

KAM

I N S T R U C T I O N M A N U A L

Star Cluster 150

Stunning red and green star cluster effect laser

M A N U A L V E R S I O N 1 . 0

14 - 05 - 12

Due to continuous product development, please ensure that you have downloaded the latest instruction manual for this product from the Kam website at www.kam.co.uk

For the latest 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

Telephone: (+44) (0)1582 690600 • Fax: (+44) (0)1582 690400 • Email: mail@lambapl.com • Web: www.lambapl.com

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 the performance of this product, please read these operating instructions carefully to familiarise yourself with the basic operations of this unit. After you have read the instructions, 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.

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 required written on the unit.



The lightning flash symbol inside a triangle is intended 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.

Any modification carried out on the unit may invalidate the unit's warranty.

If applicable, only use the stand, tripod or bracket specified or sold with the apparatus.

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 servicing or cleaning of the unit.

The serial number for this equipment should be located on the rear or underside of the unit. Please make a note of this number as you will need it for your warranty, it is a good idea to keep a copy of the serial number for your own records.

Unpacking Instructions

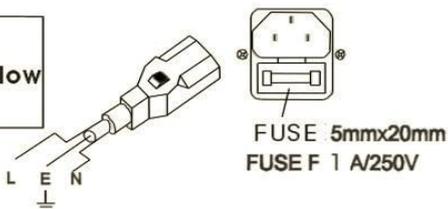
CAUTION! Immediately upon receiving a fixture, carefully unpack the carton, check the contents to ensure that all parts are present and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the package itself shows signs of mishandling. Save the package and all packing materials. In the event that a fixture must be returned to the retailer, it is important that the fixture be returned in the original box and packing.

Contents

1 x laser, 2 x keys (for key switch), 1 x interlock connector, 1 x remote control, 1 x power cord, 1 x user manual, 1 x laser safety guide

Power Supply

L = Brown
E = Green/Yellow
N = Blue



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

DMX-512 connection between fixtures

The fixture is equipped with 3-pin XLR sockets for DMX input and output. These sockets are wired in parallel. Only use a shielded twisted-pair cable designed for 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

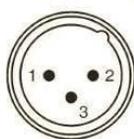
XLR-connection

DMX - output
XLR mounting-sockets (rear view):



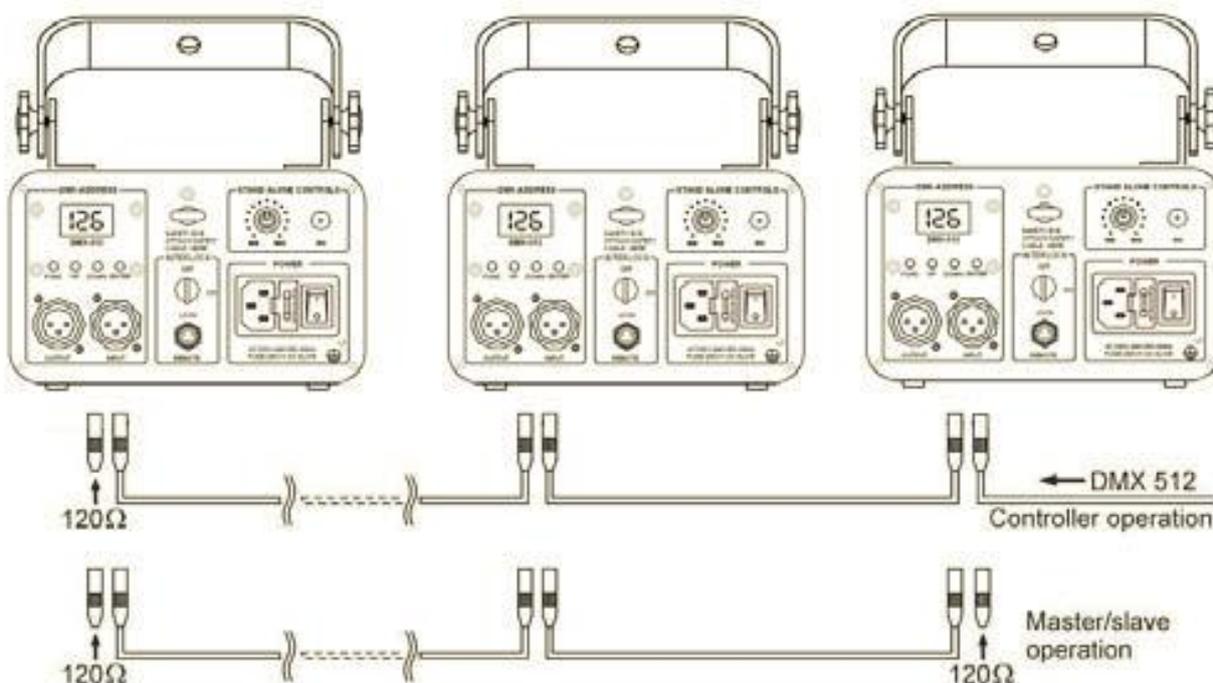
1 - Shield
2 - Signal (-)
3 - Signal (+)

DMX-input
XLR mounting-plugs (rear view):



Building a serial DMX-chain

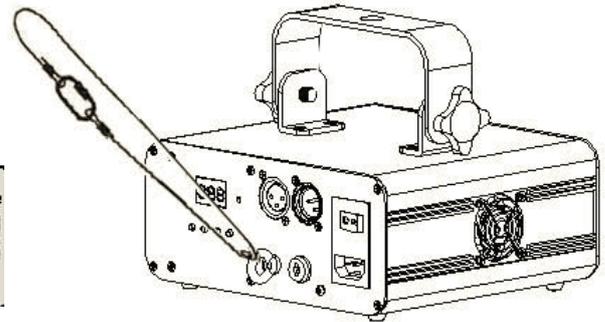
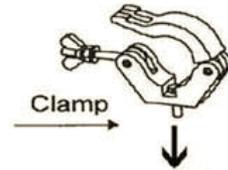
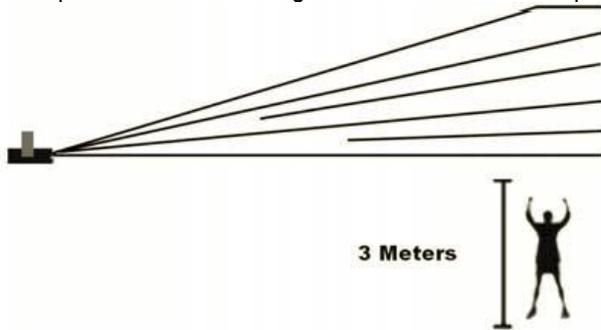
- If you are using a standard DMX-controller, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter cables. (DMX controller not supplied).
- Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect output with the input of the next fixture until all fixtures are connected.
- If you use a controller with 5 pins DMX connector, you need to use a 5 to 3 pins adapter.
- The DMX output and input connectors are pass-through to maintain the DMX circuit, when power is disconnected to the unit.
- Each fixture needs to have a DMX address to receive the data from the controller. The DMX address number which could be read from rear panel of each fixture is between 000~511.



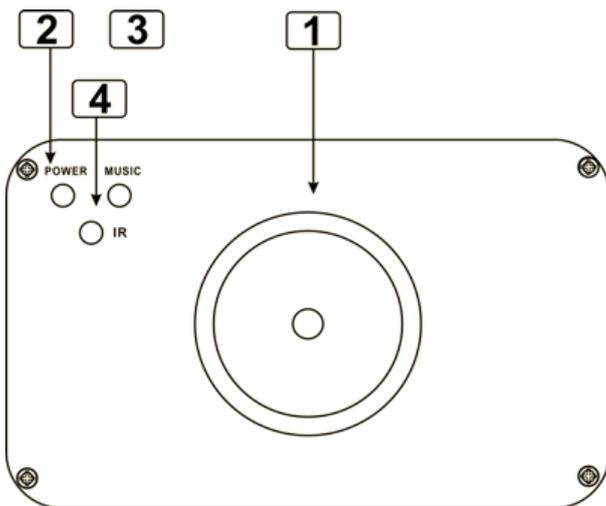
Proper laser set up & usage

This fixture has been designed to be hung. It is recommended for safety purposes, your lighting effect are properly mounted using a suitable hanging clamp and safety cable. Items appropriate for safe and effective mounting are easily sourced from your lighting vendor.

International laser safety regulations require that lasers must be operated in the fashion illustrated below, with a minimum of 3 metres (9.8 ft) of vertical separation between the floor and the lowest laser light vertically. Additionally, 2.5 metres of horizontal separation is required between laser light and audience or other public spaces.

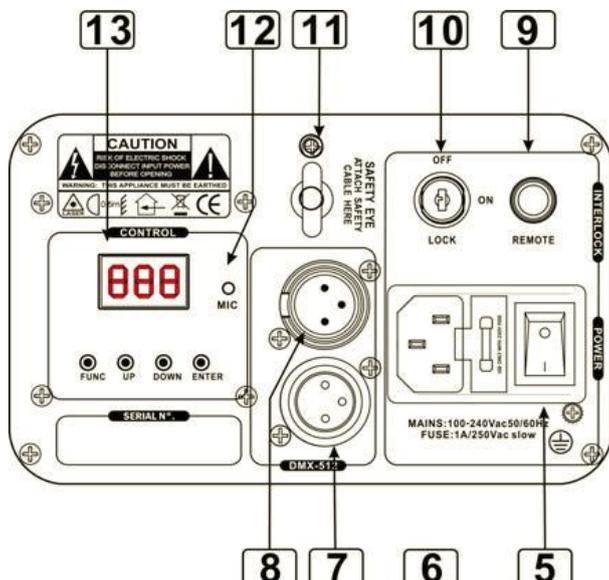


CAUTION: Use of controls, adjustments, or performance of procedures other than what is specified herein may result in hazardous radiation exposure



Front Panel

1. Laser output – Laser output aperture
2. Power – Main power indicated LED. Red is ON
3. Music/IR – Synchronize to detected music signal / IR indicator (flashing for each signal received)
4. IR – Infrared remote receiver



Rear Panel

5. Switch – Switch on and off the power
6. Mains input – with socket and integrated fuse holder
7. DMX input - 3 PIN Male XLR
8. DMX output – 3 PIN Female XLR
9. Interlock – For emergency laser stop
10. Key switch
11. Safety eye – Attach the safety cable
12. Microphone – to detect music/sound
13. LED function display

Operating Mode

When the laser is powered on, the LCD monitor on rear panel shows the current operating standalone mode, DMX address or Slave mode. With help of the LCD control panel, it is very easy to set and change the operating mode of the laser. The next time the laser is powered on it will show the last setting used before the laser was powered off.

FUNC

Mode Option, to choose the operating mode of laser.

ENTER

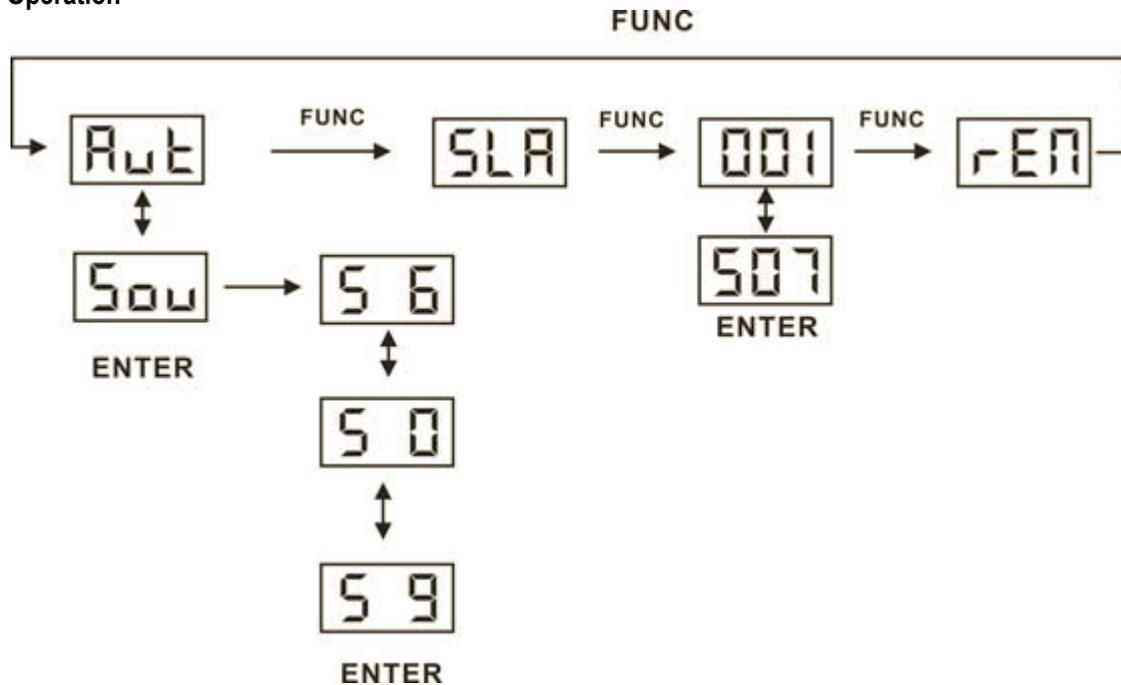
Confirmation, to confirm the selected mode.

UP

DOWN

UP/DOWN, to change operating mode, parameter or DMX address.

Operation



Display	Stand alone mode pre-programmed effect
Aut	Automatic show with slow effect
Sou	Sound activated show

ATTENTION! In pre-programmed standalone MUSIC SHOW mode, the laser beam will be blank-out in 3 seconds without AUDIO/MIC activated signal.

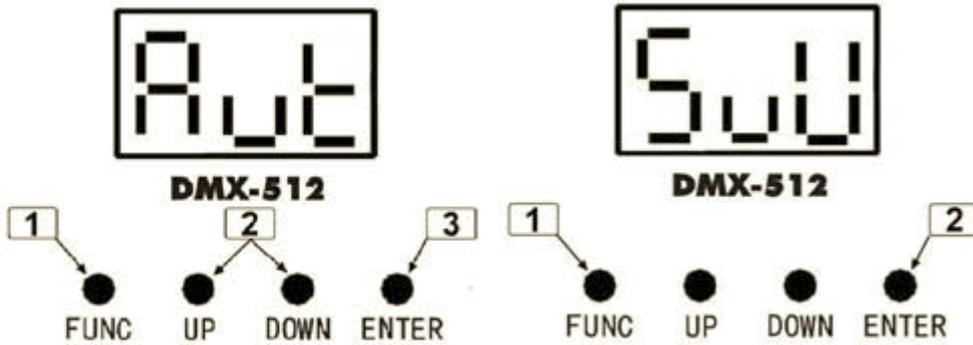
Standalone Pre-program Laser Show

- Press FUNC to enter MODE OPTION.
- Use the up/down buttons to select either AUT or SOU.
- Press UP or DOWN to select your favourite Standalone mode as above.
- Press ENTER to confirm the setting.

The laser is working in stand alone. Each time when you turn on your laser, you will have this confirmed laser show.

AUTO SHOW Each time when you turn on your laser, you will have this confirmed laser show.

SOUND ACTIVATED SHOW Each time when you turn on your laser, you will have this confirmed laser show.



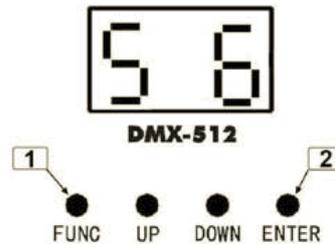
MASTER/SLAVE MODE

- Press FUNC to enter the MODE selection
- Use the up/down buttons to select SLA for Slave mode
- Press ENTER to confirm the setting

Now the laser is working in SLAVE MODE. Connect the MASTER laser with several SLAVE lasers using a DMX cable. The SLAVE lasers will produce exactly the same laser show as MASTER laser.

SOUND ACTIVATED MODE – SENSITIVITY SETTING

- Press FUNC till to you see S 6
- Use the UP/DOWN buttons to set microphone sensitivity. S0 is no sound, from S1 to S9, the sensitivity level increases.
- Press ENTER to confirm and save the setting.

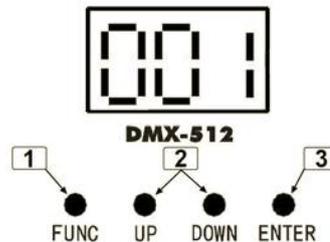


DMX MODE

- Press FUNC to enter the MODE selection
- The LED panel will show 001 for DMX mode
- Press ENTER to confirm the setting

Now the laser is working in DMX mode.

Use the up/down buttons to select the DMX address.



Note: In DMX MODE, once the DMX cable is connected to the laser and DMX controller, the DMX LED in front panel of laser will be ON.

DMX Protocol

Channel	DMX Value	Description
Ch 1	000-050	Laser Black Out
	051-100	Auto show
	101-150	Sound activated show
	151-200	DMX mode 1
	201-255	DMX mode 2

DMX Mode 1

Channel	DMX Value	Description
Ch 2 – Rotation	000-004	No function
	005-127	Clockwise rotation (slow – fast)
	128-133	Stop
	134-255	Counter clockwise rotation (slow – fast)
Ch 3 – Swing	000-255	Swing range (short – long)
Ch 4 – Colour selection	000-004	Blackout
	005-020	Red on
	021-035	Green on
	036-050	Red & Green on
	051-080	Red strobe
	081-110	Green strobe
	111-140	Red & Green strobe
	141-170	Red on & Green strobe
	171-200	Green on & Red strobe
201-255	Red & Green (alternate strobe)	
Ch 5 - Strobe	000-004	No function
	005-254	Strobe (slow – fast)
	255-255	Strobe to sound

DMX Mode 2

Channel	DMX Value	Description
Ch 2 – Rotation	000-004	No function
	005-127	Clockwise rotation (slow – fast)
	128-133	Stop
	134-255	Counter clockwise rotation (slow – fast)
Ch 3 – Swing	000-255	Swing range (short – long)
Ch 4 – Red laser	000-004	Blackout
	005-010	Red
	011-254	Strobe (slow – fast)
	255-255	Strobe to sound
Ch 5 – Green laser	000-004	Blackout
	005-010	Green
	010-254	Strobe (slow – fast)
	255-255	Strobe to sound

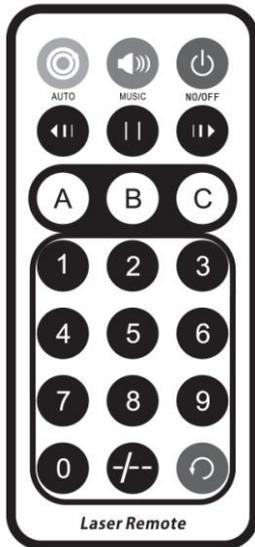
REM MODE (Remote Optional)

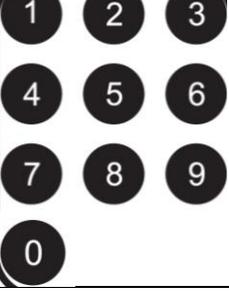
- Press FUNC to enter the MODE selection
- Use the up/down buttons to select REM for Remote mode
- Press ENTER to confirm the setting

Please check **Remote Instruction** for remote control details.

Note: In any standalone mode (except REM and SLA), press ON/OFF for 2 seconds to activate the remote function.

Remote Instruction



Button	Function	Description
 NO/OFF	ON/OFF	In REM mode, to turn ON/OFF laser. In any stand alone mode, except for SLA mode, pressing this button for 2 seconds will activate the REM mode.
 AUTO	Auto	Auto running
 MUSIC	Music	Sound Activated show. The blue music LED indicator is flashing when sound signal is detected.
	Effect pause	Pause the effect
	Colour changing	Cycle through the colours. Red > Green > R&G > Original
	Colour flashing	A for Red flashing and B for Green flashing
	Firework effect	Works with numbers
	Motor speed setting	Works with numbers
	Number buttons	Level of colour flashing, motor speed & firework effect. 0 – less 9 – more

Specifications

Mains Input:	AC100~240V, 50/60Hz
Fuse:	250V /1A Slow Blow (20mm Glass)
Total Power:	20w
Music Control:	Audio / Sound Activated
Laser Power (per unit):	100mW 650nm Red CW 50mW 532nm Green CW
Laser Classification:	Class 3B
Laser Safety Standard:	EN60825-1 2007
Condition Temperature:	10~40°C
DMX Connections:	3 pins XLR Male/Female
DMX Channels:	Max 5 channels
Dimensions:	160 x 180 x 260mm
Nett weight:	1.8Kg