L-Series Plus

OPERATING MANUAL

July 2024 • 1.1 • English

L5.0048799 / L04225

Disclaimer

Before using the product, be sure to read and understand all respective instructions.

The product is available for commercial customers only.

For product specification changes since this document was published, refer to the latest publications of ARRI data sheets or data books, etc., for the most up-to-date specifications.

Not all products and / or types are available in every country. Please check with an ARRI sales representative for availability and additional information.

The information given in this document is subject to change without notice.

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Imprint

Original version.

Initial Language

The initial language of this operating manual is English. Operating manuals in other languages are translations from English.

In the event of conflict between the respective languages (i.e. if any translation(s) of present document has/have been prepared for convenience or any other purpose), with regards to the meaning or interpretation of a word or an instruction etc., the contents and provisions of the English language version shall prevail.

For Further Assistance

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Content

1 About this Document

This operating manual is aimed at everyone involved in using the device. It provides directions on how to operate it safely and as intended. To ensure safe and correct use, all users must read the operating manual before using the device for the first time.

This operating manual is an essential part of the device. It must be easily accessible and in close proximity to the device so that users can use it as a reference anytime.

The separate user manual contains more detailed information about the features and functionalities of the device. Please visit the website www.arri.com to download the user manual.

Keep the operating manual, the user manual and all other operating and assembly instructions belonging to the device in a safe place for future reference and possible subsequent owners.

For useful information in addition to these manuals please have a look at the ARRI learn & help section on the ARRI website.

The ARRI Academy courses provide unrivalled insights into the full possibilities of working with ARRI camera systems, lenses, lighting systems and accessories.

Our advanced service training courses are designed to transfer detailed knowledge about how to service and repair all types of ARRI products and give you permanent access to detailed service instructions, special tools and service parts. To learn more, please visit ARRI academy or contact academy@arri.de.

For more details about the product, please refer to the ARRI website at:

L-Series Plus product page

The ARRI documentation portal provides important documents on the product for free download.

Please enter the following searchkeys in the search bar to retrieve the documents for the product:

L-Series Plus , L1.004880*

ARRI documentation portal

Document Revision History

Document ID: L5.0048799

Version	Release	Date	Note
1.0		April 2024	First release
1.1	L04225	July 2024	Added control network options

1.1 How to Use This Manual

How to Use This Manual

All directions are given from an operators point of view. For example, device right side refers to the right side of the device when standing behind the device and operating it in a normal fashion.

Connectors are written in all capital letters, for example "USB connector".

Buttons are written in italic typeface capital letters, for example *"PLAY button"*.

Menu paths are written in italic typeface, with menu and home in capital letters, for example *"MENU > Display Orientation > Normal"*.

2 About this Product

2.1 Introduction

Whereas other LED luminaires have taken forms that demand sacrifices in the quality of lighting designs, the L-Series Plus is unique in that it fits perfectly into established working practices. This means that lighting designers will not have to adapt their creative techniques, nor will studios have to change their operating procedures; conventional Fresnels can be exchanged for L-Series Plus Fresnels on a like-for-like basis, achieving substantial and immediate cost savings with minimal disruption.

2.2 Audience and Intended Use

The L-Series Plus luminaires are Fresnel luminaires with an LED light source. They are intended to be used in professional environments like studios, theaters and on film sets.

NOTICE

Not for Household use

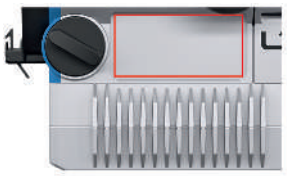
This device is intended for professional use only. It must be operated by qualified persons. It is not for household use.

NOTICE

The L-Series Plus is intended to illuminate persons and objects in a dry environment. The device meets protection class IP 20.

Always follow the safety information. Any usage other than described above is not permitted. It can damage the product and lead to associated risks such as short-circuit, fire, electric shock, etc. You are not allowed to modify the device.

2.3 Identification



The L-Series Plus serial number is located on the type plate on the left of the L-Series Plus beneath the focus knob.

The serial number consists of the last 4 digits of the product number e.g. L1.0048804-1234 (here: 1234).

2.4 Environmental Conditions

The L-Series Plus should only be used and stored under certain environmental conditions.

Check the following conditions before commissioning and operation:

Permissible Operating Temperature	-4° F / -20° C to +113° F / +45° C
Permissible Storage Temperature	-4° F /-20° C to +140° F / +60° C
Permissible Humidity	95% rH from -4° F /-20° C to +140° F / +60° C Non condensing

2.5 Technical data

Physical

	L5-C Plus	L7-C Plus
Dimension	see dimensional drawing	
Weight manual version (with yoke, spigot and mains cable, without accessories)	11.9 lb / 5,4 kg	19.2 lb / 8,7 kg
Weight P.O. version (with yoke, spigot and mains cable, without accessories)	16.0 lb / 7,3 kg	22.5 lb / 10,2 kg

Construction

Color	blue / silver or black
Housing	Composite and aluminum
Protection rating	IP 20
Protection class	I

Installation

Mounting	16 / 28 mm combo pin	28 mm junior pin
Approved Inclination	+/- 90°	
Minimum clearance around device	19.7 in / 0.5 m	
Minimum distance from light aperture to persons, objects or surfaces	19.7 in / 0.5 m	

Thermal

Cooling	Silent, temperature controlled fan cooling
Number of fans	1
Noise level (Quiet Mode)	20 dB(a)
Noise level (Variable)	up to 30 dB(a)
Noise level (High Temp)	30 dB(a)
	(measured in 39.4 in / 1,0 m distance)

Electrical

Power supply type	Self-adapting switching power supply unit	
Power supply range	100 - 240 V ~, 50-60 Hz	
Typical power draw	135 W	220 W
Power factor	< 0.9	< 0.9
THD (voltage)		

Control and Programming

	L5-C Plus	L7-C Plus
DMX channels	4 - 42	
Setting and addressing	Device menu, RDM, ALSM, web portal	
DMX compliance	ESTA DMX 512A (via ARRI Adapter Set)	
RDM compliance	ESTA DMX 512A (via ARRI Adapter Set)	
Art-Net compliance	Version 4	
sACN compliance	ANSI E1.31	
HTTP compliance	Web, mDNS Bonjour, PTP, NTP	
Firmware update	USB-A interface and ALSM	

Connectors

MAINS IN/THRU	Lockable power connectors (powerCON compatible)
DIMX IN/OUT	RJ-45 connector (via ARRI adapter set)
LAN 1/2	RJ-45 connector (EtherCON compatible)

Light Source

Type	100W RGBW LED light engine	180W RGBW LED light engine
Calibrated white light range	2.800 K - 10.000 K	
Colored light	RGBW color mixing	
Color rendition index CRI (3.200 K - 5.600 K)	> 92	> 94
TLCI (3.200 K - 5.600 K)	> 86	> 89
Green – Magenta point	+/-1 (full green to full magenta)	

Optical Path

Type	Fresnel, focussable	
Half peak beam angle	12° to 46°	12° to 45°
Zoom range	12° to 46°	12° to 45°

Dynamic Functions

Dimmer	electronic, 0 - 100%
Color mixing	RGBW color mixing (CCT, HSI, RGBW, Effect, XY, Gel, Source Matching)

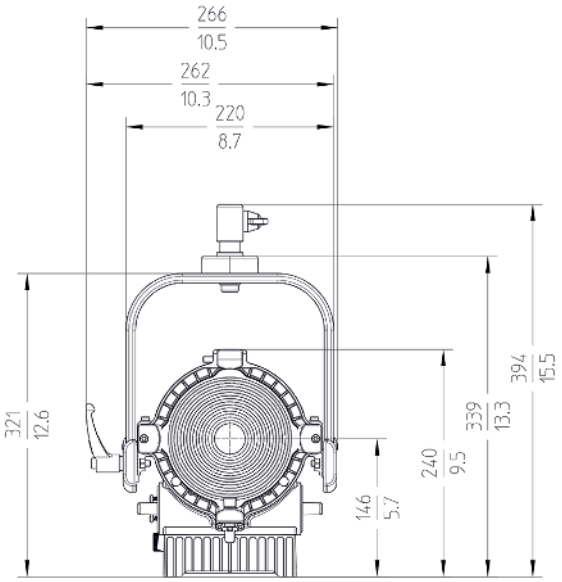
User Interface

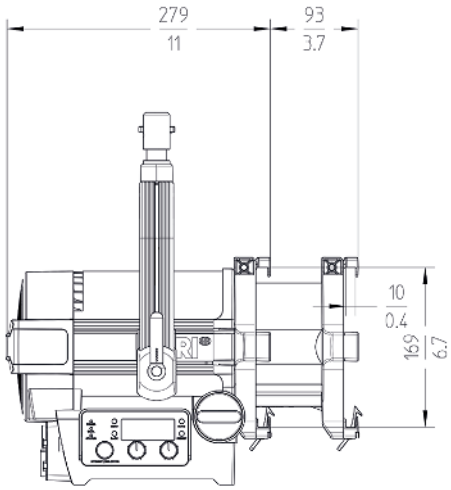
Device menu	On-Board Controller or remote control panel
USB-A port	

2.6 Dimensional Drawings

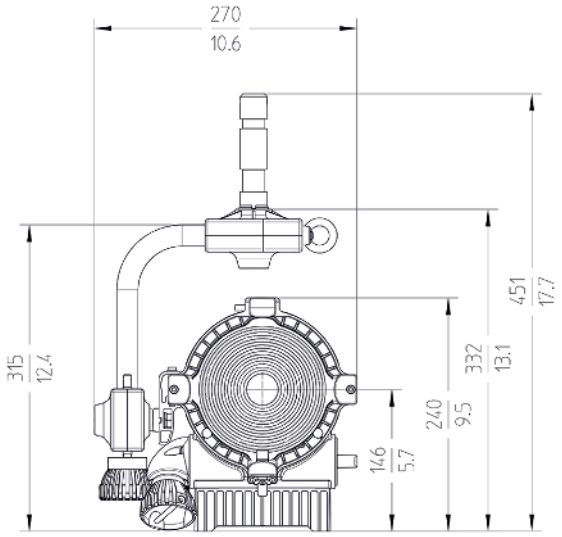
2.6.1 L5-C Plus

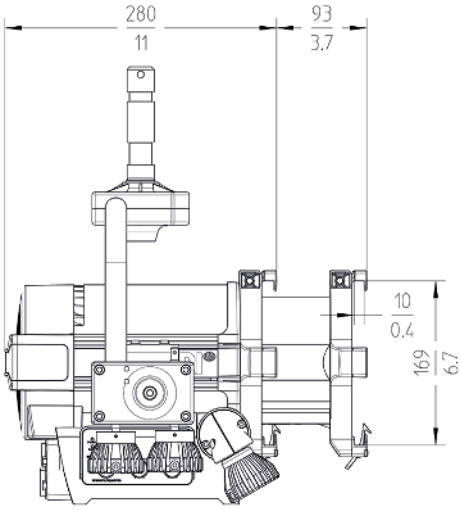
Manual Version





Pole Operated Version

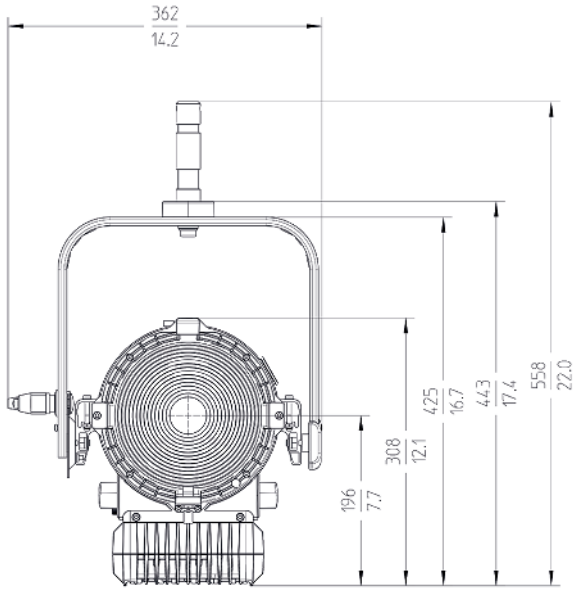


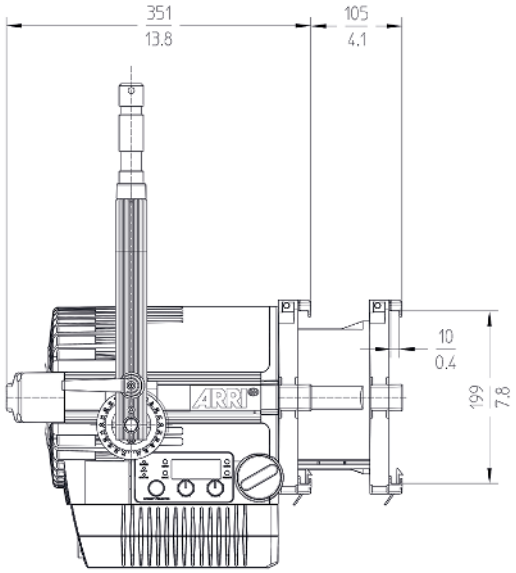


Above dimensions in millimeters, below dimensions in inches.

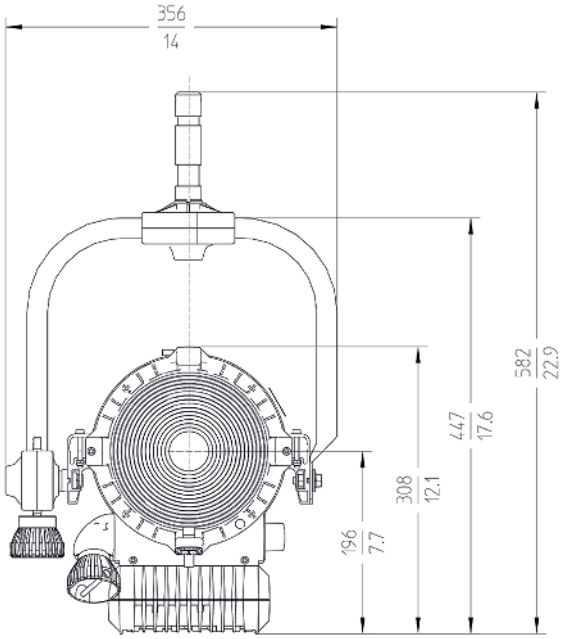
2.6.2 L7-C Plus

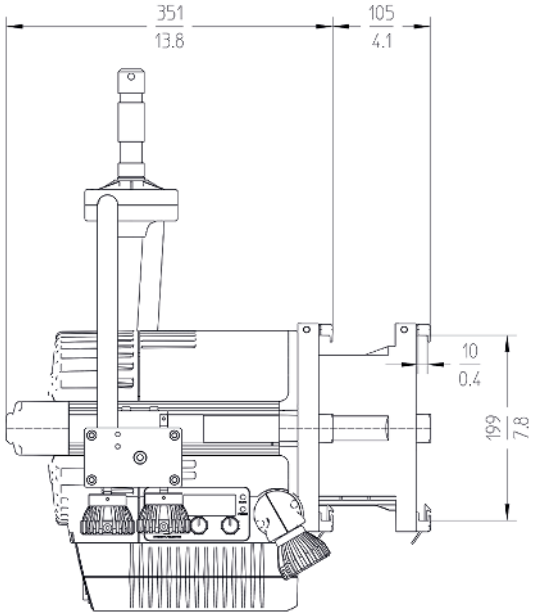
Manual Version





Pole Operated Version





Above dimensions in millimeters, below dimensions in inches.

2.7 Scope of Delivery and Warranty

NOTICE

The packaging consists of recyclable materials. For the sake of the environment, dispose the packaging material at a suitable disposal site. Always store, ship and dispose according to local regulations. ARRI is not liable for consequences from inadequate storage, shipment or disposal.

On delivery, please check if package and content are intact. Never accept a damaged or incomplete delivery.

Delivery

ARRI offers different L-Series Plus sets for different applications. Please visit the ARRI website and check the product catalog if you received a complete delivery.

Warranty

For scope of warranty, please ask your local ARRI service center. ARRI is not liable for consequences from inadequate shipment, improper use or use of third-party products.

2.8 To Replace the Light Source

NOTICE

To Replace the Light Source

The light source contained in this luminaire is replaceable. If the light source has reached the end of its operational life or if the light source fails before it reached the end of its specified operational life, please contact the manufacturer or his service agent or a similar qualified person.

2.9 Certifications and Safety Standards

CE (Europe)

CB (International)

ENEC (Europe)

cNRTLus (USA, Canada)

FCC (USA)

IC (Canada)

KC (South Korea)

Pending:

PSE (Japan)

3 Safety Instructions

This safety information is in addition to the specific operating instructions in general and must be strictly observed for safety reasons. Read and understand all safety and operating instructions before you operate or install the device. Retain all safety and operating instructions for future reference. Always follow the instructions in this and all documents supplied with the device to avoid injury to yourself or others and damage to the device or other objects.

Assembly and operation should only be carried out by trained staff familiar with the device. Only use the tools, materials and procedures recommended in this document. For the correct use of other equipment, see the manufacturer's instructions.

3.1 Structure of Safety and Warning Messages

These instructions use safety instructions, warning symbols and signal words to draw your attention to different levels of risk:

DANGER

DANGER indicates an imminent danger. If not avoided, death or serious injury will result.

Always follow the recommended measures to avoid this hazardous situation.

WARNING

WARNING indicates a possibly imminent danger. If not avoided death or serious injury may result.

Always follow the recommended measures to avoid this potentially hazardous situation.

CAUTION

CAUTION indicates a potentially imminent danger. If not avoided, slight or minor injuries may result.

Always follow the recommended measures to avoid this potentially hazardous situation.

NOTICE

NOTICE indicates a potentially harmful situation. If not avoided, the equipment or something in its surrounding may be damaged.

Always follow the recommended measures to avoid this situation.

HINT

Not relevant to safety, **HINT** provides additional information to clarify or simplify a procedure.

3.2 Warning Symbols and Product Labels

READ THE INSTRUCTIONS

Read all instructions carefully before installing, using or servicing the device. Refer to the ARRI website www.arri.com for the latest documentation.

NOT FOR RESIDENTIAL USE

Not to be used in residential areas. The device is intended for professional use only.

The device may only be operated by qualified persons.

CAUTION – GENERAL RISK!

General warning sign. Obey the general and local safety regulations.

DANGER OF LIFE! CAUTION – RISK OF ELECTRICAL SHOCK

Do not open the housing of the device. For safe operation, the housing must be completely closed at all times.

CAUTION – HIGH BEAM INTENSITY! RISK OF EYE INJURY!

Do not stare into the operating light source of the device.

CAUTION – OPTICAL RADIATION!

The device emits optical radiation such as UV, visible radiation, IR during operation. Always obey the minimum distance to persons and objects.

Obey the information about the photobiological hazards and risk group.

CAUTION – MOVING PARTS! RISK OF CRUSHING!

Do not crush your fingers or hands when moving the device or components of the device.

CAUTION – HOT SURFACE! RISK OF BURNING!

The device or parts of the device become hot during operation. Touch hot parts only with protective gloves.

CAUTION – SHARP ELEMENT! RISK OF CUTTING AND STITCHING!

Wear protective gloves when handling the element.

CAUTION – OBSTACLES! RISK OF STUMBLING AND FALLING!

Warning of obstacles on the ground.

DISCONNECT ELECTRICALLY

Disconnect electrically before re-lamping or carrying out any service or maintenance work or when the device is not in use.

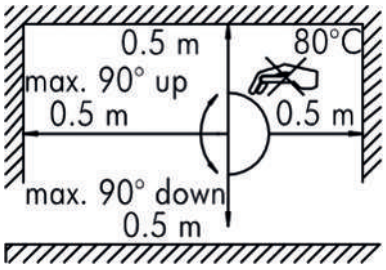
REPLACE DAMAGED COMPONENTS

Replace any cracked or scratched protective shields such as lenses, UV-screens, diffusions or housing parts immediately. Do not use a device with broken parts.

The device shall only be used complete with its protective shield.

Direct Current symbol found on electronics requiring or producing DC power.

Mandatory Safety Distances



Always observe the minimum distances to persons and flammable objects given on the type plate. Always observe the maximum tilt angle.

3.3 General Safety Instructions

DANGER

High voltage!

Risk of electric shock and fire.

- Read and understand all safety information and operation instructions before you operate or install the device or the system.
- Not to observe the safety information or general rules of reason may cause injury or death to yourself and others or damage to equipment.
- Use solely and exclusively as described in the instructions.
- Always check that the local AC power matches the voltage and frequency range printed on the type label of the device before use.
- Always earth the fixture electrically.
- Only use TN- or TT one phase power supplies and a power plug according to IEC 60309-1 or a similar national standard.
- Use only a power and connection cable designed for the device.
- Never use the cables for transportation.
- Never hang the device on its cables.
- Do not open the device. There are no user serviceable parts inside.
- In case of visible damage to cables or housings, the device must not be operated any longer.
- Never attempt to repair any part of the device on your own. Maintenance and repair work is only to be carried out by an authorized ARRI service center.
- Do not bypass or remove any safety feature of the device.

WARNING

Operation of the L-Series Plus in Case of Obvious Damage

Risk of electric shock and fire hazard caused by short circuit.

- Never use the device if electrical lines or housing are visibly damaged.
- Only use the type of power source indicated in the manual.
- Always grip the power plug to unplug the power cable.
- Do not lay cables over sharp edges (e.g. sheet metal, profile or other cut edges). Damaged cables can cause electric shock, short circuit or fire.
- Do not remove or deactivate any safety measures from the device (incl. warning stickers or paint marked screws).
- Do not try to repair the device. Repairs may only be carried out by an authorized ARRI service center.

WARNING

Humidity and Condensation

Risk of electric shock and fire.

- Never expose the product to rain or moisture.
- Do not use the product for 2 h when it was exposed to big temperature differences as condensed moisture may damage the product electrically when switched on.
- Do not bend the power cable directly after the connector. Water could immerse and cause short circuits and damage the connector.

WARNING

Overheating

Risk of fire.

- Do not operate the device if the ambient temperature exceeds +113° F / +45° C.
- Intensive use can cause the surface to become hot. Let the device cool down completely before you handle it.
- Never cover air vents during operation. Keep a minimum clearance around the air vents of 19.7 in / 0.5 m.
- Never point an intense light beam from light source to the device.
- Do not place the device on or nearby heat sources. Intense heat cause damage to the device or automatic power off during operation.

WARNING

Intense light.

Risk of injury and fire.

- Do not stare at an operating light source.
- Do not stare at the light output aperture. Risk of irreversible eye injury. Wear safety glasses. Keep a minimum distance to an illuminated surface, objects or persons of 19.7 in / 0.5 m.

Photobiological Safety

Risk Group 1* product according to EN 62471 and IEC/TR 62778 in specified minimum safety distance.

The L-Series Plus falls into the following risk groups according to EN 62471 and IEC/TR 62778 at the distances indicated below.

No photobiological hazard under normal behavioral limitation.

Distance

0.5 m / 1.46 ft

5.0 m / 16.4 ft (L5-C Plus)
7.0 m / 22.9 ft (L7-C Plus)

*The risk group listed here applies to the minimum distance specified. Further information regarding hazards due to optical radiation are present and can be requested from your dealer if necessary.

WARNING

Heavy weight

Risk of injury and damage.

- The yoke must be mounted hanging or standing vertically. Lateral load can cause deformation or breaking the spigot, its fixing screw and the yoke.
- Devices and accessories must be secured against fall when mounted above floor level. Always observe common and local safety regulations.
- Secure the device against tipping when standing on the floor. Always observe common and local safety regulations.
- Disconnect all cables prior to transport.

WARNING

Falling Components

If the device or its accessories are inadequately built up or assembled, it can fall down and cause serious injuries and damage to the device or property.

- Installation and operation can only be carried out by approved persons who know the device and the accessories. Obey the accident prevention regulations.
- Do not put the device on a not stable trolley or hand truck, stand, tripod, bracket, table or any other not stable support device.
- Always put the device on a dedicated support device.
- Secure the device and its accessories against falling and tipping over. Obey the general and local safety regulations.

WARNING

Connected Cable on the Floor

Risk of injury caused by tripping, falling or slipping over connected cables.

- Always properly secure cables connected to the device and accessories.
- Always install cables that they cannot be tripped over.
- If necessary, use a cable duct or secure the cables with adhesive tape.
- Always disconnect the cables from the device and accessories before moving.

CAUTION

Unintentional or Unexpected movement

Risk of crushing body parts. Narrow gaps and heavy weight.

- Crushing of fingers or hand between yoke and housing. Always wear protective gloves and keep your fingers out of the space between yoke and housing.
- Always wear protective gloves when mounting accessories.
- Never rest the device on your hand or foot. Risk of crushing fingers, hand or foot.

NOTICE

Parts Loosening Caused by External Vibration

Risk of damage to the L-Series Plus.

- ▶ Do not use in places where the device is subject to vibration.
- ▶ Do not store in places where the device is subject to vibration.

NOTICE

Use of Unauthorized Accessories and Service Parts

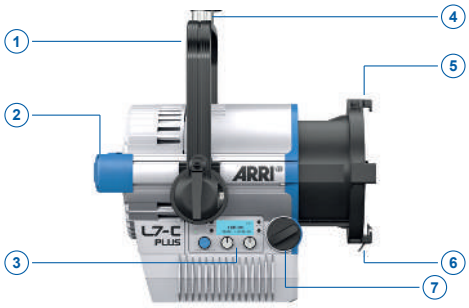
Risk of damage to the L-Series Plus

- ▶ Do not use any accessories and service parts that are not recommended by ARRI. They may damage any connected devices and invalidate the warranty.

4 Product Overview

4.1 Overview Manual Version

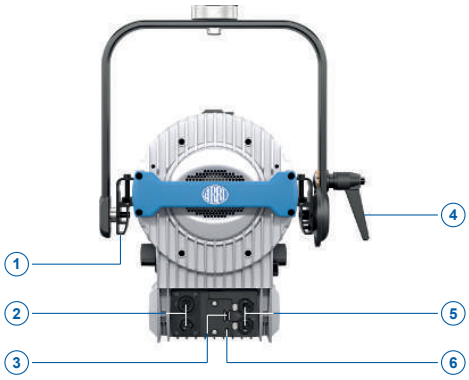
Right Side View



1 Yoke
2 Handle (L7-C Plus only)
3 Device menu
4 16/28 mm Combo Pin (L5), 28 mm spigot with Flange (L7). *
5 Top latch
6 Safety catch
7 Focus knob

**Combo Pin and spigot not shown in the illustration.*

Back Side View



1 Yoke bracket
2 MAINS In / Out
3 USB-C port
4 Tilt lock lever
5 Control data In / Through
6 Reset

4.2 Overview P.O. Version

Right Side View

1 Pan (blue)
2 Tilt (white)
3 Focus (yellow)

5 Mounting and Assembly

5.1 To Install a Safety Rope

WARNING

Risk of falling

Always attach an approved safety rope to secure the device and accessories against clamp or bracket failure when the device is mounted above floor.

The safety rope needs to be approved for at least 10 times the weight of the product including all accessories mounted to the product. The safety rope must comply with EN 60598-2-17 Section 17.6.6. It must be approved by an official body such as TÜV.

The rigging structure needs to be approved for the weight of all devices, equipment and cables installed on it.

Lead the safety rope through the safety rope attachment and the structure the device is mounted to.

Keep the safety rope as short as possible, but as long as necessary.

Block access below the work area and work from a stable platform whenever installing, servicing or moving the device or accessories.

The L-Series Plus uses the yoke as safety rope attachment. Loop the safety rope through the yoke and around the truss or another sure anchoring point. Remove as much slack as possible from the safety rope by looping it more than once around the truss chord, for example.

5.2 To Adjust the Yoke

On delivery the yoke is in the basic position (tilted back). To adjust the yoke you need:

- a T20 screw driver.

Loosen the T20 screws on both sides of the yoke bracket slightly and pull the yoke bracket towards the rear of the device. Loosen the lever of the tilt-lock and tilt the yoke upwards.

Slide the yoke to the center of gravity. The center of gravity depends on the accessories mounted at the device. Tighten both T20 screws of the yoke brackets. Do not overtighten the screws.

Tilt the yoke to the desired position and tighten the tilt-lock by using the lever. For better leverage, press the knob on the tilt-lock-lever and turn the lever to the desired position.

5.3 To Mount the Spigot

To mount the spigot you need these tools:

- a 10 mm allen socket
- a torque wrench.

To mount the spigot:

1) Place the flange and the spigot on the 13 mm hole in the middle of the yoke.
2) Insert the allen screw with washer and spring washer from the opposite side.
3) Tighten it with a torque wrench with 10 mm allen socket to 37 ft-lbs torque.

5.4 To Mount the Device

Always observe all safety information listed in section “General Safety Instructions [▶ 16]” when you mount the device and accessories:

Be aware of the maximum tilt angle of +/- 90°.

Ensure that you install all accessories correct when you mount the device above floor level:

- Top latched locked, safety catch snapped in.
- Set up tripods in a stable position. Tripods need to be approved for the load they need to carry.
- Always observe the additional load of cables and accessories!

Please observe the information given in the „Safety leaflet ARRI lampheads“ (L5.40731.E), which is available for download on the ARRI website www.arri.com.

6 Basic Operation

6.1 Pan and Tilt

Loose the mounting screw of the tripod or the appropriate fixing screw of the mounting clamp to pan the device. Tighten the screw to avoid unintended movement.

Hold the handle and loose the tilt lock lever. Tilt the device to the desired angle.

CAUTION! Tighten the tilt lock lever to avoid unintended movement.

On P.O. versions use the blue gear to adjust Pan and the white gear to adjust tilt. Both gears are self-impeding to avoid unintended movement.

6.2 To Adjust the Beam Angle

Turn one of the focus knobs beneath the lens tube or the yellow P.O. gear to adjust the beam angle continuously. The entire lens tube moves in and out. Two mechanisms protect the device from being damaged:

• A predetermined braking point prevents the device from damage, when the focus knob is turned with too high torque at either end of the focus range.

• The self-impeding focus gear prevents the lens tube to move itself in or out when the device is operated in a tilted position.

6.3 Use of Accessories for Beam Shaping

You can mount accessories such as a barndoor, filter frame or scrim on the front side of the device:

- Firmly press the button at the side of the top latch to open the top latch.
- Insert the accessory from the upside into the brackets until the safety catch engages. Slightly tilt the safety catch with your finger for support.
- Close the top latch. Make sure that the hook of the top latch engages into the holding ring of the accessory.

6.4 Switching on and off

The L-Series Plus has no mains switch.

To switch the device on or off:

- Use an external mains switch, or
- Use the power connector as a mains switch:
  - Connect the mains cable with the power source.
  - Insert the power cable connector without force in the power input socket.
  - Turn the connector clockwise to switch the device on, or
- Dim the intensity to zero (no light output) and turn the power cable mains in connector counterclockwise to switch the device off.

After connecting the device to the power source or switching it on via an external mains switch the device initializes and is ready for operation.

The device will operate with the settings made on the control panel or received by DMX / RDM, Art-Net or sACN.

6.5 Control Network

To control the L-Series Plus remotely you need to set up a network.

The device supports three control methods:

- Wired DMX / RDM via ARRI cable adapter set L2.0051206
- Wired Ethernet (Art-Net, sACN, HTTP)
- Wired Art-Net / sACN to DMX gateway. One device converts the wired Art-Net / sACN signal to a wired DMX signal for subsequent devices.

The device is equipped with two RJ45 Ethernet sockets. They are used both for connection to a DMX / RDM network and for connection to an Ethernet network. The device supports Art-Net and sACN network protocols.

NOTICE

Non-functional Control Network Due to the Use of Unsuitable Cable Adapters

The device uses its RJ45 sockets for both receiving and transmitting Art-Net / sACN and DMX control data. The ANSI E1.11-2008 standard does not support DMX and LAN signals in parallel on RJ45 connectors.

- ▶ Always use suitable cable adapters. Commercial RJ45 to XLR adapters with a pin assignment according to ANSI E1.11-2008 will not work.
- ▶ ARRI offers suitable, non-standard cable adapters. Please ask your ARRI dealer for detailed information.
- ▶ If you prefer to assemble the required cable adapters yourself, you will find the pin assignments below.

The pin assignment on both RJ45 sockets of the L5+ and L7+ is:

RJ45 Pin	Signal	Note
1	TX +	Transceive Data +
2	TX -	Transceive Data -
3	RX +	Receive Data +
4	Shield GND	Shield / DMX GND
5	Shield GND	Shield / DMX GND
6	RX -	Receive Data -
7	Data +	DMX Data +
8	Data -	DMX Data -

6.5.1 DMX / RDM Control

Tips for a Reliable DMX / RDM Data Transmission

Although the connectors are RJ45 type connectors, you need to follow the rules for DMX / RDM control networks. Use

- shielded twisted-pair cable designed for RS-485 devices, or
- CAT 6 network cables with RJ45 connectors.

Standard microphone cable cannot transmit control data reliably over long runs. 24 AWG cable is suitable for runs up to 300 meters (1000 ft.). Heavier gauge cable and/or an amplifier is recommended for longer runs.

To split a daisy chain, use a DMX splitter. Use an RDM compatible splitter when you use the RDM functionality.

Install a DMX termination plug on the last device of every DMX daisy chain. Terminate the DMX daisy chain on both ends, when you use the RDM functionality. Ask your system specialist for details.

6.5.1.1 About ARRI Cable Adapters

ARRI offers three cable adapters for creating data links with L-Series Plus devices only, mixed with other devices and/or controlled via Art-Net / sACN, DMX or Art-Net / sACN to DMX Gateway.

1 Cable Adapter No. 1: RJ45 connector to RJ45 socket

2 Cable Adapter No. 2: RJ45 connector to 5-pin XLR socket

3 Cable Adapter No. 3: RJ45 connector to 5-pin XLR connector

The cable adapters are available as a set only. The order number for the set is L2.0051206.

NOTICE

Standard XLR / RJ45 Pin Assignment Not Commonly Used

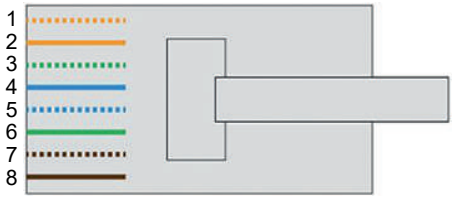
- ▶ The pin assignment of RJ45 to XLR adapters is defined in ANSI E1.11-2008. Unfortunately, the standard assignment it is not commonly used. Do not use third-party adapters unless you confirmed the correct pin assignment.
- ▶ Please note that the pins 4 and 5 of the XLR connector are not connected and are not fed through. You cannot transmit any control signals via pins 4 and 5 when using these cable adapters.

ARRI Cable Adapter No. 1: RJ45 to RJ45

The ARRI cable adapter No. 1 is used for

- Standard Art-Net / sACN data connections, if you don't want to monitor the gateway setting of the devices in the data link,
- Data connection between the lighting controller and the first L-Series Plus device, in a scenario where that first device is being used as an Art-Net / sACN to DMX Gateway. The ARRI cable adapter No. 1 isolates DMX data which might be active on pins 4, 5, 7, and 8, from the lighting controller's Art-Net / sACN connection

The pin assignment on both the socket and the connector is:



RJ45 Pin	Color	Signal	Note
1	White/ orange	TX +	Transceive Data +
2	Orange	TX -	Transceive Data -
3	White/ green	RX +	Receive Data +
4	Blue	-	-
5	White/ blue	-	-
6	Green	RX -	Receive Data -
7	White/ brown	-	-
8	Brown	-	-

ARRI Cable Adapters No. 2 and No. 3: RJ45 to 5-pin XLR Socket / Connector

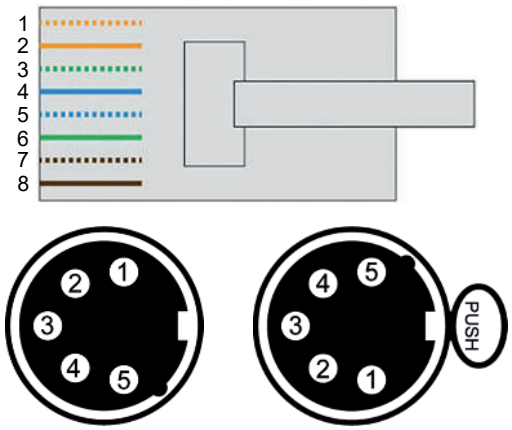
The ARRI cable adapters No. 2 and 3 are used to set up a:

- DMX / RDM only control network, and
- Art-Net / sACN to DMX / RDM network (Art-Net / sACN to DMX Gateway).

ARRI cable adapter No. 2 is the adapter RJ45 connector to 5-pin XLR socket.

ARRI cable adapter No. 3 is the adapter RJ45 connector to 5-pin XLR connector.

The pin assignment is:



RJ45 Pin	Color	Signal	XLR Pin	Note
1	White/ orange	-	-	-
2	Orange	-	-	-
3	White/ green	-	-	-
4	Blue	GND	1	Shield GND
5	White/ blue	GND	1	Shield GND
6	Green	-	-	-
7	White/ brown	Data +	3	DMX Data +
8	Brown	Data -	2	DMX Data -
			4	-
			5	-

6.5.1.2 To set up a DMX Network with only L-Series Plus Devices

DMX Network with RJ45 Network Cables

To create a DMX network with L-Series Plus only and with RJ45 network cables you need:

- An ARRI cable adapter No. 3,
- RJ45 network cables

To create the DMX network:

1. Connect a 5-pin XLR DMX cable to the DMX data output of the lighting controller or DMX splitter.
2. Connect an ARRI cable adapter No. 3 to the DMX cable.
3. Connect the RJ45 connector of the ARRI cable adapter No. 3 to one of the RJ45 sockets of the first L-Series Plus device in the daisy chain. It does not matter which RJ45 socket is used.
4. Connect the next L-Series Plus using an RJ45 network cable. Again, it does not matter which RJ45 socket is used.
5. Repeat step 4, until all L-Series Plus devices of the DMX daisy chain are connected.

Terminate each daisy chain. The L-Series Plus provides internal DMX termination. Activate the termination (*Menu* > *DMX* > *Termination* > *On*) on the last L-Series Plus of the data link.

DMX Network with 5-pin XLR DMX Cables

To create a DMX network L-Series Plus only and with DMX data cables you need:

- ARRI cable adapters No. 2 and No. 3,
- 5-pin XLR DMX cables

To create the DMX network:

1. Connect a 5-pin XLR DMX cable to the DMX data output of the lighting controller or DMX splitter.
2. Connect an ARRI cable adapter No. 3 to the DMX cable.
3. Connect the RJ45 connector of the ARRI cable adapter No. 3 to one of the RJ45 sockets of the first L-Series Plus device in the daisy chain. It does not matter which RJ45 socket is used.
4. Connect an ARRI cable adapter No. 2 to the other RJ45 socket of the L-Series Plus device. Again, it does not matter which RJ45 socket is used.
5. Connect a DMX data cable to the ARRI cable adapter No. 2.

6. Connect an ARRI cable adapter No. 3 to the XLR socket of the DMX data cable.
7. Run the DMX data cable to the next L-Series Plus device. Connect the RJ45 connector of the ARRI cable adapter No. 3 to one of the RJ45 sockets.
8. Repeat steps 4 to 7, until all L-Series Plus devices of the DMX daisy chain are connected.

Terminate each daisy chain. The L-Series Plus provides internal DMX termination. Activate the termination (*Menu* > *DMX* > *Termination* > *On*) on the last L-Series Plus of the daisy chain.

6.5.1.3 To set up DMX Networks with L-Series Plus and Other Devices

To create a DMX network consisting of L-Series Plus devices and other devices you need:

- ARRI cable adapters No. 2 and No. 3,
- 5-pin XLR DMX cables,
- Optional: RJ45 network cables

To create the DMX network:

1. To connect the lighting controller or DMX splitter to the first device of the daisy chain:

   If the first device of the daisy chain is an L-Series Plus *device:*

   Connect a DMX cable to the DMX data output of the lighting controller or DMX splitter.

   – Connect the XLR socket of the DMX data cable to the ARRI cable adapter No. 3.
   – Connect the RJ45 connector to one of the RJ45 sockets of the first L-Series Plus device in the daisy chain. It does not matter which RJ45 socket is used.

   If the first device of the daisy chain is another device:

   – Connect the DMX data output of the lighting controller or DMX splitter to the DMX data input of the first device using a standard DMX data cable.

2. To connect additional devices to your daisy chain:

   Daisy chaining from an L-Series Plus *device to another device:*

   – Connect the RJ45 socket of the L-Series Plus device to an ARRI cable adapter No. 2.
   – Connect the XLR socket of the ARRI cable adapter No. 2 to a standard DMX data cable
   – Connect the XLR socket of the DMX data cable to the DMX input of the next device.

   Daisy chaining from an L-Series Plus *device to another* L-Series Plus *device:*

   – Plug an RJ45 network cable into the unused RJ45 socket of the first L-Series Plus, and connect to either of the RJ45 sockets of the next L-Series Plus.

   Daisy chaining from another device to an L-Series Plus *device:*

   – Connect the DMX output of the device to a DMX data cable.
   – Connect the XLR socket of the DMX data cable to the XLR connector of the ARRI cable adapter No. 3.
   – Connect the RJ45 connector of the ARRI cable adapter No. 3 to one of the RJ45 sockets of the L-Series Plus device.

   Daisy chaining from another device to another device:

   – Connect the DMX data output from the device with the DMX data input of the next device using a standard DMX data cable.

3. Repeat step 2, until all L-Series Plus devices of the DMX daisy chain are connected.

Terminate each daisy chain by connecting a DMX terminator to the DMX data output of the last device of the DMX data link. The L-Series Plus provides internal DMX termination. Activate the termination (*Menu* > *DMX* > *Termination* > *On*) on the last L-Series Plus of the data link.

6.5.2 Ethernet Control

The L-Series Plus supports Art-Net, sACN and HTTP. Art-Net and sACN are network protocols to control devices.

Here is a brief explanation of some basic terms being used by Art-Net. For more detailed information, please visit the web site of the Art-Net developers: www.artisticlicence.com.

The L-Series Plus is capable of processing Art-Net for up to ten universes with one sender and three universes with two senders.

Generals rules of thumb:

- Use a maximum of 4 universes of Art-Net Art-DMX unless you really have to, or
- all universes of sACN.

Please find more information about sACN in the standard ANSI E1.31. Please obey all information given there to set up a proper network.

Tips for a Reliable Ethernet Data Transmission

In lighting technology, twisted pair Ethernet is primarily used to set up networks. The network is built using active or passive hubs and switches. Please note:

- Always follow the 5-4-3 rule. The rule states that the network between any two nodes may consist of a maximum of five segments, may be connected via a maximum of four repeaters and only three of these segments may contain end devices.
- Only use CAT 6 quality network cables or higher. The maximum cable length is 100 m.
- Indoors, network cables with standard RJ-45 connectors can be used to set up the data link.
- Outdoors, always use network cables which fulfill protection rate IP 66 when connected. The ethernet connectors of the device are EtherCON compatible.
- Use only unmanaged switches to minimize signal delay.

Ask your system specialist for details.

6.5.2.1 To set up an Ethernet Network

To create an L-Series Plus ethernet network with RJ45 network cables you need:

- RJ45 network cables

To create the ethernet network:

1. The option *Gateway* must be set to OFF on all devices of the network (please find detailed information about the device menu in the L-Series Plus user manual. The user manual is available for free download on the ARRI documentation portal).
2. Connect the ethernet data connector from the controller (or a switch) to an RJ45 network cable.
3. Connect the RJ45 connector of the RJ45 network cable to one of the RJ45 sockets of an L-Series Plus device of the network.
4. Run an RJ45 network cable from the unused RJ45 socket of the L-Series Plus device to an RJ45 socket of the next
   L-Series Plus device using an RJ45 network cable.
5. Repeat steps 3 and 4, until all L-Series Plus devices of the ethernet network are connected.

NOTICE

No Active Gateways in a Network

No device of the network may be an active Art-Net / sACN to DMX gateway. Set the option *Gateway* to OFF on all devices of the network. Otherwise the devices will not react to control signals as expected.

You can use ARRI cable adapters No. 1 between each device of the network to isolate DMX data, if a gateway is set to ON erroneously (or if you don't want to monitor the gateway settings of each device of the network).

6.5.2.2 To Set up an Art-Net / sACN to DMX Gateway Network

An L-Series Plus device can be used as a DMX gateway in a daisy chain. A DMX gateway converts the Art-Net or sACN data into DMX data. This DMX data is outputted from the gateway device and can be sent to other devices via a standard DMX daisy chain.

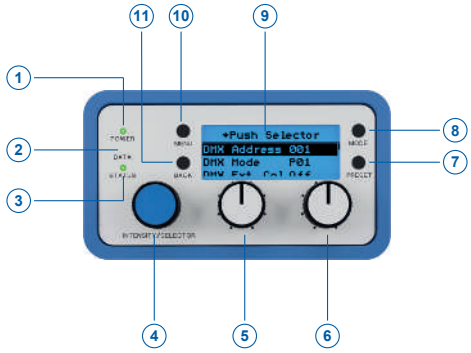
To create a DMX Gateway link you need:

- An ARRI cable adapter No. 1,
- RJ45 network cables,
- ARRI cable adapters No. 2 and No. 3,
- DMX data cables as described in section “DMX / RDM Control [▸ 24]”.

To create the DMX Gateway network:

1. Connect an RJ45 network cable to the RJ45 network data socket of the lighting controller (or a switch).
2. Connect the RJ45 network cable to an ARRI cable adapter No. 1.
3. Connect the RJ45 connector to one of the RJ45 sockets of the first L-Series Plus device in the network.
4. Open the menu on the first device and set the option *Gateway* of the device to ON (please find detailed information about the device menu in the L-Series Plus user manual. The user manual is available for free download on the ARRI documentation portal).
   – If you do not want the first L-Series Plus device in the network to be the DMX gateway, connect the devices to each other as described in section “To set up an Ethernet Network [▸ 28]“, steps 2 to 4.
   – Open the menu on the device which is meant to be the DMX gateway. Set the option *Gateway* to ON.
5. Create a DMX daisy chain, starting with the data output of the DMX gateway device, as described in section “DMX / RDM Control [▸ 24]”.

7 Menu Operation



1 Power LED
2 Data LED
3 Status LED
4 Encoder
5 Central rotary knob
6 Right rotary knob
7 Preset button
8 Mode button
9 Display
10 Menu button
11 Back button

POWER LED (1)

Color	Indication
Green	Device switched on. No error.
Off / No Color	Device switched off.

DATA LED (2)

Color	Indication
Blue	Receiving a valid DMX signal.
Purple	Host mode active
White	Receiving a valid Art-Net signal or communicating via RDM, Gateway active
Green	Receiving a valid Art-Net signal, Gateway not active
Orange	Receiving a valid sACN signal, Gateway active
Cyan	Receiving a valid sACN signal, Gateway not active
Red	No communication between menu board and controller board.
No Light	The device receives no valid control signal.

STATUS LED (3)

Color	Indication
Green	No error. Normal temperature.
Red Flashing (0,5s rhythm)	Warning device over temperature (only with fan modes QUIET and HIGH).
Red	Error detected. An error message appears in the display. Calibration data not loaded.

Display Backlight (9)

Color	Indication
Blue or Off	No error, normal condition.
Red	The display lights up red when the STATUS LED lights up red (error message).
Orange	The display lights up orange when the POWER LED lights up red.

Encoder (4)

The encoder (4) has two functions:

- **Device menu closed:** Setting the intensity.
- **Device menu open:** Use the encoder to scroll through the menu, open sub menus and set parameters. Press the knob to open sub menus and confirm settings.

Central Turn Knob (5)

Use the turn knob to set the color temperature (CCT) or the color hue (HUE). The current function of the turn knob is shown in the display (9) above the knob.

Right Turn Knob (6)

Use the turn knob to set the green/magenta point or the color saturation (SAT) or, dependent on the active color mode, categories or parameters. The current function of the turn knob is shown in the display (9) above the knob.

PRESET (7)

Use the PRESET button to call up or store a light preset or a DMX preset.

MODE (8)

Use the MODE button to swap between CCT, HSI, GEL, Source Matching, RGBW mode and x, y mode of the L-Series Plus. Press MODE long (> 3 sec.) to activate the extended color control.

DISPLAY (9)

The display shows the current settings and other information during normal operation. Press MENU (10) to open or close the menu. Use the encoder (4) and BACK (11) to navigate through the menu.

MENU (10)

MENU opens the device menu. Press MENU when the menu is open to close the menu and abort an action (Escape). Use the encoder (4) to scroll through the menu, open sub menus and set parameters.

Press MENU long to display the menus which are used most.

Back (11)

The BACK button closes a sub menu and aborts an action (Escape). Compared to the MENU button (10) the BACK button only closes the sub menu, but not the fixture menu.

Press BACK long to display the last used menus.

To lock the device menu

Use the feature to prevent an accidental change of settings.

1) Press the encoder (4) in the home screen for 5 seconds to lock all buttons and knobs.
2) The word LOCKED appears on the display when locked.
3) Press the encoder (4) in the home screen for 5 seconds again to unlock all buttons and knobs.

8 Maintenance, Cleaning and Repair

8.1 Maintenance

Clean the device periodically. You may also upload firmware to the device via the Ethernet connector or the USB port using firmware and instructions from ARRI. All other service operations on the device must be carried out by a certified ARRI service center.

The global ARRI service organization and its approved agents can provide on-site service and maintenance. They give you access to ARRIs expertise and product knowledge in a partnership that will ensure the highest level of performance throughout the product's lifetime. Please contact ARRI for details.

ARRI applies the strictest possible calibration procedures. ARRI uses the best quality materials available to ensure optimum performance and the longest possible component lifetimes. However, optical components are subject to wear and tear over the life of the product. They result in gradual changes in color over many thousands of hours of use. The extent of wear and tear depends heavily on operating conditions and environment. It is impossible to specify precisely whether and to what extent performance will be affected.

However, you may eventually need to replace optical components if their characteristics are affected by wear and tear after an extended period of use and if you require luminaires to perform within very precise optical and color parameters.

WARNING

Read the safety information before maintaining the device.

WARNING

Intense Light

Risk of injury. The device can light up suddenly when connected to power.

- ▶ Disconnect the device from mains power before handling.
- ▶ Do not stare into the light output aperture. Wear safety glasses.

WARNING

Hot surface

Risk of burning. The device becomes hot during operation.

- ▶ Disconnect the device from mains power before handling.
- ▶ Let the device cool down completely before handling.

WARNING

High Voltage

Risk of injury. The device contains components that are accessible and live at high voltage while the device is connected to power.

- ▶ Disconnect the device from mains power before handling.
- ▶ Some components can remain under tension for 30 min. after power is disconnected.
- ▶ Only a certified ARRI service center is permitted to open the device.

NOTICE

Excessive dust, smoke fluid and particle buildup degrades performance. It causes overheating and will damage the device. Damage caused by inadequate cleaning or maintenance is not covered by the product warranty.

You can carry out external cleaning as described in this section. Follow the warnings and instructions provided. Any service operation not described in this operating manual or in the user manual must be referred to a certified ARRI service center.

8.2 Cleaning

Regular cleaning is very important for device life and performance. Buildup of dust, dirt, smoke particles, fog fluid residues, etc. degrades the light output and cooling ability.

Cleaning schedules vary greatly. They depend on the operating environment. It is therefore impossible to specify precise cleaning intervals for the device.

Cooling fans suck in airborne dust and smoke particles.

Use in aggressive operation environment (e.g. at the seaside, on ships, near salt water, on industrial plants) may cause corrosion and degrade optical components if not kept clean.

In extreme cases the device needs cleaning after surprisingly few hours of operation.

Environmental factors that may require frequent cleaning include:

- Use of smoke or fog machines.
- High airflow rates (near air conditioning vents, for example).
- Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor locations, for example).

If one or more of these factors is present, inspect the device within its first few hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation. If in doubt, consult a certified ARRI service center about a suitable maintenance schedule.

Work in a clean, well lit area.

1) Use gentle pressure only when cleaning.
2) Do not use any cleaning product that contains abrasives.
3) Do not use solvents. Use care when cleaning optical components: surfaces are fragile and easily scratched.

   ⇨ To clean the device:
4) Disconnect the device from the power source. Allow it to cool down completely.
5) Vacuum or gently blow away dust and loose particles from the outside of the device and the air vents with low-pressure compressed air.
6) Clean the front lens by wiping gently with a soft, clean, lint-free cloth moistened with a weak detergent solution. Do not rub the surface hard: lift particles off with a soft repeated press.
7) Dry with a soft, clean, lint-free cloth or low-pressure compressed air. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water.
8) Check that the device is dry before reapplying power.

8.3 Repair

WARNING

Repairs carried out by untrained persons

Risk of electric shock and fire hazard caused by short circuit.

- ▶ Do not try to repair the device yourself. Repairs may only be carried out by a certified ARRI service center.

Only carry out the maintenance and repair work described in this manual.

For any further repairs and maintenance work on the device, please contact a certified ARRI service center or service-lighting@arri.de.

9 Transportation, Storage and Disposal

9.1 Transportation

NOTICE

Improper Packing and Transportation of the Device

Risk of damage to the device.

- ▶ Follow the specified environmental conditions.
- ▶ Only transport the device and accessories in suitable cases.
- ▶ Follow the instructions for transport and storage in this section.

Please take note of the following guidelines.

Transportation Guidelines:

- Remove all accessories and cables from the device.
- Always attach the protective caps, where present.
- Always transport the device in a suitable case.
- Do not subject the device to severe shocks.

9.2 Storage

Storage Guidelines:

- Disconnect all cables and power sources from the device.
- Do not pack a damp device. The device must be dry before you put it in a case.
- Always store the device in a suitable case.
- Do not store the device outside of the specified ambient temperature range.
- Do not store the device in places where it may be subject to extreme temperatures, direct sunlight, high humidity, severe vibration, dust or strong magnetic fields.

9.3 Disposal

NOTICE

You can return the product to the manufacturer Arnold & Richter Cine Technik GmbH & Co. Betriebs KG for disposal.

When you dispose third party accessories, please observe the instructions of the relevant manufacturer.

This product falls within the scope of Directive 2012/19 / EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of June 4, 2012 on waste electrical and electronic equipment (WEEE II).

Accordingly, this product must not be disposed of with household waste. There are the respective country-specific disposal rules that must be observed.

10 ARRI Service Contacts

Please see the current list of service partners at service contacts.

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Notes

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