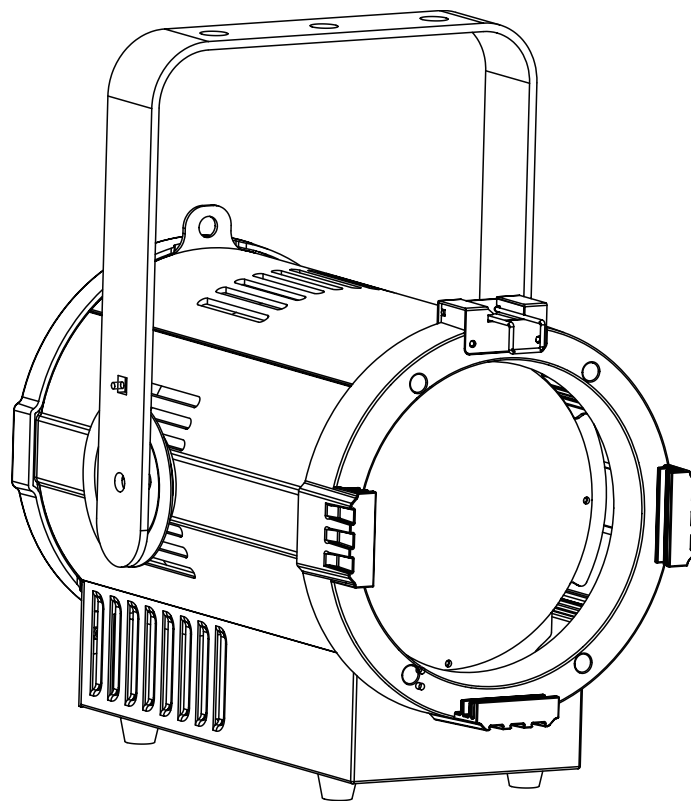




FR-100C

100 watts Cool White Powered LED Fresnel



USER MANUAL

Table of contents

Caution!	3
Introduction	3
Safety instructions	3
Overview	4
Installation	4
Read ‘Safety information’ before installing the fixture.	4
Fastening the fixture to a flat surface	4
Mounting the fixture on a truss	5
Securing with a safety cable.....	5
DMX-512 connection/connection between fixtures	5
Power connection.....	6
Operation	6
Control Menu Map.....	6
Addressing	7
Universal DMX Control.....	7
RDM control.....	7
DMX Protocol	8
ID address selection.....	9
Fixture Cleaning	10
Fuse Replacement	10
Troubleshooting	10
The fixture does not work, no light	10
Technical specifications	11

Caution!



Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!



Avoid looking directly into the light source!

Wear protective glasses and other PPE (personal protective equipment) when working on or near the fixture.



Always make sure you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label. Make sure it is grounded when using it!

Unplug mains lead before opening the housing!

Make sure that the power cord is never crimped or damaged by sharp edges. Check the fixture and the powercord from time to time.

Make sure to replace the fuse with another of the same type and rating.



For your own safety, please read this user manual carefully before you initial start-up.

Follow operating safety precautions and pay attention to warning signs methods and equipment on the user manual.



Warning! This symbol indicates a hot surface. Certain parts of the housing can become hot during operation. After use, wait for a cool-down period of at least 10 minutes before handling or transporting the device.



T =45°C

Indoor use only! To prevent risk of fire or shock, do not expose this product to rain or moisture. IP 20 rating.

The ambient temperature must always be between -5° C and +45° C.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

Introduction

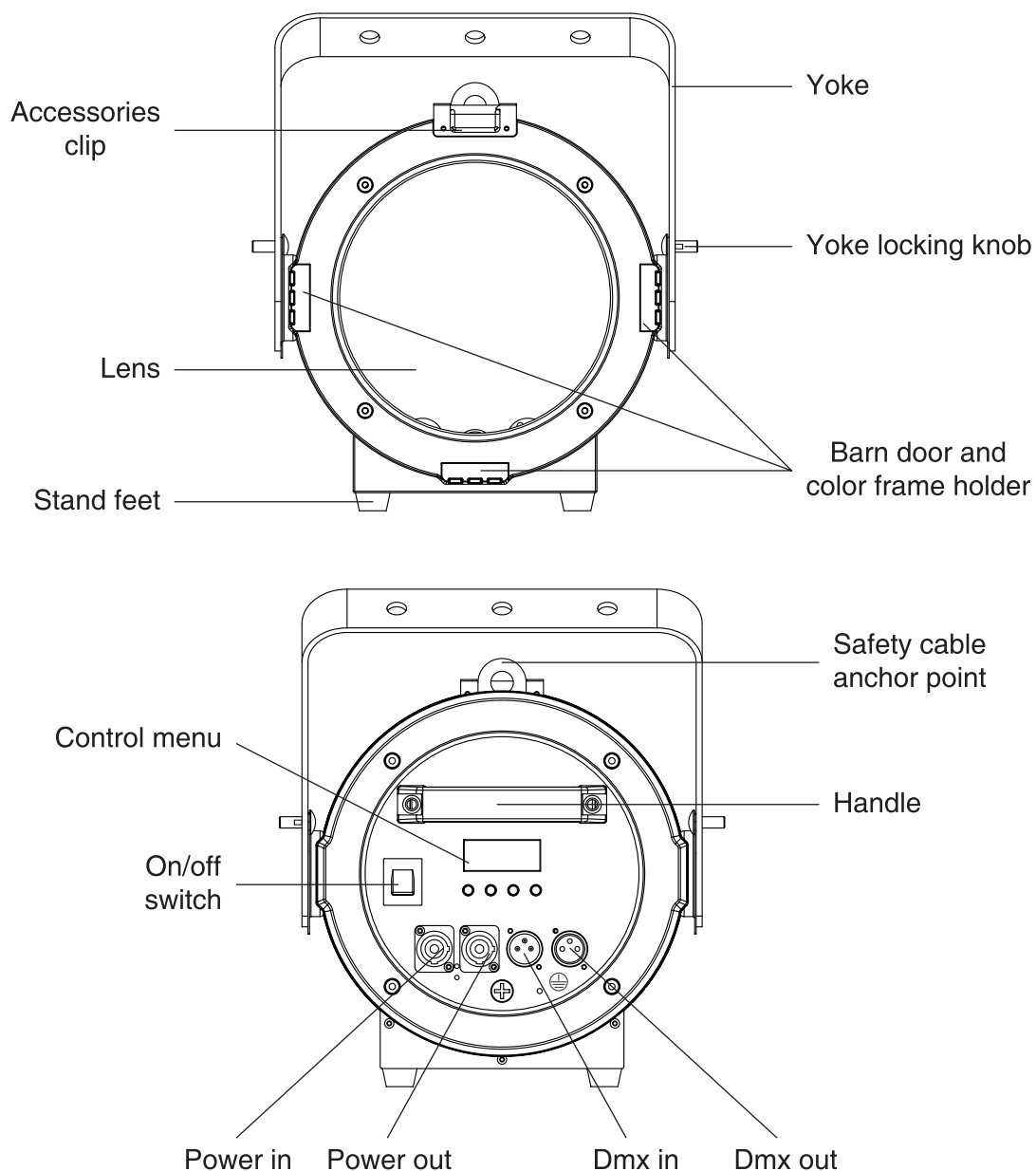
Thank you for having chosen FR-100C. You will see you acquired a powerful and versatile device.

Unpack your item. Before you initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

Safety instructions

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual. Always disconnect from the mains, when the device is not in use or before cleaning it. Keep away children and amateurs from the device! There are no serviceable parts inside the device. Maintenance and service operations are only to be carried out by authorized dealers.

Overview



Installation

Read 'Safety information' before installing the fixture.

The fixture is designed for indoor use only and must be used in a dry location with adequate ventilation. Ensure that none of the fixture's ventilation slots are blocked.

Fasten the fixture to a secure structure or surface. Do not stand it on a surface or leave it where it can be moved or fall over. If you install the fixture in a location where it may cause injury or damage if it falls, secure it as directed in this user manual using a securely anchored safety cable that will hold the fixture if the primary fastening method fails.

Fastening the fixture to a flat surface

The fixture can be fastened to a hard, fixed, flat surface that is oriented at any angle. Ensure that the surface and all fasteners used can support at least 10 times the weight of all fixtures and equipment to be installed on it.

Fasten the fixture securely. Do not stand it on a surface or leave it where it can be moved or fall over. If you install the fixture in a location where it may cause injury or damage if it falls, secure it as directed below with a securely anchored safety cable that will hold the fixture if the primary fastening method fails.

Mounting the fixture on a truss

The fixture can be clamped to a truss or similar rigging structure in any orientation. When installing the fixture hanging vertically down, you can use an open-type clamp such as a G-clamp. When installing in any other orientation, you must use a half-coupler clamp that completely encircles the truss chord.

To clamp the fixture to a truss:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Block access under the work area.
3. Fold the legs of the mounting bracket together and bolt a rigging clamp securely to the mounting bracket. The bolt used must be M10, grade 8.8 steel minimum. It must pass through both mounting bracket legs and be fastened with a self-locking nut.
4. Working from a stable platform, hang the fixture with its clamp on the truss and fasten the clamp securely.
5. Secure the fixture with a safety cable as directed below.

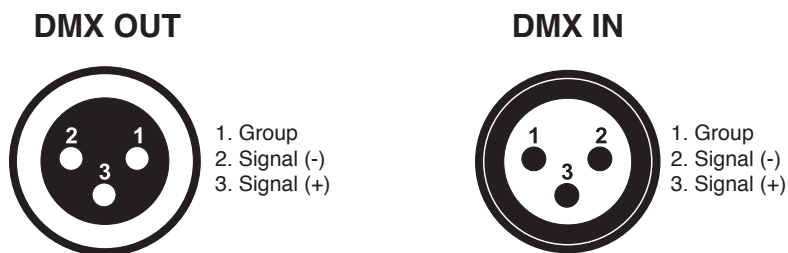
Securing with a safety cable

Secure the fixture with a safety cable (or other secondary attachment) that is approved for the weight of the fixture so that the safety cable will hold the fixture if a primary attachment fails.

Loop the safety cable through the eyebolt in the back of the fixture and around a secure anchoring point. Do not loop the safety cable around the fixture's mounting bracket only, as this will leave the fixture unsecured if it separates from the bracket.

DMX-512 connection/connection between fixtures

Occupation of the XLR-connection:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

DMX-512 connection with DMX terminator:

For installations where the DMX cable has to run a long distance or is in an electrically noisy environment, such as in a discotheque, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an

XLR plug with a 120 resistor connected between pins 2 and 3, which is then plugged into the output XLR socket of the last fixture in the chain.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 resistor between Signal (–) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Power connection

Power Requirements

The FR-100C luminaire operates on 100 to 240 volts AC (+/- 10%, auto-ranging). The luminaire contains an auto-ranging power supply.

Power linking between fixtures:


The fixture with powercon in and out socket. Connect the power out to the power in socket in the next fixture till all are connected.

Caution: maximum power linking - 8 units.

Connection with the mains:

Connect the device to the mains with the enclosed power supply cable.

The occupation of the connection cables as below:

Cable color	Connection	International
Brown	Live	L
Blue	Neutral	N
Yellow/green	Earth(Ground)	

Operation

The FR-100C can operate different modes. In each mode you can run the fixture as a stand alone fixture or in a master/slave configuration. This next section will detail the differences in the operating modes.

Control Menu Map

MENU	SUB MENU	OPERATION
Addr	d001-d512	RDM/DMX address
CHnL	2CH	Channel mode
	3CH	
	4CH	
	5CH	
Strb	S.01-s.20	Strobe with speed increasing
uL--	u.000-u.255	Dimmer
FL--	F.000-255	Zoom function
nodE	nod.0	Dimmer speed 0 (no delay)
	nod.1	Dimmer speed 1
	nod.2	Dimmer speed 2
	nod.3	Dimmer speed 3
	nod.4	Dimmer speed 4 (slowest speed)
Id	Id.01-Id.66	ID address setting
tEnP	-25~100	Fixture temperature

MENU	SUB MENU	OPERATION
UErn		Firmware version
rSEt	yes/no	Reset
pnnF	(1.2~24.0)F	PWM refresh rate adjustment(KHz)

Addressing

All fixtures should be given a DMX starting address when using a DMX signal, so that the correct fixture responds to the correct control signals. This digital starting address is the channel number from which the fixture starts to listen to the digital control information sent out from the DMX controller. The allocation of this starting address is achieved by setting the correct number on the display located on the base of the device.

You can set the same starting address for all fixtures or a group of fixtures, or make different address for each fixture individually.

If you set the same address, all the units will start to listen to the same control signal from the same channel number. In other words, changing the settings of one channel will affect all the fixtures simultaneously.

If you set a different address, each unit will start to listen to the channel number you have set, based on the quantity of control channels of the unit. That means changing the settings of one channel will affect only the selected fixture.

In the case of the FR-100C , which is 2/3/4/5 channels fixture. If you set, for example, the address in the 2 channel mode to channel 3, the device will use the channel 3 to 4 for control.

Universal DMX Control

This function allows you to use a universal DMX-512 controller to control the dimmer and strobe. A DMX controller allows you to create unique programs tailored to your individual needs.

RDM control

The FR-100C can communicate using RDM (Remote Device Management) in accordance with ESTA's American National Standard E1.20-2006: Entertainment Technology RDM Remote Device Management Over DMX512 Networks.

RDM is a bi-directional communications protocol for use in DMX512 control systems, it is the open standard for DMX512 device configuration and status monitoring.

The RDM protocol allows data packets to be inserted into a DMX512 data stream without affecting existing non-RDM equipment. It allows a console or dedicated RDM controller to send commands to and receive messages from specific fixtures.

With RDM function, you can set the DMX address of your fixtures remotely. This is especially useful when the device is installed in a remote area.

Each FR-100C has a factory set RDM UID (unique identification number).

DMX Protocol

2 Channels Mode	Function	Function Control
CH1	Dimmer	000-255: 0-100% dimmer
CH2	Zoom	000-255: zoom function

3 Channels Mode	Function	Function Control
CH1	Dimmer	000-255: 0-100% dimmer
CH2	Strobe	000-255: strobe with speed increasing
CH3	Zoom	000-255: zoom function

4 Channels Mode	Function	Function Control
CH1	Dimmer	000-255: 0-100% dimmer
CH2	Strobe	000-255: strobe with speed increasing
CH3	Zoom	000-255: zoom function
CH4	Dimmer mode	000-005: Menu setting
		006-055: Dimmer speed 0 (no delay)
		056-105: Dimmer speed 1
		106-155: Dimmer speed 2
		156-205: Dimmer speed 3
		206-255: Dimmer speed 4 (slowest speed)

5 Channels Mode	Function	Function Control
CH1	Dimmer	000-255: 0-100% dimmer
CH2	Strobe	000-255: strobe with speed increasing
CH3	Zoom	000-255: zoom function
CH4	Dimmer mode	000-005: Menu setting
		006-055: Dimmer speed 0 (no delay)
		056-105: Dimmer speed 1
		106-155: Dimmer speed 2
		156-205: Dimmer speed 3
		206-255: Dimmer speed 4 (slowest speed)

5 Channels Mode	Function	Function Control
CH5	ID address setting	000-009: ID1-ID66
		010-019: ID1
		020-029: ID2
		030-039: ID3
		...
		200-209: ID20
		210: ID21
		211: ID22
		...
		255: ID66

ID address selection

Each independent DMX address can have up to 66 ID addressed fixtures. An ID address of 0 will activate all ID address locations.

CH5 is used to select the target ID address.

DMX value	Function	DMX value	Function	DMX value	Function
000-009	ID1-ID66	212	ID23	235	ID46
010-019	ID1	213	ID24	236	ID47
020-029	ID2	214	ID25	237	ID48
030-039	ID3	215	ID26	238	ID49
040-049	ID4	216	ID27	239	ID50
050-059	ID5	217	ID28	240	ID51
060-069	ID6	218	ID29	241	ID52
070-079	ID7	219	ID30	242	ID53
080-089	ID8	220	ID31	243	ID54
090-099	ID9	221	ID32	244	ID55
100-109	ID10	222	ID33	245	ID56
110-119	ID11	223	ID34	246	ID57
120-129	ID12	224	ID35	247	ID58
130-139	ID13	225	ID36	248	ID59
140-149	ID14	226	ID37	249	ID60
150-159	ID15	227	ID38	250	ID61
160-169	ID16	228	ID39	251	ID62
170-179	ID17	229	ID40	252	ID63
180-189	ID18	230	ID41	253	ID64
190-199	ID19	231	ID42	254	ID65
200-209	ID20	232	ID43	255	ID66
210	ID21	233	ID44		
211	ID22	234	ID45		

Fixture Cleaning

Due to fog residue, smoke, and dust cleaning the internal and external optical lenses and mirror should be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates (i.e. smoke, fog residue, dust, dew). In heavy club use we recommend cleaning on a monthly basis. Periodic cleaning will ensure longevity, and crisp output.

To clean the fixture:

1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.
2. Vacuum or gently blow away dust and loose particles from the outside of the fixture with low-pressure compressed air.
3. Clean the surfaces by wiping gently with a soft, clean lint-free cloth moistened with a weak detergent solution. Do not rub glass surfaces hard: lift particles off with a soft repeated press. Dry with a soft, clean, lint-free cloth or low-pressure compressed air. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water.
4. Check that the fixture is dry before reapplying power.

Fuse Replacement

This fuse is located in a fuseholder next to the MAINS OUT socket on the connections panel.

To replace a fuse:

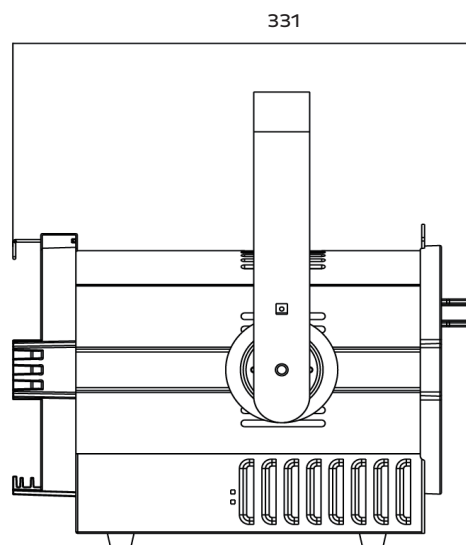
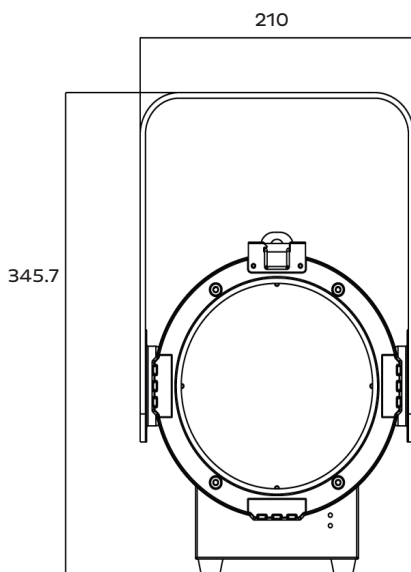
1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.
2. Unscrew the cap of the fuseholder and remove the fuse. Replace with a fuse of the same size and rating only.
3. Reinstall the fuseholder cap before reapplying power.

Troubleshooting

Listed below are a few common problems that you may encounter, with solutions.

The fixture does not work, no light

- Check the connection of power and main fuse. Be sure the external fuse has not blown.
- Measure the mains voltage on the main connector.



Technical specifications

Model	FR-100C
Light source:	100 watts Cool white COB LED
Color temperature:	5600K
LED life expectancy:	50,000 Hrs.
CRI:	97; R9≥90
Electronic zoom	
Zoom range:	25° to 65°
Light output:	85,000 Lux @ 2m @ 25°
5 Dimmer curves	
Strobe	
Video flicker free with selectable PWM	
Silent operation	
PMMA polymethyl methacrylate lens	
Barn doors included	
Control protocols:	DMX, RDM
Control channels	2, 3, 4, 5 CHs
Input voltage:	AC100-240V/50-60Hz
DMX connections:	3 pin XLR In/Out male and female
Power connections:	PowerCon In/Out
Dimensions:	331 x 210 x 345.7mm
Net weight:	6.6 Kg
Color:	Black
Housing:	Aluminum
IP rating:	20
Operating temperature:	-5°C/45°C