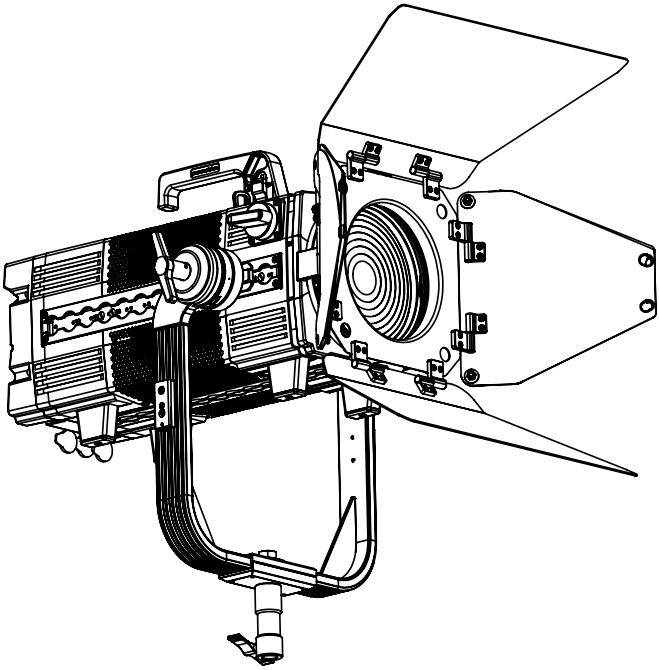
ASTERA

LEO FRESNEL



PRELIMINARY

User Manual

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INTRODUCTION / INTENDED USE

The LeoFresnel from ASTERA is a LED Fresnel for professional use in the event and film industry. The LeoFresnel is designed for direct or indirect illumination of objects and people. Due to its built-in battery it can be quickly set up at places where traditional lights cannot be mounted easily. It has the Titan LED Engine and offers excellent color and light qualities. The LeoFresnel generates white or colored light and the color temperature can be adjusted in many ways. It can be controlled with the AsteraApp or with wired DMX or wireless CRMX. The fixture can also be controlled by the integrated display or by infrared remote control. Thanks to its built-in Bluetooth it can be used as BluetoothBridge (BTB).

The LeoFresnel can be used standing or hanging. For this purpose, the device is equiped with AirlineTracks to attach the appropriate mounting accessories. The LeoFresnel can be used indoors and outdoors and has an IP55 rating.

Do not shake the device. Avoid brute force when installing or operating the device. When choosing the installation spot, please make sure that the device is not exposed to extreme heat or dust. Avoid direct sunlight for longer periods of time. The specified ambient temperature must be maintained. Keep away from direct insulation (particularly in cars) and heaters. Never use the device during thunderstorms connected to the power mains. Overvoltage could destroy the device. Always disconnect the device during thunderstorms. Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Always fix the fixture with an appropriate safety wire.

Operate the device only after having become familiarized with its functions. Please consider that unauthorized modifications on the device are not allowed due to

safety reasons! If this device is operated in any way different from what is described in this manual, the device may suffer damages and the warranty may be void. The disclaimer includes all damages, liability or injury resulting from failure to follow the instructions in this manual. Furthermore, any other operation may lead to dangers like short circuit, burns, electric shock, crash etc. This device is not for household use and is not suitable for permanent installation.

SAFETY INFORMATION

Before you operate this unit read the manual carefully. Always make sure to include the manual if you pass/rent/sell the unit to another user. Please use your own caution when operating. This product is for professional use only. It is not for household use.

- Do not operate the unit in areas of high temperature conditions or under direct sunlight. It can cause abnormal behavior or damage the product.
- Always use a suitable safety wire when mounting the light overhead.
- Connect the safety wire only to the intended safety mount.
- Always follow local safety requirements.

LI-ION Battery: A rechargeable lithium-ion battery is built into this unit.

- Only authorized personal may service the battery.
- Do not place in fire or heat.
- Do not use or charge the light if it is damaged.
- Avoid bumping or plunging, it may cause fire or explosion.
- Never store the battery when fully drained. Always recharge immediately when empty. Please do not charge unattended.
- Make sure to fully charge all units before storing them.
- Partially charged batteries will lose capacity.
- Fully recharge every 6 months if not used.
- The battery may only be replaced with an original spare part from Astera.
- Follow applicable laws and regulations for transport, shipping, and disposal of batteries. For details on recycling lithium, lithium-phosphate, and lithium-ion batteries, please contact a government recycling agency or your waste-disposal service.
- Always charge with flight case open.
- It is recommended to charge at a temperature between 15°C and 35°C.

Warning: In extreme cases, abuse or misuse of standard/rechargeable batteries can lead to:

- Explosion
- Fire development
- Heat generation or smoke and gas development

- Do not look directly into the light.
- It can cause harm to your eyes.
- Do not look at the LEDs with a magnifying glass or any other optical instrument that may concentrate the light output.
- Use only Astera approved accessories to diffuse or modify the light beam.

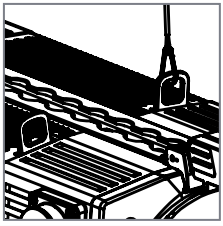
- Do not open the product housing.
- Do not apply power if the light is damaged.
- Do not submerge the light into any liquid.
- Do not replace the LED light source.
- Caution, risk of electric shock.

The LeoFresnel shall be installed near a socket-outlet which must be easily accessible.
Warning: risk of electric shock - Do not open device.

- The exterior surfaces of the light can become hot, up to 70°C (158°F) during normal operation.
- Ensure that accidental physical contact with the device is impossible.
- Install only in ventilated locations.
- Do not cover the light.
- Allow all lights to cool before touching.
- Keep 0.3 m (12") from objects to be illuminated.

SECONDARY SAFETY MOUNTING

The LeoFresnel must always be secured by a safety wire when used in a hanging position.
If the primary suspension fails, the device must not fall more than 20cm.

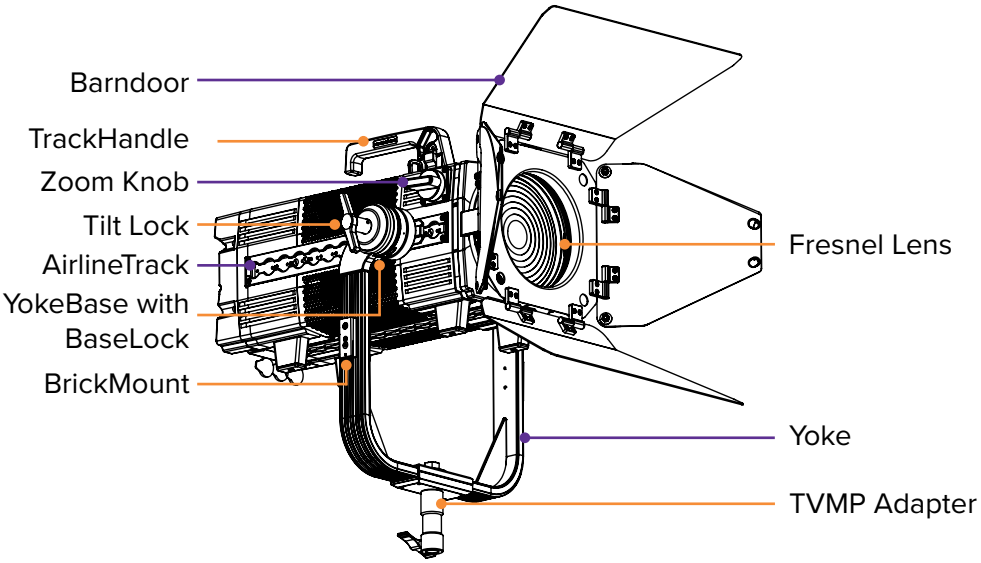


CLEANING AND MAINTAINING

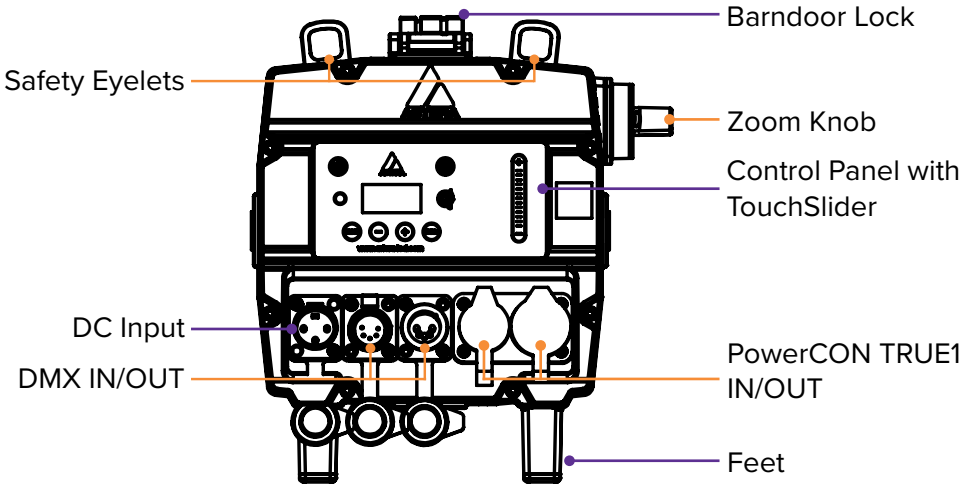
Caution: Liquids entering the housing of the device can cause a short circuit and damage the electronics. Do not use any cleaning agents or solvents. Only clean using a soft damp cloth.

PRODUCT OVERVIEW

Isometric view



Back view



USAGE

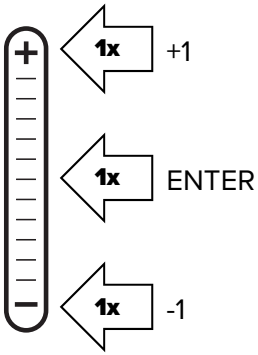
1. Integrated control panel

Use the menu buttons to navigate through the main menu. Settings for color adjustment and brightness / runtime are directly accessible by two symbol buttons.

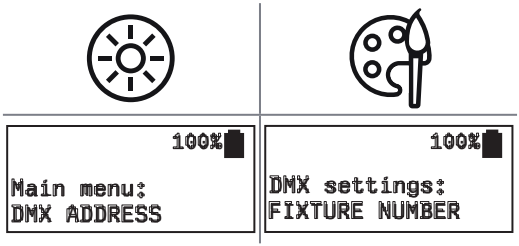
	Top navigation	Inside main menu
⏻	On / Off	
MENU	Main menu	Back to previous menu
−	Reset settings	Scroll down
+	Change input select	Scroll up
ENTER	Set DMX adress	Choose / Confirm
🎨	Color adjustment	
☀	Brightness and runtime control	

TouchSlider

The LeoFresnel has a touch slider. It is only active in certain menus and can also be operated by tapping.

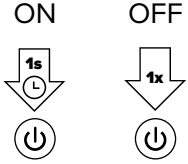


Active in these four menus:



2. Switching On / Off

A new LeoFresnel needs a few seconds of charge to disable its shipping mode before it can be switched on.



Press the power botton for one second and release it to turn on the LeoFresnel. When you press the power button to turn on the light, the display will not turn on until you release the button. To turn off the light, press the power button once.

3. Fan control

The LeoFresnel has a built-in fan that can be controlled as follows. Navigate to Fan Control menu. There you can choose between the following settings:

OFF:	The fan always remains switched off. If the light becomes too hot, the brightness is gradually reduced. (Ambient temperature dependent)
AUTO:	The fan starts on demand and switches between the three speeds as required. This is the default setting.
LOW: MED: HIGH:	Different speeds. The light never changes them by itself, but if the speed is too low, the brightness is gradually reduced.

4. More control options

IR — On/Off, Static Colors, Preprogrammed Effects

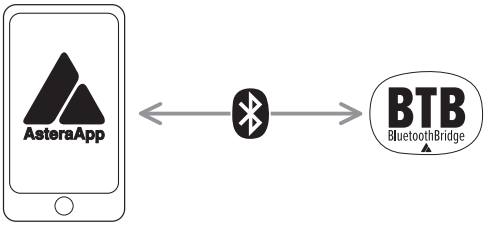
APP — All settings, Complex effects, Talkback+, Updates

DMX — Control from DMX consoles via CRMX or Wireless DMX

DMX — Control from DMX consoles via Power/Data Combination Cable

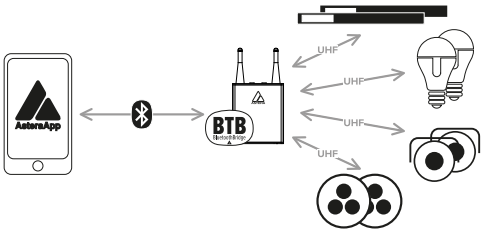
DMX RDM — Remote Device Management (RDM) wired and wireless

5. Connect Bluetooth Bridge (BTB)



To control your lights with the AsteraApp, first connect a Bluetooth Bridge (BTB). It forwards the AsteraApp signal to paired lights. You may use an AsteraBox as BTB or choose a light with built-in BTB, like LeoFresnel, AX9, NYX Bulb, PixelBrick, Titan Tube BTB, Helios Tube BTB.

Connect AsteraBox as BTB

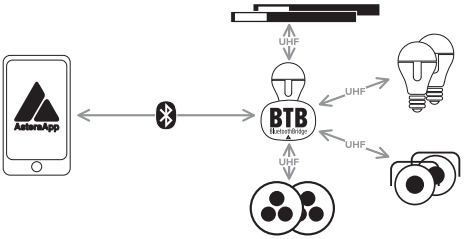


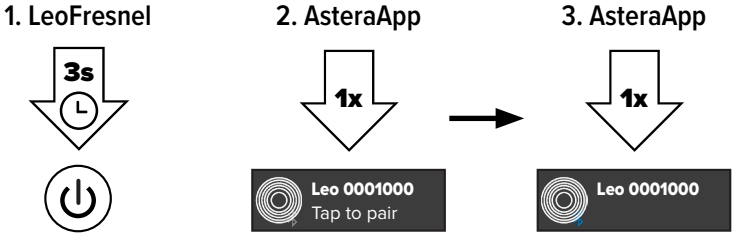
Please power on the AsteraBox. Connect the AsteraBox directly from the AsteraApp main menu by following the instructions there.

Connect light as BTB

Please note: This ONLY works for Astera lights with built-in Bluetooth.

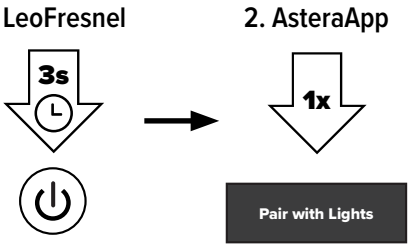
Please power on the light. Hold down the power button for 3 seconds until the light flashes blue. In the AsteraApp press „Manage Bluetooth Bridges“, then “+” and follow instructions on screen to connect. The light which is connected as BTB shows a small Bluetooth icon in the display.





6. Pair with lights

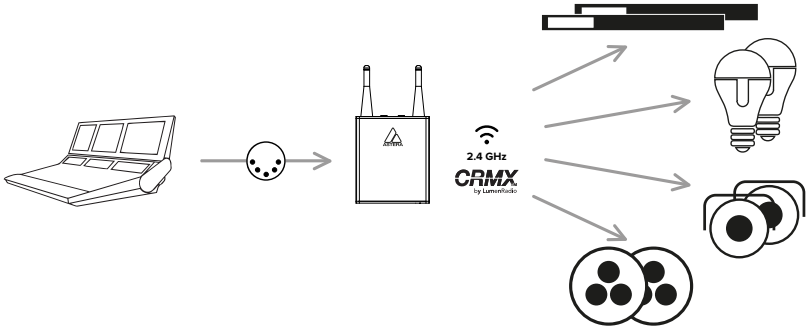
Once the AsteraApp is connected to a BluetoothBridge, you can pair your lights with the app:
Please power on the light(s). Then hold down the power button for 3 seconds until the lights flash blue. Go to “Pair with Lights” dialog in the AsteraApp. Then press OK.

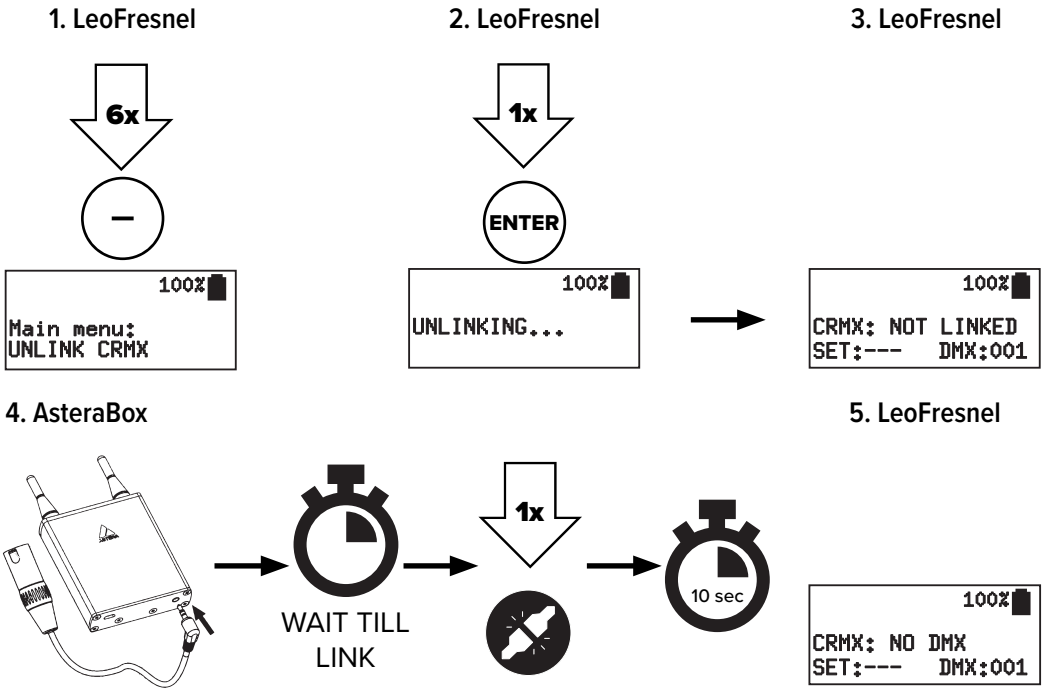


7. Linking to a CRMX transmitter

The LeoFresnel can be controlled via Wireless DMX/ CRMX. To do this, it must first be connected to a CRMX transmitter. There are two different methods to do this: either the connection is established by pressing a button on the transmitter or a linking key is set that matches the transmitter.

Linking via push button



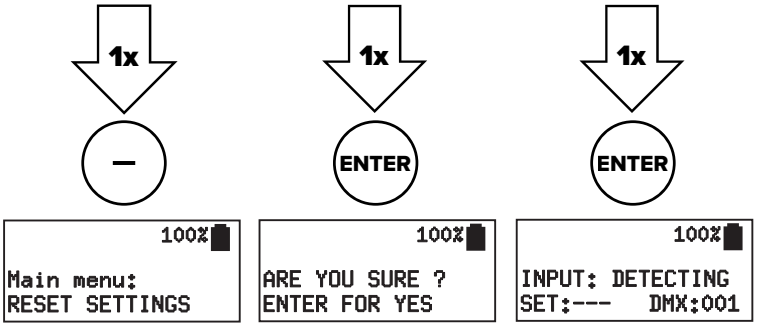


Linking via linking key

Alternatively, LeoFresnel can also be connected to a CRMX transmitter using a linking key, provided that the transmitter supports this linking option. To set a linking key, navigate in the main menu to „DMX SETTINGS“. Under „CRMX LINK BY KEY“ you can enter the desired eight-digit combination.

8. Reset

RESET sets „Input Select“ to „AUTO“ and runtime to 5 h.



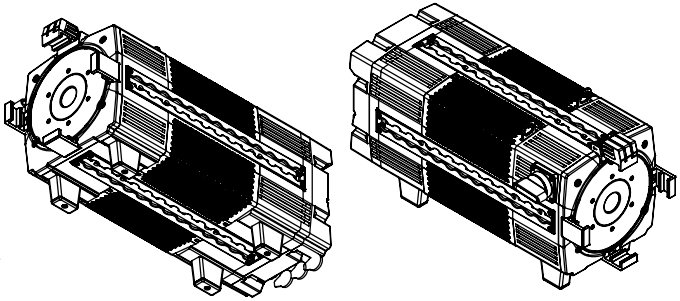
9. Charging and DC wiring

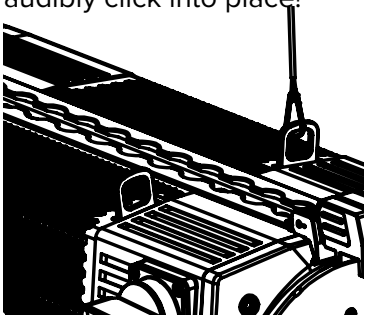
While the power cable is connected, the display shows the charging status. Charge immediately when the battery is empty. Do not store the unit when the

battery is empty. In addition to the powerCON TRUE1 input/output connectors, the LeoFresnel also has a 3Pin XLR input for use with External DC sources. The external DC input will accept voltages from 12VDC to 48VDC. The external DC source should be able to supply at least 250W. The polarity for the External DC input is Pin 1 Ground, Pin 2 DC+. Pin 3 is not used. It is not possible to charge the internal battery via the DC input.

10. Rigging

The LeoFresnel is equipped with AirlineTracks on all four sides to attach various Astera mounting accessories. When installing accessories on the AirlineTracks, they must audibly click into place!

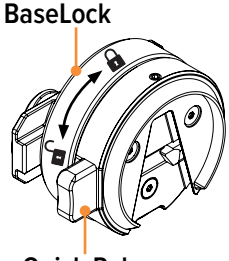




With the included yoke, LeoFresnel can be easily hung. When hanging, always secure with a safety wire at the safety eyelet on top of the light's housing. Make sure the light cannot drop more than 20cm if primary mounting fails.

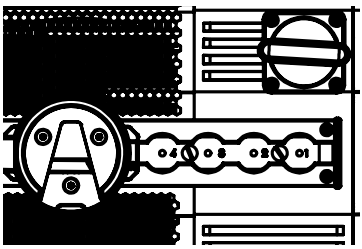
The LeoFresnel can also be mounted on tripods. For this purpose, a TVMP (TV to motion picture) adapter that can be attached to the yoke of the LeoFresnel is included with the product.

Yoke attachment with YokeBase - Quick Release



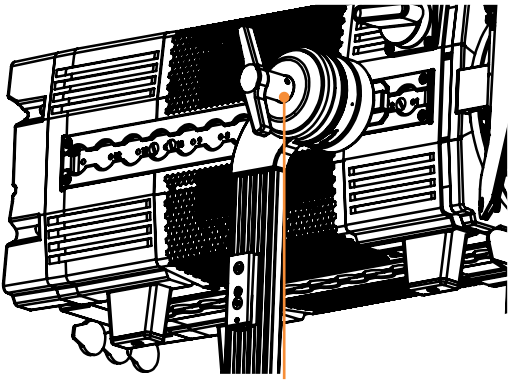
To attach the LeoFresnel yoke, the two YokeBases must first be inserted into the AirlineTracks on opposite sides. To secure the YokeBase, turn the BaseLock clockwise.

The scales in the AirlineTracks help to ensure that the same position is selected on both sides. There is a default position for the YokeBase.



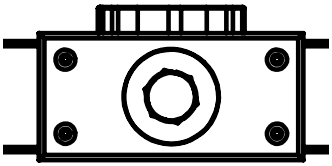
You can move the YokeBase to balance the light or to use it in a different configuration. It is important that the YokeBase is oriented so that the opening of the V points downward. When the light is properly prepared, the yoke can be inserted into the YokeBases from the bottom up.

The yoke is attached to the YokeBases with a Quick Release system. To release the yoke, first loosen the Tilt Lock. This acts as a safety for the Quick Release. Once the Tilt Lock is loose, press the QuickRelease buttons on each YokeBase to release the fixture from the Yoke. Make sure to hold the fixture securely while releasing it.


TiltLock

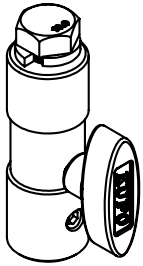
Attention: Only unscrew YokeBase if yoke is detached!

Mounting options with Yoke



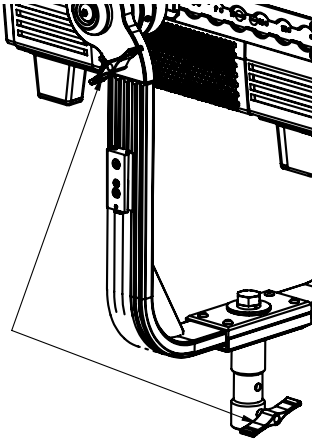
The LeoFresnel Yoke has a mounting hole allowing for the use of up to 1/2" or M12 bolt. On both sides of the Yoke there is a BrickMount (PB15-BMO), to which suitable Astera accessories, such as a RuntimeExtender (REX1) can be attached.

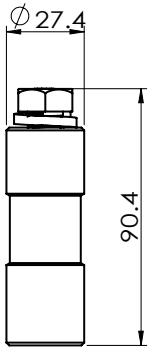
TVMP Adapter



The TVMP adapter has a 1/2" thread on top and comes with a 1/2" bolt with washer. With this bolt the TVMP adapter can be attached to the hole of the LeoFresnel yoke.

This allows the LeoFresnel to be mounted on stands using the BabyPin (5/8") receiver or the JuniorPin (1-1/8").

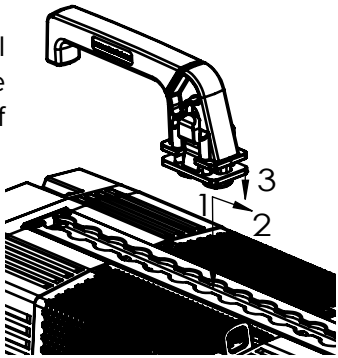


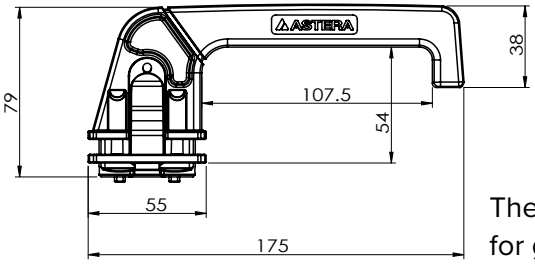


In this application, the TVMP T-Bolt can be stowed on a dedicated thread on the yoke to prevent it from being lost.

TrackHandle

The included TrackHandle easily converts the LeoFresnel into a handheld light. To do this, simply attach the TrackHandle with its robust double stud fitting to one of the LeoFresnel's AirlineTracks.

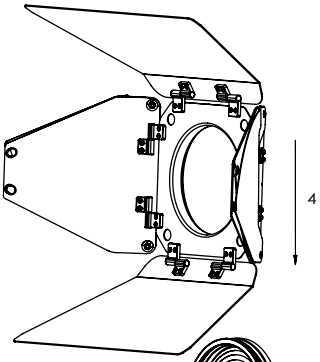




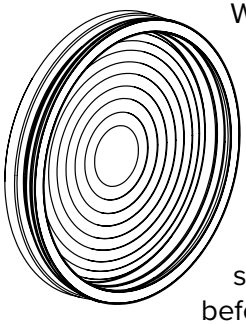
The TrackHandle is also a useful accessory for general handling of the light.

11. Beam modifiers

LeoFresnel can not only be used as Fresnel but also be used as an open face light without any beam modifiers. In addition to the Fresnel lens, Barndoors are included in the product scope.

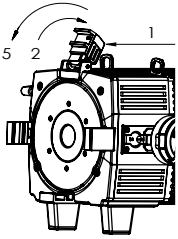


Fresnel Lens

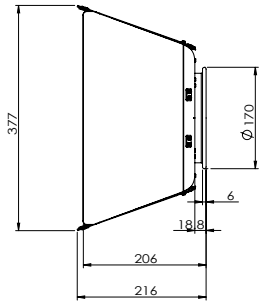


With the included Fresnel lens LeoFresnel provides a beam from 15° to 60°.

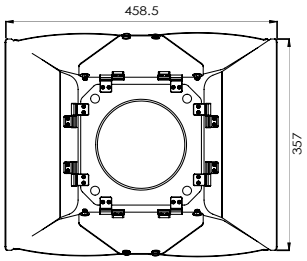
To insert the Fresnel lens, pull the barndoor lock upwards and turn it to the side. Now slide the Fresnel lens into the holder and close the barndoor lock by lifting and turning it again. Make sure that the barndoor lock is properly engaged before moving the light.



Barndoor

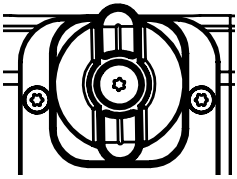


An 8 leaf barndoor is included as standard. They are inserted in front of the Fresnel lens in the same way as the Fresnel lens.



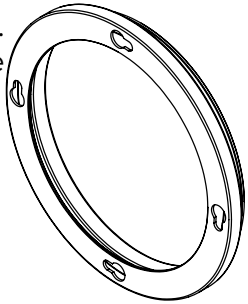
Zoom

The built-in zoom allows adjustment of the beam between 15° and 60°. There is a scale on the side of the lens tube for reference.



Rabbit-Rounder Adapter

The LeoFresnel is supplied with a Rabbit-Rounder adapter. This allows the attachment of corresponding DOPchoice accessories. It is simply inserted in place of the Barndoor.



TROUBLESHOOTING

Problem	Possible cause	Solution
The fixture does not turn on.	The battery may be empty.	Connect it to power and try again.
The fixture turns on and the display is on, but the LEDs do not emit light.	The fixture could be set to BLACKOUT mode. Set to display black color or is operating in DMX mode and doesn't receive a valid signal.	It is good practice to do a RESET SETTINGS.
The fixture is not working correctly - it does not display the color or effect chosen.	The fixture may still be operating under a previous setting.	It is good practice to do a RESET SETTINGS between setups.
The power cable is connected but the fixture is not charging.	The battery may be fully charged.	The fixture will only commence charging when its battery has a temperature of 45° C or less. Turn the fixture off and let it cool down; once cold enough, it will start charging.

SPECIFICATIONS - TECHNICAL DATA

Order Code	AF250
LED Engine	Titan LED Engine
Colors	RGBMintAmber
Total LED Power	350W
LED Power Draw	250W
CRI (Ra)/ TLCI 3200- 6500 K*	≥96
Beam Angle	15° - 60°
Strobe	0 - 25 Hertz
Pixels	1
Battery Runtime	up to 20 hours
Battery Runtime max. Brightness	2 h
Battery Lifetime	80 % after 400 cycles
DC Input	12-48VDC - max. 15A
DC Connector	3pin XLR (Pin 1: Ground , Pin 2: DC+)
AC Input	100 - 240 VAC, 50/60 Hertz, 3.8 A, 250W
AC Connector	PowerCON TRUE1 Input/Output
Power Consumption (max.)	TBD 300W
CRMX Receiver	Built-in
BluetoothBridge BTB	Built-in
Wireless Protocols	CRMX, UHF, Bluetooth, WiFi, RDM
Wireless Range	CRMX/UHF up to 300 m / 330 yds Bluetooth up to 3 m / 3.3 yds
Infrared Control	Yes
TouchSlider	Yes
Housing Material	Polymer & Metal
IP Rating unwired	IP55
IP Rating wired	IP55
Ambient Operating Temperature	0 - 40 °C / 32 - 104 °F
Weight (with AF250-FL, AF250-BD)	tbd
Weight (with AF250-FL, AF250-BD, AF250-YK, 2x AF250-YKB)	tbd
Dimensions L x W x H	tbd
Dimensions L x W x H (AF250-YK, 2x AF250-YKB)	tbd

DISPOSAL

- The light contains a lithium-ion battery.
- Don‘t throw the unit into the garbage at the end of its lifetime.
- Make sure to dispose of according to your local ordinances and/or regulations, to avoid polluting the environment!
- The packaging is recyclable and can be disposed.

MANUFACTURERS DECLARATION

Hereby, Astera LED Technology GmbH declares that the type of radio equipment LeoFresnel complies with Directive 2014/53 / EU. The full text of the EU Declaration of Conformity is available at the following Internet address: https://astera-led.com/leofresnel.

Astera LED Technology GmbH declares that 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 deter-mined 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.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user‘s authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC RF Radiation Exposure Statement Caution: To maintain compliance with the FCC’s RF exposure guidelines, place the product at least 20 cm from nearby persons.

RF CHARACTERISTICS

Wireless Modules	Modulation	ERP (Transmitter)	Channel Count
EU: UHF***(863-870 MHz)	FHSS	<25 mW	47
USA: UHF (917-922.20 MHz)	FHSS	<25 mW	53
AUS: UHF (922.30-927.50 MHz)	FHSS	<25 mW	53
SGP: UHF (920.50-924.50 MHz)	FHSS	<25 mW	41
KOR: UHF (917.9-921.5 MHz)	FHSS	<25 mW	10
RUS: UHF (868.75-869.12 MHz)	FHSS	<25 mW	6
JPN: UHF (922.80-926.40 MHz)	FHSS	<25 mW	19
CRMX (2402-2480 MHz)	FHSS	-	79
RDM (2402-2480 MHz)	FHSS		79
Bluetooth 5.0 LE (2402-2480 MHz)	FHSS	10 mW (BLE)	40
Wi-Fi (2412-2472 MHz)	DSSS, OFDM	100 mW	13

*** General allocation of frequencies for use by short-range radio applications

Spectrum usage regulations:

Frequency range in MHz[1)]	Maximum equivalent radiant power (ERP)	Additional parameters / frequency access and interference mitigation techniques
865 - 868	25 mW	Requirements for frequency access and mitigation techniques[3)] Alternatively, a maximum duty cycle[2)] of 1% can be used.
868,0 - 868,6	25 mW	Requirements for frequency access and mitigation techniques[3)] Alternatively, a maximum duty cycle[2)] of 1% can be used.
868,7 - 869,2	25 mW	Requirements for frequency access and mitigation techniques[3)] Alternatively, a maximum duty cycle[2)] of 0.1% can be used.
869,40 - 869,65	500 mW	Requirements for frequency access and mitigation techniques[3)] Alternatively, a maximum duty cycle[2)] of 10% can be used.
869,7 - 870,0	25 mW	Requirements for frequency access and mitigation techniques[3)] Alternatively, a maximum duty cycle[2)] of 1% can be used.

1) The use of adjacent frequency bands within this table as a single frequency band is permitted, provided that the specific conditions for each of these adjacent frequency bands are met.

2) „duty cycle“ means the ratio of $(T_{on})/(T_{obs})$ expressed as a percentage, where ‚T_{on}‘ is the ‚on-time‘ of a single transmitting device and ‚T_{obs}‘ is the observation period T_{on} is measured in an observation frequency band (F_{obs}). Unless otherwise specified in this general allocation, T_{obs} is a continuous period of one hour and F_{obs} is the applicable frequency band in this general allocation (table).

3) Frequency access and interference mitigation techniques shall be used whose performance level at least meets the essential requirements of Directive 2014/53/EU or the Radio Equipment Act (FuAG). Where relevant techniques are described in harmonised standards, the references of which have been published in the Official Journal of the European Union pursuant to Directive 2014/53/EU, or parts thereof, performance shall be ensured which is at least equivalent to those techniques.

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