impression
FR1 TM

User Manual

Luminaire software version 1.20

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GLP® impression® FR1 TM (Trackmount) User Manual Revision C

This manual covers firmware version 1.20

Contents

1. Safety

Key to symbols

The following symbols are used in this manual:

Warning! Safety hazard. Risk of severe injury or death.

Warning! Hazardous voltage. Risk of lethal or severe electric shock.

Warning! See user manual for important safety information.

Warning! Fire hazard.

Warning! Risk of eye injury.

General safety information

Read this section carefully before installing or using the impression® FR1 TM (Trackmount) luminaire. If you have any doubts or questions about how to use the luminaire safely, contact your GLP® supplier for assistance. Your GLP supplier will be happy to help.

The impression FR1 TM and this user manual are intended for use by experienced professionals with the knowledge and skills to set up, operate, and maintain high-powered, remotely controlled lighting equipment safely and efficiently. These operations require expertise that may not be provided in this manual.

- Respect all warnings and directions given in this user manual and on the luminaire. Read this manual and familiarize yourself with the safety precautions it contains before installing or using the luminaire. The manufacturer will take no responsibility for damages or harm resulting from disregard for the information in this manual.

- Check the GLP website at www.glp.de and make sure that you have the latest version of this user manual. Check also that the software version indicated on page 2 of the user manual matches the version installed in the luminaire. You can download the correct version of this user manual if necessary.

- Make the user manual available to all installers and operators and save the manual for future reference.

- If you have questions about the safe installation, operation or maintenance of the impression FR1 TM, please contact an authorized GLP distributor (see list of distributors at www.glp.de).

- Use the luminaire only as directed in this user manual. Observe all markings in this user manual and on the luminaire.

- Refer any service operation not described in this manual and refer all repairs to a technician authorized by GLP.

- The light source in this luminaire must not be changed by the end user.

- Read and follow the user documentation for all additional equipment.

Electrical safety

- Do not allow the luminaire to come into contact with water or moisture.

- Install the luminaire on EUTRAC 3 lighting track that is correctly and safely installed in accordance with the lighting track's user documentation and with local building and electrical codes. The lighting track must be electrically connected to ground (earth) and the installation must have both overload and ground fault (earth fault) protection. The track must be in perfect condition and be rated for the electrical requirements of all devices mounted on it. For more information, see the lighting track manufacturer's documentation.

- The lighting track must be connected to AC mains power at 100-240 V, 50/60 Hz. Do not mount the luminaire on lighting track that is supplied with power from a dimmer or presence detector.

- Shut down and lock out AC mains power to the lighting track before carrying out any installation or maintenance work.

- Shut down power to the lighting track when the luminaire is not in use.

- Shut down power to the lighting track immediately if the track, luminaire or any seal, cover, cable, or other component is damaged, defective, deformed, wet or showing signs of overheating. Do not reapply power until the item has been repaired and made safe by a qualified technician authorized by GLP.

- If a fuse blows, replace it with one of the original type and rating only. If new fuses blow, disconnect the luminaire from power and send it to a technician authorized by GLP for repair.

Fire safety and protection from burns

- Do not operate the luminaire if the ambient temperature (Ta) exceeds 45° C (115° F).

- The surface of the luminaire's casing can reach up to 55° C (131° F) during operation. Avoid contact by persons and materials. Do not install the luminaire in a location where there is a risk of accidental contact. Allow the luminaire to cool for at least 10 minutes before handling

- Keep the luminaire well away from flammable materials.

- Keep all combustible materials (e.g. fabric, wood, paper) at least 100 mm (4 in.) away from the luminaire.

- Ensure that there is free and unobstructed airflow around the luminaire. Provide a minimum clearance of 100 mm (4 in.) around fans and air vents.

- Do not illuminate surfaces within 500 mm (19.7 in.) of the luminaire.

- Do not install a fuse that has a higher rating than the one originally installed in the luminaire. Do not bypass fuses.

- Do not stick filters, masks or other materials onto optical components.

- The luminaire's optical components can focus the sun's rays, creating a risk of fire and damage. Do not expose the front of the luminaire to sunlight or any other intense light source, even from an angle.

Eye safety

- The impression FR1 TM is classified as a Risk Group 2 luminaire according to EN 62471. Possibly hazardous radiation emitted.

- Do not stare into the light output from the luminaire. May be harmful to the eyes.

- Do not look at the luminaire's light output with optical instruments or any device that may concentrate the light output.

- Make sure that persons working on or near the luminaire are not looking directly into the light output when the luminaire lights up suddenly. This can happen when power is applied, when the luminaire receives a DMX signal, or when certain control menu items are selected.

- Provide well-lit conditions to reduce the pupil diameter of anyone working on or near the luminaire.

Strobe safety

- Flashing light, particularly at 5 - 30 Hz, may cause seizures in persons with photosensitive epilepsy. Do not use strobe effects for extended periods.

- Comply with local regulations on the use of strobe lighting and notify the public in advance with highly visible warning signs when strobe effects are used.

- If a seizure occurs, stop using strobe effects. Seek professional medical help. Note the time that the seizure starts and finishes. Call emergency medical help urgently if the seizure lasts more than five minutes, if it is the person's first seizure, or if the person is injured. While waiting for help to arrive, consider the following general advice for caring for a person who is having a seizure: Protect the affected person from injuring themselves on hard or sharp objects. If necessary, move the person to a safe place. Lay them on their side with their head supported to prevent it from hitting the floor. Loosen any tight clothing around their neck. Do not use force to hold the person or restrict their movements. Do not put anything in their mouth, including your fingers.

Installation safety and protection from personal injury

- Installation must be performed by qualified personnel only and carried out in accordance with applicable regulations such as DIN VDE 0711-217.

- Restrict access below the work area and work from a stable platform whenever installing, servicing or moving the luminaire.

- Mount the luminaire only on EUTRAC 3 lighting track that is correctly and safely installed and rated for the weight of all the devices that will be installed on it.

- When installing a luminaire, support its weight until you have closed both of the two mechanical fasteners at each side of the luminaire to lock the fasteners into the lighting track. Do not allow the luminaire to hang from only one mechanical fastener.

- Allow a minimum center-to-center distance of 1000 mm / 40 in. between luminaires on the lighting track. Do not install luminaires at less than this distance from each other or you may overload the track and cause a safety hazard.

- Secure the luminaire against falling if the primary trackmount adapter fails by equipping it with a safety cable as directed in this manual. The safety cable must be approved for the weight of the luminaire and fastened to a secure anchoring point in a fixed structure. If no fixed structure is available, secure the luminaire using the safety cable and retaining collar supplied with the luminaire (or identical replacement items supplied by GLP) as directed in this manual.

- Before applying power to the luminaire, ensure that all fasteners are correctly closed, that the luminaire is secure, and that the moving head can move through its full range without risk of collision.

- Do not operate the luminaire with missing or damaged covers, shields or any optical component.

- If the luminaire becomes damaged, stop using it immediately and remove it from the installation. Do not attempt to use a luminaire that is obviously damaged.

- Do not modify the luminaire in any way not described in this user manual.

- Install genuine GLP parts only.

2. **Avoiding damage**

Do not point the front of the luminaire towards the sun or other strong light sources. The front lens focuses and concentrates light just like a magnifying glass. Strong light can cause internal damage to the luminaire, melting components or starting an internal fire within seconds.
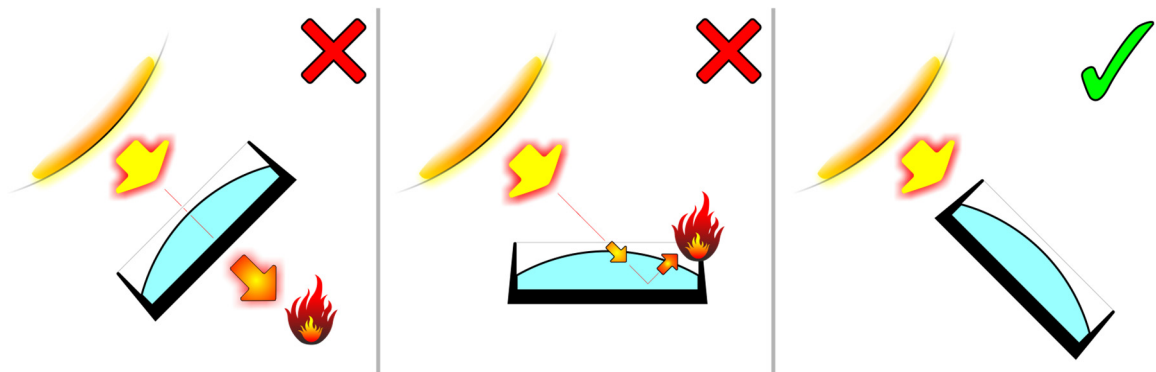

Figure 1. Avoiding damage from light sources

Damage can occur whether the luminaire is powered on or off. See Figure 1.Damage can also occur if the light hits the front of the luminaire at an angle: the luminaire does not need to be pointing *directly* at the sun or other light source.

To avoid problems from strong light sources:

- Do not expose the front of a luminaire to sunlight or any other strong light source.
- For outdoor applications during daylight, make sure that the front face of any luminaire is shielded or points away from the sun, even when not in use.
- Avoid pointing other high-powered beam lights directly at the luminaire.

Do not pick up or carry the luminaire by the front lens bezel. The LCD display is also fragile. Picking up or supporting the luminaire in these spots could result in damage that is not covered by the product warranty.

Use only original spare parts. Any structural modification of the system will void the product warranty.

Inspect the luminaire regularly and clean it if necessary. Clean the luminaire only as directed in this manual. Oils, solvents, and other chemicals commonly used for cleaning can damage the lens coatings and surfaces.

Do not drop the luminaire or expose it to mechanical stress.

Do not expose the luminaire to heat (from other lighting luminaires for example).

Transportation and storage

Transport the impression FR1 TM either in a flightcase or in its original packaging to protect the luminaire from damage caused by shocks during transportation.

Store the luminaire in a dry location when not in use.

3. **Product overview**
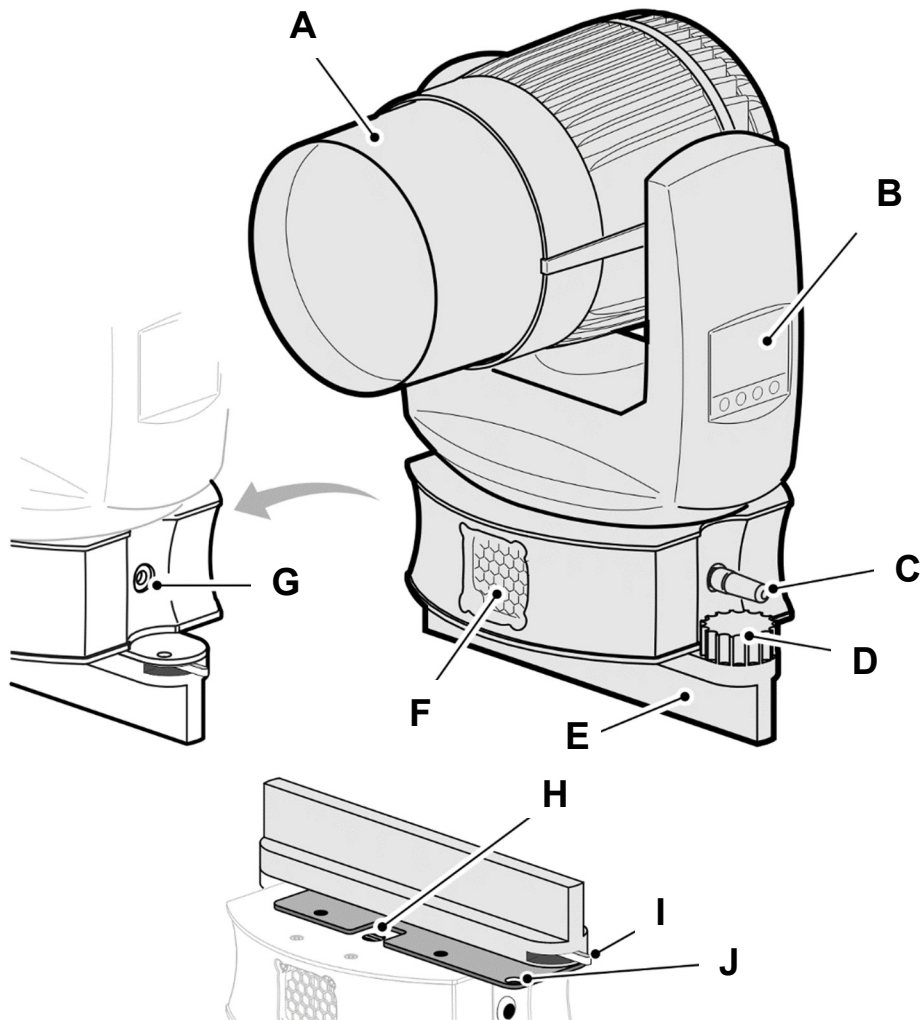
Figure 2: Product overview

A – Front lens assembly   F – Cooling vent

B – Control panel with backlit LCD display G – Wireless control linking button

C – Wireless control antenna   H – Fuseholder

D – Combined mechanical fastener and   I – Mechanical fastener lever
    power phase selection handscrew
                                           J – Safety cable attachment point
E – Trackmount adapter

4. **Product features**

The impression® FR1 TM from GLP® is a high-quality moving head lighting luminaire with a 60 watt RGBW LED and advanced optics that give a powerful, homogenous and sharply defined beam throughout the luminaire's 10:1 zoom range. Advanced German design allows exceptional performance and a versatile feature set to be packed into one of the most compact moving head lighting luminaires currently available. Smooth pan and tilt head movement, RGB color mixing, color presets, zoom, strobe, shutter and dimmer effects and wireless DMX control all make the FR1 TM a spectacular alternative to static lighting track luminaires.

The luminaire is designed for easy mounting on EUTRAC 3 Standard Surface Lighting Track.
See www.eutrac.de/3/1/en/products/~3_surface_track_standard.

It is possible to control large numbers of luminaires – individually and/or as groups – via wireless DMX using the CRMX system from LumenRadio.
See https://lumenradio.com/products/wireless-dmx/.

The impression FR1 TM is not suitable for household use, for use in any location where unattended children have access to it, or for use in permanent outdoor installations.

Light source

The impression FR1 TM is equipped with an OSRAM Ostar RGBW LED with a rated lifetime of up to 50 000 hours.

Removable micro-Fresnel lens

A detachable micro-Fresnel lens is fitted to the front of the luminaire to give a smoother beam. It is possible to remove this lens to obtain a harder-edged beam (see page 30).

Pan and tilt

The impression FR1 TM pans through 629° and tilts through 210° with coarse and fine control channels and self-correcting position feedback.

Pan and tilt position feedback can be disabled using the control panel or the *Control/Settings* DMX channel.

The direction of pan and tilt movement can be reversed by selecting *Invert* command using the control panel or the *Control/Settings* DMX channel, and you can also swap pan and tilt via the control panel. Inverting and swapping movement is a fast way of obtaining symmetrical effects without reprogramming at the console.

The default settings for position feedback, inversion and swapping are OFF.

Continuous (endless) pan rotation is also available on a separate DMX channel.

Color

The impression FR1 TM lets you control color using both color presets and 0-100% continuous RGBW color mixing.

If you use the color presets channel, we recommend that you set RGBW levels to 100% as a starting point before selecting a color preset. After you have selected a color on the color preset channel you can then fine-tune it using the RGBW channels.

CTC

The CTC DMX channel lets you adjust color temperature from 2500 to 10 000 K.

If you use the CTC channel, we recommend that you set RGBW levels to 100% as a starting point before setting a color temperature. After you have set a color temperature on the CTC channel you can then fine-tune it using the RGBW channels.

Shutter effects

The impression FR1 TM features an electronic dimmer / shutter system that provides pulse and strobe effects.

Dimming

0 – 100% continuous dimming is available.
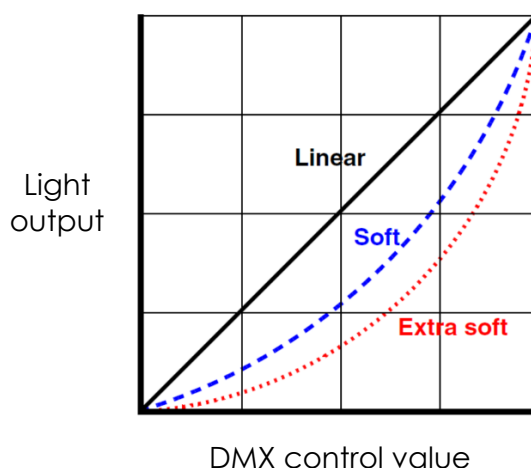
Figure 3. Dimming curves

See Figure 3. You can select from three different dimming curves using the control panel or the *Control/Settings* DMX channel: **Linear**, **Soft** and **Extra soft**:

- Light output using the **Linear** curve will appear to increase and decrease evenly throughout the dimming range.

- The **Soft** and **Extra soft** curves give finer control at low light levels (where the eye is more sensitive to changes in light level) and coarser control at high levels.

The default setting is **Extra soft**.

Fan modes

The four different cooling fan modes give you a range of options to choose from depending on how much you want to give priority to high-intensity light output or to low fan noise:

- **Regulated** gives priority to light output. If the luminaire is blacked out, fans run at minimum speed. When light output intensity is increased, temperature regulation increases fan speed to the level necessary to keep the luminaire at optimum temperature.

  - If light output is set to maximum intensity but the fans can keep the luminaire at optimum temperature, there will be no regulation of light intensity. If the luminaire begins to exceed optimum temperature, light intensity will be reduced until optimum temperature can be maintained.

- **High** mode is optimized for maximum light output and suits operation in high ambient temperatures. Fans are set to constant operation at high speed and light output intensity is regulated in order to keep luminaire temperature at optimum level.

  - Besides maximizing light output in high ambient temperatures, you can use this mode to cool down a luminaire quickly or to remove dust from cooling fans.

- **Medium** mode is suitable for low-noise operation in normal ambient temperatures. Fans are set to constant operation at medium speed and light output intensity is regulated in order to keep luminaire temperature at optimum level.

- **Low** mode is optimized for minimum noise. Fans are set to constant operation at low speed and light output intensity is regulated in order to keep luminaire temperature at optimum level.

  - This mode gives an extremely low fan noise level, but if you use it in high ambient temperatures there may be a noticeable reduction in light output intensity.

In all fan modes, if luminaire temperature reaches a dangerous level, LEDs will be shut down for a period until the fans have brought the temperature down to a safe level.

You can set the cooling fan mode using the control panel or the *Control/Settings* DMX channel.

Movement performance

Three settings are available for the movement of mechanical effects (pan, tilt, zoom etc.):

- In **Normal** mode, movement is set to achieve a balance between speed, noise and smoothness that will be best in average situations. This is the default setting.

- In **Fast** mode, all movement is set to high speed. This mode gives impressively fast effects, but noise levels will be higher than in Normal mode.

- In **Smooth** mode, movement is optimized to obtain the smoothest action and lowest noise. This mode gives super low-noise operation and smooth performance, but effect movement is slower than in Normal mode.

You can select movement performance settings using the control panel or the *Control/Settings* DMX channel.

No-DMX (behavior when the luminaire is not receiving a DMX signal)

You can set the luminaire to respond in four different ways if no DMX signal is present (if the luminaire is being controlled by DMX but the DMX signal stops, or if you apply power to the luminaire when no DMX signal is present):

- **Hold** sets the luminaire to continue obeying the last DMX values it received. This is the default setting.

- **Blackout** sets the luminaire to black out whenever it is not receiving a DMX signal.

- **Stand-Alone** sets the luminaire to play its stored stand-alone scene (see DMX Shot below) when the luminaire is not receiving a DMX signal. If no stand-alone scene is stored in memory, the luminaire will black out.

- **DMX Shot** takes a snapshot of the DMX values that are currently being received and stores them in the luminaire's memory as its stand-alone scene. The luminaire will display this stand-alone scene if it is set to Stand-Alone (see above) and is not receiving a DMX signal.

You can select one of the above four settings using the control panel or the *Control/Settings* DMX channel.

Zoom

The impression FR1 TM has a 10:1 zoom range. You can narrow the beam angle from 35° in flood mode to 3.7° in spot mode.

Zoom can be inverted from flood → spot to spot → flood using the control panel and the *Control/Settings* DMX channel. The default setting for zoom inversion is OFF.

Control panel

The control panel on the side of the yoke has a backlit graphic LCD display for setting up the luminaire and changing luminaire settings. See 'Control menu layout' on page 22 for a table showing the control menu structure and options available.

PWM frequency

You can change the LED dimming PWM frequency using either a DMX command or a control panel setting in order to avoid flicker and beat frequencies in video images.

The default PWM setting is 582 Hz. You can adjust the PWM frequency continuously from 582 to 618 Hz, or you can set it to either 1200, 2400, 4800 or 9600 Hz. Note that a higher PWM frequency may affect dimming performance.

The PWM frequency setting is stored in the luminaire and is not affected by cycling power off and on. However, it will be affected if you use the Factory default command in the control menus.

You should set all the luminaires in an installation to the same PWM frequency in order to ensure the same performance. As described above, you can do this using the PWM frequency selection or Factory default commands in the control menus or using the PWM frequency DMX channel.

5. **Preparing for use**

⚠ **Warning!** Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the luminaire.

Included Items

See Figure 4. The impression FR1 TM is supplied with the following items:

- Retaining collar **A** for installing in lighting track
- Safety cable **B** with lockable clip and eyebolt for fastening to a retaining collar.

Figure 4. Included items

Installing the luminaire on lighting track

To install the luminaire:

1. Check that the lighting track is safely and correctly installed in accordance with the track manufacturer's instructions. Check that the track can safely support a load of 5 kg per 500 mm / 11.1 lbs. per 20 in. Do not install more than one FR1 TM luminaire per 1000 mm / 40 in.

2. Check that the head of the luminaire will be at least 0.5 m (20 in.) away from combustible materials (paper, textiles, wood, etc.) when the luminaire is installed.

3. Shut down and lock out power to the lighting track.

4. Check that the fasteners at both ends of the luminaire's track adapter are in the open position and oriented so that they will fit correctly into the track.

5. Lift the luminaire up to the lighting track and pass the track adapter and fasteners into the track. If the fasteners are not correctly oriented, remove the luminaire from the track, turn it 180° end-to-end and pass the track adapter and fasteners into the track again.

⚠ **Warning!** Support the weight of the luminaire until you have closed both of the two mechanical fasteners at the ends of the track adapter. Do not allow a luminaire to hang from one fastener only.

6. See Figure 5. At the end of the track adapter next to the wireless linking button, use the lever (arrowed) to close the main mechanical fastener. This will fix one side of the luminaire into the track and make the connection to the Neutral line inside the track. You must continue to support the weight of the luminaire until you have closed the other mechanical fastener – do not allow the luminaire to hang from one fastener only.
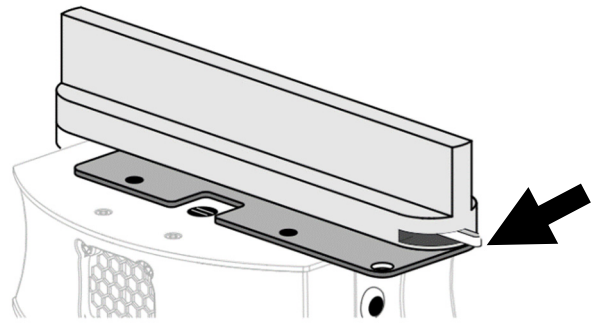
Figure 5. Main mechanical fastener

7. At the antenna end of the track adapter, close the second fastener to fix the other side of the luminaire into the track. Make the connection to one of the three power phases by turning and/or pulling the knob on the fastener as follows:

   - Turn clockwise = Phase 1
   - Turn counterclockwise = Phase 2
   - Pull and turn counterclockwise = Phase 3
   - Pull and turn clockwise = Neutral

8. See Figure 6. At the wireless linking button end of the track adapter, tighten the M4 x 6 mm mechanical fastener locking screw that prevents the mechanical fastener lever from being opened accidentally.

   Warning! If you ever need to replace this screw, use an M4 screw with a shaft (threaded part) that is exactly 6 mm in length.
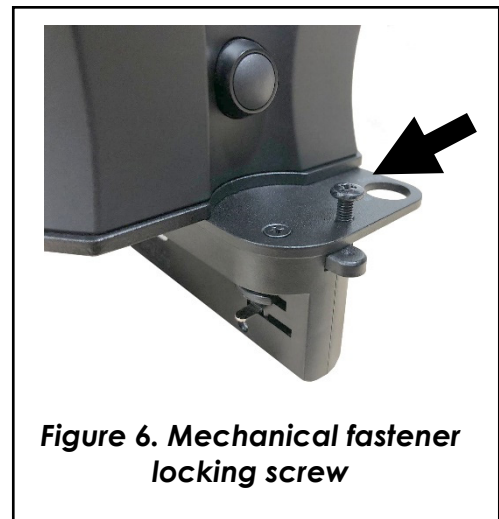
Figure 6. Mechanical fastener locking screw

9. See Figure 7. Note the position of the safety cable attachment point (arrowed) in the luminaire's baseplate. Install a safety cable as directed on the following pages.

   Warning! Secure the luminaire with a safety cable using one of the two options described in the following section. Do not leave an FR1 TM luminaire suspended in lighting track unless it is secured with a safety cable.
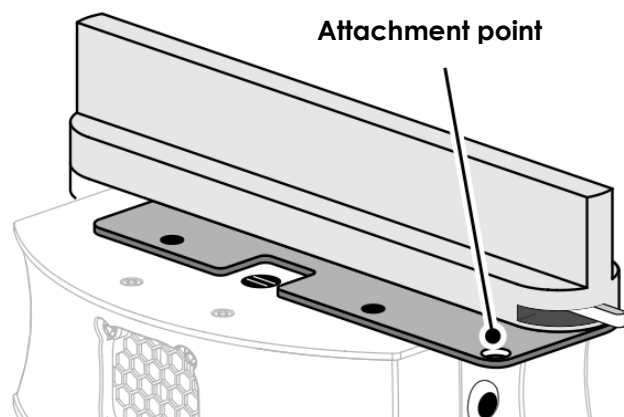
Attachment point

Figure 7. Safety cable attachment point

Option 1: Anchoring to a building or rigging structure

1. Provide a secure anchoring point such as a building member, eyebolt screwed into a secure surface or rigging structure.

2. Obtain a safety cable that is approved by TÜV, UL or a similar organization as a safety attachment for the weight of the luminaire. Fasten the safety cable to the anchoring point and to the safety cable attachment point in the luminaire's baseplate so that it will hold the luminaire if the rigging clamp fails. Take up as much slack as possible in the safety cable (by looping it more than once around the rigging structure, for example).

3. Check that the luminaire will be held securely by the safety cable if the primary attachment method fails.

4. Make sure that the head will not collide with another luminaire or any other object when it tilts and rotates.

5. If you are going to install another luminaire on the same lighting track, allow a 1000 mm / 40 in. center-to-center distance between luminaires, or you may overload the lighting track and cause a safety hazard.

Option 2: Anchoring to the lighting track

1. Check that power to the lighting track is still locked out.
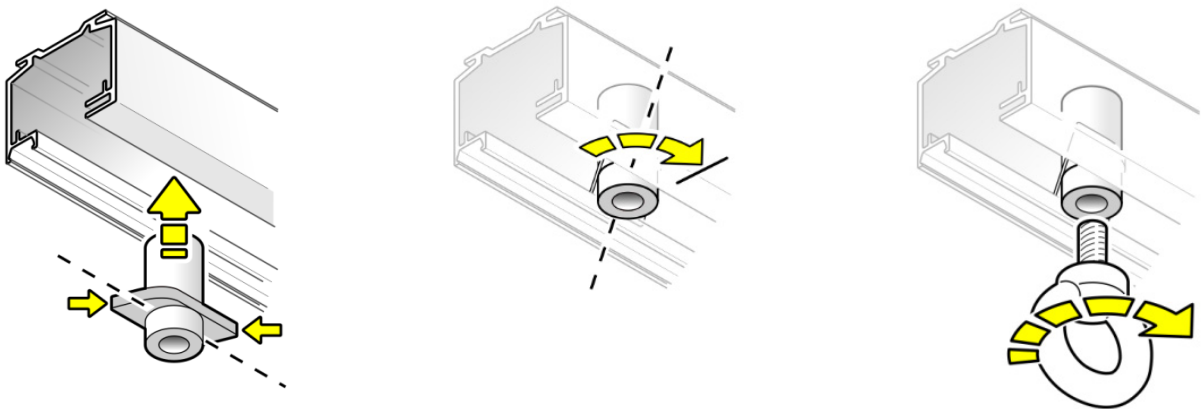
Figure 8. Installing a retaining collar and safety cable

2. See Figure 8. Note the flanges (arrowed) on the sides of the retaining collar that is supplied with the luminaire.

3. Pass the flanges into the lighting track immediately next to the luminaire and turn the retaining collar fully clockwise so that the flanges extend fully into the track.

4. Screw the M8 eyebolt on the end of the safety cable that is supplied with the luminaire firmly into the retaining collar. Check that the eyebolt is now held securely in the lighting track.

5. See Figure 9. Attach the free end of the safety cable to the safety cable anchoring point in the luminaire's baseplate using the lockable carabiner clip (arrowed in Figure 9) on the end of the safety cable. Fasten the lock on the carabiner clip so that the safety cable cannot become unfastened from the luminaire.

6. Check that the luminaire will be held securely by the safety cable if the primary attachment method fails.

7. Make sure that the head will not collide with another luminaire or any other object when it tilts and rotates.

8. If you are going to install another luminaire on the same lighting track, allow a 1000 mm / 40 in. center-to-center distance between luminaires, or you may overload the lighting track and cause a safety hazard.
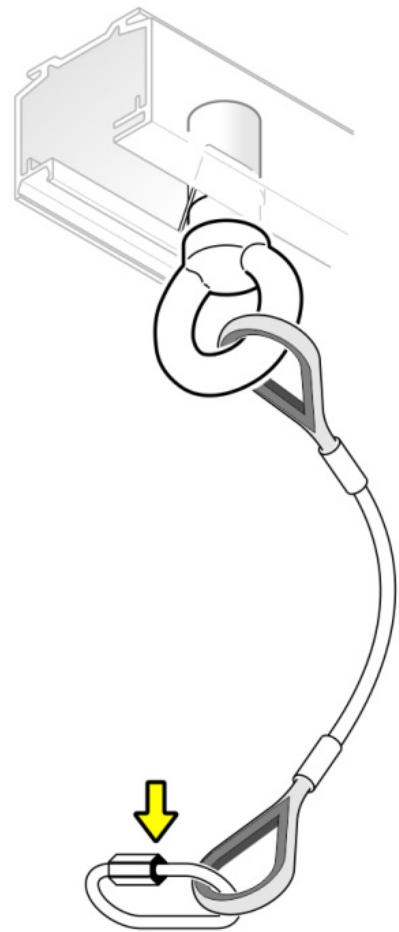
Figure 9. Carabiner clip

Setting up for DMX control

To configure the luminaire for control via DMX, open the menus in the fixture's control panel and set the fixture's DMX Address. Note the following:

- The FR1 TRM uses 16 DMX channels. If individual control of luminaires is required, each luminaire must have its own 16 channels in the 512 channels that are available in one DMX universe. If you give the first luminaire DMX address 1, for example, you should give the next luminaire DMX address 17.

- If you want two or more luminaires to behave identically at all times, you can give them the same DMX address.

- The default DMX address is 1.

- If you need to use more than 512 DMX channels, use a DMX controller that can manage two or more DMX universes.

Use certified DMX cable for DMX links between XLR-type DMX connectors.

Connecting to a CRMX wireless control system

The impression FR1 TM has an onboard wireless receiver that allows remote control by DMX over a LumenRadio CRMX wireless network. You can use any transmitter that is CRMX-compatible.

See Figure 10. Either connect a PC running a DMX control application via a USB-DMX interface or connect a dedicated DMX control console to a CRMX transmitter. Check the user documentation of those devices (make sure that the luminaires will be within the transmitter's range, for example).
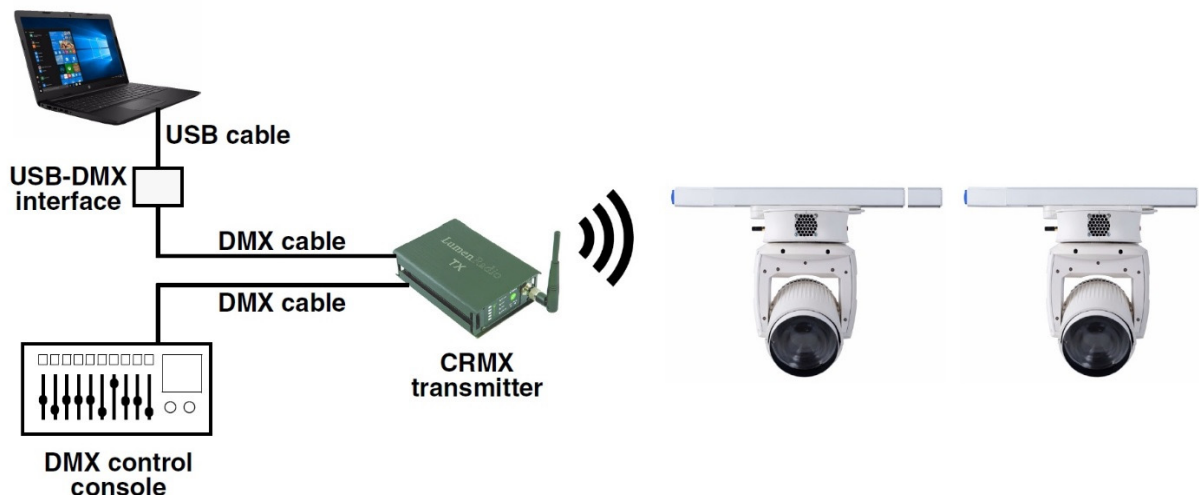
Figure 10. CRMX wireless control system

To establish wireless connections between the CRMX transmitter and luminaires:

1. Apply power to the luminaires and to the CRMX transmitter.

2. If the luminaires are set up with any existing network connections, delete them by pressing and holding the wireless linking button on the side of the luminaire for around 10 seconds. The luminaire is now ready for a new connection.

3. Put the CRMX transmitter into discovery mode following the instructions in the transmitter's user documentation. The transmitter will now search for unlinked luminaires for a limited period.

4. To link one or more impression FR1 TM luminaires to the transmitter, press the wireless linking button on the side of the luminaire(s) once. As soon the button is pressed the luminaire will try to connect to any CRMX transmitter that is within range and in discovery mode.

If a handshake between a luminaire and a transmitter is successful and a connection is established, the connection is stored in both the luminaire and the transmitter. The luminaire and transmitter will remember the connection after a power cycle.

It is normally a good idea to delete any connections that are stored in a transmitter before starting new linking processes. Deleting stored connections will help to ensure a clean new installation.

Unlinking and linking luminaires

You can unlink a luminaire from a CRMX network at any time by pressing the wireless linking button on the side of the luminaire and holding for around 10 seconds.

You can link an unlinked luminaire to a CRMX Network at any time by putting the transmitter into discovery mode and pressing the wireless linking button on the side of the luminaire once. The luminaire will then connect to the transmitter automatically. If the luminaire fails to connect, press the wireless linking button for about 10 seconds to delete any stored links, and then try the procedure again.

Advice and assistance

If you would like advice with planning or implementing a DMX control system over LumenRadio CRMX, your GLP supplier will be happy to help.

6. **Control menus and LCD display**

Warning! DMX control is disabled when the control menus are active. Be prepared for the head to move as soon as you exit the control menus.

The control panel and LCD display provide access to user settings, readouts, and utilities. See 'Control menu layout' on page 22 for details of the options available. Note that many of these options are also available via DMX on the Control/Settings DMX channel-

When power is applied, the luminaire resets. After the reset has completed, the main menu is displayed:

```
V:1.20/NE              582

       198            -214
                      Next
                      215
DMX Start Address

Mode    Enter    Down    UP
  O       O       O       O
```
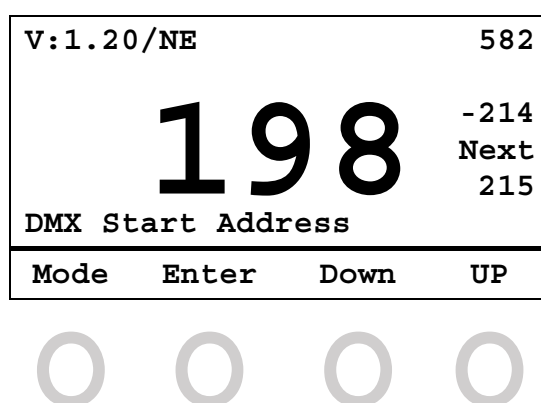
Figure 11. Main menu

See Figure 11. From left to right, the top line of the main menu displays:

- Main CPU software version
- DMX control mode: **N** (Normal)
- Dimming curve: **L** (Linear), **S** (Soft) or **E** (Extra Soft)
- PWM frequency.

In the example shown in Figure 11, the luminaire is running CPU software version 1.20. The luminaire is in Normal DMX control mode and set to the Extra-soft dimming curve. The current PWM frequency is 582.

A flashing display indicates loss of DMX.

To use the control panel:

- Use the **Down** and **Up** buttons to scroll between menu options.
- Press the **Enter** button to select a setting, confirm a command or enter a submenu.
- Press the **Mode** button to escape and return to the top of the menu.

7. **Control menu layout**

DMX Start Address	1 - 512			DMX start address
Setup	DMX Mode	NORM		
Settings	Pan/Tilt	Invert Pan	ON / **OFF**	Invert pan left/right
		Invert Tilt	ON / **OFF**	Invert tilt up/down
		Swap Pan/Tilt	ON / **OFF**	Swap Pan/Tilt channels
		Position Feedback	**ON** / OFF	Disable position encoders for Pan/Tilt
		Pan Enable	**ON** / OFF	On: Enabled and controllable via DMX Off: Disabled and no motor current
		Tilt Enable	**ON** / OFF	On: Enabled and controllable via DMX Off: Disabled and no motor current
		Movement per-formance	Fast	Effects movement optimized for highest speed
			Normal	Effects movement standard
			Smooth	Effects movement optimized for smoothness and lowest noise
	Zoom	Invert Zoom	ON / **OFF**	Zoom inverted from Flood → Spot to Spot → Flood
	Shutter	Error Blackout	ON / **OFF**	Light output is stopped if an error occurs
		No DMX Blackout	ON / **OFF**	Light output is stopped if DMX fails for 3 seconds
	Init Positions	Save		Save current positions as initial positions after reset without DMX
		Reset		Reset initial positions after reset without DMX
	Dimming Curve	Linear		Select dimming curve option
		Soft		
		Extra Soft		

Settings (continued)	DMX Hold	Blackout		Luminaire blacks out if DMX signal is lost
		Hold		Last DMX values are held if signal is lost
		Stand-Alone		Luminaire goes to stored stand-alone scene if DMX signal is lost
		DMX Shot		Take snapshot of current scene and save it as stand-alone scene
	PWM Frequency	582-618 Hz / 1200 Hz / 2400 Hz		Set LED PWM frequency
	Display	Contrast	0 - **50** -100 %	Set display contrast
		Brightness	0 - **100** %	Set display brightness (Auto Brightness must be disabled)
		Blackout Time	1 - **10** -30 s	Set time until display blackout after last keystroke (Auto Blackout must be enabled)
		Display Orientation	**Normal** / Inverted	Flip display up/down
		No DMX Flash	**ON** / OFF	Display flashes if DMX fails
	Temperature Unit	**°C** / °F		Sets units shown in display
	Fan Mode	**Regulated**		Temperature- regulated cooling fan operation
		High		Constant cooling fan speed
		Medium		
		Low		
	Reset Factory Settings	Confirm (Yes/No)		Reset all values (except serial number) to factory defaults
Information	System Errors	List		Show all recent errors (permanent)
	System Versions	Main (SW/HW)		Main luminaire software (main application, boot loader) and hardware versions
		Pan/Tilt (SW/HW)		Pan/tilt software and hardware versions
		LED Driver (SW/HW)		LED driver and hardware versions

Information (continued)	Temperatures	Main Temperature	Current	-128 - 127 °C/°F	Main head temperature sensor readouts
			Maximum resettable	-128 - 127 °C/°F	
			Maximum non-resettable	-128 - 127 °C/°F	
		LED Temperature	Current	-128 - 127 °C/°F	LED temperature readouts
			Maximum resettable	-128 - 127 °C/°F	
			Maximum non-resettable	-128 - 127 °C/°F	
	Luminaire Information	Luminaire Hours	Total hours	0-99999 h	Total operation time from new
			Resettable hours	0-99999 h	Resettable hours counter
		Boot count		0-99999	Number of times luminaire has been started up (non-resettable)
	DMX Input Monitor	Pan rotation			DMX values received on each channel
		Zoom			
		Special			
		CTC			
		Dimmer			
		Shutter			
		White			
		Blue			
		Green			
		Red			
		Color Wheel			
		Tilt			
		Pan rotation			
	Fans Monitor	PSU Fan	RPM (/U)		Fan speeds (and voltages)
		Head Fan	RPM (/U)		

		Full System Reset	Confirm (Yes/No)	Reset luminaire
Manual Control	Reset	Pan/Tilt Reset	Confirm (Yes/No)	Reset pan and tilt only
		LED Driver Reset	Confirm (Yes/No)	Reset LED driver only
	Manual DMX	Pan	**0** - 255	Manually apply DMX values (these commands are available if no DMX is present – values are overwritten by a DMX signal). Values are reset to initial values after a luminaire reset.
		Zoom	**0** - 255	
		Pan rotation	**0** - 255	
		Special	**0** - 255	
		CTC	**0** - 255	
		Dimmer	**0** - 255	
		Shutter	**0** - 255	
		White	**0** - 255	
		Blue	**0** - 255	
		Green	**0** - 255	
		Red	**0** - 255	
		Color Wheel	**0** - 255	
		Tilt	**0** - 255	
		Pan	**0** - 255	
		Reset All Values	Confirm (Yes/No)	Set all manual DMX values to 0

Test	Pan/Tilt	ON / **OFF**		Run test sequence
	Colour	ON / **OFF**		
	All	ON / **OFF**		
Service	Enter Code	**0** - 255		Enter code (contact GLP if you would like the code) to access Service Menu (resets automatically after luminaire restart or after 10 min. with no control panel input)
	Serial	0 - 99999		Last 5 digits of luminaire's serial number. Needed for correct RDM operation
	Clear EEPROM	**0** - 255		Clear time and power on values
	LED Calibration	Red-Max	0 - **128** - 255	Adjust base RGBW intensity
		Green-Max	0 - **128** - 255	
		Blue-Max	0 - **128** - 255	
		White-Max	0 - **128** - 255	
	Pan	0 - **128** - 255		Adjust pan home position
	Tilt	0 - **128** - 255		Adjust tilt home position
	Zoom	0 - **128** - 255		Adjust zoom home position

Default values are shown **in bold type**.

User-settable values are displayed in grey boxes.

8. **DMX channel layout**

Normal mode (16 DMX channels)

Channel	Function	Description	DMX range	Default DMX	% Range*	Fade
1	Pan coarse	Left – right in 1.2° increments (16 bit)	0 – 65535	32768	0 – 100%	Fade
2	Pan fine					
3	Tilt coarse	Up – down in 1.2° increments (16 bit)	0 – 65535	32768	0 – 100%	Fade
4	Tilt fine					
5	Color presets (virtual color wheel)	RGBW control	0 – 7	0	0 – 2.5%	Snap
		Color 01 - Red	8 – 15		3 – 5.5%	
		Color 02 - Amber	16 – 23		6 – 9%	
		Color 03 - Warm yellow	24 – 31		9.5 – 12%	
		Color 04 - Yellow	32 – 39		12.5 – 15%	
		Color 05 - Green	40 – 47		15.5 – 19.5%	
		Color 06 - Turquoise	48 – 55		20 – 21.5%	
		Color 07 - Cyan	56 – 63		22 – 24.5%	
		Color 08 - Blue	64 – 71		25 – 27.5%	
		Color 09 - Lavender	72 – 79		28 – 31%	
		Color 10 - Mauve	80 – 87		31.5 – 34%	
		Color 11 - Magenta	88 – 95		34.5 – 37%	
		Color 12 - Pink	96 – 103		37.5 – 40.5%	
		White – CTO	104 – 111		41 – 43.5%	
		White	112 – 119		44 – 46.5%	
		White – CTB	120 – 127		47 – 49.5%	
		Rainbow effect stop	128		50.2%	
		Rainbow effect active	129 – 223		50.5 – 87.5%	Fade
		Random colors slow – fast	224 – 255		88 – 100%	Fade
6	Red	Color mixing - Red	0 – 255	255	0 – 100%	Fade
7	Green	Color mixing - Green	0 – 255	255	0 – 100%	Fade
8	Blue	Color mixing - Blue	0 – 255	255	0 – 100%	Fade
9	White	Color mixing - White	0 – 255	0	0 – 100%	Fade
10	Shutter / strobe	Shutter closed	0 – 15	255	0 – 5.5%	Snap
		Shutter pulse random	16 – 47		6 – 18.5%	Fade
		Fade on, snap off (random patterns)	48 – 79		19 – 31.5%	Fade
		Snap on, fade off (random patterns)	80 – 111		32 – 43.5%	Fade
		Fade on, fade off (random patterns)	112 – 143		44 – 62.5%	Fade
		Strobe with blackout pause	144 – 199		63 – 77.5%	Fade
		Strobe effect slow - fast	200 – 239		78 – 94.5%	Fade
		Shutter open	240 – 255		95 – 100%	Snap
11	Dimmer coarse	Intensity 0 – 100%	0 – 65535	0	0 – 100%	Fade
12	Dimmer fine					
13	CTC	RGBW raw	0 – 15	0	0 – 5.9%	Snap
		CTC 10 000 K – 2500 K	16 – 255		6 – 100%	Fade

14	Control/Settings (see notes at end of this table)	Idle	0 – 11	0	0 – 4.3%	Snap
		No function	12 – 26		4.7 – 10.2%	
		Performance = Fast*	27 – 29		10.6 – 11.4%	
		Performance = Normal*	30 – 32		11.8 – 12.5%	
		Performance = Smooth*	33 – 35		12.9 – 13.7%	
		No function	36 – 38		14.1 – 14.9%	
		Dimmer curve = Extra-soft*	39 – 41		15.3 – 16.1%	
		Dimmer curve = Linear*	42 – 44		16.5 – 17.3%	
		Dimmer curve = Soft*	45 – 47		17.6 – 18.4%	
		No function	48 – 56		18.8 – 22.0%	
		Display auto-off*	57 – 59		22.4 – 23.1%	
		Display permanently on*	60 – 62		23.5 – 24.3%	
		Display invert off*	63 – 65		24.7 – 25.5%	
		Display invert on*	66 – 68		25.9 – 26.7%	
		No function	69 – 71		27.1 – 27.8%	
		No DMX = Blackout*	72 – 74		28.2 – 29.0%	
		No DMX = Hold current effect*	75 – 77		29.4 – 30.2%	
		No DMX = Stand-Alone*	78 – 80		30.6 – 31.4%	
		No DMX = Save Snapshot*	81 – 83		31.8 – 32.5%	
		No function	84 – 86		32.9 – 33.7%	
		Fans temperature-regulated*	87 – 89		34.1 – 34.9%	
		Fans constant high*	90 – 92		35.3 – 36.1%	
		Fans constant medium*	93 – 95		36.5 – 37.3%	
		Fans constant low*	96 – 98		37.6 – 38.4%	
		No function	99 – 104		38.8 – 40.8%	
		P/T position feedback off*	105 – 107		41.2 – 42%	
		P/T position feedback on*	108 – 110		42.4 – 43.1%	
		No function	111 – 116		43.5 – 45.5%	
		Tilt invert off*	117 – 119		45.9 – 46.7%	
		Tilt invert on*	120 – 122		47.1 – 47.8%	
		Pan invert off*	123 – 125		48.2 – 49%	
		Pan invert on*	126 – 128		49.4 – 50.2%	
		Zoom invert off*	129 – 131		50.6 – 51.4%	
		Zoom invert on*	132 – 134		51.8 – 52.5%	
		No function	135 – 149		52.9 – 58.4%	
		PWM frequency:				
		582 Hz**	150		58.8%	
		583 Hz**	151		59.2%	
		584 Hz**	152		59.6%	
		585 Hz**	153		60%	
		586 Hz**	154		60.4%	
		587 Hz**	155		60.8%	
		588 Hz**	156		61.2%	
		589 Hz**	157		61.6%	
		590 Hz**	158		62%	
		591 Hz**	159		62.4%	
		592 Hz**	160		62.7%	
		593 Hz**	161		63.1%	
		594 Hz**	162		63.5%	
		595 Hz**	163		63.9%	
		596 Hz**	164		64.3%	
		597 Hz**	165		64.7%	
		598 Hz**	166		65.1%	
		599 Hz**	167		65.5%	
		600 Hz**	168		65.9%	
		601 Hz**	169		66.3%	
		602 Hz**	170		66.7%	
		603 Hz**	171		67.1%	
		604 Hz**	172		67.5%	
		605 Hz**	173		67.8%	
		606 Hz**	174		68.2%	

14 continued		607 Hz**	175		68.6%	
		608 Hz**	176		69.0%	
		609 Hz**	177		69.4%	
		610 Hz**	178		69.8%	
		611 Hz**	179		70.2%	
		612 Hz**	180		70.6%	
		613 Hz**	181		71.0%	
		614 Hz**	182		71.4%	
		615 Hz**	183		71.8%	
		616 Hz**	184		72.2%	
		617 Hz**	185		72.5%	
		618 Hz**	186		72.9%	
		No function	187 – 191		73.3 – 74.9%	
		1200 Hz**	192 – 194		75.3 – 76.1%	
		2400 Hz**	195 – 197		76.5 – 77.3%	
		4800 Hz**	198 – 200		77.6 – 78.4%	
		9600 Hz**	201 – 203		78.8 – 79.6%	
		No function	204 –251		80 – 98.4%	
		Reset entire luminaire*	252 – 255		98.8 – 100%	
15	Zoom	Flood wide – narrow	0 – 255	0	0 – 100%	Fade
16	Endless pan rotation	Stop	0	0	0%	Snap
		Pan rotation CW fast – slow	1 – 127		0.5 – 49.5%	Fade
		Stop	128		50.2%	Snap
		Pan rotation CCW slow – fast	129 – 254		50.5 – 99.5%	Fade
		Stop	255		100%	Snap

Notes:

Percentage values are calculated by dividing DMX values by 2.56 and rounding to the nearest 0.1%.

*To apply a command on Channel 14 (Control/Settings), start at a value of zero, then move to the required value and hold it for at least 3 seconds. If you move to the required value from any other value than zero, the command will not be applied.

**To adjust the PWM frequency using the Control/Settings channel, start at a value of zero, move to the required value and hold it for at least 5 seconds.

9. **Service and maintenance**

⚠️ **Warning!** Read 'Safety' starting on page 4 for important safety information that you must understand before you service the luminaire. Work in well-lit conditions. Do not look directly into the light output.

Maintenance

Suggested maintenance intervals

The cleaning schedule depends on the operating environment. The intervals below are suggestions from our experience with typical installations. Adjust as necessary.

Maintenance Task	Interval	How
Clean front lens	Weekly	Wipe with soft cloth and glass cleaning fluid.
Clean fans and air channel	Monthly	Use soft brush and vacuum cleaner. Hold fan blades still with pen or screwdriver to avoid spinning them too fast with vacuum.
Lubricate zoom rails	Yearly or as necessary	Apply tiny quantity of Klüber Barrierta to rails.

Cleaning

impression FR1 TM components require occasional cleaning to prevent the buildup of dust, dirt, and smoke fluid residue. Pay special attention to the air vents and front lens. Failure to keep the luminaire clean will significantly reduce light output and may cause damage. Do not let optical parts come into contact with oil or grease or touch with bare fingers.

Regular cleaning will ensure the maximum performance and reliable operation. The lenses and glass gobos may be cleaned with alcohol wipes or a soft cloth moistened with isopropyl alcohol.

Wait until all parts are dry before operating the luminaire.

Lubrication

The only parts that may require occasional lubrication are the focus/zoom rails. Contact GLP Service and Support for advice.

Removing and reinstalling the micro-Fresnel lens

If you would like to obtain a sharper-edged beam, you can remove the micro-Fresnel lens that is installed in the front of the head (bear in mind that this will result in a slight loss of evenness in the beam projection). The lens is held by three screws. A frost filter is installed immediately under the lens.

To remove the micro-Fresnel lens:

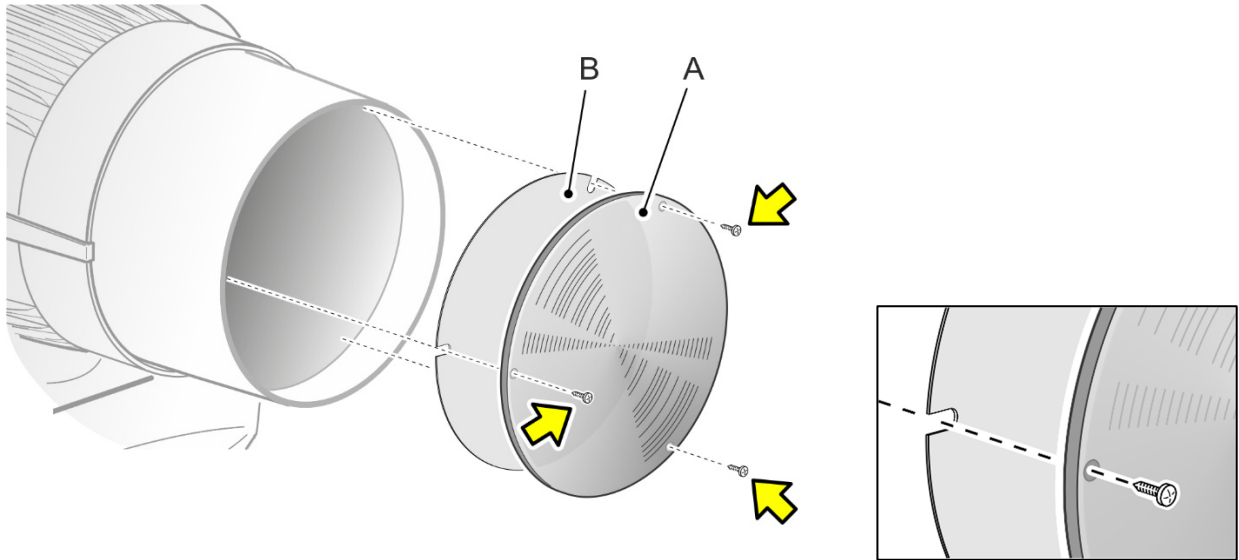1. Shut down power to the luminaire and allow it to cool.

Figure 12. Removing a micro-Fresnel lens

2. See Figure 12. Remove the three Phillips #1 screws (arrowed) from the lens in the front of the head.

3. Tilt the head downwards and allow the lens **A** and frost filter **B** to slide out of the head. Store the lens for possible re-use.

4. Reinstall the frost filter in the head by passing the three screws through the notches in the filter and tightening them into their holes in the head.

If you reinstall the micro-Fresnel lens later, use the three Phillips screws to fasten it into its original position over the frost filter. See Figure 13. The smooth side of the lens must face inwards and the ridges must face out of the head.
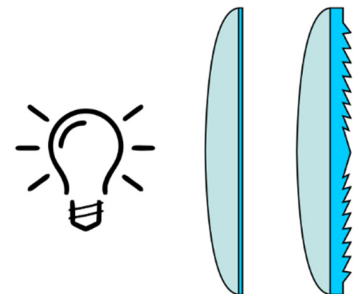

Figure 13. Lens orientation

impression®
FR1 TM

Main fuse

See Figure 14. The main fuse sits in a holder in the bottom of the base.

If the luminaire appears to be completely shut down even though power is applied, the main fuse may have blown. Shut down power to the track system before replacing the fuse. Replace only with a fuse of the same type and rating.

Figure 14. Main fuse

GLP Service and Support

Contact information for the nearest GLP Service and Support is available online at www.glp.de/en/service, by request via email at info@glp.de, or by telephone at the following numbers:

- GLP Germany: +49 (7248) 927 1955
- GLP N. America: +1 818 767-8899
- GLP U.K.: +44 1392 690140
- GLP Asia: +852 (3151) 7730
- GLP Nordic: +46 737 57 11 40

10. **Technical specifications**

Light source

LED type: Osram Ostar RGBW
LED lifetime: 50.000 hours
Number of LEDs: 1
CRI (Ra): 80
TLCI: 80
TM30-15 77/106

Optics

Min. zoom angle: 3.7°
Max. zoom angle: 35°
Zoom range: 10:1

Effects

Color mixing: RGBW continuous
Color presets: 12 + 3 whites, adjustable via RGBW
Color temperature correction: 2500 K – 10 000 K, electronic, adjustable via RGBW
Dimmer: 0-100% continuous, electronic
Shutter/strobe: Pulse and strobe effects, max. 14 Hz, electronic
Variable PWM frequency

Movement

Resolution: 8 - 16 bit
Positional feedback: Yes
Pan range: 629°
Tilt range: 210°
Endless movement: 360° endless pan rotation

Control

Control system: USITT DMX512
Control data communication: LumenRadio CRMX wireless system
Onboard interface: Control panel with backlit LCD graphical display
Luminaire settings: Onboard control panel or via wireless DMX

Installation

Hanging vertical installation from EUTRAC 3 Standard Surface Lighting Track
Minimum center-to-center distance when installed: 1000 mm / 40 in.
Safety cable for secondary attachment of luminaire required

Electrical

AC power: 100-240 V, 50/60 Hz
Maximum power consumption @230 V: 80 W
Power consumption at idle: 14 W
Primary fuse: 20 mm T 2A
EEC (Energy Efficiency Class): E
EEI (Energy Efficiency Index): 1.193
Energy consumption (kWh/1 000 h): 68

Thermal

Temperature-regulated forced air cooling
Thermal protection system
Maximum ambient temperature: 45° C / 115° F
Minimum ambient temperature: 5° C / 41° F

Product color

White (standard)

Included items

Lighting track safety cable with carabiner clip and M8 eyebolt
Retaining collar for M8 eyebolt
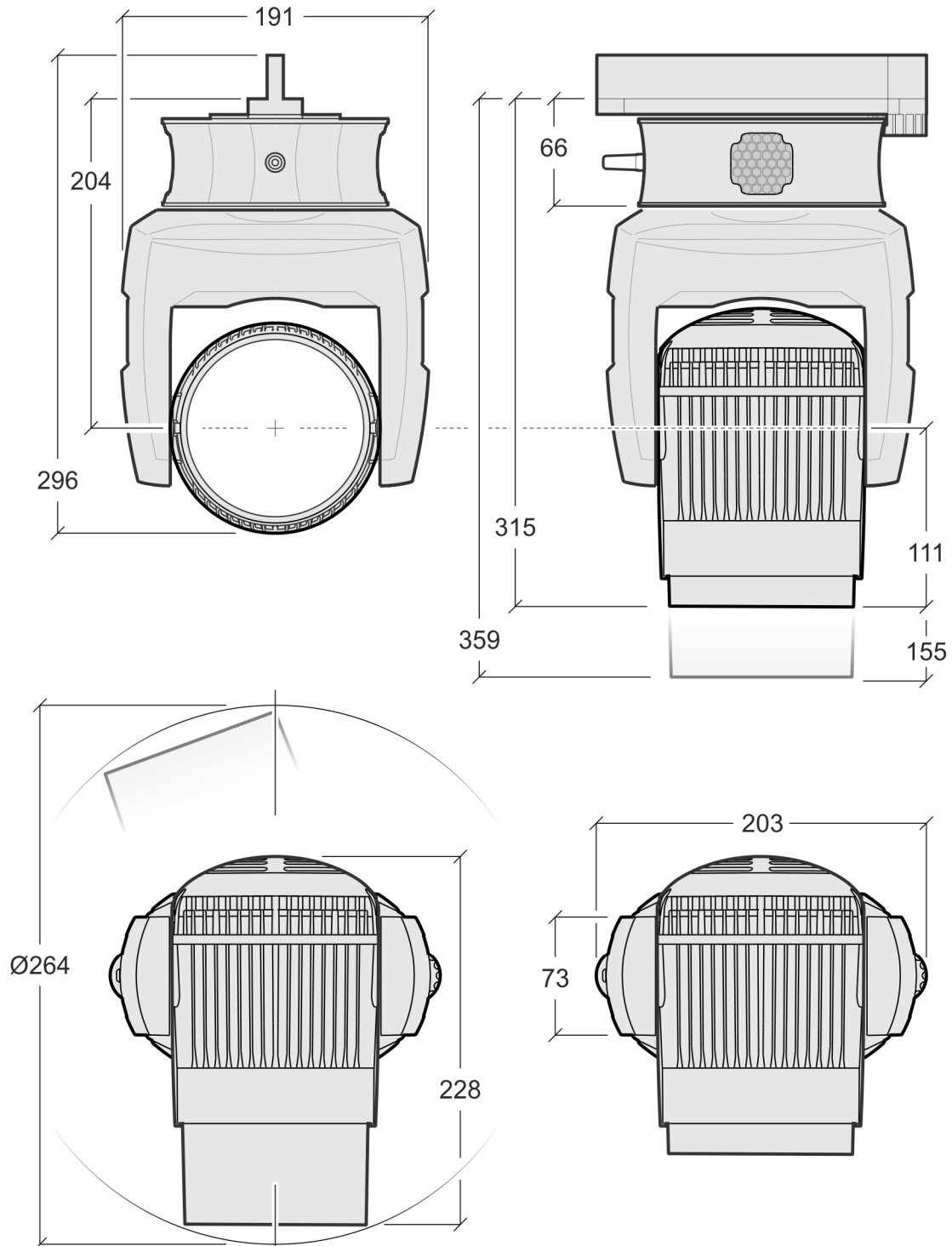
Shipping options

Single product: Cardboard packing case

Dimensions and weight

Depth: 140 mm / 5,5 ins.
Width: 190 mm / 7.5 ins.
Height (head vertical, zoom at max. extension): 355 mm / 14.0 in.
Weight: 5 kg / 11 lbs.
Minimum center-to-center distance: 1000 mm / 40 in.

Note: Specifications are subject to change without notice.

11. **Dimensions**

Dimensions given in millimeters