Orbiter

USER MANUAL

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Introduction

The Orbiter from ARRI is a very bright LED spotlight. The spotlight features a holder for optical accessories and two stirrup holders with quick release fasteners. Similar to the ARRILITE series or the ARRI M-Series, the Orbiter is designed for direct or indirect illumination of objects. The high output allows a large distance of the light source to the object. Like all ARRI LED products, the Orbiter has a fully tunable light source.

The Orbiter produces white or colored light with adjustable color temperature and adjustable green-magenta point. The light spectrum has been optimized for excellent color reproduction and perfect interaction with digital cameras. All models can be controlled via the DMX512-A protocol, LumenRadio CRMX (wireless DMX), RDM, Art-Net protocol, sACN, web portal or the control unit for the Orbiter.

Please follow the safety and installation instructions for the Orbiter. You will find the Safety and installation instructions for free download in the download section of the ARRI website www.arri.com.

NOTICE

Please observe the safety and warning instructions in the „Orbiter Short Instruction“ and the „Safety and Installation Manual“. They are available for free download on the website www.arri.com.

Features

Light Field

Depending on the optical accessories used, the Orbiter offers the same dramatic possibilities as a conventional open-face spotlight or profile spotlight.

Even Light Field

The Orbiter allows homogeneous illumination of the scene via indirect lighting or highlighting of certain objects. It delivers natural results.

Vibrant Colors, Full Spectrum Lighting

True-to-life color rendition is an outstanding feature of the Orbiter. The fully tunable white light of the Orbiter can be adjusted for different skin tones, camera sensors and mixed light environments. Full gamut color mixing enables the rendition of all color shades. The extensive gel library and the favorite list offer a wide range of familiar colors at the user’s fingertips.

Cool Light Beam

The Orbiter emits, compared to a conventional lamphead, only few heat at the front, making actors feel comfortable in the light beam.

Properties

Quick Lighting Mount Accessory Holder

The quick lighting mount accessory holder on the front of the fixture (Quick Lighting Mount) holds the optical accessories from the ARRI range of accessories for the Orbiter. The receptacle has an interface port for communication with the optical accessory and a power supply for the optical accessory when required.

Stirrup

Two stirrups are available for the Orbiter. The manual stirrup made of aluminum is stable and lightweight. The P.O. stirrup is made of steel and designed for rod operation.

The two quick-release latches on both sides of the Orbiter allow for quick mounting and removing of the stirrup or other stirrup types from ARRI. The stirrup is not included and must be ordered separately.

Tilt Lock

The high strength tilt locks on each side of the stirrup provide secure locking. It eliminates movement and slippage and ensures that the Orbiter will stay where you put it.

Control

All functions of the Orbiter are controllable through DMX (cabled), CRMX (wireless DMX) or Art-Net. The Orbiter is also fully RDM compatible (via DMX and Art-Net with suitable controllers) and is equipped with an RDM feedback channel for reporting all set parameters including system status.

The Orbiter is equipped with an integrated LumenRadio CRMX receiver for wireless DMX control and RDM data transfer.

Control Panel for Orbiter

For location use a control panel for the Orbiter is available. The control panel supports control of intensity, color temperature, green-magenta point, hue, saturation and much more parameters. The control panel can be stowed and used on the backside of the Orbiter or off the fixture via a connector cable.

Control Options

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

Option	Control	Configuration	Information
Control Panel for Orbiter	Yes	Yes	See user manual „Control Panel“ (Download from www.arri.com)
DMX	Yes	No	See DMX Modes Specification (Download from www.arri.com)
LumenRadio CRMX (wireless DMX)	Yes	No	page 21
RDM	No	Yes	page 32
Art-Net and sACN	Yes	No	page 25
ALSM	No	Yes	page 30
Orbiter Web Portal	No	Yes	page 30
Stellar App	Yes	No	www.arri.com/stellar/

Status LED

The status LED on the back panel of the Orbiter indicates the status of the fixture:

Status LED Behaviour		Beschreibung
	Green / Always on	Normal operation
	Green and blue / Always on	Normal operation Art-Net, DMX, sACN traffic receiving
	Green and blue / Blinking	Normal operation Wireless DMX traffic receiving
	Orange / Blinking slow (2 Hz)	Warning, degraded mode
	Red / Always on	Error (Fail safe)

Control Panel for Orbiter

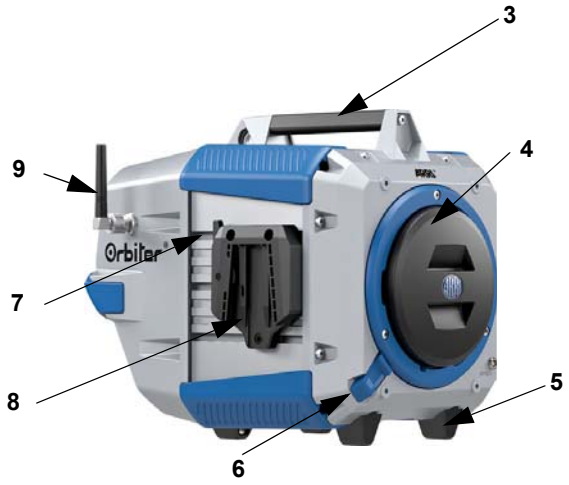
A detailed description of the control panel for the Orbiter and the menu structure can be found in the user manual "Control Panel for Orbiter". The manual is available for free download in the download area of the ARRI website www.arri.com.

The illustration shows the designations of the operating elements of the control panel as used in the section “To Use the Modes” on page 11.

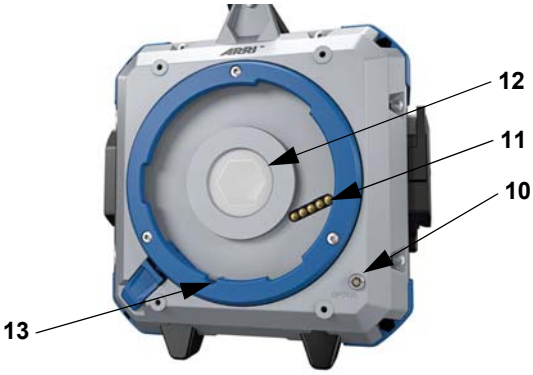
The control panel is not shipped with the fixture as a standard. It is available as an accessory.

Overview

Orbiter (delivery state)

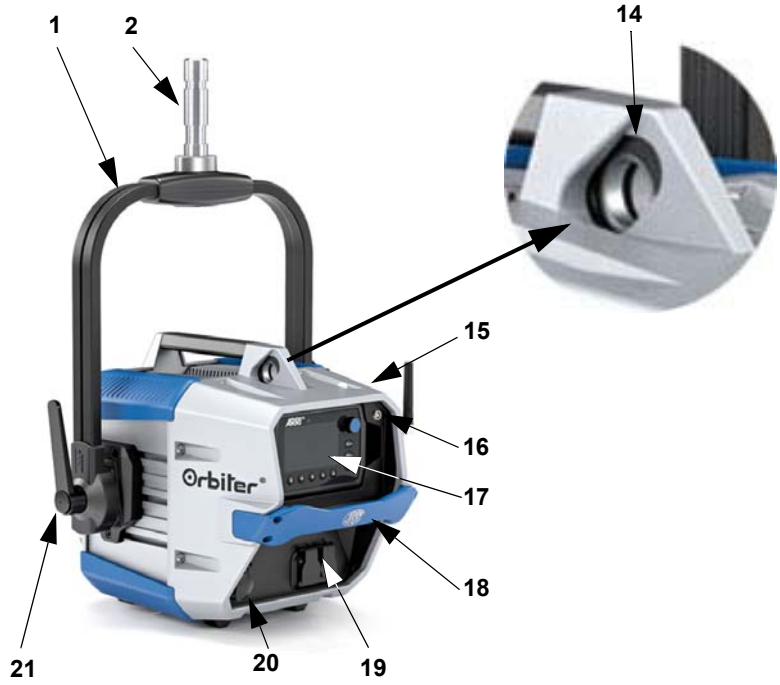


Quick Lighting Mount QLM



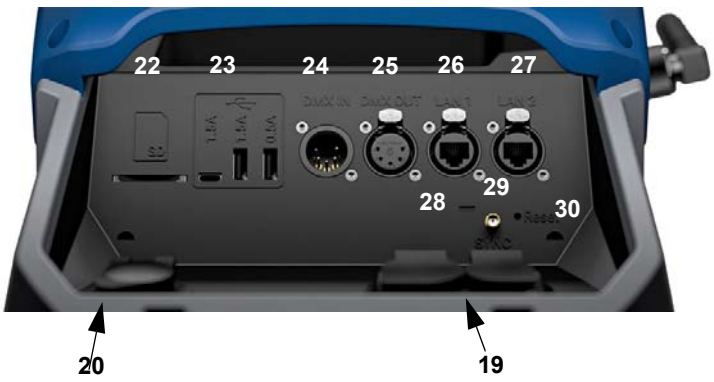
Orbiter with manual yoke & control panel*

Safety Loop Attachment



**Yoke & control panel must be ordered separately*

Connector Panel



1 Yoke
2 Spigot (junior pin)
3 Upper handle
4 Protective cap
5 Rubber feet
6 Locking slider
7 Quick release lever
8 Yoke bracket
9 Antenna (wireless DMX)
10 Communication interface (5-pin Lemo)
11 Digital optics interface (5-pin)
12 Light output with protective glass
13 Guide for locking pin
14 Safety loop attachment
15 Ambient light sensor
16 Connector for Control panel extension cable
17 Control panel
18 Focus handle
19 Mains in and out
20 Battery connector 48 V - 52 V ⎓
21 Tilt lock
22 SD card slot
23 USB ports
24 DMX in
25 DMX out
26 Ethernet connector (RJ45)
27 Ethernet connector (RJ45)
28 Status LED
29 SYN connector (SMA)
30 Reset button

Modes

The Orbiter supports 18 operating modes when controlled via DMX. The 8-bit modes should be used for simple light control (dimmer consoles).

The 16-bit modes are used in combination with a DMX or Art-Net / sACN controller that supports 16 bit resolution. The increased resolution compared to the 8-bit modes provides for stepless dimming and continuous color adjustment.

Below you will find a short description of the supported modes. A detailed overview can be found in the document "Orbiter DMX Modes Specification", which is available for free download on the ARRI website www.arri.com.

CCT

Mode for operation with white light only when few channels are available. Control of intensity, color temperature and adjustment of the green-magenta point.

HSI

Simplified mode for control of hue, saturation and intensity. Use this mode when the control offers only a limited number of channels.

X,Y Coordinates

The X,Y mode defines the color of the light via its X,Y coordinates in the CIE-1931 diagram with 8 or 16 bit resolution. One channel defines the type of color transition.

RGBACL

Simplified mode for the generation of colored light when only few channels are available. It allows control of the overall intensity and the intensities of the colors red, green, blue, amber, cyan and lime. Please note the color space setting (see page 19).

Gel Selection (GEL)

An extensive filter library is available in GEL mode. The color temperature of the virtual white light source can be set to 3,200 K or 5,600 K. The intensity is adjustable.

Source Matching

Choose the appropriate light source for your requirements. Source Matching saves a lot of time. Choose the light source that best matches the illumination of the scene from 46 different light sources.

Lighting Effects

The Orbiter is equipped with an extensive effect generator supporting a lot of different lighting effects. Activate a lighting effect via the control panel, DMX, Art-Net or sACN and adjust the parameters. In no time you can create exactly the effect you need.

Color Sensor

In color sensor mode, the Orbiter measures the color temperature of the ambient light and adjusts the light output to the currently measured ambient light or follows the ambient light continuously.

Favorites

The user can store up to 246 favorites in the Orbiter. A favorite can freely be modified by the user and called up any time. The favorites are stored permanently, they are still available after a power cycle.

Ultimate DMX Mode

The ultimate DMX mode allows the combination of different control modes. You can pre-select two different modes and crossfade between them. This allows you to quickly select, prepare and crossfade the most suitable control modes for your needs.

Extended Color Control (ECC)

The extended color control allows the intuitive modification of a selected color tone. When the Extended Color Control is active, eight parameters are added to each control mode (see “Extended Color Control (ECC)” on page 15). Depending on the selected mode (except Lighting Effects), 8 (8-bit modes) or 16 (16-bit modes) additional DMX channels are assigned per fixture.

NOTE

Depending on the selected mode, the required address space should be reserved in the fixture patch to enable independent control of all fixtures.

To Use the Modes

This section describes the use of the operating modes via the control panel.

A complete overview of the parameters and options of the individual features and the structure of the fixture menu can be found in the Control panel user manual, which is available for free download at www.arri.com.

To set the Lighting Parameters in CCT Mode

Select the parameter to set with a quick button (Intensity, color temperature CCT, green-magenta point G/M). Press „ECC“ to open the extended color control menu (see page 15). Set the value of the selected parameter with the encoder. Press „Mode“ long to save the setting as a favorite.

To set the Color in HSI Mode

Select the parameter to set with a quick button (Intensity, hue, saturation). Press „ECC“ to access the extended color control menu (see page 15). Set the value of the selected parameter with the encoder. Press „Mode“ long to save the setting as a favorite.

To set the Color in X,Y Mode

Select the parameter to set with a quick button (Intensity, x value, y value). Press „ECC“ to access the extended color control menu (see page 15). The value range both of the x any y coordinate is from 0.0000 to 0.8000. Press „Mode“ long to save the setting as a favorite.

To set the Color in RGBACL Mode

Select the parameter to set with a quick button (Intensity, red, green, blue, amber, cyan, lime). Press „ECC“ to access the extended color control menu (see page 15). Press „Calibration“ to select the calibrated or the non-calibrated color space (see page 19). Set the value of the selected parameter with the encoder. Press „Mode“ long to save the setting as a favorite.

To set the Lighting Parameters in GEL Modes

Select the parameter to set with a quick button (Intensity, gel, brand, category, no color [remove all gels], base CCT [color temperature of the virtual white light]). Press „ECC“ to access the extended color control menu (see page 15). Press „Mode“ long to save the setting as a favorite.

The table below shows the available filter brands and categories implemented in the gel library.

Rosco	**LEE**
Color Correction	Color Correction
CalColor	Color Filters
Storaro Selection	600 Series
Cinelux	Cosmetic Filters
	700 Series

To set the Light Source Type in Source Matching Mode

Select the parameter to set with a quick button (Intensity, category, source). Press „ECC“ to access the extended color control menu (see page 15). Press „Mode“ long to save the setting as a favorite.

Please find a detailed overview of all supported light sources in the document „Orbiter DMX Modes Specification", which is available for free download on the ARRI website www.arri.com.

To Select a Lighting Effect and set the Parameters

The Orbiter offers an effect library with a wide variety of lighting effects used on set or in a TV studio. The Orbiter replaces many special effect devices with its unique effect library.

You can call up all effects using the control panel or via DMX, Art-Net or sACN. Every effect offers specific parameters. A lighting effect can be stored as a favorite for quick access at a later point.

To select and activate an effect

1. Press the „Mode“ button and select „Effect“ with the encoder.
2. Select the desired effect by turning the encoder. The lighting effect starts immediately, except "Explosion". This effect starts when you press the "Trigger" quick button.
3. Set the parameters, as described below.

To stop an effect

Change the mode to stop an effect.

The Orbiter provides the following effects in DMX modes 22 (8 bit) and 23 (16 bit). Intensity is a parameter for all effects:

Candle

Low flickering of a warm light, slower than fire and less energetic. The light gentle fades in CCT and brightness with periods of static behavior in between. It consists of „flutters“ and static periods.

Parameters:

- Intensity
- Speed
- CCT range

Clouds Passing

Slow variations in intensity and CCT that can be offset. The effect is most useful when using many Orbiters that are offset to prevent a simultaneous effect on different fixtures.

Parameters:

- Intensity
- Clouds passing speed
- Offset
- Sync

Club Lights

Random colors that pulse, flash and fade.

Parameters:

- Intensity
- Speed
- Color variety (3, 6, 9, 12, 15, 18, 21 or 24 colors)

Cop Car

Creates an on-board blue, blue/red, blue/white, blue/red/white, blue/orange, blue/red/orange, red/orange, orange or red flashing effect to mimic a police car, an ambulance or a fire brigade. Do not use the effect in public areas without permission.

Parameters:

- Intensity
- Color combination
- Flash pattern

Explosion

Creates a bright flash with fast increasing and slow decreasing intensity. Press the quick button „Trigger“ to trigger an explosion.

Parameters:

• Intensity
• Trigger
• Decay (Afterglow)
• Change color

Fire

Creates a flickering fire effect with randomly changing color temperature.

Parameters:

• Intensity
• Speed
• CCT range

Fireworks

Bright flashes of color and have a quick start and fade to zero intensity.

Parameters:

• Intensity
• Speed
• Colors

Fluorescent Flicker

Fluorescent color with static periods and then periods of the light flickering on and off.

Parameters:

• Intensity
• Speed
• Frequency
• Change color

Lightning

Creates an on-board flashing lightning effect. Intensity, speed and frequency of flashing can be controlled.

Parameters:

• Intensity
• Speed
• Frequency
• Sync
• Change color

Paparazzi

Effect that mimics a flash bulb or modern camera flash.

Parameters:

• Intensity
• Speed
• Flash type
• Change color

Party Effect

The Party effect calls up the color spectrum or changes the color saturation from full to less and vice versa in an endless loop.

Parameters:

- Intensity
- Speed
- Saturation

If you do not need the effect for shooting, you will need it for the party when the movie is done!

Pulsing

A pulsing or throbbing effect where the color and speed can be set.

Parameters:

- Intensity
- Frequency
- Duration
- Change color

Strobe

Generates a white or colored strobe effect with adjustable speed.

⚠ DANGER

DANGER! Risk of injury or death through epileptic seizure.

Do not use the effect near stairways, in corridors or near public exits.

Provide advance notice that strobe lighting is in use. Display advisory notices on the set, at the point of ticket sales, on tickets if possible, in the program, and at the entrance(s) to the venue or studio.

Avoid extended periods of continuous flashing, particularly at frequencies of 10 to 20 flashes per second. At flash rates below 5 flashes per second, it is estimated that only 5% of flicker-sensitive persons will be at risk of seizure

Make sure that personnel at the venue are trained in the care of a person who is having an epileptic seizure and able to provide care if necessary.

If strobes are in use and a person has a seizure, switch the strobes off immediately.

Mount strobes as high above head height as practicable.

Parameters:

- Intensity
- Speed
- Color

Television

Creates an on-board TV effect. Cool CCT that changes intensity every few seconds.

Parameters:

- Intensity
- Speed
- CCT range

Welding

Quick bright flashes with a fast decay.

Parameters:

- Intensity
- Speed
- Minimum level
- Change color

When you change a parameter of the active effect via DMX or the control panel, the internal effect generator recalculates the values immediately. As a result, the effect may be stepped, stuttering or uneven for a short time. Do not change the parameters while the effect is active if it is important that the effect runs smoothly.

Extended Color Control (ECC)

The extended color control (ECC) allows the modification of the selected color in an intuitive way. It can be used both via the control panel or DMX. It is available in all modes except „Effect“ and „Favorites“.

To use the Extended Color Control via DMX

The Orbiter applies nine additional parameters to every DMX mode when the extended color control is activated. Dependent on the selected mode the Orbiter adds nine (8-bit modes) or 16 (16-bit modes) DMX channels to the DMX mode. Please find more information in the „Orbiter DMX Modes Specification“ which is available for free download on the ARRI web site www.arri.com.

To use the Extended Color Control via the Control Panel

Get access to the extended color control via the ECC quick button in a menu.

The picture below shows the color control screen.

The eight stylized rotary controls with neutral position in the middle represent the parameters of the extended color control. The crossbars show the current value of the parameter. The active parameter is marked by a light blue frame around its rotary control.

Double-clicking the encoder sets the selected parameter to the neutral position, triple-clicking sets all parameters of the extended color control to the neutral position.

When changing the mode, the current values of the parameters are stored and will be recalled the next time this mode is called up. The parameters are retained when the Orbiter is switched off.

When extended color control is active:

- The mode symbol in the display is followed by the symbol for extended color control in the main menu,
- the parameters are saved with a favorite. Favorites with parameters of the extended color control are marked with an asterisk,
- an active favorite is left when a parameter is changed,
- the calibrated RGBACL color space is activated when extended color control via DMX is active,
- the direct RGBACL color space cannot be used,
- the parameters are taken into account during crossfade,
- the parameters are not considered when an effect is activated.

Favorites

The user can store up to 246 favorites in the Orbiter. A favorite can freely be modified by the user and called up any time. The favorites are stored permanently, they are still available after a power cycle.

The favorites are erased when performing a factory reset.

To store a favorite, press the Mode button for 2 seconds in a color mode screen to add the active color to your favorites.

The favorite will be stored in the database of favorites. Each favorite includes information about:

Settings:

• Tungsten mode

• High speed mode

• Effect incl. its parameters

• Calibrated color space

• user calibrated RGBACL white point

Light data

• Color mode

• Dimmer value

• CCT

• GN

• Hue

• Saturation

• Gel filter mode data

• Light source matching

• RGBACL mode values

• Extended color control values

Favorite number

Creation date

Favorites are shown in order of their creation date.

When loading a favorite it overwrites all current settings with settings contained in the favorite. When at least one setting or value is modified after favorite load, the favorite is exited. When you want to keep the modified setting, you have to store it as a new favorite.

To set the Intensity in all Operating Modes

The encoder sets the intensity in all modes as the default setting. The current value is shown in large letters on the display when changed. The selector reacts dynamically: fast turning changes the intensity in large steps, slow turning allows very precise adjustment of the intensity. The quick buttons allow the intensity to be changed quickly at fixed intervals (+/- 1%, +/- 10%) or to absolute values (0%, 25%, 50%, 75%, 100%). „Done" leaves the intensity menu.

Control Menu „Menu“

The following section gives detailed information of the global settings of the fixture and the light.

Light Control

Host/Client Mode

When Host/Client mode is active, the fixture follows the control commands of the host fixture. For this purpose the fixtures must be connected to each other via DMX line.

By default the host/client mode is not active.

Activating and deactivating the Host/Client Mode

1. Open the menu with MENU.
2. Select the "Light Control" menu with the encoder. Push the encoder to open the menu.
3. The Host/Client mode is the first menu item of the "Light Control" menu and is therefore already selected. Push the encoder to open the menu.
4. Select the desired operating mode with a quick button or with the encoder (turn and push).
5. The menu closes automatically after a few seconds.

Operational Mode

The operational mode determines whether the Orbiter produces light with high color quality (High Color Rendering, default setting) or high brightness (High Output), or is particularly quiet in noise-critical situations (Low Noise).

To set the operational mode

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Operational Mode“ with the encoder. Push the encoder to open the menu.
4. Select the operational mode by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Dimming Curve

The Orbiter supports four dimming curves. The dimming curves are global: They affect both the intensity control via the control panel or DMX, WDMX, Art-Net and sACN.

- **Linear:** The intensity changes proportional to the encoder or the channel value.
- **Exponential:** This is the default setting. The resolution is high at lower intensity levels and low at higher intensity levels. Use this dimming curve when you need a high resolution at low intensity levels. This is the default setting.
- **Logarithmic:** The resolution is low at lower intensity levels and high at higher intensity levels. Use this dimming curve when you need a high resolution at high intensity levels.
- **„S“ curve:** The resolution is both high at lower and higher intensity levels and low at intensity levels in between. Use this dimming curve, when you need a high resolution at low and high intensity levels.

To set the dimming curve

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Dimming Curve“ with the encoder. Push the encoder to open the menu.
4. Select the dimming curve by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

NOTICE

The dynamic of an effect using the intensity is very low, when you choose a basic intensity value in a flat area of the dimming curve. Choose a different effect or select another dimming curve to create a more dynamic effect.

Tungsten Mode

The Tungsten Mode mimics the dimming curve and strike on-and-off effect of a traditional tungsten lamp. The CCT warms as the light is dimmed and when the intensity drops to zero quickly there is a short after-glow of warm light. This mode is perfect for mixing the Orbiter with tungsten sources or for producing a familiar effect. The default setting is Off.

To activate and deactivate the tungsten mode

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Tungsten Mode“ with the encoder. Push the encoder to open the menu.
4. Activate or deactivate the tungsten mode by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

High Speed Mode

The High Speed mode generates flicker-free light for High Speed shootings. The High Speed Mode has been tested up to 25.000 fps and down to 2° shutter angle with no flicker or roll bars. The default setting is Off.

NOTICE

Effects are deactivated in High Speed mode. When you try to call up an effect in High Speed mode, the warning „*Not Possible: High Speed Active*“ is displayed. When you try to activate the High Speed mode with an effect active, the warning „*Not Possible: Effect Active*“ is displayed. De-activate the effect or the High Speed mode to change the control mode.

To activate and deactivate the high speed mode

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „High Speed Mode“ with the encoder. Push the encoder to open the menu.
4. Activate or deactivate the high speed mode by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Color Sensor Mode

In color sensor mode, the Orbiter adopts the color temperature of the current ambient light (Momentary) or follows the color temperature of ambient light (Continuous, default setting).

To set the color sensor mode

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Color Sensor Mode“ with the encoder. Push the encoder to open the menu.
4. Select the color sensor mode by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Color Sensor Calibration

The color sensor can be calibrated for different light sources to perfectly match the light produced by the headlight to the ambient light. The default setting of the color sensor calibration is "Tungsten".

To select the color sensor calibration

1. Open the menu with MENU.
2. Choose the menu "Light Control" with the encoder. Push the encoder to open the menu.
3. Choose the menu "Color Sensor Calibration" with the encoder. Push the encoder to open the menu.
4. Select the desired light type with a quick button or with the encoder (turn and push).
5. The menu closes automatically after a few seconds.

Calibrated RGBACL Color Space

When using RGBACL mode, the Orbiter by default does not generate colors in a calibrated color space (direct). The color is generated with optimized brightness within the specified tolerances. You can activate the calibrated color space Kodak Pro Photo Color Gamut / ESTA standard E1.54 to force the Orbiter to generate a calibrated color. The calibrated color space is a global setting and is active in both on-board controls and DMX.

To activate and deactivate the calibrated RGBACL color space

1. Push MENU button to open the fixture menu.
2. Choose the menu „Light Control“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „RGBACL Calibrated Mode“ with the encoder. Push the encoder to open the menu.
4. Activate or deactivate the RGBACL calibrated mode by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

DMX

The Orbiter can be controlled via DMX or Art-Net. When receiving different control data the Orbiter prioritizes the received data as shown in the table below.

Control Protocol	Priority
DMX	DMX commands override sACN and Art-Net commands
sACN	sACN commands override Art-Net commands, but are overwritten by DMX commands.
Art-Net	Art-Net commands are overriden by sACN and DMX commands

Address

When you control the Orbiter using DMX in a DMX data network, you must assign a DMX address to the fixture.

To assign a DMX address

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Address“ with the encoder. Push the encoder to open the menu.
4. Select the DMX address by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Mode

NOTICE

The Orbiter offers different DMX modes. Please find a detailed overview of all DMX modes in the document „Orbiter DMX Modes Specification“ which is available for free download on the ARRI website www.arri.com.

To set the DMX mode

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Mode“ with the encoder. Push the encoder to open the menu.
4. Select the DMX mode with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Loss Behavior

You can set the behavior of the fixture when the control signal is lost. The table below shows the available options:

Option	Description
Hold Last Command (default setting)	The last received DMX values are used until the fixture is switched off or valid DMX data is received again.
Black Out	The fixtures douses to 0% intensity immediately.
Hold 2 Min. Fade Out	The last received DMX values are used for 2 minutes. After 2 minutes the fixture douses to 0% intensity. When valid DMX data is received after less than 2 minutes, these data will be used.

To set the DMX-Signal-Loss Behavior

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Loss Behavior“ with the encoder. Push the encoder to open the menu.
4. Select the DMX loss behavior by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

To Select the DMX Modes Specification

The Orbiter offers different DMX modes. When a mode is modified or added, a new version of the DMX mode specification will be released. To ensure compatibility with existing DMX networks, you can set which version of the DMX mode specification the fixture should use.

To set the DMX mode specification

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Mode Specification“ with the encoder. Push the encoder to open the menu.
4. Select the DMX mode specification by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Reduce Channels

The Orbiter uses many DMX channels to ensure optimal fixture control and to support all functions in the best possible way. If you do not need certain functions (e.g. extended color control) for your application or your control system does not provide enough DMX channels, you can disable these functions and reduce the number of DMX channels accordingly using the "Reduce Channels" function. The functions are still available via the control panel. The default setting is Off.

To reduce channels

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Reduce Channels“ with the encoder. Push the encoder to open the menu.
4. Select the setting by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Wireless DMX (CRMX)

The Orbiter is equipped with a 2,4 GHz, 2dBi antenna and a wireless DMX receiver supporting the Lumen-Radio CRMX protocol.

If there is DMX traffic received via a wired interface (DMX-512A, ArtNet or sACN) and wireless DMX is activated (CRMX State On, default setting), the Orbiter can be linked to a wireless DMX transmitter via an RDM discovery command. Once linked successfully, the Orbiter processes wireless DMX data and respond to RDM requests only via the wireless link.

The Status LED on the connector panel fades from blue to green followed by a 2 second fade from green to blue as soon as CRMX (WDMX) is active AND CRMX data is received and processed by the Orbiter.

If the CRMX State is set to OFF, no wireless DMX and no wireless RDM traffic will be processed.

CRMX Link

CRMX Link unlinks or links the fixture from or couples the fixture to a CRMX transmitter. The wireless DMX (CRMX) must be enabled (CRMX State On) to use this function.

To Link an Orbiter with a wireless DMX transmitter

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „CRMX State“ with the encoder. Push the encoder to open the menu.
4. Select „On“ by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

To Unlink an Orbiter from a wireless DMX transmitter

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „CRMX State“ with the encoder. Push the encoder to open the menu.
4. Select „Off“ by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

NOTICE

As soon as DMX or RDM traffic is detected via the other interfaces, any wireless DMX or RDM data will be ignored and the Orbiter processes the wired DMX/RDM traffic.

Transition Type

When fading from white light to colored light or vice versa and when fading between two colors, you can specify the fade type. The table below shows the available fade types.

To set the fade type

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Transition Type“ with the encoder. Push the encoder to open the menu.
4. Choose the menu „CRMX State“ with the encoder. Push the encoder to open the menu.
5. Select the transition type by pushing a quick button or with the encoder (turn and push).
6. The menu closes automatically after some seconds.

Fade Type	Description
Direct (default setting)	„Direct“ fades linear on the shortest distance
Through Black	„Through Black“ fades from color 1 to black to color 2.
Through White	„Through White“ fades from color 1 to white to color 2.
Over White Point	„Over White Point“ fades from color 1 to color 2 above the CIE white point.
Under White Point	„Under White Point“ fades from color 1 to color 2 below the CIE white point.

Termination

A DMX data line must be terminated with a termination resistor to prevent the data signal from being reflected at the open end of the line. The Orbiter can terminate the DMX data line internally, an additional terminating resistor is no longer required. The default setting is Off.

NOTICE

A DMX line may only be terminated at the physical end, after the last device of the data line. To avoid errors due to DMX data loss, use this function only if the Orbiter is the last physical device of the data line. DMX data lines connecting devices in host/client mode without external DMX control should be terminated at both ends.

To activate and deactivate the internal termination resistor

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Termination“ with the encoder. Push the encoder to open the menu.
4. Choose the menu „CRMX State“ with the encoder. Push the encoder to open the menu.
5. Select the desired option by pushing a quick button or with the encoder (turn and push).
6. The menu closes automatically after some seconds.

To Activate and De-activate RDM Features (RDM State)

The RDM features of the Orbiter can be activated or de-activated. The default setting is On.

NOTICE

When controlling the Orbiter using the ARRI Stellar App, the RDM features must be activated to enable communication via RDM between Stellar and the fixture.

To activate and de-activate the RDM features

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „RDM State“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

To Activate and De-activate the DMX/RDM Gateway

With enabled DMX/RDM gateway the Orbiter makes all 512 channels of the used universe available at its 5-pin DMX connectors. The default setting is On.

To activate and de-activate the RDM features

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „DMX/RDM Gateway“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Valid Filter

In the default setting, the Orbiter checks the integrity of the received control data stream. If certain parameters of the data stream change (e.g. number of received DMX channels), the fixture will display a warning and check the data stream again before it recognizes the data stream as a valid control signal. If the length of the data stream changes frequently, the check may lead to unexpected behavior of the fixture. Therefore the function can be deactivated, the Orbiter then accepts all received data without further check.

To activate and deactivate the filter

1. Push MENU button to open the fixture menu.
2. Choose the menu „DMX“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Valid Filter“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Network Settings

The menu „Network Settings“ contains various parameters and functions for setting up the Orbiter in a network.

Connection

Shows whether the Orbiter is connected to a network.

IP-Address

If the Orbiter is connected to a network, it shows its IP address in the display.

Network Mode

Used to set the IP mode. In DHCP mode, the IP address, gateway, DNS1 and DNS2 are automatically assigned to the Orbiter by the network. You should use this mode if possible.

The "Art-Net 2.x.x.x" and "Art-Net 10.x.x.x" parameters are used to set up the Orbiter in an Art-Net network. "Manual" allows you to assign a fixed IP address.

Subnet Mask

Shows the network mask.

Gateway Address

Shows the gateway address.

DNS1 / DNS2

DNS addresses of the fixture.

Timeserver

Timeserver address of the fixture.

Logserver

Logserver address of the fixture.

Bonjour State

The Orbiter can be found automatically in a network using the "Bonjour" application. You can activate or deactivate Bonjour in the "Bonjour State" menu. You can also set the status via RDM or the Web Portal.

If Bonjour is disabled, the fixture cannot be automatically detected by the ARRI Lighting Service Manager (ALSM).

To activate and deactivate the Bonjour function

1. Push MENU button to open the fixture menu.
2. Choose the menu „Network Settings“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Bonjour State“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

MAC Address

Shows the MAC address of the fixture.

Art-Net & sACN

The Orbiter supports Art-Net 4.0. Art-Net is a network protocol to control devices. The Orbiter supports the sACN protocol (ANSI E1.31). It acts as a responder.

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

Generals rules of thumb:

• Maximum of 4 universes of Art-Net Art-DMX unless you really have to.

• All universes of sACN.

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

The menus „Network Settings“ and „Art-Net & sACN“ give access to all parameters you need to use Art-Net and sACN in a proper way.

Art-Net/sACN State

Sets the behavior of the fixture when a network signal is received. The fixture can automatically detect the network signal (Automatic), accept only Art-Net (Art-Net Only) or only sACN (sACN Only) or accept no network data (Off).

To select the accepted network protocols

1. Push MENU button to open the fixture menu.
2. Choose the menu „Art-Net & sACN“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Art-Net/sACN State“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Art-Net Universe

Selects the Art-Net universe.

Art-Net Net Sub Uni

Shows the sub-universe used.

Merge Mode

The Art-Net protocol supports the use of multiple transmitters or nodes transmitting Art-DMX in the same universe. Merging is limited to two sources, other sources are ignored. The default setting is HTP (Highest Takes Precedence).

sACN Universe

Selects the sACN Universe.

Flash Drive Functions

The Orbiter is equipped with two USB A ports (load capacity 1500 mA and 500 mA) and one USB C port. The USB A ports support the features described below. The Orbiter accepts FAT32 formatted USB 1.0 / 2.0 flash drives or SD / SDHC Cards.

The USB C port can be used for service purpose.

Save and load a favorite list, fixture settings or system log

The list of favorites, fixture settings and system logs available in the fixture can be saved on a USB storage medium. Favorite lists and fixture settings can be loaded from another fixture. You can update the firmware.

To save and load a favorite list, fixture settings or system log

1. Connect an USB storage medium to an USB-A port or an SD card to the SD slot of the Orbiter.
2. Push the MENU button to open the fixture menu.
3. Choose the menu „Flash Drive Functions“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

To update the firmware

1. Copy the Orbiter Update file into the root directory of a USB storage medium.
2. Push the MENU button to open the fixture menu.
3. Choose the menu „Flash Drive Functions“ with the encoder. Push the encoder to open the menu.
4. Choose the option „Update Firmware“ with the encoder. Push the encoder to open the menu.
5. Wait until the process is finished and the Orbiter restarts.
6. Remove the USB storage medium.

To update the firmware of the control panel

The firmware of the control panel is automatically updated by the Orbiter when the control panel is connected to the Orbiter and the firmware versions of the Orbiter and the control panel are different.

NOTICE

Disconnect all DMX cables from the fixture before using an USB storage medium or an SD card. The data transfer between the fixture and the USB storage medium or the SD card might be disturbed due to interferences.

Do not remove the USB storage medium or SD card stick during an update or data transfer. The file system might be corrupted. You might need to perform a recovery update to return the fixture to a functional state.

Setup the Display Behavior

You can set the intensity of the background illumination, the contrast, the behavior of the background illumination and the orientation of the display content.

Auto Adjust

When this function is active (default setting), the backlight of the control unit automatically adapts to the ambient brightness. If the function is not active, the brightness value of the "Display Brightness" setting is used.

To activate and deactivate the Auto Adjust function

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Auto Adjust“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Display Backlight

With the setting "Always On" (default setting), the backlight of the control panel remains on. "10 sec off" switches the lighting off 10 seconds after the last keypress.

To set the backlight behaviour:

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Display Backlight“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Display Brightness

This function adjusts the brightness of the control panel backlight. Select a value between 0% (dark) and 100% (bright, default).

To set the display brightness:

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Display Brightness“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Screen Mode

This function switches between white text on dark background (dark, default setting), dark text on light background (light) or automatic switching, depending on the ambient brightness.

To set the screen mode:

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Screen Mode“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Display Orientation

This function sets the orientation of the display content. You can choose between „Automatic" (display orientation depending on the control orientation, default setting), „Normal" (normal display when the control is upright, i.e. the encoder is in the upper right corner) or „Upside Down" (display content rotated 180°).

To set the display orientation

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Display Orientation“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Zoomed-In View

This function activates (Enable, default setting) or deactivates (Disable) the display of enlarged views of certain functions. An example is the enlarged display of the brightness value when adjusting the brightness. When this function is active, the brightness value is shown in a large size on a separate screen. When it is deactivated, the separate screen will not be shown.

To set the zoomed-in view:

1. Push MENU button to open the fixture menu.
2. Choose the menu „Display Setup“ with the encoder. Push the encoder to open the menu.
3. Choose the menu „Zoomed-In View“ with the encoder. Push the encoder to open the menu.
4. Select the desired option by pushing a quick button or with the encoder (turn and push).
5. The menu closes automatically after some seconds.

Read out Fixture Information

1. Push MENU button to open the fixture menu.
2. Choose the menu „Fixture Info“ with the encoder. Push the encoder to open the menu.
3. The Orbiter shows several fixture settings:
   - Status: Fixture status
   - Data: Shows if and which data is received
   - Power: mains voltage, voltage of the battery pack
   - Errors: Error list, if available
   - Light Engine Temperature: Temperature of the Light Engine
   - Fixture Orientation: Orientation of the fixture
   - Light Engine Hours: Operating hours of the Light Engine
   - System Hours: Operating hours of the fixture
   - Fixture Firmware Version: Firmware version of the fixture
   - Fixture Serial Number: Serial number of the fixture
   - Control Panel Serial Number: Serial number of the control panel
   - Optics: Type of optics detected by Quick Lighting Mount.
4. Push MENU button to close the fixture settings menu.

Show Fixture Settings

1. Push MENU button to open the fixture menu.
2. Choose the menu „Fixture Settings“ with the encoder. Push the encoder to open the menu.
3. Select the desired language with the encoder (turn and push).
4. Push MENU button to close the fixture settings menu.

Factory Reset

1. Push MENU button to open the fixture menu.
2. Choose „Factory Reset“ with the encoder. Push the encoder to perform a factory reset.
3. Confirm your selection by selecting „Reset“ or cancel the selection by selecting „Cancel“.
4. The Orbiter reboots after successful factory reset.

Software Tools and Firmware

ARRI Lighting Service Manager (ALSM)

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. You can download it from the ARRI web site www.arri.com/lighting/alsm free of charge.

Firmware

Please find the latest firmware in the dowbload area of the LiOS web site www.arri.com(lios for free download.

NOTICE

Check regularly on the ARRI Orbiter website if a new firmware version is available for the Orbiter. For best performance we strongly recommend to use the luminaire with the latest firmware available.

Orbiter Web Portal

The Orbiter provides a web page accessible via http, when connected to a network. Type in the IP address of the Orbiter in your web browser to open the web portal and change the settings listed below. The web portal can also be found by using a Bonjour service to discover the fixture and open the web portal without needing to know the IP address.

NOTICE

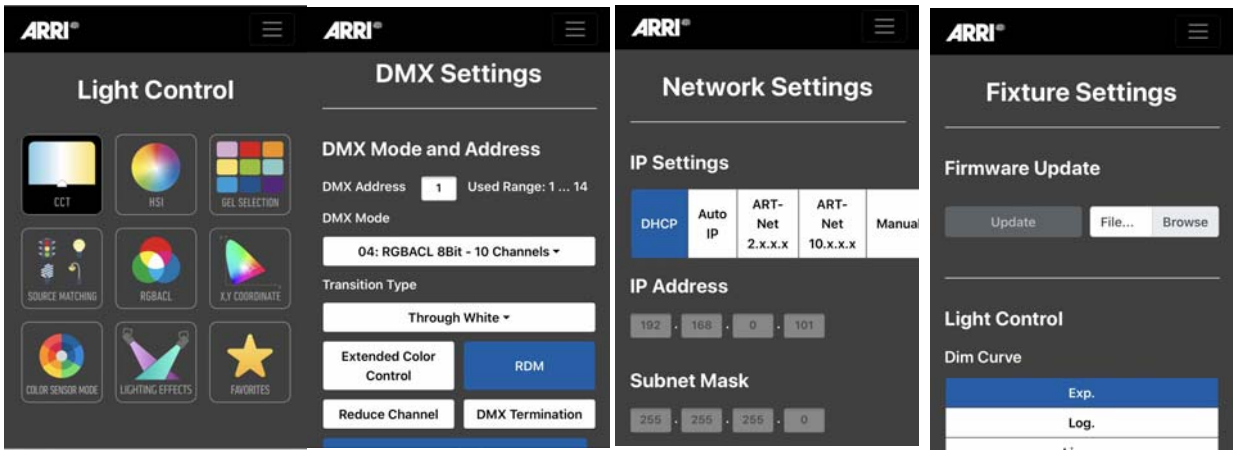
Always use the latest version of your web browser. Earlier versions might not be compatible to the web portal of the Orbiter.

Avoid access to the web portal during shots or a show. The data exchange with the web portal can lead to delayed reaction time to changes in the control signal or internal calculation routines and to unexpected reactions of the fixture.

The web portal features:

- Select the operating mode
- Read and modify DMX settings
- Read and modify network settings
- Read and modify fixture settings

and much more.



Structure of the Fixture Menu

Please find a detailed overview and explanation of the structure of the fixture menu in the control panel user manual which is available for free download on the ARRI web site www.arri.com.

Main Menu	Sub Menu
MODE	**CCT** Set intensity, color temperature and green-magenta point.
	HSI Set intensity, hue and saturation.
	X,Y Coordinates Set intensity and x,y coordinates of the light color.
	RGBACL Set intensity and RGBACL portions of the light.
	Gel Selection Set intensity and color filter from the gel library.
	Source Matching Set intensity and type of light source.
	Effect Choose lighting effect.
	Color Sensor Set intensity and behaviour of the color sensor.
	Favorites Choose a favorite.
MENU	**Light Control** Several settings regarding the emitted light.
	DMX DMX settings
	Network Settings Network settings
	Art-Net & sACN Network protocol settings
	Flash Drive Functions
	Display Setup Setup of display parameters
	Fixture Info Displays information about fixture parameters.
	Fixture Settings Displays fixture settings
	Factory Reset Performs a factory reset.
USER	**User Button 1 - 10**

RDM Commands

Please find a detailed overview and explanation of the available RDM commands RDM implementation specification which is available for free download on the ARRI web site www.arri.com.

Warning and Error Messages

The table below shows all warning and error messages of the Orbiter. Errors are divided into categories. Dependent from its category, errors can be fixed as shown below:

Error Category	Description and Remedy
Auto	Can be fixed by the user. The error message disappears after fixing the problem.
Reboot	Can be fixed by power cycling the fixture.
User	The user has to fix the error by change of intensity or dialog.
Service	The user must contact the ARRI service.

All errors and warning are logged. Some errors and warning are not shown as **message** on the control panel but via the status **LED**.

Fixture Behavior	Description
Log	Warning / Error is logged.
CP/LED	Warning / Error is displayed on the control panel and via the status LED.
Light Output	Light output is enabled after or during warning / error state.Orbiter
Error reset	See table above.

Warnings

Warnings activate the degraded mode (no light output), until the reason for the warning is fixed.

Code	Warning	Log	CP/ LED	Light Output	Cat.	Description / Remedy
E.002	Config Files Missing. Default values are applied	X	X	X	**Auto**	Perform a reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.008	Light Engine Temperature high	X	X	X	**Auto**	Reduce intensity level to avoid misfunction or failure due to overtemperature. Avoid mounting or setup conditions that might block the airflow.
E.009	LED Driver Temperature high	X	X	X	**Auto**	Reduce intensity level to avoid misfunction or failure due to overtemperature. Avoid mounting or setup conditions that might block the airflow.
E.010	Mainboard Temperature high	X	X	X	**Auto**	Reduce intensity level to avoid misfunction or failure due to overtemperature. Avoid mounting or setup conditions that might block the airflow.
E.011	Power Supply Temperature high	X	X	X	**Auto**	Reduce intensity level to avoid misfunction or failure due to overtemperature. Avoid mounting or setup conditions that might block the airflow
E.012	NTC Temperature sensor deviation	X	X	X	**Auto**	Reduce intensity level to avoid misfunction or failure due to overtemperature. If problems persists, contact a certified service partner or ARRI service.
E.013	Fan speed Issue	X	X	X	**Auto**	Turn off the fixture and try to clean the fan e.g. with pressured air. If problems persists, contact a certified service partner or ARRI service.

Code	Warning	Log	CP/ LED	Light Output	Cat.	Description / Remedy
E.014	DC input voltage low	X	X	X	Auto	DC input voltage too low. Increase voltage or switch to mains power supply.
E.015	Flash drive power supply not detected	X	-/X	X	Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.016	Flash drive not found	X	X	X	Auto	Remove the USB stick, wait some seconds and reconnect it. If the problem persists, format to FAT or try another USB stick.
E.017	Flash drive read/write not possible	X	X	X	User	Remove the USB stick, wait some seconds and reconnect it. If the problem persists, format to FAT or try another USB stick.
E.018	Factory default values not found.	X	X	X	Auto	Perform a reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.019	DMX signal lost	X	X	X	Auto	Check DMX network incl cables or enable DMX termination. Only manual control via Control Panel possible.
E.020	DMX data collision	X	X	X	Auto	External gateway or host (Host/Client mode) detected. Fixture stops function as gateway or host.
E.021	PSU communication lost	X	X	X	Auto	Reduce intensity level to avoid misfunction or failure due to overtemperature. If problems persists, contact a certified service partner or ARRI service.
E.022	LiOS upate failed	X	X	X	User	Perform a firmware update. If warning persists, contact a certified service partner or ARRI service.
E.023	PWM values invalid	X	X	X	User	The fixture can be used on.
E.024	Fan power supply not detected	X	-/X	X	Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.025	Color sensor defect	X	X	-/X	Service	Color Sensor mode can't be used. Use different mode. Contact a certified service partner or ARRI service to replace sensor.
E.026	Sensor defect magnetometer or accelerometer	X	X	X	Service	No storage of meta data of magnetometer or accelerometer. Contact a certified service partner or ARRI service to replace sensor.
E.027	Drop detected	X	X	X	User	Restart fixture. If warning persists, contact a certified service partner or ARRI service.
E.029	TBD				Service	Contact a certified service partner or ARRI service.
E.030	Color sensor calibration loss	X	X	X	Service	Color Sensor mode can't be used. Use different mode. Contact a certified service partner or ARRI service to replace sensor.

Error Messages

Error messages switch off the light engine until the problem is fixed.

Code	Error	Log	CP/ LED	Light Output	Cat.	Description / Remedy
E.001	Filesystem not found	X	X		Reboot	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.002	Config files not found	X	X		Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.003	LED supply voltage not detected	X			Service	Contact a certified service partner or ARRI service.
E.004	PWM driver not found	X	X		Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.005	Light engine not found	X	X		Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.006	LED channel fault	X	X		Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.007	Calibration fault	X	X		Service	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.
E.008	Light engine temperature critical	X	X		User	Turn the fixture off or set intensity to "0%" via Control Panel or DMX to start cool down process. Restart or increase intensity after some minutes.
E.009	PWM driver temperature critical	X	X		User	Turn the fixture off or set intensity to "0%" via Control Panel or DMX to start cool down process. Restart or increase intensity after some minutes.
E.010	Controller temperature critical	X	X		User	Turn the fixture off or set intensity to "0%" via Control Panel or DMX to start cool down process. Restart or increase intensity after some minutes.
E.011	PSU temperature critical	X			User	Turn the fixture off or set intensity to "0%" via Control Panel or DMX to start cool down process. Restart or increase intensity after some minutes.
E.012	NTC temperature sensor(s) defect	X	X		User	Restart fixture or reset by pressing the Reset button (5 s). If warning persists, contact a certified service partner or ARRI service.

Code	Error	Log	CP/ LED	Light Output	Cat.	Description / Remedy
E.014	DC input voltage dropped / too low	X			User	DC input voltage dropped under 48 VDC. Check DC source, increase voltage or switch to mains power supply.
E.028	Optics recognition failed	X	X		User	Check pin/contacts of accessory and QLM. Clean or dry contacts and insert again. If error persists, contact certified service partner or ARRI service.
E.031	Protection cap attached	X	X		User	Remove protection cap and attach original ARRI optics or accessory. To activate light output, first dim down to 0%.

Equations for CCT Calculations

Equations for calculation

To calculate the CCT value

8 bit

$$DMX_{Value} = \frac{CCT_{Value} - 2000}{70588}$$

$$CCT_{Value} = (DMX_{Value} \times 70588) + 2000$$

16 bit

$$DMX_{Value} = \frac{CCT_{Value} - 2000}{0.27466239}$$

$$CCT_{Value} = (DMX_{Value} \times 0.27466239) + 2000$$

To calculate the x,y coordinate

8 bit

$$DMX_{x-Value} = \frac{x_{Coordinate} \times 255}{0.8}$$

$$DMX_{y-Value} = \frac{y_{Coordinate} \times 255}{0.8}$$

16 bit

$$DMX_{x-Value} = \frac{x_{Coordinate} \times 65535}{0.8}$$

$$DMX_{y-Value} = \frac{y_{Coordinate} \times 65535}{0.8}$$

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libkcapi

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Written by: Philip Hazel
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STM32F7xx CMSIS + HAL driver

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