

Orbiter®

SAFETY AND INSTALLATION MANUAL

L5.0021114 / L03702

01 / 2021



Revision History

Date	Revision	Changes	Revisor
20-08-28		First release	mfg
20-10-29	L03653	Minor changes to comply to series	mfg
21-01-20	L03702	Update of standards and certifications	mfg

© 2020 Arnold & Richter Cine Technik GmbH & Co. Betriebs KG. All rights reserved.

Information subject to change without notice. ARRI and all affiliated companies disclaim liability for any injury, damage, direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document.

No part of this document may be used for distribution, reproduction, transmission, transcription, storage in a data retrieval system, or translated into any language in any form by any means without the prior written permission of ARRI. If you are downloading files from our web pages for your personal use, make sure to check for updated versions. ARRI cannot take any liability whatsoever for downloaded files, as technical data are subject to change w/o notice.

The products offered by ARRI are approved for use in a number of countries, including Canada, the European Union, Japan, and the USA. Product-specific information on approval can be found in the respective operating instruction manuals. Import and use in countries other than those mentioned in the respective operating instructions may be subject to legal, regulatory, or official requirements and regulations. Before the products are imported into these countries or used in these countries, compliance with the existing legal, regulatory, and administrative requirements and regulations must be ensured.

It is the importer's or the user's responsibility, prior to importation or use, to inform themselves of the applicable legal, regulatory, and administrative requirements and regulations and to ensure compliance with these requirements and regulations, including applying for and obtaining any necessary approvals or registrations.

As far as reasonable and legally possible, ARRI will support requests in relation to such applications by providing technical documents or declarations.

As an importer or user, you confirm that you are familiar with and comply with the legal, regulatory, and administrative requirements and regulations that apply in the countries to which you ship or use the products. You further confirm that you will arrange for any necessary registrations, enrolments, or authorizations that are required in such countries.

You release ARRI from all obligations resulting from any legislative, regulatory, or administrative requirements regarding import or use of the products, except in countries where ARRI has obtained a registration or certification. You agree to indemnify, defend, and hold ARRI harmless from any and all claims, damages, losses, liabilities, costs, and expenses (including reasonable fees of attorneys and other professionals) that may arise out of a demand on ARRI in connection with your obligations mentioned above.

Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd.

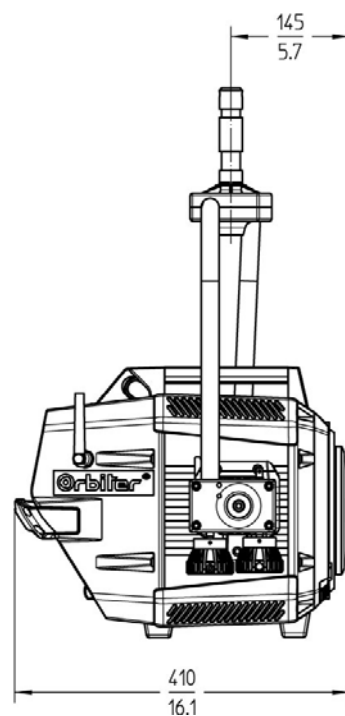
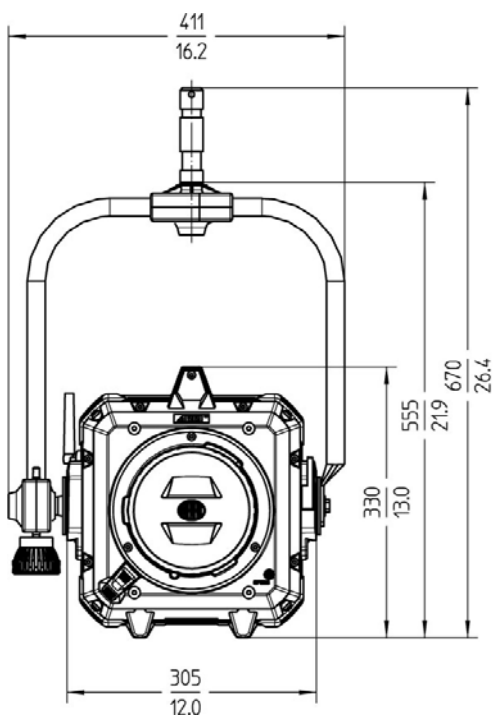
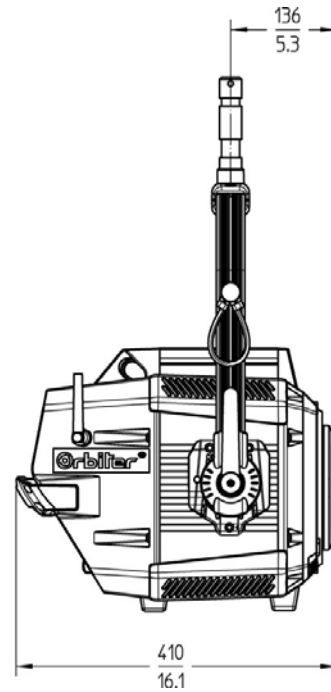
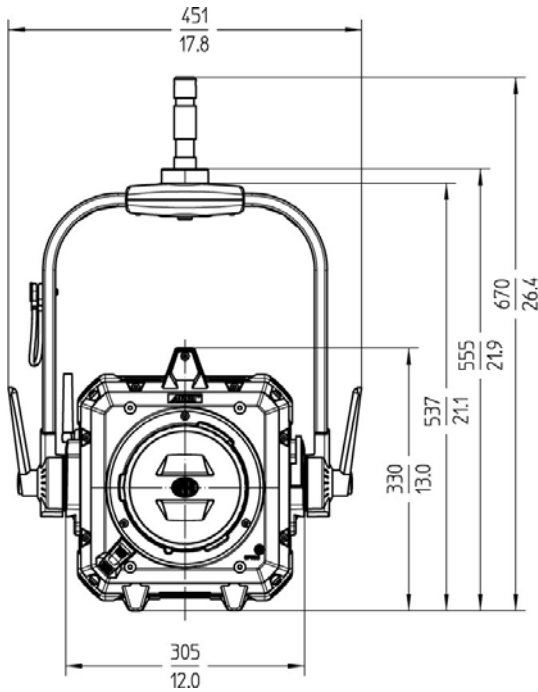
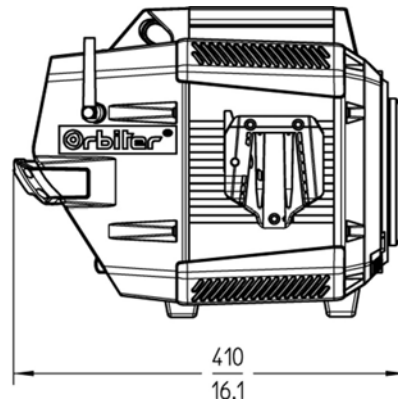
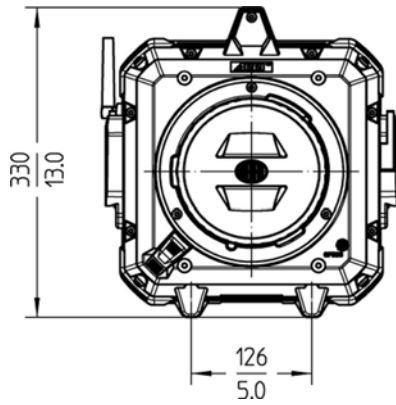
License agreement open source software

This device contains open source software. The associated license texts can be retrieved via the web interface of the device. To access the web interface of the device, please connect the Orbiter to your network and call the following address in the web browser: <http://<IP address of the Orbiter>/licenses/>.

ARRI, the ARRI Logo, ARRIMAX, ARRISUN, EB, **LIOS**, L-Series, MAX Technology, M-Series, Orbiter, POCKET-PAR, Quick Lighting Mount, True Blue, SkyPanel, SKYPANEL, T 12 and T 24 are registered trademarks of Arnold & Richter Cine Technik GmbH & Co. Betriebs KG.

Dimensions

All dimensions in mm (above dimension line) and inch (below dimension line)



Content

Dimensions	3
Safety Information	5
Risk Levels and Alert Symbols	5
Explanation of the Symbols Used in this Manual and on the Type plate	5
Vital Precautions	6
Warnings	7
General Precautions	8
To Replace the Light Source	9
Maintenance Information	9
Firmware	9
Intended Use	9
Introduction	10
Unpacking	10
Transportation of the Product	10
Overview	11
Physical Installation	12
To Secure the Fixture and Accessories against Falling	12
To Mount the Yoke	13
To Remove the Yoke	13
Basic Features	14
Pan and Tilt	14
Use of Accessories for Beam Shaping	14
To Mount Optical Accessories	14
To Remove Optical Accessories	14
DMX / RDM Interface	14
Wireless DMX	15
USB Ports	15
USB Ports on the Front Side	15
SD card slot	15
Ethernet Interfaces	15
Control Panel	15
To Remove and to Insert the Control Panel	16
To Connect and Disconnect the Control Panel Cable	16
To Power and use the Orbiter	16
Power Source	17
AC Power	17
To Connect a Battery Pack	18
DMX	20
Tips for a Reliable Data Transmission	20
To Connect the Data Link	20
SYNC Interface	20
Specification	21
Standards and Regulations	23
Test Certificates	24

Safety Information


Always follow these instructions and instructions printed on the product or given in the documentation shipped with the product to protect against injury to yourself and damage to the product or other objects.

Risk Levels and Alert Symbols


Safety warnings, safety alert symbols, and signal words in these instructions indicate different risk levels:

 **DANGER**

DANGER indicates an imminent hazardous situation which, if not avoided, **will result in** death or serious injury.

 **WARNING!**

WARNING indicates a potentially hazardous situation which, if not avoided, **may result in** death or serious injury.









 **CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, **may result in** minor or moderate injury.

NOTICE

NOTICE explains practices not related to physical injury. No safety alert symbol appears with this signal word.

Explanation of the Symbols Used in this Manual and on the Type plate

Symbol	Description	Symbol	Description
	Please read all instructions carefully before using the product for the first time.		Do not look into the active light source.
	The product is intended for professional use and may only be operated by qualified persons.		High voltage! Risk of electric shock.
	The product becomes hot during operation. Do not touch the product during operation.		Protection glass. Replace a broken protection glass immediately. Do not use a product with broken protection glass.
	Optical radiation (UV, visible, IR)		Unplug the mains cable before any service or maintenance work or when the product is not in use.

Vital Precautions

DANGER



High voltage! Risk of electric shock and fire.

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

Not to observe the safety information or general rules of reason may cause injury or death to yourself and others or damage to equipment.

Use solely and exclusively as described in the instructions.

Always check that the local AC power matches the voltage and frequency range printed on the type label of the product before use.

Always earth the fixture electrically. Only use TN- or TT one phase power supplies and a power plug according to IEC 60309-1 or a similar national standard.

Do not connect or disconnect the power cable when powered. The connectors can be damaged by arcing.

Install the cables in a trip-proof manner. Use a cable duct or stick the cables with adhesive tape where necessary.

Never lead cables over sharp edges (e.g. sheet metal, profile or other cut edges). Damaged cables can cause electric shock, short circuit or fire.

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

The mains and loop-through cables must be longer than the safety cable so that the product is held by the safety cable and not by the mains cables in the event of a fall. Otherwise the cables could tear off and cause serious injury or even death by electric shock. Damage to the products and other objects is possible.

Do not open the product. There are no user serviceable parts inside.

In case of visible damage to cables or housings, the product must not be operated any longer. 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. Improper repair attempts can be life-threatening.

Never bypass or remove any safety feature of the product.



Unplug the mains cable before any service or maintenance work or when the product is not in use.

 **WARNING!**



Humidity and condensation. Risk of electric shock and fire.

Never expose the product to rain or moisture. Do not use the product for 2 h when it was exposed to big temperature differences as condensed moisture may damage the product electrically when switched on.

For reliable, rainproof operation, the optional rain cover must be used. The permissible range of inclination is 75° upwards and 90° downwards when the rain cover is used.

Do not bend the power cable directly after the connector. Water could immerse and cause short circuits and damage the connector.

If water has entered the spring contacts of the quick lens mount or the control panel, the water must be removed by pressing the spring contacts with an absorbent cloth. Otherwise, the water may cause a short circuit during the next closing operation and damage the unit.

 **WARNING!**



Overheating! Risk of fire.

Do not operate the product if the ambient temperature exceeds 45° C (113° F).

Intensive use can cause the surface to become hot (up to 75° C / 167° F). Let the product cool down complete before you handle it.

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

The minimum distance from the light output aperture to flammable material is 0.5 m (1.65 ft.).

Never point a light beam from another luminaire into the light output aperture. Do not place the product on or nearby heat sources. Intense heat cause damage to the product or automatic power off during operation.

 **WARNING!**



Intense Light! Risk of injury and fire.

Do not stare at a operating light source.



Intense light. Do not stare at the light output aperture. Risk of irreversible eye injury. Wear safety glasses. Keep a minimum distance to an illuminated surface and objects of 0.5 m (1.65 ft.).

The minimum distance from the light output aperture to persons or animals 0.5 m (1.65 ft.).

The product must not be used without an reflector or optical accessory.

The product must not be used with damaged protection glass of the light output aperture.

⚠ WARNING!**Heavy weight! Risk of injury and damage.**

The yoke must be mounted hanging or standing vertically. Lateral load can cause deformation or breaking the spigot, its fixing screw, the yoke or the yoke brackets.

Wear suitable protective gloves to avoid injury from sharp edges (e.g. sheet metal, profile or other cut edges).

The product must not be exposed to vibration. This could cause parts to come loose or other damage.

The lamphead may slip out of the yoke brackets if it is suspended incorrectly.

Regularly check the tightness of the spigot fixing screw (recommended torque for all versions: 50 Nm / 37 ft-lb.).

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

The fixture must only be secured against fall using the safety loop attachment provided for the safety cable. Never use the carrying handle or the handle on the back as an anchor point for the safety cable.

The top handle may be used as an anchor point for the safety cable of the accessories.

Secure the device against tipping when standing on the floor or when high wind load is present. Always observe common and local safety regulations.

Disconnect all cables prior to transport.

Do not disassemble the yoke by unscrewing the tilt lock handles.

General Precautions**NOTICE**

The ARRI Orbiter is intended for professional use and may only be operated by qualified persons. It is not intended for household use.

Please follow the user manual of accessories and third party accessories such as battery packs and battery chargers. They contain important safety and security information. Keep these safety and installation manual, the user manual and all operating and installation instructions belonging to the system in a safe place for future reference and possible subsequent owners.

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.

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.

Help protecting the environment by disposing the package material at your local recycling center.

All components comply to the guidelines listed below:

- Radio equipment directive 2014/53/EU
- Low voltage directive 2014/35/EU
- EMC directive 2014/30/EU
- RoHS directive 2011/65/EU

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

To Replace the Light Source

NOTICE

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

Maintenance Information

NOTICE

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 isopropyle alcohol.

Keep electric contacts clean and replace corroded parts.

Only use disinfectants with a maximum alcohol content of 70% to disinfect the product.

Firmware

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 fixture with the latest firmware available.

Intended Use

NOTICE

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.

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, CRMX (wireless DMX), RDM, Art-Net protocol, the web portal or the control panel for the Orbiter.

Please find more detailed information about the features of the Orbiter in the user manual for the Orbiter. You will find the user manual for free download in the download section of the ARRI website www.arri.com.

Unpacking

NOTICE

Product and packaging contain recyclable materials. Always store, ship, and dispose of according to local regulations.

ARRI is not liable for consequences from inadequate storage, shipment or disposal.

The Orbiter is supplied with the short instruction and the following accessories:

- Antenna
- Protective cap

The following accessories need to be ordered separately:

- mains cable with inline switch, powerCON TRUE1 TOP connector and power plug or bare ends
- yoke with yoke adapters and junior pin, manual or pole operated
- optic accessories like open face optics, dome optics or softboxes
- control panel for the Orbiter
- connector cable control panel - fixture
- cases and bags
- skid
- raincover

Transportation of the Product

The Orbiter and accessories can be damaged if not transported properly. Damage caused by improper transport is excluded from the warranty. Please observe the following instructions.

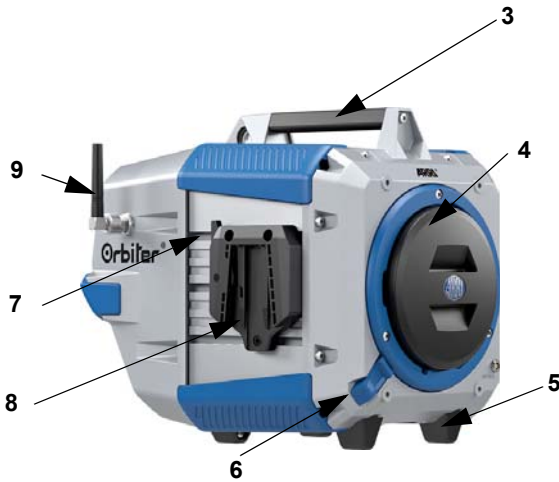
NOTICE

Avoid transport damage! Please observe when transporting the product:

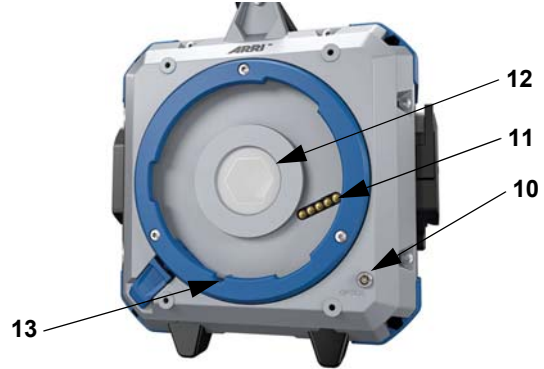
- Always mount the protective cap.
- Disconnect all cables. Do not move the product by pulling it by its cables.
- Transport the fixture and accessories only in the original packaging or in a suitable transport case (flight case).

Overview

Orbiter (delivery state)



Quick Lighting Mount QLM



Orbiter with manual yoke & control panel*

Safety Loop Attachment



- 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

*Yoke & control panel must be ordered separately

Connector Panel



Physical Installation

⚠ WARNING!

Risk of falling! Risk of injury.

Attach an approved safety cable to secure the product and accessories against clamp or bracket failure when the product is mounted above floor. The safety cable needs to be approved at least 10 times the weight of the product including all accessories mounted at the product. The safety cable must comply with EN 60598-2-17 Section 17.6.6 and be approved by an official body such as TÜV.

Lead the safety cable through the safety loop attachment (14, see “Overview” on page 11) and the structure the fixture is mounted to.

Keep the safety cable as short as possible, but as long as necessary. The upper handle (3) or the focus handle (18) must not be used as an anchor for the safety cable.

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

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

There is a danger of crushing your fingers when mounting and dismantling the yoke. Wear suitable protective gloves if necessary.

NOTICE

Do not illuminate the product 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 Secure the Fixture and Accessories against Falling

Pass the safety cable through the safety loop attachment (14) of the fixture (see picture on the right) and around the structure supporting the fixture. The safety loop attachment is designed as a shock absorber. It absorbs the forces acting on the fixture in the event of a fall and protects the fixture from damage.

Keep the safety cable as short as possible, but as long as necessary. The upper handle (3) or the focus handle (18) must not be used as an anchor for the safety cable.

The upper handle (3) may be used as an anchor point for the safety cable for optical accessories.



To Mount the Yoke

Both yoke versions feature the quick release system for mounting and removing the yoke without a tool.

- Place the Orbiter on a smooth, stable surface or mount the stirrup on a tripod.
- Align the yoke adapters of the yoke (4, short side down).
- Position the yoke adapters under the two yoke brackets of the Orbiter.
- Slide both yoke adapters into the yoke brackets on the fixture until both latches engage. When pushed in, the levers fold out and back again. The yoke is locked properly, when both levers are fully retracted and the red markings are not visible.



To Remove the Yoke

Both yoke versions feature the quick release system for mounting and removing the yoke without a tool.

- Flip out one lever and press the stirrup slightly downwards until the yoke adapter slides out of the yoke bracket
- Repeat the procedure for the other side and remove the yoke from the fixture.



WARNING!



Heavy weight! Risk of injury and damage.

When installing the Orbiter and accessories, observe all safety instructions, especially that:

- the yoke brackets do not open unintentionally,
- the tilt locks do not release unintentionally,
- the quick lighting mount is locked,
- the antenna is securely attached,
- the yoke is mounted hanging or standing vertically.,
- Tripods are set up in a stable position. Tripods need to be approved for the load they need to carry,
- each Tripod is stabilized with sand bags, and
- the Orbiter is secured against tipping over when set up on the ground.

Note the weight of cables and accessories!

Basic Features

Pan and Tilt

Loose the mounting screw of the tripod or the appropriate fixing screw of the mounting clamp to pan the Orbiter. Tighten the screw to avoid unintended movement. Loose both tilt lock levers (21) to tilt the Orbiter to the desired angle. Tighten the both tilt lock levers to avoid unintended movement.

Use of Accessories for Beam Shaping

WARNING!



Parts may fall off! Risk of injury and damage.

The fixture must not be mounted upside down (rubber feet on the top).

Optical accessories may fall off and injure persons if the locking slider (6, arrow in the figure below) is released. Always open the locking slider with great care.

If no accessories are used, the protective cap (4) must be fitted to prevent damage to the fixture. Never transport the fixture without the protective cap fitted.

For information on the characteristics and use of the optical accessories, please refer to the accessory manual. Interchangeable optics and light design accessories are inserted into the quick lighting mount on the front of the Orbiter.

NOTICE

There is no light output or only very short light output for self-test purpose with mounted protective cap (4) or when no optic or optical accessory is mounted to the Orbiter.

To Mount Optical Accessories

- Remove the protective cap (4) by pushing the locking slider (6, arrowed in the figure right) and turning the protective cap counter-clockwise until it stops and removing it.
- Align the locking pin of the accessory with the guide for the locking pin (13) and insert the accessory in the Quick Lighting Mount.
- Turn the accessory clockwise, until the lock (6) audibly engages.
- The accessory must be secured with a suitable safety cable. Pass the safety cable through the safety loop attachment of the accessory and the supporting structure or the upper handle (3) of the Orbiter.

Always secure the accessory against falling with a safety cable if the primary catch fails!



To Remove Optical Accessories

- Remove the safety cable from the accessory.
- Push the locking pin (6) inwards and turn the accessory counter-clockwise until it stops.
- Remove the accessory and place the protective cap on the Quick Lighting Mount.

DMX / RDM Interface

The Orbiter is equipped with a wired and wireless DMX / RDM-interface. It has locking 5-pin XLR connectors for DMX / RDM data input and throughput. The wireless DMX / RDM interface is compatible to the LumenRadio CRMX protocol. Please find more detailed information how to establish a DMX / RDM data-link in chapter "DMX" on page 20.

Wireless DMX

The antenna for the CRMX interface is mounted on the right side of the Orbiter

USB Ports

NOTICE

Disconnect all data cables from the product before using a USB memory stick. The data transfer between the product and the USB memory stick might be disturbed due to interferences.

Do not use service features during a show or a shot. The data transfer between the product and the controller might be disturbed due to interferences.

Both USB-A ports can power small USB devices. The maximum current is 1500 mA @ 5V (left USB-A port) or 500 mA @ 5V (right USB-A port). Do not overload the USB-A connector.

The Orbiter has two USB-A ports (23) to upload firmware, upload and download fixture settings and favorite or download error and service logs using a USB memory stick. The memory stick must be formatted with the FAT32 file system.

The USB-C port (23) is used to connect the Orbiter to a PC / notebook for service purpose.

USB Ports on the Front Side

The Orbiter has two USB ports (10, 11) on the front side for recognition of the mounted optics and for communication with optical accessories.

The interface for recognition of the mounted optics (11) automatically connects to the optics when the optics are mounted.

The interface for communication with optical accessories (10) is designed as a 5-pin lockable Lemo connector.

SD card slot

The Orbiter has an SD card slot (22) for updating firmware, loading and saving fixture settings and favorites, storing error and service logs using an SD card. The SD card slot accepts standard SD and SDHC cards.

Ethernet Interfaces

The Orbiter is equipped with two RJ45 Ethernet connectors (26 and 27). The Ethernet signal can be daisy-chained as the Orbiter acts like a switch in an Ethernet network. The interface can be used for control, uploading new firmware, setting parameters and service purpose using the ARRI lighting service manager.

Download the ALSM free of charge from the ARRI web site www.arri.com/lightingsoftware.

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.

Control Panel

The optional control panel for the Orbiter can be used directly at the fixture or via a connecting cable remote from the Orbiter. When used directly on the Orbiter, the control panel is held magnetically in the recess at the rear of the fixture (see figure below). The control panel for the Orbiter automatically connects to the fixture when it is inserted into the recess.



WARNING!**Strong Neodym Magnet - Danger of Injury!**

Neodym magnets are extremely powerful.



The very strong force between the magnets can cause serious injuries. Fingers and other parts of the body can be trapped between two magnets.



Strong magnets can affect the operation of pacemakers or other implanted medical devices.

To Remove and to Insert the Control Panel

The control panel may be removed and inserted with the fixture powered. The last setting of the fixture is retained when the control panel is removed.

To remove the control panel:

- Push the control panel slightly to the left.
- Lift the control panel out of the recess on the right.
- Pull the control panel to the right out of the recess.

To insert the control panel:

- Push the control panel diagonally to the left into the recess.
- Press the right side of the control panel into the recess and push it to the right until it locks in place. The control panel is magnetically fixed in the recess. When the fixture is powered, the control panel is ready for operation after a short time.

WARNING!**Drop Out of Control Panel - Danger of Injury!**

Always check that the control unit is mounted securely in the fixture. Danger of injury through falling control panel.

To Connect and Disconnect the Control Panel Cable

- Plug the 4-pin Lemo connector of the connector cable into the connector of the fixture and the control panel. The connector locks automatically.
- Pull back the ring of the Lemo connector to unlock the connector and pull out the connector.

NOTICE

The control panel can be used directly at the Orbiter or via a connecting cable remote from the Orbiter. If two controllers are used, the controller on the connecting cable has priority.

To Power and use the Orbiter**WARNING!**

Intense light! Danger of eye injury.

Do not stare at the operating light source.

The Orbiter has no mains switch. After connecting the fixture with the power source or switching it on with the mains cable inline mains switch the Orbiter initializes for a few seconds and is ready for operation. The Orbiter will operate with the settings made on the fixture menu or received by DMX / RDM, Art-Net or sACN. Please observe the information in the following section.

Power Source

DANGER



High voltage! Risk of electric shock and fire.

For protection from electric shock, always connect the fixture 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.

Use only an ARRI mains cable or loop-through mains cable or cables which fulfill the specifications from ARRI. The use of other mains cables might cause electric shock, malfunction and damage of the product.

Do not connect or disconnect the mains cable when powered. The connectors can be damaged by arcing.

WARNING!



Intense light! Risk of eye injury. Use an eye protection.

Ensure that persons do not look at the light output aperture without eye protection when the product is connected to AC power or a battery pack. The product can light up suddenly. The high intensity light beam of the product can cause eye irritation or injury when not respecting the safety distance.

NOTICE

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 Orbiter is equipped with an auto-sensing switch-mode power supply that adapts automatically to 100 V - 240 V~, 50 / 60 Hz (nom.).

Make sure that no person stares at the light output aperture and the product is isolated from DMX before you connect it to AC power.

You can hard-wire the Orbiter to a building electrical installation. Power outlets or external power switches that supply the Orbiter with power must be located near the fixture and easily accessible so that the fixture can easily be disconnected from power. Alternatively you can use a mains cable with inline main switch and suitable mains plug.

The Orbiter is connected to the power source via a mains cable with a Neutrik® PowerCON® TRUE1 TOP cable connector. ARRI supplies various mains cables with PowerCON® TRUE1 TOP connectors as accessories. The mains cable must always meet the following specification.

Region	Cable Quality	Temperatur range	Standards
EU, China	Rubber cord H07RN-F 3G1,5	min. -20° C to +85° C min. -4° F to +185° F	HAR, CCC
USA, Canada	Rubber cord SJ0(0)W 3x14 AWG	min. -20° C to +90° C, min. -4° F to +194° F 300 V, min. 15 A	UL, CSA
Japan	Flexible cord HVCTF 3X2.0 mm ²	min. +60° C (+140° F), min. 300 V, 80 shore	PSE, JET

Table 1: Mains cable specification

The mains cable is available as an accessory. We recommend the use of original ARRI mains cables.

To Loop Through the Mains Power

The Orbiter is equipped with a mains voltage output for supplying other fixtures with mains voltage. The voltage at the mains output corresponds to the voltage at the mains input. The load on the mains voltage output must not exceed 15 A. Therefore, connect no more than

- 5 (five) Orbiter at 240 V~ mains voltage, or
- 3 (three) Orbiter at 120 V~ mains voltage

with each other.

The loop-through cable is available as an accessory. We recommend the use of original ARRI loop-through cables. The use of other loop-through cables is at your own risk.

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.
- Turn the cable connector a full quarter-turn clockwise to lock the cable connector.
- To unlock 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.

To Connect a Battery Pack

The Orbiter can be used with a battery pack independent of AC power. The battery pack must meet the following specifications:

Output voltage	48 - 52 V =
Permitted temperature range	-20° C to +45° C (-4° F to +113° F)
Recommended minimum capacity	10 Ah
Connector type	3-pin XLR connector


Table 2: Battery pack specification

The pin out of the 3 pin XLR connector is:

Pin	Description
1	-
2	+ (48 - 52 V =)
3	not connected

Table 3: Pin out of the battery connector (3 pin XLR)

⚠ WARNING!



Risk of electric shock, fire and damage.

Only use original ARRI connector cables to connect the battery pack. Cables that are too long can cause fixture malfunction due to excessive voltage drop in the cable. Cables that are too short can lead to over voltage and damage to the fixture.

NOTICE

The pin out of the battery pack must correspond to the pin out shown above. Connectors with different pin out may cause damage to the Orbiter and the battery pack.

The Orbiter switches off below the minimum voltage of 48 V_{DC}. Battery input voltages above 53.5 V_{DC} will damage the fixture.

If the Orbiter switches off due to under voltage, you must disconnect the battery pack from the Orbiter before connecting the fixture to an AC power source.

When using a battery pack, follow all safety instructions of the manufacturer. Only use battery packs that meet all the specifications listed. Use of unsuitable battery packs can damage both the fixture and the battery pack.

To Insert and Remove the 3 pin XLR connector

- The main switch of the battery pack, if present, must be turned off.
- Insert the XLR connector into the battery pack connector (20) without force. Note the position of the locking device!
- The connector must snap into place. Repair or replace the connector if it does not click into place.
- If possible, switch off the battery pack before removing the connector. Press the latch on the connector and pull it out of the connector.

Tips for using battery packs

It is not possible to give a reliable indication of the operating time with a battery pack. The actual operating time depends strongly on age, state of charge, type of battery pack and brightness setting of the Orbiter.

If the battery pack does not have a switch for switching on and off, the brightness of the orbiter should be set to zero before disconnecting the connector cable to the battery pack. This will reduce the load on the connectors and increase the lifetime of the connectors.

DMX

To control the Orbiter via DMX you need a wired or wireless DMX data link.

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

Pin 1 = Shield

Pin 2 = DMX Data - (cold)

Pin 3 = DMX Data + (hot)

Pin 4 = DMX Data - (cold)

Pin 5 = DMX Data + (hot)

Pins 4 and 5 are not used by the Orbiter 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.

Do not overload the data link. You must not connect more than 32 Orbiters per data link. Depending on the channel requirements the address space of one data link (512 channels) may not be enough to control all products of the installation. You may set more than one Orbiter to identical DMX addresses to obtain identical behavior. For independent control every Orbiter needs to be assigned an individual address range.

If you need to control more Orbiters 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 / CAT 7 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 first fixture on the data link.
- Run the data link from the data output (female XLR) to the data input of the next fixture.
- 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 fixture on the link or activate the internal termination of the Orbiter.

SYNC Interface

The SMA Interface „SYNC“ has no function and cannot be used by the user.

Specification

Physical

Dimensions	see page 3
Weight (w/o yoke, optics, accessories)	11,7 kg (25.8 lbs)
Weight (with manual yoke, optics, accessories)	14,2 kg (31.3 lbs)
Weight (with p.o. yoke, optics, accessories)	14,9 kg (32.9 lbs)

Light Source

Type	ARRI Spectra LED Lightengine
Typ. LED lifetime L70	50.000 h
White light	2.000 K - 20.000 K
Colored light	RGBACL color mixing
Color rendering index	typ. CRI >98
Television lighting consistency index	typ. TLCI >95
IES TM-30-15	typ. >94
Green-Magenta point	+/- 1 (full green to full magenta)

Optical Path

Type	Luminaire with quick lighting mount for changeable optics and optical accessories, automatic recognition of mounted optics / accessory
Light aperture	45 mm / 1.78 in

Dynamic Functions

Dimmer	electronic, 0 - 100%
Color mixing	RGBACL color mixing, (hue and saturation)

Control and Programming

DMX Channels	3 - 58 channels, depending from type and mode
Setting and addressing	Via fixture menu or ALSM
DMX compliance	ESTA DMX512A LumenRadio CRMX
RDM compliance	ANSI E1.20 - 2010
Art-Net	Version 4
sACN	ANSI E1.31
Firmware update	Via USB port, network and ALSM

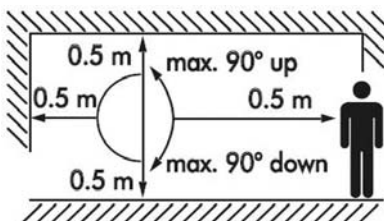
Construction

Color	Blue/silver or black
Housing	Metal housing with plastic profiles
IP rating	IP 24 (with optional rain cover) IP 20 (without rain cover)
Protection class	I



Installation

Mounting	Junior pin (28 mm)
IP rating and orientation without rain cover	IP20, +/- 90°
IP rating and orientation with rain cover	IP24, + 75° / - 90°
Min. clearance around fixture	0,5 m (20 in.)
Min. distance to illuminated persons and animals	0,5 m (20 in.)
Min. distance to illuminated objects and surfaces	0,5 m (20 in.)



Connectors

AC power input and through-put	Neutrik® powerCON TRUE1 TOP connector
Battery in	Neutrik® 3 pin, lockable XLR connector
DMX- / RDM-Input / Through	Neutrik® 5 pin, lockable XLR connector
Ethernet connector	2 x Neutrik® RJ45 EtherCON connector
USB port	USB 2.0, 2 x USB-A (1500 mA and 500 mA), 1 x USB-C
SD card slot	SD Card
Synchronization	SMA connector (no function)
Extension cable control panel	4 pin, lockable Lemo connector
Communication interface for optics	5 pin, lockable Lemo connector

Electrical

Power input	100 V - 240 V~, 50 / 60 Hz (nom.)
Power supply unit	Auto-sensing switching-mode power supply
Battery input	48 - 52 V ==

Typical power

230 V ~, 50 Hz	400 W nom., 500 W max.
cos φ	> 0,9
Inrush current	< 13 A

Measurements made at nominal voltage with all LEDs at full intensity. Allow for a deviation of +/- 10%

Noise emission

Noise level in High Color Rendering Modus	30 dB(a)
Noise level in High Output Modus	30 dB(a)
Noise level in Low Noise Modus	20 dB(a)

Temperatures

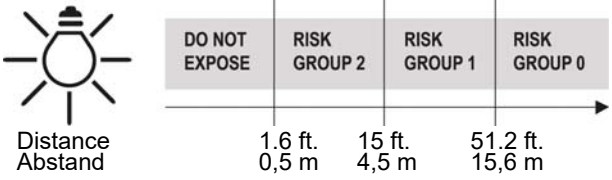
Minimum ambient temperature (t _a)	-20° C (-4° F)
Maximum ambient temperature (t _a)	+45° C (113° F)
Cooling	Silent, temperature-controlled fan cooling

Photobiological Safety

Risk group 2

CAUTION: Potentially dangerous optical radiation. Do not look into the light for longer periods of time during operation. Can be harmful to the eyes.**

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



Accessories

Please find a detailed overview of all accessories available in the „Orbiter Accessories Guide“ and on the ARRI website.

Standards and Regulations

Product Safety Standards

- Directive 2014/35/EU (Low Voltage Directive) & IEC CB scheme
(EN / IEC 60598-2-17, EN / IEC 60598-1, EN / IEC 61347-2-13, EN / IEC 61347-1, EN / IEC 62384, EN / IEC 62031, EN / IEC 62471, EN / IEC 62493)
- ANSI/UL Standard for USA
(UL 1573, UL 8750)
- CSA Standard of Canada
(CAN/CSA-C22.2 NO. 166, CAN/CSA-C22.2 NO. 9.0S1, CAN/CSA-C22.2 No. 250.13)
- METI Standard of Japan
(J61347-2-13, J61347-1, J3000)

Electromagnetic Compatibility Standards

- Directive 2014/30/EU (EMC Directive)
(EN 55015 / CISPR 15, EN / IEC 61547, EN / IEC 61000-3-2, EN 61000-3-3)
- Federal Communications Commission - Code of Federal Regulations of USA
(FCC 47 CFR Part 2, FCC 47 CFR Part 15)
- Interference-Causing Equipment Standard of Canada
(ICES-003)
- METI Standard of Japan
(J55015)
- KS Standards of South Korea
(KN 32, KN 35)

Radio Equipment Standards

- Directive 2014/53/EU (Radio Equipment Directive)
(ETSI EN 301 489-1, ETSI EN 301 489-17, ETSI EN 300 328, EN 62311)
- Federal Communications Commission - Code of Federal Regulations of USA
(FCC Part 15, Subpart B, FCC Part 15, Subpart C, ANSI C63.4, IEEE C 95.1)
- Government of Canada - Industry Canada - Interference-Causing Equipment Standard
(ICES-03, RSS 210)

Hazardous Substances Standards

- Directive 2011/65/EU (RoHS)
(EN 50581)
- Commission Regulation (EU) No 1272/2013 (REACH Directive)
(AfPS GS 2014:01 PAK)
- Directive 2002/96/EG (WEEE)
(ElektroG)

Test Certificates

International

- CB Certificate
(Safety standards under IECCEE)

Europe

- EMC Test Report
(standards under 2014-30-EU)
- Human exposure to EMF Test Report
(Safety standard under 2014-35-EU)
- Radio Test Report
(standards under 2014-53-EU)

USA & Canada

- cNRTL Certificate
(Safety standards under OSHA)
- EMC Test Report
(standards under FCC & IC)
- Radio Verification Certificate and Equipment Authorization / Registration (FCC) and
- Radio Human Exposure Test Report (FCC)
- Radio Certificate of Compliance
(IC) and Equipment Authorization / Registration for
Canada (FCC)
(CAN ICES 3 (B)/NMB-3(B))

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

China

- Radio Transmission Equipment Type Approval Certificate (SRRC)

Japan

- PSE Circle Mark Certificate (Safety + EMC)
- Construction Type Certification (MIC)

South Korea

- EMC & Radio Test Report
(standards under KN)
- Registration Certificate - Radio module (KC)
- Registration Certificate - Luminaire (KC)

Australia & New Zealand

- Supplier's declaration of conformity (RCM)

Mexico

- Test Report & Certificado de Homologacion (IFT)

United Arab Emirates

- Telecom Equipment Registration Certificate (TRA)

India

- Equipment Type Approval Certificate (ETA)

Brazil

- Radio Approval Certificate (ANATEL)

Argentina

- Radio Approval Certificate (ENACOM)

Philippines

- Type Acceptance Certificate (NTC)

Thailand

- Approval Certificate (NTC)

ARRI 