

KAM

INSTRUCTION MANUAL

Kam Cluster FX-Bar

Portable performance lighting & laser rig

M A N U A L V E R S I O N 1 . 0
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For the latest instruction manual updates and information on the entire Kam range visit:

www.kam.co.uk

Kam products are manufactured by: **Lamba plc**, Unit 1, Southfields Road, Dunstable, Bedfordshire, United Kingdom LU6 3EJ
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If this product is ever no longer functional please take it to a recycling plant for environmentally friendly disposal.

Due to continuous product development, specifications and appearance are subject to change.

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Thank you for purchasing this Kam product, we are sure that it will serve you for many years to come.

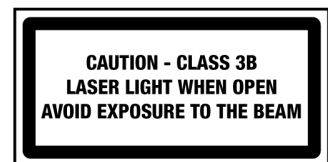
To optimise its performance, please read these instructions carefully to familiarise yourself with the basic operations of the unit. Please retain them for future reference. This unit has been tested at the factory before being shipped to you. To prevent or reduce the risk of electrical shock or fire, do not expose the unit to rain or moisture. To prevent a fire hazard, do not expose the unit to any naked flame sources. Unplug this apparatus during lightning storms or if it is unlikely to be used for long periods of time.

When installing the unit, please ensure you leave enough space around the unit for ventilation. Slots and openings in the unit are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. To prevent fire hazard, the openings should never be blocked or covered.

The unit is powered by the mains, always handle the power cable by the plug. Never pull out the plug by pulling on the cable. Never touch the power cable when your hands are wet as this could cause an electric shock. Do not tie a knot in the cable. The power cable should be placed such that it is not likely to be stepped on. A damaged power cable can cause a fire or give you an electrical shock. Check the power cord periodically, if you ever find that it is damaged, replace it before using the unit again. Contact your retailer for a replacement.

The voltage of the available power supply differs according to country or region. Be sure that the power supply voltage of the area where this unit is to be used meets the requirements of the unit.

The lightning flash symbol inside a triangle is to alert the user to the presence high voltage within the unit's enclosure that may be of sufficient power to constitute a risk of electrical shock to persons. Caution: to prevent the risk of electric shock, do not attempt to open the unit. No user-serviceable parts inside. Refer all servicing to qualified service personnel. The exclamation mark inside a triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance. Please read and pay attention to all laser safety warning sticker labels on the unit.



Select the installation location of your unit carefully. Avoid placing it in direct sunlight or locations subject to vibration and excessive dust. Do not use the unit where there are extremes in temperature (below 41°F / 5°C or exceeding 95°F / 35°C).

Unpacking and safety Please unpack your new product carefully. Your new product should reach you in perfect condition. Please check that no damage has occurred during transit. If any damage is found, do not operate your unit. Please contact the retailer you purchased it from immediately. If there is any damage to the mains cable do not use the device. Always disconnect the unit from the mains supply when carrying out any cleaning of the unit.

Manufacturer declarations



In compliance with the following requirements: **RoHS Directive (2002/95/EU)** and **WEEE Directive (2002/96/EU)**. If this product is ever no longer functional please take it to a recycling plant for environmentally friendly disposal.

CE declaration of conformity

R&TTE Directive (1999/5/EU), EMC Directive (2004/108/EU), Low Voltage Directive (2006/95/EU).

The declarations are available on application from certification@lambapl.com

Before putting the devices into operation, please observe the respective country-specific regulations.

This manual contains important laser system safety and operation information. Read and understand all instructions prior to powering on the laser unit the first time to avoid eye injury and to avoid breaking the law. Keep this manual in a safe place for future reference. Lasers can be hazardous and have unique safety considerations. Permanent eye injury and blindness is possible if lasers are used incorrectly. Pay close attention to each safety WARNING statement in this manual.

Please refer to the **Kam Class 3R Laser Product Safety Guide** (available at Kam.co.uk) for more information on laser safety.

Laser safety warnings...

Potential laser injury hazard exists with this product! Please read these instructions carefully, which include important information about installation, safe use and service!



Caution Avoid direct eye contact with laser light. Never intentionally expose your eyes or others to direct laser radiation.



Caution It is illegal and dangerous to shine any laser at aircraft.



Caution Operating procedures other than those specified herein may result in hazardous radiation exposure.

Overhead rigging


Important - the installation must be carried out by qualified service personal only. Improper installation can result in serious injuries and /or damage to property. Overhead rigging required extensive experience. Working load limits should be respected, certified installation materials should be used, the installed unit should be inspected regularly for safety.

- Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- Locate the unit in a well ventilated spot, far away from any flammable materials and/or liquids. The fixture must be fixed **at least 50cm** from surrounding walls
- The device should be installed out of reach of people and outside of areas where persons may walk by or be seated.
- Before rigging make sure that the installation area can hold minimum point load of 10 times the device's weight.
- The device should be well fixed; a free swinging mounting is dangerous.
- Do not cover any ventilation opening as this may result in overheating

Before first time use, the unit should be inspected for safety. Inspection the unit regularly every year.

AC power

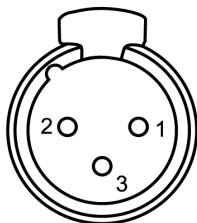
The unit is supplied with a power plug appropriate to its voltage. Should any other connections be required they must be carried out with the following configuration:

Cable (EU)	Cable (US)	Pin	International
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/green	Green	Earth	

DMX-512 connection

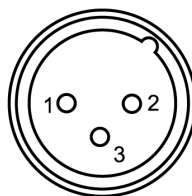
If you are using a standard DMX controller, you can connect the DMX output of the controller directly to the DMX input of the first unit in a DMX chain. If you wish to connect a DMX controller with other XLR outputs you will need to use adapter cables.

DMX output



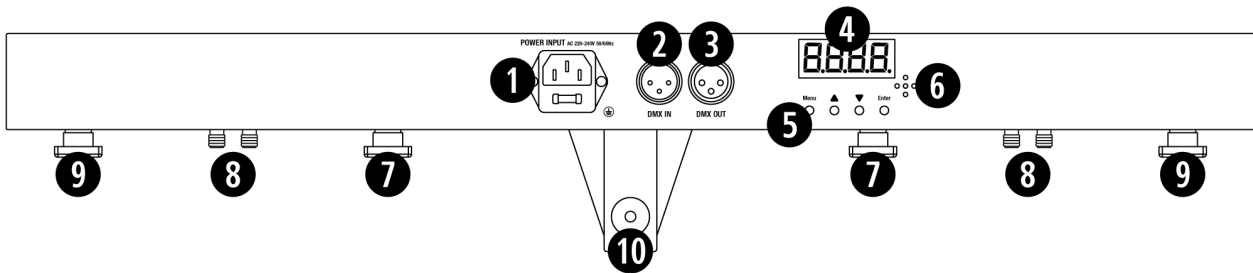
1 = Shield
2 = Signal (-)
3 = Signal (+)

DMX input



Connect the DMX output of the first unit in a DMX chain with the DMX input of the next unit in the chain. Always connect the the output of one unit with the input of the next unit until all units are connected.

Unit features & functions



Number	Feature	Function
1	Power supply input	Attach the IEC mains cable here. Built-in fuse.
2	DMX input	3 pin XLR connector for DMX512 input communication.
3	DMX output	3 pin XLR connector for DMX512 output communication.
4	LED display	LED function display and menu buttons to control the operating mode of the unit.
5	MENU buttons	MENU function buttons x 4 (see below for operation).
6	Mic	Built-in microphone for Sound-to-Light operation.
7	Par can mounts	Attach the par can lights to the controller bar at the 2 points shown.
8	Lighting unit connections	Attach all 4 lighting cables to the controller bar at the points shown.
9	Laser mounts	Attach the lasers to the controller bar at the 2 points shown.
10	Light stand socket	Tighten screw to secure the controller bar to the light stand.

Function setting

Using the four function buttons on the controller bar you can set the operating mode of the unit. Press the **Menu** button to display the different functions (see table below for a description of the functions). Use the **Up** or **Down** arrow buttons to make your selection. When you have chosen your desired function, press the **Enter** button to confirm the change.

Auto modes: **AP** (parcan effects) / **AF** (laser effects) / **AN** (parcan and laser effects)

Sound to Light modes: **SP** (parcan effects) / **SF** (laser effects) / **SN** (parcan and laser effects)

Display	Mode	Function		
AUT	AUTP par can auto mode	AP01-AP13 auto shows	S01-S32 par can speed	
	AUTF laser auto mode	AF01-AF07 auto shows	S01-S32 laser speed	N00-N09 motor speed setting
	AUTN unit auto mode	AN01-AN10 auto shows	S01-S32 lighting speed	N00-N09 motor speed setting
SOU	SOUP par can sound mode	SP01-SP13 sound shows		
	SOUF laser sound mode	SF01-SF07 sound shows		
	SOUN unit sound mode	SN01-SN10 sound shows		
COL	COLO	R 0-255 red adjust		
		G 0-255 green adjust		
		B 0-255 blue adjust		
		U 0-255 white adjust		
		S00-32 strobe adjust		
		N00-09 motor speed adjust		
dNH (DMX)	D001-D510	3CH 3 channel DMX mode		
		7CH 7 channel DMX mode		
		11CH 11 channel DMX mode		
SLA	SLAU	Master/Slave mode		
SYS	ASEN	SN01-SN04 mic sensitivity		

DMX address setting

When controlling the unit (or units) with a DMX controller, each one must be set with a specific DMX address. You can choose to set all units with the same DMX address or you can set every unit with its own DMX address. If all units are set with the same DMX address all units will be synchronised and operate in the same way. If you set each unit with a different DMX address, they will receive the DMX signal from their own DMX address. You will now be able to control each unit individually. The DMX address that you set for each unit must be determined by the number of channels. This unit has different options of DMX channel modes (3, 7 or 11). When working in 3 DMX channel mode, you should set the starting address of the first unit to 1, the second unit must be set to 4 (1+3), the third to 7 (4+3), the fourth to 10 (7+3) and so on. When working in 7 channel mode, you should set the starting address of the first unit to 1, the second unit must be set to 8 (1+7), the third to 15 (8+7), the fourth to 22 (15+7) and so on. When working in 11 channel mode, you should set the starting address of the first unit to 1, the second unit must be set to 12 (1+11), the third to 23 (12+11), the fourth to 34 (23+11) and so on.

3 channel DMX mode

NB The DMX settings in Channel 2, relate to the 6 settings in Channel 1 (AP, AF, AN, SP, SF, SN)

Channel	Value		
1	0-9	Black out	
	10-49	APxx	
	50-89	AFxx	
	90-129	ANxx	
	130-169	SPxx	
	170-209	SFxx	
	210-255	SNxx	
2	ANxx/SNxx	0-19	Auto Program 1
		20-39	Auto Program 2
		40-59	Auto Program 3
		60-79	Auto Program 4
		80-99	Auto Program 5
		100-119	Auto Program 6
		120-139	Auto Program 7
		140-159	Auto Program 8
		160-179	Auto Program 9
		180-255	Auto Program 10
3	Speed adjust	0-255	

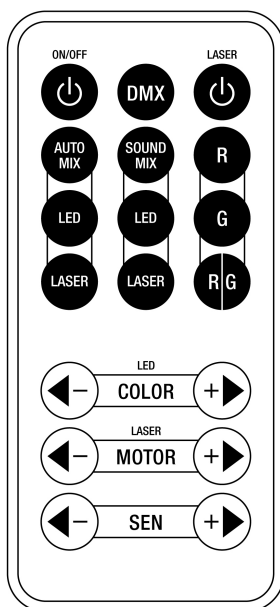
7 channel DMX mode

Channel	Value	Function
1	0-255	Red
2	0-255	Green
3	0-255	Blue
4	0-255	White
5	0-255	Strobe
6	0-255	Motor
7	0-9	NO
	10-99	Red laser
	100-199	Green laser
	200-255	Red and green laser

11 channel DMX mode

Channel	Value		
1	0-255	Red	Laser
2	0-255	Green	
3	0-255	Motor	
4	0-255	Red	Par cans
5	0-255	Green	
6	0-255	Blue	
7	0-255	White	
8	0-255	Red	Laser
9	0-255	Green	
10	0-255	Motor	
11	0-255	Strobe	

Remote control operation



ON/OFF button – turn the unit on or off

DMX button – set the unit to DMX mode

Laser ON/OFF button – turn the lasers on or off

AUTO MIX button – set the unit to Auto mode with par cans and lasers

LED button – set the unit to Auto mode with par cans

LASER button – set the unit to Auto mode with lasers

SOUND MIX button – set the unit to Sound mode with par cans and lasers

LED button – set the unit to Sound mode with par cans

LASER button – set the unit to Sound mode with lasers

R button – turn the red laser diode on

G button – turn the green laser diode on

R/G button – turn the red and green laser diodes on

- **COLOR + buttons** > – adjust the par can colour/speed (- slower / + faster)

- **MOTOR + buttons** + – adjust the laser motor speed (- slower / + faster)

- **SEN + buttons** – adjust the sensitivity of the Sound mode (- less sensitive / + more sensitive)

Product specification

Mains power / rated power	AC 220~240V, 50/60Hz / 60w
Control modes	3/7/11 channel DMX512 / Auto / Sound-to-Light / Master/Slave / Remote control
Light source	2 x par cans with 12 x 1w RGBW LEDs plus 2 x lasers with 120 mW red + 50mW green diodes
Operating temperature	-20°C to 40°C
Laser safety class	3R
DMX512 connections	3 pins XLR male/female
Dimensions (WxDxH)	725 x 200 x 150mm (not including stand)
Weight	5.8Kg

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