

Dieser Ausrüstung ist gemäß IEC 60529 IPX54 geschützt (Staub- und Spritzwassergeschützt).

Vorsicht

Mit "Vorsicht" wird auf eine Gefahr hingewiesen, die korrekte Arbeits- oder Verfahrensweisen erfordert, um Tod oder Verletzung zu verhindern.

- An dieser Ausrüstung dürfen keine Änderungen vorgenommen werden;
- Es sollen nur von den Hersteller empfohlene Zubehörteile verwendet werden;
- Dieses Produkt enthält keine Anwenderteile. Reparatur und Wartung nur von qualifiziertem Fachpersonal vornehmen lassen oder nehmen Sie Kontakt auf mit Ihrem Grass Valley Vertretene;

Achtung

Mit "Achtung" werden Arbeitsanweisungen gekennzeichnet, die zu befolgen sind, um eine Beschädigung oder Zerstörung der Ausrüstung bzw. von Eigentum zu verhindern.

- Dieses Produkt darf nicht an extremen stöße oder Zittern ausgesetzt werden;
- Dieses Produkt darf nicht an extremen Temperaturen ausgesetzt werden;
- Um einer Überhitzungsgefahr vorzubeugen, ist das Produkt korrekt zu belüften.



Chapter 1

Installation

1.1 Mounting the viewfinder

1.1.1 Mounting viewfinder and microphone holder

To mount the viewfinder proceed as follows:

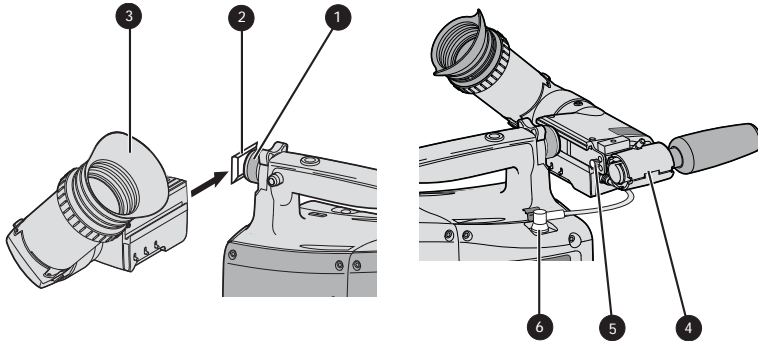
1. Loosen locking ring (1) of viewfinder support bracket (2) at the front of the camera handgrip. (As seen from the rear of the camera, turning the locking ring counterclockwise moves it towards the handgrip.)
2. Slide the viewfinder onto the viewfinder support bracket.
3. Tighten the locking ring (1) by turning it clockwise (as seen from rear) so that the viewfinder is mounted securely to the support.
4. Connect the viewfinder cable to the viewfinder connector socket (6) at the top right of the camera.
5. Slide the microphone holder (4) onto the viewfinder and secure with the knurled screw (5).



Note

Always fit the microphone holder as it functions as a safety stop for the viewfinder.

6. To improve the comfort of the skin contact when using the viewfinder, fit the eye piece cover (3) to the rubber eyepiece. Spare eye piece covers (ordering number 3922 405 00461) are available via your Grass Valley representative.



1.1.2 Positioning the viewfinder

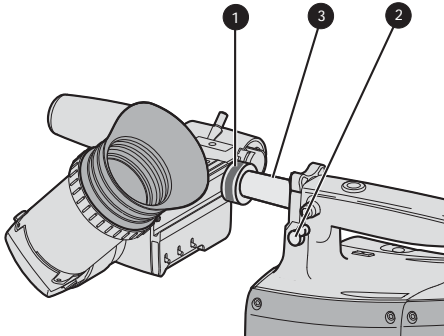
The horizontal position of the viewfinder can be adjusted as follows to suit your requirements:

1. Loosen the locking ring (1). (As seen from the rear of the camera, turning the locking ring counterclockwise moves it towards the handgrip.)
2. Slide the viewfinder horizontally along the rail to the desired position.
3. Tighten the locking ring (1) by turning clockwise.

The dioptre hood and eyepiece of the viewfinder can be rotated vertically.

The viewfinder can be positioned backwards and forwards along the camera axis. Loosen the support bracket round bar retaining lever (2) and slide the round bar (3) forwards or backwards. When the desired position is reached tighten the support bracket round bar retaining lever (2) again.

To use the viewfinder at a distance press the button (4) below or above the eyepiece tube and swing it free of the associated clip (5). The display can now be seen from further away.



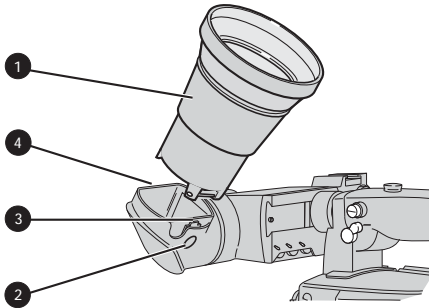
1.2 Viewfinder accessories

1.2.1 LDK 5390/00 Wide angle eyepiece

If you regularly use the viewfinder at a distance, for example, when you use the camera in the hand-held position, it is recommended that you fit the optionally available wide angle eyepiece. To fit the wide angle eyepiece proceed as follows:

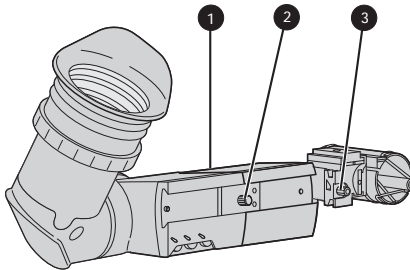
1. Hold the eyepiece (1) securely.
2. Press the button (2) below the eyepiece tube and swing it free of the button clip (3).
3. Press the button (4) above the eyepiece tube and remove the eyepiece.

4. Fit the wide angle eyepiece (1) to the two clips (3) ensuring that they both click into place.



1.2.2 LDK 5390/10 Left eye adaptor

A left eye adaptor is optionally available to allow the viewfinder to be used with the left eye. Before mounting the viewfinder onto the camera, attach the left eye adaptor (1) to the viewfinder and secure it using the screw (2). Do not forget to mount the microphone support bracket (3) at the end of the left eye adaptor.

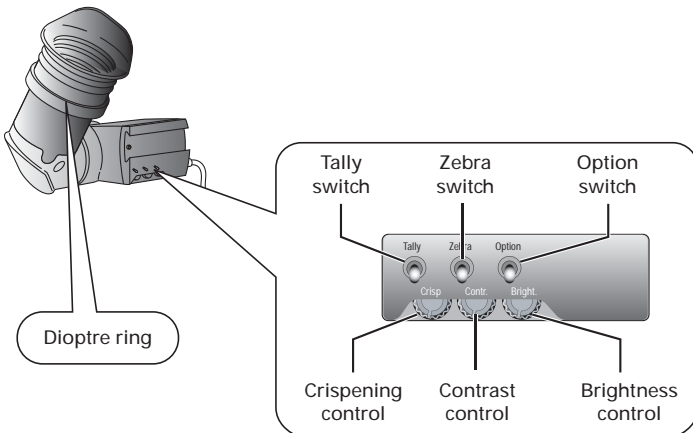


Chapter 2

Operation

2.1 Controls

Set up the viewfinder according to your own preferences; adjust viewing parameters, select markers, message boxes and on-screen display times in the VF menu.



2.1.1 Tally on/off switch

The red Tally indicators at the front of the viewfinder and at the rear of the handgrip light to indicate that the camera is On Air. The Tally switch is used to control the Tally indicators at the front of the viewfinder and the rear of the handgrip. When this switch is set to the Off position, the Tally indicator does not light even when the camera is On Air.

When the camera is On Air, the REC indicator in the viewfinder lights. When the studio ISO signal is received, the MEDIA indicator lights.

2.1.2 Zebra (exposure indication)

The Zebra function displays a zebra pattern in the viewfinder in areas where highlights occur. This diagonal line pattern warns you that the area affected has risen above a preset level of the full scale video exposure. Go to the VF > Zebra menu to turn Zebra on or off and to set the video levels at which the Zebra function works.

2.1.3 VF option switch

Not used.

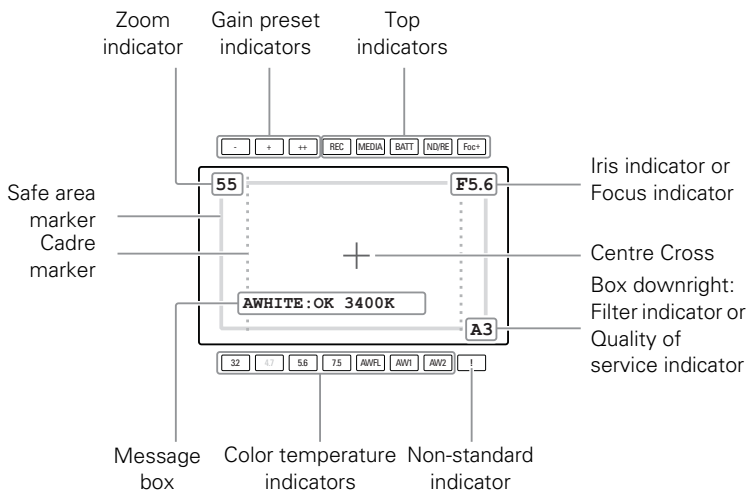
2.1.4 Viewfinder picture quality

Adjust the Brightness and Contrast controls according to your preferences. If you wish, use the Crispening (peaking) control to adjust the sharpness of the viewfinder picture (reduce the crispening when the gain is set to +++).

2.1.5 Dioptre adjustment

The dioptre of the viewfinder can be adjusted to suit your eyesight by turning the Dioptre adjustment ring. The range of the dioptre is +1 to -3.

2.2 Viewfinder markers and indicators



2.2.1 Screen markers

Go to the VF menu to select the markers you wish to see in the viewfinder screen. The following markers can be set up:

Marker	Description
Cadre marker	A dotted white line or a shaded area that shows the limits of a 4:3 (15:9 or 14:9) picture.
Safe area marker	Encloses an area that represents 80% of the whole viewfinder picture area. This is the minimum area seen on a TV-set.
Message box	Displays information messages.
Centre cross	Marks the centre of the picture

2.2.2 Screen indicators

Go to the VF menu to select the indicators you wish to see in the viewfinder screen. The following indicators can be set up:

Indicator	Description
Zoom indicator	Indicates the percentage to which the lens has been zoomed out or in, ranging from 0 (wide) to 99 (tele). It shows 50 if the lens does not support this feature.
Iris indicator	Indicates the iris opening (F -value) of the lens. Typical range is 1.4 to 25. Displays 'Closed' when the lens is closed or capped.
Focus indicator	Indicates the percentage of the focus distance range from 0 (close-up) to 99 (infinity).
Filter indicator	Indicates the selected optical filter.
Quality of Service indicator	When an HD Wireless system is in use, this indicator shows the quality of the wireless transmission link.



Note

Either the Iris indicator or the Focus indicator can be displayed in the viewfinder. When one of the indicators is turned on, the other is automatically turned off.

**Note**

When using an HD Wireless system Go to the VF > Box Downright item to select the Filter or the Quality of Service indicator to be displayed in the viewfinder screen. You can also switch off the indicator.

2.2.3 Gain preset indicators

The gain preset indicators at the top of the viewfinder light as follows:

Indicator	Function
-	Gain is - (-6 dB or -3 dB)
Off	Gain is 0 dB
+	Gain is + (3 dB, 6 dB or 9 dB)
++	Gain is ++ (6 dB, 9 dB or 12 dB)
+ and ++	Gain is +++ (12 dB)

2.2.4 Top indicators

The top indicators provide status information about the camera:

Indicator	Function
REC	Lights when the camera is On Air.
MEDIA	Lights when studio ISO recording has started.
BATT	Lights if the camera supply voltage is less than 11.5 V (when using a battery or an external supply).
ND/RE	Lights when an ND optical filter or the range extender is selected.
FOC+	Lights when the focus assist function is on.

2.2.5 Color temperature indicators

The color temperature indicators light as follows:

Indicator	Function
3.2	Lights when preset temperature of 3200 K is selected.
5.6	Lights when preset temperature of 5600 K is selected.
7.5	Lights when preset temperature of 7500 K is selected.
AWFL	Lights when a memory for fluorescent light (FL50 or FL60) is selected.
AW1	Lights when auto white balance memory 1 is selected.
AW2	Lights when auto white balance memory 2 is selected.

2.2.6 Non-standard indicator (!)

The non-standard video settings indicator (!) lights when one of the following conditions occur:

- exposure time is not set to the nominal value.
- black stretch is on.
- extended auto iris is on.
- AWC (continuous automatic white balance) or FL color temperature is on.

2.3 Focussing

A focus assist function can be switched on or off in the VF menu. This function adds motion in the viewfinder to objects in sharp focus. The FOC+ indicator in the viewfinder lights when this function is on.

The viewfinder zoom function is another feature that helps you focus. This function enlarges the centre of the viewfinder image. Choose one of the following buttons and the way it operates (momentary or toggle) to control this function in the Install menu:

- The VTR button on the camera.
- The VTR button on the lens.
- The RET switch on a zoom control when a large lens adaptor is used.

When the viewfinder zoom function is in use, many of the viewfinder markers are switched off to improve the clarity of the display. The FOC+ indicator in the viewfinder flashes when the viewfinder zoom function is active.

Chapter 3

Specifications

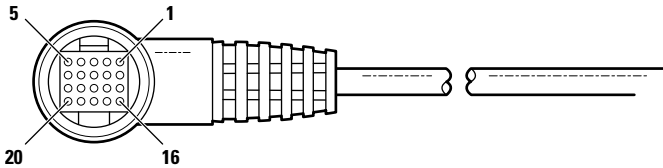
3.1 Technical specifications

3.1.1 General

Dimensions (L X W x H)	255 x 126 x 135 mm
Weight (approx.)	0.74 kg (1.6 lbs) without microphone and mic holder
Operating temperatures	-20 to +45 °C (-4 to +113 °F)
Storage temperatures	-25 to +60 °C (-13 to +140 °F)
Operating humidity	93%
Power supply	+10.5 VDC to 17 VDC (supplied by the camera)
Power consumption (max.)	10 W (supplied by the camera head)
Display type	2-inch CRT high resolution type
Linearity and geometry	Distortion: 1% within a circle with a diameter of picture height, 1.5% for outer region.
Resolution (horizontal)	Min. 650 lines in centre of screen at 400 cd/m ²
Frequency response	5 MHz within -1 dB to +2 dB with resp. to 0.1 MHz 10 MHz - 3 dB
Peaking	0 to 12 dB at approx. 3.5 MHz
Black level stability	Change of black level 1.5% with respect to white level
Controls	Brightness, Contrast and Peaking
Indicators	Tally light, On-Air, Yellow On-Air, Call signal

3.2 Connectors

3.2.1 Viewfinder connector (lead)



20-pin male viewfinder connector, moulded to the viewfinder cable
(manufacturer code: Hirose HR12-14LA20P)

Pin	Description	Pin	Description
1	-80 VDC	11	GND
2	Not connected	12	VF video
3	GND	13	Pb VF video return
4	INTN-D (I ² C interface)	14	Pr VF video return
5	Not connected	15	GND
6	Not connected	16	+Batt (10.5 to 17 VDC)
7	VF video return	17	-Batt (10.5 to 17 VDC)
8	SDA-D (I ² C interface)	18	Pb VF video
9	SCL-D (I ² C interface)	19	Pr VF video
10	Not connected	20	Shield



