



L-Series®

L10

User Manual

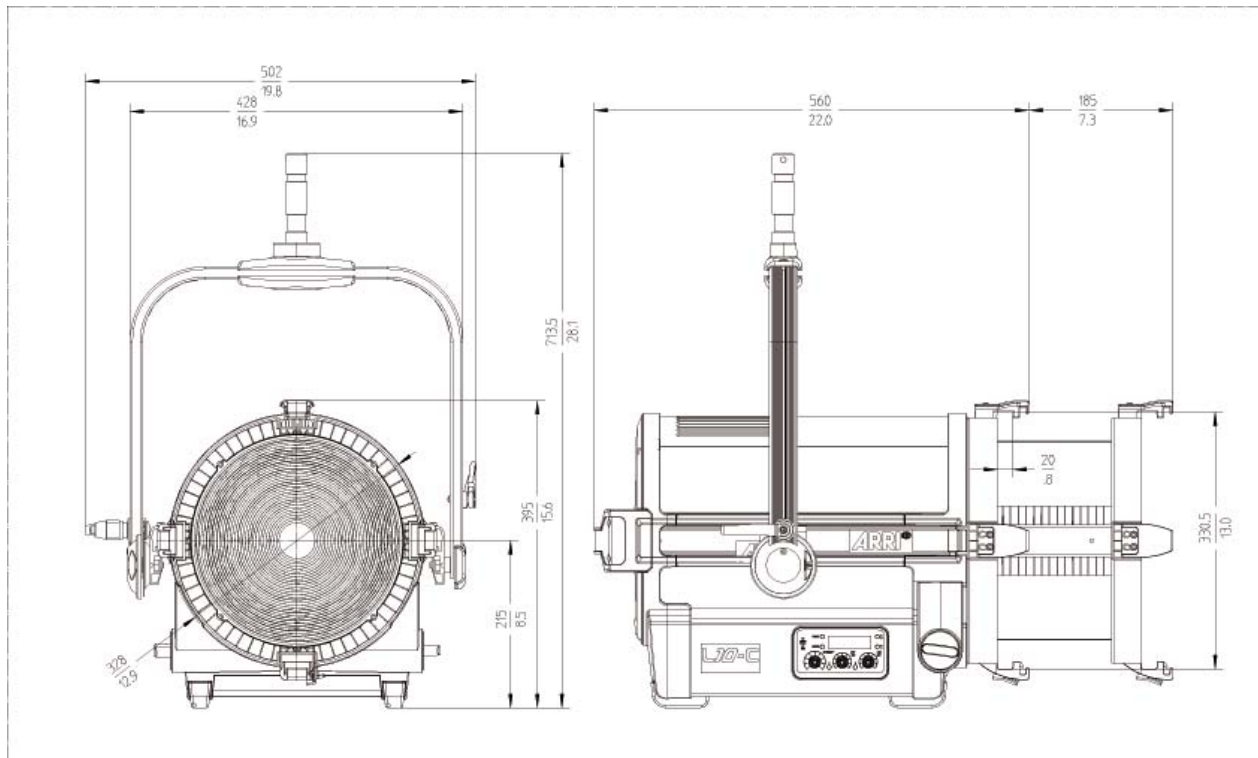
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Dimensions



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Safety Information



Always follow these instructions to protect against injury to yourself and damage to the product or other objects.

Explanations of Warning Signs and Indications



Possible risk of injury or damage to equipment.



Risk of fire or electric shock. Possible risk of injury or damage to equipment.



Caution! Hot surface. Possible high surface temperature. Risk of injury through burns.



Caution! High intensity light emission. Risk of eye injury.

Note: Indicates further information.

General Notes

- This document contains important instructions and notes to handle the product safe.
- Always follow all safety information for your own protection.
- Please contact a trained ARRI® service technician to do any service and maintenance not described in this manual
- Please follow the user manual of accessories and third party accessories, like motorized yokes. They contain important safety and security information.
- Read the user manual and installation manual which are shipped with accessories for the ARRI® L-Series®.
- Retain this user manual and all user and installation manuals shipped with the system for further reference and possible new owners of this product.
- ARRI® L-Series® products are intended for professional use and may only be operated by qualified persons. They are not for household use.
- Help protecting the environment by disposing the package material at your local recycling center.
- All components comply to the guidelines listed below:
 - Low voltage directive 2014/35/EU
 - EMC directive 2014/30/EU
 - RoHS directive 2011/65/EU

General Safety Information



Read and understand all safety information and operation instructions before you operate or install the product or the system.



Use only genuine spare parts or accessories that have been recommended or approved by ARRI. Other accessories or spare parts may cause hazards, damage the product or invalidate the warranty.



Check all cables and devices for visible damage before you work with the system. Defective electric or electronic devices must not be used. Take special care of the following components:

| Component | Possible damage |
|------------------|----------------------------|
| Housing, lens | Cracks, cuts, deformation |
| Cables | Cuts, deformation, burns |
| Connectors | Cracks, deformation, burns |
| Cable connectors | Damaged |
| Threads | Damaged |



If the product or accessory is visibly damaged, the product or accessory must no longer be used. Replace or repair the respective part. In case of repairs, please contact an authorized ARRI service center.



Never attempt to repair any part of the product on your own. Maintenance and repair work is only to be carried out by an authorized ARRI service center.



Do not operate the product if the ambient temperature exceeds 45° C (113° F). Observe all information given in chapter "Specification" on page 47.



Do not 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 bypass any safety feature of the product.



Do not open the product. There are no user serviceable parts inside. The housing is sealed with an adhesive seal that will break immediately when trying to open the housing. Doing so will invalidate the warranty.



In addition to regular visible checks ARRI recommends that all electric components are checked for electrical safety by a professional every 12 month. Keep the protocol of the check.

Specific Safety Information



Intensive use can cause the surface and the heat sink to become warm. Let the product cool down complete before you handle it.



Never cover air vents and the heat sink during operation. Keep a minimum clearance around the product of 0.5 m (1.65 ft).



WARNING! Intense light. Never look direct into the light source.



Never point a light beam from another luminaire into the light source. Do not place the product on heat sources. Intense heat cause automatic power off during operation.



WARNING! The stirrup must be mounted hanging or standing vertically. Lateral load can cause deformation or breaking of the spigot and the stirrup.



Devices and accessories must be secured against fall when mounted above floor level. Always observe common and local safety regulations.



Never use the cables for transportation. Never hang the product on its cables.



CAUTION! High voltage! Always disconnect the product complete from mains voltage before you connect or disconnect a cable.



Always check that the local AC power matches the voltage and frequency range printed on the type label of the product before use. Never use the product when the AC power does not match.



The product must not be used on a surface without a skid (accessory) mounted. To do so causes overheating.



Never connect the product to a dimmer-system or a dimmer-channel in non-dim mode. To do so will damage the electronics. Damages caused by connecting the product to a not suitable power source are not covered by the warranty.



Always keep cables away from the product during operation. Do not tilt the power cable directly after the connector. Water could immerse and cause short circuits and damage the connector.



Disconnect all cables prior to transport.



Not to observe these safety information or to ignore common sense may cause serious injury or even death. Damage to the product or other devices is possible.

Please observe the information given in the „Safety leaflet ARRI lampheads“ (L5.40731.E). The leaflet is available for download on our web site www.arri.com.

Maintenance Information

- Do not clean the surface of the product with solvents or strong detergents.
- Clean the product with a soft cloth wetted with a mild detergent. Do not rub the surface: lift stuck particles off with a soft repeated press.
- Clean soiled electric contacts with cotton swabs wetted with isopropyl alcohol.
- Keep electric contacts clean and replace corroded parts.

Legal disclaimer

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Intended use

This product is intended to illuminate persons and objects in a dry environment.

Always follow the safety information.

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

This product fulfils European and national requirements.

Introduction

Thank you for selecting a LED luminaire of the L-Series from ARRI. The L10 is a fresnel-luminaire equipped with a high precision, micro-processor controlled LED light source. LED luminaires are much more efficient than light sources with conventional tungsten lamps. They are a perfect and easy replacement for conventional fresnel-luminaires with tungsten lamps.

The L-Series LED luminaires combine the advantages of the LED technology with the ease of use of a traditional fresnel-luminaire. The L10 integrates seamlessly into established working practice. The optical system offers real fresnel characteristics with an extreme smooth beam and clean shadows. The half peak angle can be adjusted continuously from 15° - 50°.

The L10 emits white or colored light with adjustable color temperature and adjustable green / magenta saturation. Please find more detailed information in the section "Specification" on page 47. The light spectrum is optimized for excellent color rendition and fulfills perfectly the demands of modern, digital cameras. All models of the L10 can be controlled using the common DMX512-A protocol or the fixture menu.

The L10 can be powered by AC power. Please find more detailed information in the section "Power" on page 17.

Features

Focus

Traditional fresnel-luminaires are able to spot and flood the beam as needed. Whether it is a flood field for a pullback or a tight spot for a bright highlight, the continuous focusability of the L10 performs just as expected.

Versatile beam characteristics

The L10 provides the same ability as conventional fresnel-luminaires to cut set elements and shape the beam with barndoors and flags.

Even light field

Clean, defined shadows have traditionally been a trait of single source tungsten and daylight fixtures. L10 fresnel-luminaires provide the same single shadow properties lighting designers expect, delivering natural results.

Vibrant colors, full spectrum lighting

True-to-life color rendition is an outstanding feature of the L10, comparable to a full spectrum tungsten source. The fully tuneable white light of the L10-C can be adjusted for different skin tones, camera sensors and mixed light environments. Full gamut color mixing enables the rendition of all color shades, making color filters dispensable.

Cool light beam

Like all LED light sources the L10 does emit nearly no infrared or UV radiation and thus does not forward heat, making actors feel comfortable in the light beam.

Properties

Focus knob

The TRUE BLUE® style focus knobs provide precise adjustment and rapid flood-to-spot with only a few turns. Knobs on both sides of the fixture ensure easy access from all positions.

Sliding stirrup

The sliding stirrup design enables precise compensation for front end accessories.

Yoke

With an extreme slim profile, the extruded aluminum yoke provides high strength without added weight. An optional, pole operated yoke allows full operation of pan and tilt from the floor and is therefore a popular choice for many studios.

Tilt-lock

The high strength tilt-lock provides extreme secure locking. It eliminates movement and slippage and ensures that the light beam will stay where you put it.

DMX-control

All functions of the L10 are controllable through DMX. The L10 is also fully RDM compatible and is equipped with a feedback channel for reporting all set parameters including system status.

Fixture menu

For location applications the L10 is equipped with a fixture menu for manual adjustment of intensity, color temperature and plus/minus green as well as hue and saturation (functions available depending on type).

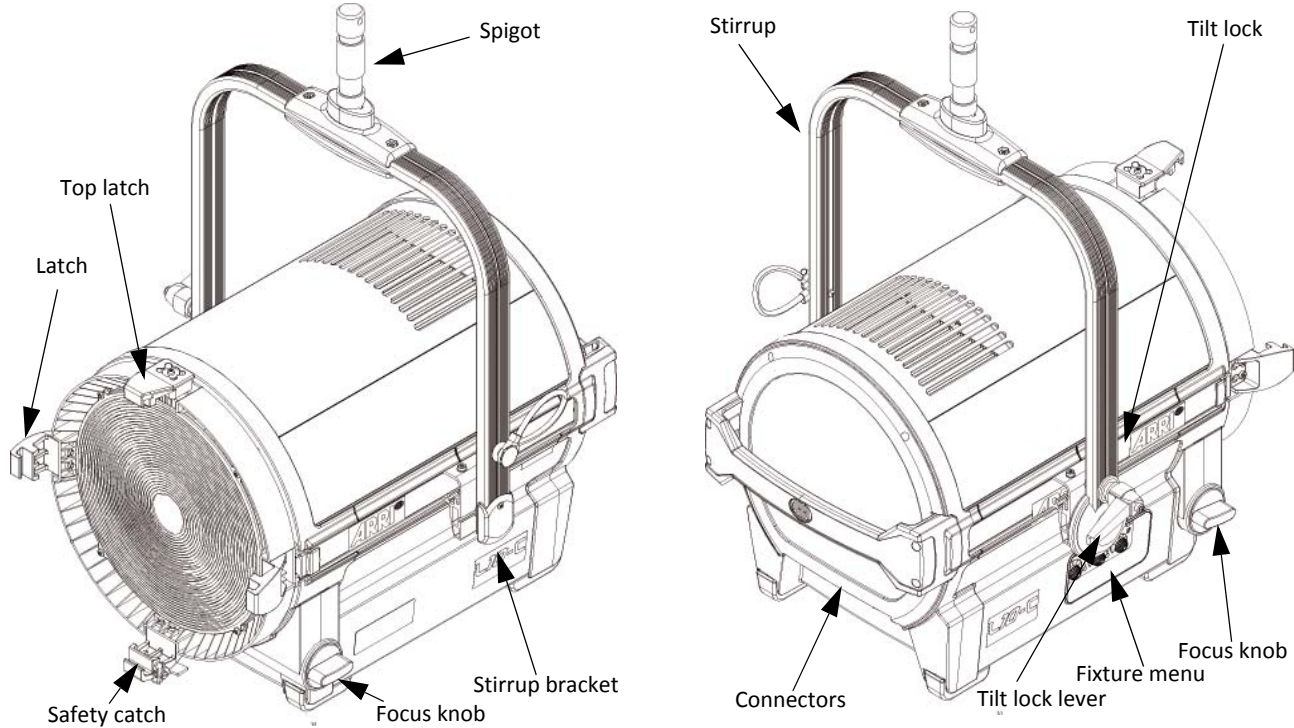
Unpacking

The L10 is supplied with:

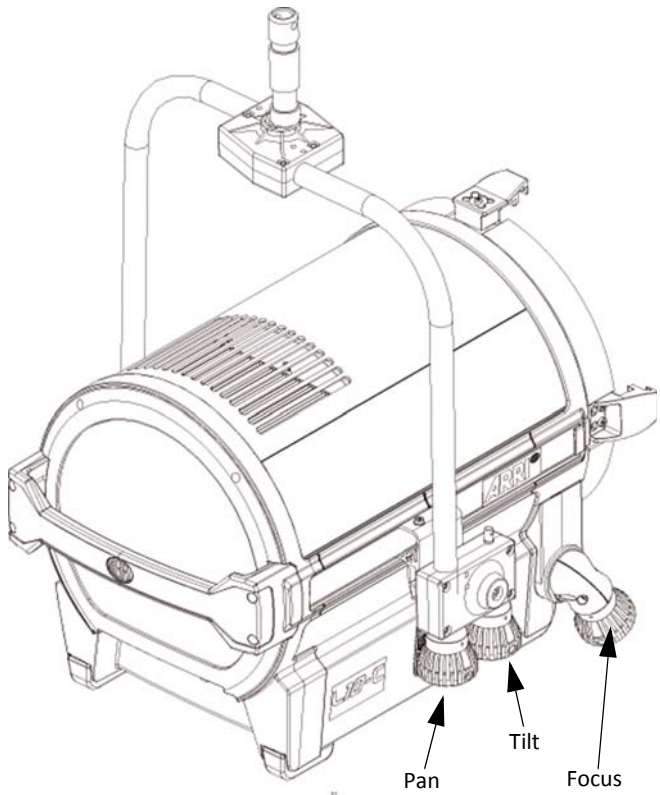
- Power cable with power plug or bare ends
- Stirrup
- 28 mm spigot (mounted on p.o. stirrups)
- Short instruction

Please refer to the section “Accessories” on page 48 for more information about optional accessories.

Overview



Front view and back view, manual version



Back view, p.o. version

Physical Installation



WARNING! Attach an approved safety-cable to secure the product against clamp or bracket failure. Lead the safety-cable through the stirrup and keep it as short as possible. The safety-cable needs to be approved at least 10 times the weight of the product including all accessories mounted at the product. Secure all accessories mounted at the product with additional safety-cables to protect them from fall down and cause injuries and damages.



WARNING! The rigging structure needs to be approved for at least 10 times the weight of all devices, equipment and cables installed on it.



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



IMPORTANT! Do not illuminate the display and the fresnel-lens by high power light beams from a short distance. The display and the light engine are damaged by high brightness and heat radiation within very short time.

To adjust the stirrup

You need

- a Torx20 screw driver,
- a 10 mm allen key and
- a torque wrench (37 ft-lbs)

to adjust the stirrup.

On delivery the stirrup is in the basic position (tilted back). Loosen the Torx20 screws on both sides of the stirrup bracket slightly and pull the stirrup bracket towards the rear of the product. Loosen the lever of the tilt-lock and tilt the stirrup upwards.

Slide the stirrup to the point of balance. The point of balance is dependent on the accessories mounted at the product. Tighten both Torx20 screws of the stirrup brackets. Do not overtighten the screws. Tilt the stirrup 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.

To mount the spigot

Place the spigot and the distance plate on the 13 mm hole in the middle of the stirrup. Insert the allen screw with washer and spring washer and tighten it with a torque wrench to 37 ft-lbs torque.

To mount the device

Always observe all safety information listed in section “Physical Installation” on page 14 when you mount the product and accessories:

- Be aware of the maximum tilt angle 90° upwards and 90° downwards.

Ensure that you install all accessories correct when you mount the product 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 our web site www.arri.com.

Basic features***Pan and tilt***

Loose the mounting screw of the tripod or the appropriate fixing screw of the mounting clamp to pan the L10. Tighten the screw to avoid unintended movement. Loose the tilt-lock to tilt the L10 to the desired angle. Tighten the tilt-lock-lever to avoid unintended movement.

To adjust the beam angle

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

- A predetermined braking point prevents the product 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 product is operated in a tilted position.

Use of accessories for beam shaping and light design

You can mount accessories such as a barndoor, filter holder or scrim on the front side of the L10:

- 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.

DMX/RDM-interface

The L10 has a DMX/RDM-interface. It has 5-pin XLR connectors for DMX/RDM data input and throughput. Please find more detailed information to establish a DMX/RDM data-link in section “DMX data link” on page 24.

USB-interface

The L10 has a mini-USB connector to upload firmware and set parameters. The USB-interface can be used for service purpose like download error reports and set certain data. To do so you need a software tool, the ARRI Lighting Service Manager ALSM.

Download it free of charge from the ARRI web site www.arri.com.

Please find more detailed information to work with the ALSM in the user manual of the software. The manual is included in the download package.

To turn on and use the product

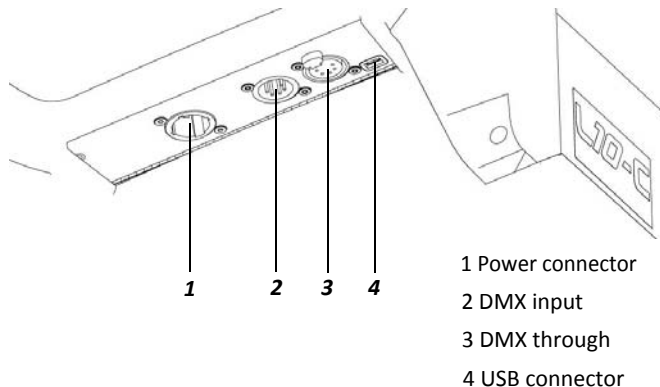
Turn on the power switch or connect the L10 to AC power. The L10 initializes for some seconds and is ready for operation. The L10 will operate with the settings made on the fixture menu or received by DMX. Please observe the following section to use the L10.

Control options

You can set up or control the L10 with the options listed in the table below:

| Option | Control | Configuration | Information |
|---------------------|---------|---------------|-------------|
| Fixture menu | yes | yes | page 18 |
| DMX | yes | no | page 23 |
| RDM | no | yes | page 29 |
| ALSM | no | yes | page 32 |

Connector Panel



Power



WARNING! For protection from electric shock, always connect the product electrically to ground (earth) when connected to AC power. The AC mains power supply must be fitted with a fuse or circuit breaker and ground-fault (earth-fault) protection.



IMPORTANT! Ensure that persons do not look at the light emission aperture when the product is connected to AC power. The product can light up suddenly. The high intensity of the product can cause eye irritation or injury when not respecting the safety distance.



IMPORTANT! Always connect the product direct to AC power. Do not connect it to a dimmer-system. Doing so will damage the product.

AC power

The L10 has an auto-sensing switch-mode power supply that automatically adapts to AC power at 90 - 264 V ~, 45 - 65 Hz (nom.).

Before you connect the L10 to AC power, check that:

- the dimmer knob at the fixture menu is set to 0%, and
- no DMX signal is present at the DMX-input of the L10.

You can hard-wire the L10 to a building electrical installation. You can install a power plug that is suitable for the local power outlets on the power cable. Socket outlets or external power switches that supply the L10 with power must be located near the product and easily accessible so that the L10 can easily be disconnected from power.

The L10 requires a power input cable with a Neutrik® PowerCON® True1 NAC3FX-W cable connector. Cable requirements are listed in section “Specification” on page 47. ARRI offers power cables with PowerCON® cable connectors and different plugs or bare ends (see “Accessories” on page 48).

To insert and remove the PowerCON® cable connector

- Line up the raised key of the connector and the keyway of the input socket. Insert the cable connector without force in the power input socket.

To insert the cable connector:

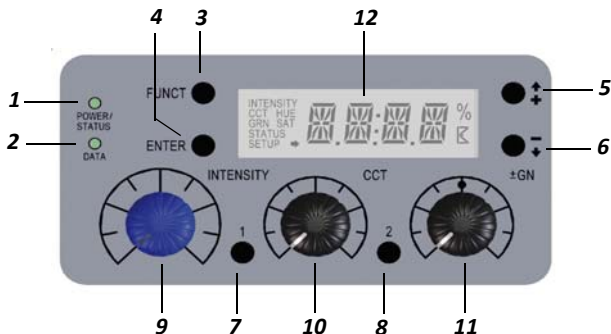
- Turn it a full quarter-turn clockwise.

To remove the cable connector:

- Push the connector lock backwards and turn the cable connector counter-clockwise. Pull the cable connector out of the power input socket.

Fixture menu

Overview of the fixture menu



Features of the fixture menu

Status indicator POWER/STATUS (1):

| Color | Indication |
|---|----------------------------------|
| Green | Fixture switched on. No error. |
| Red flashing (0,5s rhythm)* | Warning fixture over temperature |
| Red* | Fixture over temperature |
| Change from red to green* | Fixture normal temperature |
| Red flashing (0,25s rhythm)* | Calibration data not loaded |
| *Display lights up red when STATUS-LED is lit red | |

DATA (2)

The DATA indicator lights blue, when a valid DMX signal is detected on the DMX-input.

FUNCT (3)

The FUNCT button has two functions:

- Normal operation: Switches between CCT and HSI mode (only ARRI L10-C).
- Fixture menu open: Jump UP one menu level.

ENTER (4)

The ENTER button has three functions:

- Normal operation: Activate blinking arrow for calling up MEM1 or MEM2.
- Fixture menu open: OPEN next menu level, or
- Confirm a setting.

+ / [up] (5)

The + / [up] button navigates the menu or increases a value. Press the button long to activate the fast-run feature.

- / [down](6)

The - / [down] button navigates the menu or decreases a value. Press the button long to activate the fast-run feature.

INTENSITY (9)

The rotary knob sets the intensity level.

CCT / HUE (10)

The rotary knob sets the color temperature (CCT) or the hue (only ARRI L10-C in color mode).

GN / SAT (11)

The rotary knob sets the green/magenta saturation or the color saturation (SAT, only ARRI L10-C in color mode).

MEMORY 1 and MEMORY 2 (7 and 8)

Activate or store a memory.

During operation the mode and recent values are displayed. On the first menu level the values for INTENSITY, CCT/HUE (only ARRI L10-C) and GN/SAT (only ARRI L10-C) can be retrieved via the + / [up]/- / [down] buttons. The menu STATUS, confirmed with ENTER, calls up the next level which displays information on faultless operation and the temperature of the light engine. To retrieve values for operating hours, DMX-version and firmware-version, press ENTER to call up the third level. The FUNCT button jumps up one menu level.

A detailed overview of the fixture menu is listed in section "Fixture Menu" on page 26.

To set the operation mode (only L10-C)

Press the FUNCT button to switch from CCT mode to HSI mode and vice versa.

IN CCT mode the L10 generates white light with optimized color rendition. In HSI mode the L10 generates colored light. If saturation is set very low, the L10 generates white light, but not with optimized color rendition.

To set the color temperature and green/magenta saturation in CCT mode

Set the color temperature continuously with the rotary knob CCT/HUE. Set the green/magenta saturation continuously with the rotary knob GN/SAT.

Press the + / [up] or - / [down] button until GRN is displayed left in the display (e.g. +0.23) to retrieve the currently set green/magenta value. The color temperature is always displayed (e.g. 4.150K).

To set the color in HSI mode (only ARRI L10-C)

Set the hue continuously with the rotary knob CCT/HUE. Set the saturation continuously with the rotary knob GN/SAT.

Press the + / [up] or - / [down] button until SAT is displayed left in the display (e.g. 45) to retrieve the currently set saturation value. The hue is always displayed (e.g. 118°).

To set the brightness in both operating modes

Set the brightness in both operating modes continuously with the rotary knob INTENSITY

Press the + / [up] or - / [down] button until INTENSITY is displayed left in the display (e.g. 24%) to retrieve the currently set brightness value.

To set the fan mode

Set the fan mode using the fixture menu:

- Press the + / [up] or - / [down] button, until SETUP is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until FAN is displayed.
- Confirm with the ENTER button. The current fan mode is displayed.
- Press the + / [up] or - / [down] button to select the fan mode (see the table below). Confirm the selected mode with the ENTER button. The fan mode is activated immediately.
- Press the FUNCT button two times to leave the menu.

| Fan mode | Description |
|-------------|--|
| LOW | Fan operates constantly at low speed (silent) |
| VARI | The temperature of the light engine controls the fan speed. The fan starts running at app. 70% brightness. |
| HI45 | Use this mode for ambient temperatures up to 45° C / 113° F. The fan runs at maximum speed. The maximum brightness is reduced by app. 15%. |

To set the DMX address

- Press the + / [up] or - / [down] button, until SETUP is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until DMX is displayed.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until CHAN is displayed.
- Confirm with the ENTER button. The current DMX address is displayed.
- Press the + / [up] or - / [down] button to select the DMX address. Confirm the selected address with the ENTER button. The DMX address blinks three times for confirmation.
- Press the FUNCT button to leave the menu.

To set the Signal lost behavior

Set the signal lost behavior:

- Press the + / [up] or - / [down] button, until SETUP is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until DMX is displayed.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until LSIG is displayed.
- Confirm with the ENTER button. The current setting is displayed.

The following options are available:

- **HOLD:** The last received DMX values are used until the L10 is switched off or valid DMX data is received again.
- **BOUT:** The L10 douses to 0% intensity.
- **H2MF:** The last received DMX values are used for 2 minutes. After 2 minutes the L10 douses to 0% intensity. When valid DMX data is received after less than 2 minutes, these data will be used.
- Press the + / [up] or - / [down] button to select the signal lost behavior. Confirm the selected mode with the ENTER button. The option blinks three times for confirmation.
- Press the FUNCT button to leave the menu.

To set the DMX mode

Set the DMX mode using the fixture menu:

- Press the + / [up] or - / [down] button, until SETUP is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until DMX is displayed.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until PROT is displayed.
- Confirm with the ENTER button. The current DMX mode is displayed.

- Press the + / [up] or - / [down] button to select the DMX mode. Confirm the selected mode with the ENTER button. The DMX mode blinks three times for confirmation.
- Press the FUNCT button to leave the menu.

To set the display illumination and status indicators

To switch the display illumination and status indicators on or off:

- Press the + / [up] or - / [down] button, until SETUP is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until INDC is displayed.
- Confirm with the ENTER button. The current setting is displayed.
- Press the + / [up] or - / [down] button to select the option ON or OFF. Confirm the selected mode with the ENTER button.
- Press the FUNCT button to leave the menu.

To read out fixture information

To display fixture information:

Operating hours

- Press the + / [up] or - / [down] button, until STATUS is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until HOUR is displayed.

- Confirm with the ENTER button. The current operating hours are displayed (e.g. 501h).
- Press the FUNCT button to leave the menu.

Version of the DMX protocol

To display the version of the DMX protocol:

- Press the + / [up] or - / [down] button, until STATUS is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until DMXV is displayed.
- Confirm with the ENTER button. The current version is displayed (e.g. 3.1).
- Press the FUNCT button to leave the menu.

Firmware-version

To display the firmware-version:

- Press the + / [up] or - / [down] button, until STATUS is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until SW is displayed.
- Confirm with the ENTER button. The current firmware version is displayed (e.g. 2.0).

Recent temperature

To display the recent temperature of the light engine:

- Press the + / [up] or - / [down] button, until STATUS is displayed left in the display.
- Confirm with the ENTER button. Press the + / [up] or - / [down] button until the temperature (e.g. 42,1°) is displayed.
- Press the FUNCT button to leave the menu.

Error status

To display the error status:

- Press the + / [up] or - / [down] button, until STATUS is displayed left in the display.
- Confirm with the ENTER button.
- If there is no error, OK will be displayed. Otherwise the error code is displayed (see “Error messages” on page 33).
- Press the FUNCT button to leave the menu.

Short cuts

The demo mode, setting the DMX address and DMX mode can be called up via short cuts in the fixture menu:

- Press and hold the ENTER button, until JUMP is displayed in the display (from every menu).
- Press and hold the FUNCT button to activate the demo mode. Press the ENTER button again to deactivate the demo mode.
- Press the + / [up] button to set the DMX address.

- Press the - / [down] button to set the DMX mode.

The JUMP menu closes 3 sec. after the last key press or after pressing the ENTER button.

Demo mode

In demo mode the L10 calls up an endless loop with all features the L10 supports.

- **ARRI L10-TT and ARRI L10-DT:** Change of the color temperature from warm to cold and vice versa. Set the intensity with the dimmer knob. Set the speed with the CCT knob from 0-100% (60 s - 1 s).
- **ARRI L10-C:** Call up the color spectrum or change the color temperature from warm to cold and vice versa. Set the intensity with the dimmer knob. Set the speed with the CCT knob from 0-100% (60 s - 1 s). The GN knob sets the saturation and changes between color and color temperature sequence. With GN at „0“ the color temperature loop is active. Turn the GN knob clockwise to increase the saturation to 100%.
- Press the JUMP and FUNCT button or the FUNCT button alone to deactivate the demo mode.

As an alternative activate and deactivate the demo mode in the menu Setup -> DEMO.

Shift key

This short cut is only available in the main menu. Press the ENTER button, until a small arrow starts blinking in the display. Memory 1 or memory 2 calls up one of two factory settings.

DMX control

DMX mode

The L10 offers, depending on the model, up to 15 DMX modes. Use the 8 bit modes with basic DMX controllers like dimmer consoles. The most common modes for operation via DMX are mode 1 and mode 2.

ARRI recommends the use of the 16 bit modes in combination with DMX controllers supporting 16 bit resolution to obtain best results. The high resolution provides smooth dimming and precise color adjustments.

The coarse/fine modes utilize two DMX channels for most parameters and provide higher resolution compared to the 8 bit modes in combination with DMX controllers that do not support 16 bit resolution. One channel sets the coarse value of the function which is divided in 256 increments using the fine channel.

The setting can be changed any time using the rotary knobs of the fixture menu.

White and RGBW

This mode provides control of intensity, color temperature, +/- green and individual channels for controlling the red, green, blue and white color.

White

Simple white-only mode. It is used when the number of available channels of the DMX controller is very limited. It provides control of intensity, color temperature and +/- green.

White & HSI

Provides control of intensity, color temperature, +/- green, hue and saturation (HSI = hue, saturation, intensity). In HSI mode the color and intensity is very even over the fixtures as it is controlled using color algorithms which take the tolerances of the light engines into account during calculation.

RGBW

Simple mode for controlling the overall intensity and the red, green, blue and white intensity when only a limited number of DMX channels is available.

HSI

Simple mode for controlling hue, saturation and intensity when only a limited number of DMX channels is available.

Please find a detailed description of all modes in chapter "DMX protocol" on page 34.

Note: Depending on the selected DMX mode the channels required for each product should be allocated in the DMX controller to provide independent control of all products connected to the controller. Please allocate the maximum number of channels, which is 18 in DMX mode 6.

DMX data link

For controlling the ARRI L10 via DMX you need a DMX data link.

The ARRI L10 has 5-pin locking XLR sockets for DMX and RDM data input and output. The default pin-out of both sockets is:

Pin 1 = Shield

Pin 2 = Data - (cold)

Pin 3 = Data + (hot).

Pins 4 and 5 are not used by the ARRI L10 but are bridged between input and output sockets. These pins can therefore be used as a pass-through connection for an additional data signal if required.

Pin 4 = Data - (cold)

Pin 5 = Data + (hot).

The limitation of 32 products per data link is not applicable for the L10. You must not connect more than 256 products per data link. Depending on the channel requirements the address space of a data link (512 channels) may not be enough to control all products connected. You may set more than one product to identical DMX addresses to obtain identical behavior. For independent control every product needs to be assigned an individual address range.

If you need to control more products individual, you need to set up additional DMX data links.

Tips for a reliable data transmission

- Use shielded twisted-pair cable designed for RS-485 devices or CAT 6 network cables: 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 the data link, use a DMX splitter. Use an RDM compatible splitter when you use the RDM functionality.
- Install a DMX termination plug on the last product of every DMX data link. Terminate the DMX data link on both ends, when you use the RDM functionality. Ask your system specialist for details.

To connect the data link

- Connect the DMX data output from the controller to the data input (male XLR) of the L10.
- Run the data link from the data output (female XLR) to the data input of the next product.
- Terminate the data link by connecting a 120 Ohm, 0.25 Watt resistor between the data 1 hot (+) and cold (-) conductors (and between data 2 hot and cold if used) at the data output of the last product on the link.

Fixture Menu

From firmware-version 1.0

Note: The small, horizontal arrow in the displays indicates sub-menus. Press the ENTER button to access the sub-menus.

| Level 1 | Level 2 | Level 3 | Level 4 | Description (Default = bold) |
|------------------|---------|---------|---------|---|
| Intensity | | | | Displays the recent intensity level when turning the dimmer knob in %. |
| CCT | | | | Only in CCT mode: Displays the recent color temperature when turning the CCT/HUE knob in K |
| HUE | | | | Only in HUE mode (only L10-C): Displays the recent hue when turning the CCT/HUE knob in ° (0-360°) |
| GRN | | | | Only in CCT mode: Displays the recent green / magenta value when turning the GRN/SAT knob in % |
| SAT | | | | Only in HUE mode (only L10-C): Displays the recent saturation when turning the GRN/SAT knob in % |

Status Messages

From firmware-version 1.0

Note: The small, horizontal arrow in the displays indicates sub-menus. Press the ENTER button to access the sub-menus.

Note: In setup and status mode the options keep available until another function is called up. All other modes return to the appropriate mode after 2 sec.

| Level 1 | Level 2 | Level 3 | Level 4 | Description |
|---------|---------|---------|---------|--|
| STATUS | OK | | | Product ready for operation, no errors OR Error message (see "Error messages" on page 33) |
| | ERROR | | | |
| | SW | | | Firmware version |
| | DMX V | X.X | | Version of the DMX protocol |
| | HOUR | XXXX t | | Hours of operation |
| | XX.X°C | | | Recent temperature of the light engine |

Fixture Menu

From firmware-version 1.0

Note: The small, horizontal arrow in the displays indicates sub-menus. Press the ENTER button to access the sub-menus.

Note: In setup and status mode the options keep available until another function is called up. All other modes return to the appropriate mode after 2 sec.

| Level 1 | Level 2 | Level 3 | Level 4 | Description (Default setting = bold) |
|---------|---------|-------------|--|--|
| SETUP | DMX | PROT | P.001 ...P.015 | Set the DMX mode |
| | | LSIG | HOLD | The DMX values are held when DMX signal is lost |
| | | | BOUT | Product douses when DMX signal is lost |
| | | | H2MF | Product douses 2 min after DMX signal is lost |
| | | CHAN | 1...512[-Mode] | Set the DMX start address. Max. start address = 512 - channels used by the DMX mode chosen |
| | FACT | NO | Do not load the factory defaults | |
| | | YES | Load the factory defaults | |
| | DEMO | ON | Activate the demo sequence (see page 23) | |
| | | OFF | De-activate the demo sequence | |
| | INDC | ON | The status indicators and the illumination of the display stay ON | |
| | | OFF | The status indicators and the illumination of the display switch OFF | |
| | FAN | LOW | Fan mode LOW | |
| | | VARI | Fan mode VARI | |
| | | HI45 | Fan mode HI45 | |

RDM commands

From Firmware-version 1.0

| Command | Description | GET | SET |
|------------------------|--|-----|-----|
| Discover Unique Branch | Searches RDM device | X | X |
| Discover Mute | Mutes the RDM device, no response messages | X | X |
| Discover Unmute | Activates device for response messages | X | X |
| Supported Parameters | Shows a list of all supported RDM commands | X | |
| Parameter Description | Shows a list of commands that are not standard rdm commands, mostly commands from manufacturer. Describes the data type and shows if Set or Get or both are supported for the listed commands. | X | |
| Device Info | Lists RDM protocol version, device model ID, product category, software version ID (from Main), DMX footprint, DMX personality, sub-device count and sender count. | X | |
| Software Version Label | Shows the software version string from main, e.g. Main 1.66.1 Yes 16 2012 19:10:26 | X | |
| DMX Start Address | DMX address | X | X |
| Identify Service | Identify Flag -> physically flash the light, ARRI L10-C flashes Blue and all other White | X | X |

Required RDM command extensions

| Command | Description | GET | SET |
|-----------------------------|---|-----|-----|
| Status Message | Display of actual warning / error message of the fixture. | X | |
| Status ID Description | Detailed description of each warning / status report. | X | |
| Device Label | This parameter allows you to generate an informative label for each fixture. It can be utilized to identify the rack number of a dimmer or to determine the position of a fixture | X | X |
| Product Detail ID List | This parameter is utilized to retrieve technical details of a fixture. ARRI L10 shows LED with PWM control | X | |
| Device Model Description | A text description of up to 32 characters for the model type of the fixture. ARRI L10-C, ARRI L10 Daylight Tuneable or ARRI L10 Tungsten Tuneable | X | |
| Manufacturer Label | Display the company name ARRI Lighting | X | |
| Boot Software Version ID | PrBo SW Version e.g. „2.03.00“ | X | |
| Boot Software Version Label | Shows text from PrBo Bootloader, e.g. PrBo 2.03.00 Jan 16 2012 19:10:26 | X | |
| DMX Personality | DMX mode | X | X |
| DMX Personality Description | Displays a text description of a DMX mode with up to 32 characters, shown exactly as in the description in the ALSM | X | |
| Slot Info | Shows a description for each DMX channel in use in the requested DMX mode | X | |
| Slot Description | Shows a text description with max. 32 characters for each DMX channel from the requested DMX mode | X | |
| Default Slot Value | Shows the default DMX channel value from the requested DMX mode | X | |
| Sensor Definition | Shows the definition from a specific sensor and a text description | X | |
| Sensor Value | Shows the actual sensor value | X | |
| Device Hours | Shows the actual device hours of the fixture | X | |

| Command | Description | GET | SET |
|-----------------------|--|-----|-----|
| Lamp Hours | Shows the actual lamp hours of the fixture | X | |
| Factory Defaults | This command deletes all user parameters and sets the fixture to factory default | X | X |
| Device Power Cycles | Shows the power cycle value, counts every cold start (switch or power-up) | X | |
| Reset Device | Fixture makes a software reset (warm start) and carries out a reboot | X | X |
| Power State | Power state of the fixture, supported power states: POWER_STATE_STANDBY (0x02), POWER_STATE_NORMAL (0xFF), POWER_STATE_FULL_OFF (0x00) POWER_STATE_SHUTDOWN (0x01) | X | X |
| Perform Selftest | Supported test modes and demo modes | X | X |
| Self Test Description | Shows a description for each test / demo mode | X | |

Manufacturer commands

| Command | Description | GET | SET |
|---|--|-----|-----|
| RDM Fan Mode PID: 0x8001 | Changes the FAN mode of the fixture - this message supports Set and Get commands - the first data byte is used to show / change the fan mode USER_FAN_MODE_LOW = 1 USER_FAN_MODE_VARI = 2 USER_FAN_MODE_HI45 = 3 | X | X |
| RDM Status LED PID: 0x8002 | Switch on /off indication LEDs and LCD back light - this message supports Set and Get commands - the first data byte is used to switch indication LEDs on and off LEDs and LCD back light on = 0 LEDs and LCD back light off = 1 | X | X |
| Supported values from -1 to +1 | | | |
| RDM DMX Signal Lost Mode PIS: 0x8005 | If the DMX signal gets lost or the DMX device is unplugged the LED fixture holds the last valid signal, or it holds the last valid signal for two minutes and then douses or switches off immediately. Supported values: 0 -> hold 1 -> hold 2 minutes 3 -> switch off | X | X |

ARRI Lighting Service Manager

Please find information about the features and the functionality of the ARRI Lighting Service Manager in the user manual for the ARRI Lighting Service Manager, which can be downloaded with the ARRI Lighting Service Manager software-bundle from the ARRI web site www.arri.com free of charge.

Error messages

From firmware-version 1.0

| Code | Error | Remedy |
|-------|--|---|
| E.003 | Controller over temperature. STATUS lit up red. | Let the product cool down. The STATUS indicator changes to green when the product has cooled down. Turn the dimmer knob to „0“ or send an intensity value „0“ via DMX to activate the light engine again. |
| E.004 | Light engine over temperature | See E.003 |
| E.005 | Power supply over temperature | See E.003 |
| E.006 | Calibration data of light engine faulty or EEPROM error. | WARNING: Loss of calibration data. This error can only be fixed by re-calibrating the light engine. Please contact the ARRI service. |
| E.007 | Invalid PWM value calculation | Notice: The product can be used on. This message is more a notification than an error. |
| E.008 | Invalid values during calculation | See E.007 |
| E.009 | Invalid values during calculation | See E.007 |
| E.010 | Fan error. The fan speed deviates or the fan doesn't run at all. | Set the fan to LOW or HI and see if it starts rotating, in order to determine if there is an electrical malfunction. All mechanical tests or repairs may only be carried out by a trained service technician. |
| E.011 | Fixture menu module not be detected. | If the fixture menu is working, error E.011 can be ignored. However, if the fixture menu remains dark (no LED lights up) we recommend to contact the ARRI service. They can then carry out detailed analyses. |
| E.012 | Temperature sensor(s) are defective or deviation within NTC values too high. | One or more temperature sensors are defective or the deviation within the individual NTCs or BNTCs exceeds the variation tolerance of 12° C / 54° F. Check the error log (LSeries Manager) to see which temperature sensors are affected. Contact the ARRI service. |
| E.013 | Calibration data faulty. | WARNING: Loss of calibration data. Fixture needs to be re-calibrated. |
| E.014 | Watchdog error | Notice: The product can be used on. This message is more a notification than an error. |
| E.015 | LED channel faulty | Notice: The product can be used on. This message is more a notification than an error. |

DMX protocol

DMX protocol V3.x is set as default. Use the ALSM to change to DMX protocol V4.x. ARRI advises to reserve 4 DMX channels more for each fixture when using DMX protocol V3.x. This way you do not need to modify the patch when you want to use additional features which will become available with DMX protocol V4.x.

The DMX protocol V4.x uses 4 DMX channels more in each DMX mode.

ARRI L10-TT (Tungsten Tuneable)

From firmware-version 1.0

Overview

| 8 bit, 1 channel per function | 16 bit, 2 channels per function | Coarse / fine, 1-2 channels per function |
|-------------------------------|---------------------------------|--|
| DMX mode 1* | DMX mode 2 | DMX mode 3 |

* = Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.

(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Color temperature CCT 2.600 K → 3.600 K |
| 3 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | | | Reserved (only V4.x) |
| 5 | | | Reserved (only V4.x) |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |

Mode 2: 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|---------------|---------|---|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-65535 | 0-100 | Color temperature 2.600 K → 3.600 K |
| 4 | LO | | | |
| 5 | HI | 0-5.000 | 0-7 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | LO | 5.001-10.000 | 8-15 | |
| | | 10.001-29.999 | 16-46 | |
| | | 30.000-40.000 | 46-61 | |
| | | 40.001-59.999 | 61-92 | |
| | | 60.000-65.535 | 92-100 | |
| 7 | | | | Reserved (only V4.x) |
| 8 | | | | Reserved (only V4.x) |
| 9 | | | | Reserved (only V4.x) |
| 10 | | | | Reserved (only V4.x) |

Mode 3: Coarse / fine channel per function

Each of the 256 coarse steps is divided in 256 fine steps. Use this mode when your lighting control desk does not support true 16 bit resolution.

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Color temperature coarse 2.600 K → 3.600 K |
| 4 | 0-255 | 0-100 | Color temperature fine |
| 5 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |

ARRI L10-DT (Daylight Tuneable)

From firmware-version 1.0

Overview

| 8 bit, 1 channel per function | 16 bit, 2 channels per function | Coarse / fine, 2 channels per function |
|-------------------------------|---------------------------------|--|
| DMX mode 1* | DMX mode 2 | DMX mode 3 |

* = Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.

(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Color temperature CCT 5.000 K → 6.500 K |
| 3 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | | | Reserved (only V4.x) |
| 5 | | | Reserved (only V4.x) |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |

Mode 2: 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|---|--|---|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-65535 | 0-100 | Color temperature CCT 5.000 K → 6.500 K |
| 4 | LO | | | |
| 5 | HI | 0-5.000 5.001-10.000 10.001-29.999 30.000-40.000 40.001-59.999 60.000-65.535 | 0-7 8-15 16-46 46-61 61-92 92-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | LO | | | |
| | | | | Reserved (only V4.x) |
| | | | | Reserved (only V4.x) |
| | | | | Reserved (only V4.x) |
| | | | | Reserved (only V4.x) |

Mode 3: Coarse / fine channel per function

Each of the 256 coarse steps is divided in 256 fine steps. Use this mode when your lighting control desk does not support true 16 bit resolution.

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Color temperature coarse 5.000 K → 6.500 K |
| 4 | 0-255 | 0-100 | Color temperature fine |
| 5 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| | | | Reserved (only V4.x) |
| | | | Reserved (only V4.x) |
| | | | Reserved (only V4.x) |
| | | | Reserved (only V4.x) |

ARRI L10-C

From firmware-version 1.0

Overview

| 8 bit, 1 channel per function | 16 bit, 2 channels per function | Coarse/fine, 1-2 channels per function |
|---|---------------------------------|--|
| DMX mode 1 [*] White & RGBW | DMX mode 6 White & RGBW | DMX mode 11 White & RGBW |
| DMX mode 2 White | DMX mode 7 White | DMX mode 12 White |
| DMX mode 3 White & HSI | DMX mode 8 White & HSI | DMX mode 13 White & HSI |
| DMX mode 4 RGBW | DMX mode 9 RGBW | DMX mode 14 RGBW |
| DMX mode 5 HSI | DMX mode 10 HSI | DMX mode 15 HSI |

* = Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.

(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: White & RGBW, 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Color temperature CCT 2.800 K → 10.000 K |
| 3 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | 0-255 | 0-100 | Xfade to color White → RGBW color |
| 5 | 0-255 | 0-100 | Intensity red 0% → 100% |
| 6 | 0-255 | 0-100 | Intensity green 0% → 100% |
| 7 | 0-255 | 0-100 | Intensity blue 0% → 100% |
| 8 | 0-255 | 0-100 | Intensity white 0% → 100% |
| 9 | | | Reserved (only V4.x) |
| 10 | | | Reserved (only V4.x) |
| 11 | | | Reserved (only V4.x) |
| 12 | | | Reserved (only V4.x) |

Mode 2: White, 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Color temperature CCT 2.800 K → 10.000 K |
| 3 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | | | Reserved (only V4.x) |
| 5 | | | Reserved (only V4.x) |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |

Mode 3: White & HSI, 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Color temperature CCT 2.800 K → 10.000 K |
| 3 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | 0-255 | 0-100 | Xfade to color White → RGBW color |
| 5 | 0-255 | 0-100 | Hue 0° → 360° |
| 6 | 0-255 | 0-100 | Saturation 0 → full saturated |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |
| 10 | | | Reserved (only V4.x) |

Mode 4: RGBW, 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|-------|---------|-------------------------------------|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Intensity red 0% → 100% |
| 3 | 0-255 | 0-100 | Intensity green 0% → 100% |
| 4 | 0-255 | 0-100 | Intensity blue 0% → 100% |
| 5 | 0-255 | 0-100 | Intensity white 0% → 100% |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |

Mode 5: HSI, 8 bit resolution per function

| Channel | Value | Percent | Function |
|---------|-------|---------|---|
| 1 | 0-255 | 0-100 | Dimmer closed → open |
| 2 | 0-255 | 0-100 | Hue 0° → 360° |
| 3 | 0-255 | 0-100 | Saturation 0 → full saturated |
| 4 | | | Reserved (only V4.x) |
| 5 | | | Reserved (only V4.x) |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |

Mode 6: White & RGBW, 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|---|--|---|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-5.000 5.001-10.000 10.001-29.999 30.000-40.000 40.001-59.999 60.000-65.535 | 0-7 8-15 16-46 46-61 61-92 92-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 4 | LO | | | |
| 5 | HI | 0-65.535 | 0-100 | Xfade to color White → RGBW color |
| 6 | LO | | | |
| 7 | HI | 0-65.535 | 0-100 | Intensity red 0% → 100% |
| 8 | LO | | | |
| 9 | HI | 0-65.535 | 0-100 | Intensity green 0% → 100% |
| 10 | LO | | | |
| 11 | HI | 0-65.535 | 0-100 | Intensity blue 0% → 100% |
| 12 | LO | | | |
| 13 | HI | 0-65.535 | 0-100 | Intensity white 0% → 100% |
| 14 | LO | | | |
| 15 | | | | Reserved (only V4.x) |
| 16 | | | | Reserved (only V4.x) |
| 17 | | | | Reserved (only V4.x) |
| 18 | | | | Reserved (only V4.x) |

Mode 7: White, 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|---|--|---|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-65.535 | 0-100 | Color temperature CCT 2.800 K → 10.000 K |
| 4 | LO | | | |
| 5 | HI | 0-5.000 5.001-10.000 10.001-29.999 30.000-40.000 40.001-59.999 60.000-65.535 | 0-7 8-15 16-46 46-61 61-92 92-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | LO | | | |
| 7 | | | | Reserved (only V4.x) |
| 8 | | | | Reserved (only V4.x) |
| 9 | | | | Reserved (only V4.x) |
| 10 | | | | Reserved (only V4.x) |

Mode 8: White & HSI, 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|---|--|---|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-65.535 | 0-100 | Color temperature CCT 2.800 K → 10.000 K |
| 4 | LO | | | |
| 5 | HI | 0-5.000 5.001-10.000 10.001-29.999 30.000-40.000 40.001-59.999 60.000-65.535 | 0-7 8-15 16-46 46-61 61-92 92-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | LO | | | |
| 7 | HI | 0-65.535 | 0-100 | Xfade to color White → RGBW color |
| 8 | LO | | | |
| 9 | HI | 0-65.535 | 0-100 | Hue 0° → 360° |
| 10 | LO | | | |
| 11 | HI | 0-65.535 | 0-100 | Saturation 0 → full saturated |
| 12 | LO | | | |
| 13 | | | | Reserved (only V4.x) |
| 14 | | | | Reserved (only V4.x) |
| 15 | | | | Reserved (only V4.x) |
| 16 | | | | Reserved (only V4.x) |

Mode 9: RGBW, 16 bit resolution per function

| Channel | | Value | Percent | Function |
|---------|----|----------|---------|-------------------------------------|
| 1 | HI | 0-65535 | 0-100 | Dimmer closed → open |
| 2 | LO | | | |
| 3 | HI | 0-65.535 | 0-100 | Intensity red 0% → 100% |
| 4 | LO | | | |
| 5 | HI | 0-65.535 | 0-100 | Intensity green 0% → 100% |
| 6 | LO | | | |
| 7 | HI | 0-65.535 | 0-100 | Intensity blue 0% → 100% |
| 8 | LO | | | |
| 9 | HI | 0-65.535 | 0-100 | Intensity white 0% → 100% |
| 10 | LO | | | |
| 11 | | | | Reserved (only V4.x) |
| 12 | | | | Reserved (only V4.x) |
| 13 | | | | Reserved (only V4.x) |
| 14 | | | | Reserved (only V4.x) |

Mode 10: HSI, 16 bit resolution per function

| Channel | Value | Percent | Function |
|---------|-------|----------|---|
| 1 | HI | 0-65535 | Dimmer closed → open |
| 2 | LO | | |
| 3 | HI | 0-65.535 | Hue 0° → 360° |
| 4 | LO | | |
| 5 | HI | 0-65.535 | Saturation 0 → full saturated |
| 6 | LO | | |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |
| 10 | | | Reserved (only V4.x) |

Mode 11: White & RGBW, Coarse/fine per function

| Channel | Value | Percent | Function |
|---------|-------|---------|---|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Color temperature CCT coarse 2.800 K → 10.000 K |
| 4 | 0-255 | 0-100 | Color temperature fine |

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 5 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | 0-255 | 0-100 | Xfade to color White → RGBW color |
| 7 | 0-255 | 0-100 | Intensity red coarse 0% → 100% |
| 8 | 0-255 | 0-100 | Red fine |
| 9 | 0-255 | 0-100 | Intensity green coarse 0% → 100% |
| 10 | 0-255 | 0-100 | Green fine |
| 11 | 0-255 | 0-100 | Intensity blue coarse 0% → 100% |
| 12 | 0-255 | 0-100 | Blue fine |
| 13 | 0-255 | 0-100 | Intensity white coarse 0% → 100% |
| 14 | 0-255 | 0-100 | White fine |
| 15 | | | Reserved (only V4.x) |
| 16 | | | Reserved (only V4.x) |
| 17 | | | Reserved (only V4.x) |
| 18 | | | Reserved (only V4.x) |

Mode 12: White, Coarse / fine channel per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Color temperature CCT coarse 2.800 K → 10.000 K |
| 4 | 0-255 | 0-100 | Color temperature fine |
| 5 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | | | Reserved (only V4.x) |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |

Mode 13: White & HSI, Coarse / fine channel per function

| Channel | Value | Percent | Function |
|---------|--|--|---|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Color temperature CCT coarse 2.800 K → 10.000 K |
| 4 | 0-255 | 0-100 | Color temperature fine |
| 5 | 0-10 11-20 21-119 120-145 146-244 245-255 | 0-4 5-8 8-46 47-57 57-96 96-100 | GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green |
| 6 | 0-255 | 0-100 | Xfade to color White → RGBW color |
| 7 | 0-255 | 0-100 | Hue coarse 0 → 360° |
| 8 | 0-255 | 0-100 | Hue fine |
| 9 | 0-255 | 0-100 | Saturation coarse 0 → full saturated |
| 10 | 0-255 | 0-100 | Saturation fine |
| 11 | | | Reserved (only V4.x) |
| 12 | | | Reserved (only V4.x) |
| 13 | | | Reserved (only V4.x) |
| 14 | | | Reserved (only V4.x) |

Mode 14: RGBW, Coarse / fine channel per function

| Channel | Value | Percent | Function |
|---------|-------|---------|--|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Intensity red coarse 0% → 100% |
| 4 | 0-255 | 0-100 | Red fine |
| 5 | 0-255 | 0-100 | Intensity green coarse 0% → 100% |
| 6 | 0-255 | 0-100 | Green fine |
| 7 | 0-255 | 0-100 | Intensity blue coarse 0% → 100% |
| 8 | 0-255 | 0-100 | Blue fine |
| 9 | 0-255 | 0-100 | Intensity white coarse 0% → 100% |
| 10 | 0-255 | 0-100 | White fine |
| 11 | | | Reserved (only V4.x) |
| 12 | | | Reserved (only V4.x) |
| 13 | | | Reserved (only V4.x) |
| 14 | | | Reserved (only V4.x) |

Mode 15: HSI, Coarse / fine channel per function

| Channel | Value | Percent | Function |
|---------|-------|---------|--|
| 1 | 0-255 | 0-100 | Dimmer coarse closed → open |
| 2 | 0-255 | 0-100 | Dimmer fine |
| 3 | 0-255 | 0-100 | Hue coarse 0 → 360° |
| 4 | 0-255 | 0-100 | Hue fine |
| 5 | 0-255 | 0-100 | Saturation coarse 0 → full saturated |
| 6 | 0-255 | 0-100 | Saturation fine |
| 7 | | | Reserved (only V4.x) |
| 8 | | | Reserved (only V4.x) |
| 9 | | | Reserved (only V4.x) |
| 10 | | | Reserved (only V4.x) |

Overview of typical CCT values as DMX values

| CCT-Value | DMX-Value (8 bit) | | | DMX-Value (16 bit) | | |
|-----------|-------------------|------|-----|--------------------|--------|--------|
| | TT | DT | C | TT | DT | C |
| L10- | TT | DT | C | TT | DT | C |
| 3.200 K | 153 | -- | 14 | 39.321 | -- | 3.670 |
| 5.600 K | -- | 102 | 99 | -- | 26.214 | 25.493 |
| 6.000 K | -- | 170 | 113 | -- | 43.712 | 29.098 |
| 6.500 K | -- | 100% | 131 | -- | 65.535 | 33.685 |

To calculate CCT values in DMX % and vice versa

Use the following formulas to transform CCT values in DMX % values and vice versa:

$$CCT_{\text{Target}} = \frac{(CCT_{\text{max}} - CCT_{\text{min}}) \times DMX_{\text{in percent}}}{100} \times CCT_{\text{min}}$$

$$DMX_{\text{in percent}} = \frac{CCT_{\text{recent}} - CCT_{\text{min}}}{CCT_{\text{max}} - CCT_{\text{min}}} \times 100$$

CCT values for the ARRI L10 models:

L10-TT (Tungsten Tuneable)

$$CCT_{\text{min}} = 2.600 \text{ K}$$

$$CCT_{\text{max}} = 3.600 \text{ K}$$

L10-DT (Daylight Tuneable)

$$CCT_{\text{min}} = 5.000 \text{ K}$$

$$CCT_{\text{max}} = 6.500 \text{ K}$$

L10-C

$$CCT_{\text{min}} = 2.800 \text{ K}$$

$$CCT_{\text{max}} = 10.000 \text{ K}$$

Specification

Physical

| | |
|--|--|
| Length (Focus in flood position) | 560 mm (22 in.) |
| Length (Focus in spot position) | 745 mm (29.3 in.) |
| Width | 502 mm (19.8 in.) |
| Height | 395 mm (15.5 in., Stirrup folded down) |
| Latch distance | 344 mm / 13.5 " |
| Width for accessories | 344 mm / 13.5 " |
| Weight (manual version, w/o accessories) | 19,7 kg (43.4 lbs.) |
| Weight (P.O. version, w/o accessories) | 21,3 kg (47 lbs.) |

Light source

| | |
|------------------------------------|-------------------------------------|
| Type | ARRI LED Lightengine |
| Typ. LED lifetime L70 | 50.000 h |
| White light | 2.800 K - 10.000 K (ARRI L10-C) |
| | 2.600 K - 3.600 K (ARRI L10-TT) |
| | 5.000 K - 6.500 K (ARRI L10-DT) |
| Colored light | RGBW color mixing (only ARRI L10-C) |
| Color rendering index | typ. CRI >94 |
| Green/Magenta saturation | +/- 1 (full green to full magenta) |

Optical path

| | |
|---------------------------|---------------------|
| Type | Fresnel, focussable |
| Lens diameter | 274 mm / 10 " |
| Half peak angle | 15° - 50° |

Dynamic functions

| | |
|------------------------|---------------------------------------|
| Dimmer | electronic, 0 - 100% |
| Color mixing | RGBW color mixing |
| | (Hue and saturation, only ARRI L10-C) |

Control and Programming

| | |
|----------------------------------|---|
| DMX channels | 7-18 channels, depending on type and mode |
| Setting and addressing | Fixture menu, RDM, ALSM |
| DMX compliance | ESTA DMX 512A |
| RDM compliance | ESTA DMX 512A |
| Firmware update | USB interface and ALSM |

Construction

| | |
|-----------------------------|---------------------------------------|
| Color | Blue/silver or black |
| Housing | Composite housing with aluminum frame |
| Protection rating | IP 20 |

Installation

| | |
|---|------------------|
| Mounting | 28 mm spigot |
| Orientation | +/- 90° |
| Minimum clearance around fixture | 0,5 m (19.7 in.) |
| Minimum view distance to light aperture | 0,5 m (19.7 in.) |

Connectors

| | |
|-----------------------------------|------------------------------|
| AC power input | Neutrik® PowerCON® True1 |
| DMX and RDM data in/out | 5-pin, locking XLR connector |
| USB connector | Mini-USB-A |

Electrical

| | |
|--------------|--|
| AC power | 90 - 250 V~, 50 - 60 Hz AC |
| Power supply | Auto-sensing switching-mode power supply |

Typical Power

| | |
|---|-------|
| 230 V, 50 Hz | 510 W |
| cos φ | > 0.9 |
| Measurements made at nominal voltage with all LEDs at full intensity. | |
| Allow for a deviation of +/- 10% | |

Noise emission

| | |
|--------------------------------------|-----------|
| Ambient temperature = 35° C (95° F) | < 20dB(A) |
| Ambient temperature = 45° C (113° F) | < 30dB(A) |

Thermal

| | |
|---------------------------------------|--|
| Minimum ambient temperature (t_a) | -20° C (-4° F) |
| Maximum ambient temperature (t_a) | 45° C (113° F) |
| Cooling | Silent, temperature-controlled fan cooling |

Approvals

| | |
|-----------|---------------------|
| EU safety | EN / IEC 60598-2-17 |
| | EN / IEC 60598-1 |
| | EN / IEC 62471 |
| | EN / IEC 62493 |
| EU EMC | EN 55015 |
| | EN / IEC 61000-3-2 |
| | EN / IEC 61000-3-3 |
| | EN / IEC 61547 |
| | CISPR 15 |
| US safety | UL1573 |

| | |
|---------------|-------------------------|
| US EMC | FCC CFR 47 Part 2 |
| | FCC CFR 47 Part 15 |
| Canada safety | CAN/CSA C22.2 No. 166 |
| | CAN/CSA C22.2 No. 9.0 |
| | CAN/CSA C22.2 NO. 9.0S1 |
| Canada EMC | ICES-003 |

Included items

| |
|-------------------|
| 28 mm spigot |
| Short instruction |

Accessories

| | |
|---|------------|
| Power input cable 1,5 m, 3G1,5, H05RN-F, HAR, PowerCon TRUE1, bare end | L2.0001485 |
| Power input cable 3,0 m, 3G1,5, H05RN-F, HAR, Switch, PowerCon TRUE1, Schuko plug | L2.0001486 |
| Power input cable 7,0 m, 3x16AWG, SEOOW, SOOW or W, cUL (ZJCZ), Switch, PowerCON TRUE1, Edison plug | L2.0001487 |
| 4-leaf barndoor (344 mm, 13.5 ") | L2.40950.0 |
| 4-leaf barndoor (344 mm, 13.5 ", black / silver) | L2.80951.0 |
| 8-leaf barndoor (344 mm, 13.5 ") | L2.40960.0 |
| Filter frame (330 mm, 13.0 ") | L2.80970.0 |
| Snoot with variable aperture (344 mm / 13.5 ") | L2.80975.0 |
| Speed ring circular (9305, 344 mm, 13.5 ") | L2.76247.0 |
| Chimera Quartz Plus „S“ | L2.89054.0 |
| Safety-cable with Kettbiner | L2.80864.0 |

Order information

| | |
|--|------------|
| ARRI L10-C, MAN., blue/silver, Edison (7 m) | L0.0003381 |
| ARRI L10-C, MAN., blue/silver, Schuko (3 m) | L0.0003382 |
| ARRI L10-C, MAN., blue/silver, bare ends | L0.0003383 |
| ARRI L10-C, MAN., black, bare ends | L0.0003384 |
| ARRI L10-C, P.O., blue/silver, bare ends | L0.0003385 |
| ARRI L10-C, P.O., black, bare ends | L0.0003386 |
| ARRI L10-TT, MAN., blue/silver, Edison (7 m) | L0.0003387 |
| ARRI L10-TT, MAN., blue/silver, Schuko (3 m) | L0.0003388 |
| ARRI L10-TT, MAN., blue/silver, bare ends | L0.0003389 |
| ARRI L10-TT, MAN., black, bare ends | L0.0003390 |
| ARRI L10-TT, P.O., blue/silver, bare ends | L0.0003391 |
| ARRI L10-TT, P.O., black, bare ends | L0.0003392 |
| ARRI L10-DT, MAN., blue/silver, Edison (7 m) | L0.0003393 |
| ARRI L10-DT, MAN., blue/silver, Schuko (3 m) | L0.0003394 |
| ARRI L10-DT, MAN., blue/silver, bare ends | L0.0003395 |
| ARRI L10-DT, MAN., black, bare ends | L0.0003396 |
| ARRI L10-DT, P.O., blue/silver, bare ends | L0.0003397 |
| ARRI L10-DT, P.O., black, bare ends | L0.0003398 |

Specification subject to change without notice. For the latest product specification including photometric data, see www.arri.com

In case of technical problems, please visit us at www.arri.com, to find the next ARRI service center.

www.arri.com

FCC

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

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