Kam
INSTRUCTION MANUAL

VR250 Laser
250mW twin aperture violet & red DMX laser

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

Two button wireless remote control
100 in-air laser patterns
Over 300 laser effects in Auto mode
Sound-to-Light, Auto, DMX512 & Master/Slave modes
7 channel DMX512 operation with XLR DMX in & out
Adjustable microphone sensitivity
Fan cooled operation
Key operated power control
Adjustable hanging bracket
Tough metal chassis

For the latest instruction manual updates and information on the entire Kam range visit:

www.kam.co.uk

INTRODUCTION

Thank you for purchasing the VR250 Laser.

To optimise the performance of this product, please read these operating instructions carefully to familiarize yourself with the basic operations of this unit. The KAM Vr250 Laser has been designed to create amazing laser effects. Please keep these user instructions in a safe place for future reference. This unit has been tested at the factory before being shipped to you. There is no assembly required.

WARNING

To prevent or reduce the risk of electrical shock or fire, do not expose this unit to high temperature, rain or moisture.

Unintended reflections of the laser beam from reflective or metallic surfaces can be dangerous. Do not touch the laser aperture. When cleaning the laser Aperture, please use a soft cloth.

Laser Class 3B product. National regulations must be adhered to at all steps of installation. These can be downloaded from the website www.kam.co.uk (In Germany apply DIN 56912 and BGVR LASER note: additional regulations may apply).

Always replace the fuse with exact same type because anything other than the specified fuse can cause a fire, electric shock, damage your unit, and will void your manufactures warranty. This appliance must be earthed.

This appliance should be used by qualified personnel only.

UNPACKING YOUR NEW KAM PRODUCT

Carefully inspect your laser, as you unpack it. If any damage is evident, please notify the supplier you purchased the unit from immediately. For safety reasons do not use the unit if any damage has occurred during transportation.
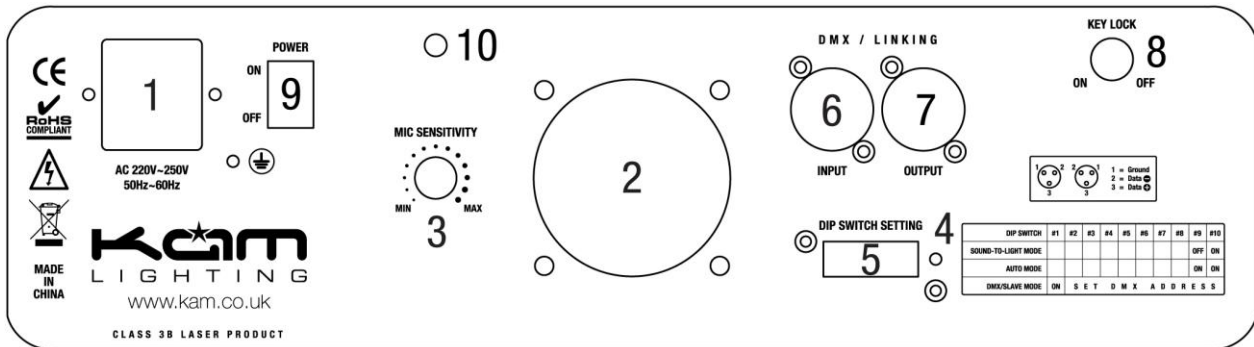
Contents:
1 x laser
1 x mains cable
2 x safety keys
1 x instruction manual
1 x wireless remote

FEATURES

1. Red and violet laser diodes
2. Multiple modes.
DMX 512 controllable, stand alone modes sound / automatic, master slave linkable
3. Multiple built in programs
4. The unit has 7 channels to control in DMX mode.
5. The unit has BLACK OUT function. The unit will shut OFF if no DMX512 signal is received
6. Master-Slave function
The system allow linking of many units (as slave unit) together for use without a controller allowing sound or automatic synchronization
7. In sound active mode, the unit's panel has LED indicating for sound active. The unit will shut off after 8 seconds when the music stops.
8. Wireless remote

The front panel has indication lights which show the when the laser is powered on and when the sound active microphone is working.

REAR PANEL

1. Power inlet 240v
2. Cooling Fan
3. Audio Sensitivity Knob
4. DMX Signal Indicator: Green
5. Dipswitches: Function Setting
6. DMX input
7. Dmx output
8. Safety key lock
9. Power on/off
10. Safety loop

FUNCTIONS & SETTINGS

Wireless remote

The laser operates with the wireless remote control supplied, pressing button A and then releasing it will turn the laser on.
Pressing button B and then releasing it will turn the laser off.

Sound Active mode
The pattern of the laser is controlled by sound, using the built in microphone the laser will react to the bass beat of the music. Turning the sensitivity knob in the clockwise direction will increase the fixture's sensitivity to sound, turning knob in the counter clockwise direction to decrease the sensitivity. The diode will automatically turn off after 8 seconds when the music stops.
Set dipswitch 10 on only

AUTO
Auto cycles the built-in programs without being controlled externally.via a DMX controller this will not be affected by sound.
Set dipswitches 9 &10 on only

DMX Control
The system only accepts the DMX512 signal of international standard to control the system mode, the laser pattern ON /OFF, the size, the position, the speed, etc.

DMX Control function Chart

Channel	Function	Value	Description
CH1	Mode	0-49	Blackout
		50-99	Sound active mode
		100-149	AUTO mode
		150-199	Static patterns use Ch2 to change pattern
		200-255	Dynamic patterns use Ch2 to change pattern
CH2	Pattern selection	0-255	52 static & dynamic pattern change
CH3	Position-X	0-255	Adjust position-X
CH4	Position-Y	0-255	Adjust position-Y
CH5	Scanning speed	0-255	0 is fast, 255 is slow
CH6	Dynamic patterns play speed	0-255	0 is fast, 255 is slow, has ten grade speed
	Ch1 must be set to value 200 – 255 to use ch6		
CH7	Static pattern size	0-255	0 is small, 255 is big
	Ch1 must be set to value 150-199 to use ch7		

CH2 pattern select table

Using ch2 you can manually select a desired pattern listed below

To select static patterns from chart below ch1 must be set to 150-199
To select dynamic patterns from chart below ch1 must be set to 200-255

DMX Channel Value	Static Patterns	Dynamic Patterns
0-4	Circle	Circle to big
5-9	Dot circle 1	Dot circle to big
10-14	Dot circle 2	Scan circle to big
15-19	Scan circle	Circle random
20-24	Horizontal line	Dot circle random
25-29	Hori-dot line	Circle scanning
30-34	Vertical line	dot circle scanning
35-39	Vert-dot line	Circle spin
40-44	45° diagonal	Dot circle spin
45-49	Dot diagonal	Dot/circle alternate
50-54	135° diagonal	Scan circle small to large
55-59	Dot diagonal	Circle jump
60-64	V line 1	Dot circle jump
65-69	V dot line 1	Hori-line jump
70-74	V line 2	Hori-dot line jump
75-79	V dot line 2	Vertical line jump
80-84	triangle 1	Vert-dot line jump
85-89	dot triangle 1	Diagonal line jump
90-94	triangle 2	Dot Diagonal line jump
95-99	dot triangle 2	spokes 1
100-104	square	Dot spokes
105-109	dot square	Spokes 2
110-114	rectangle 1	Dot spokes 2
115-119	dot rectangle 1	Circle chase scan
120-124	rectangle 2	Dot Circle chase scan
125-129	dot rectangle 2	45° diagonal move
130-134	Christcross	Dot diagonal move
135-139	xline	Hori line flex
140-144	Hori-extend line	Hori dot line flex
145-149	Hori-short line	Hori line move
150-154	Hori-flex line	Hori dot line move
155-159	Hori-flex dot line	Vertical line move
160-164	Vert-extend line	Vert-dot line move
165-169	Vert-short line	Rectangle pulsing
170-174	Vert-flex line	Dot rectangle pulsing
175-179	Vert-flex dot line	Square pulsing
180-184	steps line 1	Dot square pulsing
185-189	steps line 2	Rectangle rotate
190-194	steps line 3	Dot rectangle rotate
195-199	steps line 4	Square rotate
200-204	star 1	Dot square rotate
205-209	star2	Pentagon rotate
210-214	star3	Dot pentagon rotate
215-219	Star 4	star rotate
220-224	Pentagon 1	Pentagon star pulsing
225-229	Pentagon dot line	Fly line
230-234	Wave line	Dot fly line
235-239	wave dot line	Waves
240-244	Spiral line	Dot waves
245-249	Multiple dot 1	Multiple dot jump 1
250-254	Multiple dot 2	Square dot jump
255	Square dot	Multiple dot jump 2

DMX address calculation
For DMX mode, DMX512 address from #1 to 9# dipswitches must be set, the address is set from 1 to 511. Each dipswitch represents a binary value.

One unit has 7 channels, so each unit must be assigned 7 channels
Example:
Unit One set address=1 dip switch 1 on only , 2nd unit set address=8 set dipswitch 4 on only, 3rd unit set address=16 set dipswitch 5 0nly on, and so on

OPERATION

Stand-Alone Operation (Sound Active, AUTO mode)
The mode allows a single unit to react to the beat of the music in the master mode.
1. Install the units in a suitable position
2. Set dipswitch to select Sound Active or AUTO mode.
3. Turn on the unit power, the unit begins reset, then the unit begins working.
4. The unit will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the unit to make the unit more or less sensitive in sound active. The panel has LED indicating for sound active.

Master-Slave Operation without DMX controller
This mode will allow you to link up to 32 units together without controller.
1. Install the units in a suitable position
2. Choose a unit to function as Master mode, set dipswitch to select Sound Active or AUTO mode. (Sound active 10 on only) (auto 9 &10 on only) The other units must be set to Slave mode, set dipswitch 1 on only to select Slave mode.
3. Use standard XLR microphone cable chain your units together via the XLR connector on the rear of the units. For longer cable runs we suggest a terminator at the last fixture.
4. Turn on the all units' power, the units begins reset, and then the unit begins working. The slave units will react the same as the master unit.
5. The units will react to the low frequencies of music via the internal microphone. Adjust the audio sensitivity knob on the back of the master unit to make the unit more or less sensitive in sound active. The panel has LED indicating for sound active

Universal DMX Operation (DMX mode)
This mode allows you to use universal DMX-512 console to operate.
1. Install the units in a suitable position
2. Use standard XLR microphone cable chain your units together via the XLR connector on the rear of the units. For longer cable runs we suggest a terminator at the last fixture.
3. Assign a DMX address to each the unit using dipswitches,
4. Turn on the all units' power, the units begins reset, and then the unit begins working.
5. Use DMX console to control your units.

If all units are to be controlled exactly the same, all dmx start addresses must be set to the same value
Example all units dipswitch one on

If individual dmx control is desired each unit must have its own dmx start address, and should be at least 7 channels apart, dmx start addresses must not overlap

Notes:
1. DMX console cannot be used in Master-Slave operation (Sound Active or AUTO mode).
2. There should be only one master unit in Master-Slave operation.

TECHNICAL SPECIFICATION

1. Voltage: AC220V/ 110V, 50/60HZ, Fuse: 2A/250V
2. Rated Power: 30W
3. Laser: 100mW red (650nm) + 150mW violet (405nm)
4. Working Modes: DMX, Sound Active, AUTO, Master-Slave
5. DMX Control Channel: 7 channels
6. Graphics & Effects: more than 100 patterns, over 300 effects
7. DMX 3 pins XLR for DMX or Maser-Slave linking
8. Size: 330*130*120mm
9. Weight: 5.5Kg