



Blizzard Lighting, LLC
<http://www.blizzardpro.com>
Waukesha, WI USA
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1. GETTING STARTED

What's In The Box?

- 1 x Laser Blade™ G
- 1 x Ever-So-Handy Power Cord
- This Lovely User Manual

Getting It Out Of the Box

Congratulations on purchasing Laser Blade™ G, the totally stellar green laser light fixture. Now that you've got Laser Blade™ G, you should carefully unpack the box and check the contents to ensure that all parts are present and in good condition. If anything looks as if it has been damaged in transit, notify the shipper immediately and keep the packing material for inspection. Again, please save the carton and all packing materials. If a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

Powering Up!

All fixtures must be powered directly off a switched circuit and **cannot be run off a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0% to 100% switch.**

Warning! All fixtures must be connected to circuits with a suitable Ground (Earthing).

Getting A Hold Of Us

If something happens goes wrong, please visit www.blizzardpro.com/support and open a support ticket. We'll be happy to help, honest.

Disclaimer: The information and specifications contained in this document are subject to change without notice. Blizzard Lighting™ assumes no responsibility or liability for any errors or omissions that may appear in this user manual. Blizzard Lighting™ reserves the right to update the existing document or to create a new document to correct any errors or omissions at any time. You can download the latest version of this document from www.blizzardpro.com.

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Laser Safety Instructions

Lasers are one of the coolest effects available, and when they are used appropriately, they will be fun, legal and harmless. To make sure that is the case...

- Always set up and install all laser effects so that all laser light is at least 3 meters (9.8 feet) above the floor on which people can stand.
- After setting up, and before public use, test laser to ensure proper function. Do not use if any defect is detected. Do not use if laser emits only one or two laser beams rather than dozens/hundreds, as this could indicate damage to the diffraction grating optic, and could allow emission of higher laser levels above Class 3R.
- **NEVER** point lasers at people or animals. Never look into the laser aperture or laser beams.
- **NEVER** point lasers in areas in which people can potentially get exposed, such as uncontrolled balconies, etc.
- **NEVER** point lasers at highly reflective surfaces, such as windows, mirrors and shiny metal. Even laser reflections can be hazardous.
- **NEVER** point a laser at aircraft, **this is a federal offense!**
- **NEVER** point un-terminated laser beams into the sky.
- **NEVER** expose the output optic (aperture) to cleaning chemicals.
- **NEVER** use laser if the laser appears to emit only one or two beams.
- **NEVER** use the laser if the housing is damaged, the housing is open, or if the optics appear damaged in any way.
- **NEVER** open the laser housing. The high laser power levels inside of the protective housing can start fires, burn skin and will cause instant eye injury.
- **NEVER** leave this device running unattended.

The operation of a class 3R laser show is only allowed if the show is controlled by a skilled and well-trained operator, familiar with the data from this manual. The legal requirements for using laser entertainment products vary from country to country. The user is responsible for the legal requirements at the location/ country of use.



2. MEET THE LASER BLADE™ G

Main Features

- 50mW, 532nm green DPSS CLASS 3R fat beam laser
- 15KPPS galvo scanners
- Moving head features 540° pan & 270° tilt
- 133 built-in geometric figures, 14 animations, & 76 beam patterns
- Easy-to-use 4-button LCD control panel menu
- Built-in auto-beam, auto-animation and sound-activate programs
- 2 animations in one frame can be operated separately via DMX
- Perfect for venues, large and small
- Ready to use right out of the box

Additional Features

- Rugged and well-built (It hits the gym regularly)
- Lightweight and easily portable
- Clamp mounting bracket included
- Easy-to-use 4-button LCD control panel
- 3-pin DMX input and output

DMX Quick Reference

Channel	18-Channel
1	Mode Selection, DMX/Auto/Sound
2	Pan
3	Tilt
4	Vertical Speed (Slow <--> Fast)
5	Group 1, Pattern Selection
6	Group 1, OFF/ON
7	Group 2, Pattern Selection
8	Group 2, OFF/ON
9	2 Groups Animation
10	Moving-X
11	Moving-Y
12	X-Axis Rotation
13	Y-Axis Rotation
14	Rotation
15	Zoom In/Out
16	Sine Wave Fluctuation
17	Fluctuation Speed
18	Auto Dot (Slow <--> Fast)

Laser Blade™ G Pin-Up Picture



The Rear Connections



3. SETUP



Before replacing a fuse, disconnect the power cord.
ALWAYS replace with the same type and rating of fuse.

Fuse Replacement

The Laser Blade™ G utilizes a high-output switch-mode power supply with an internal fuse. Under normal operating conditions, the fuse should not require replacement. The fuse is field replaceable, however it is an advanced procedure suited to qualified individuals. Should the fuse require replacement, please contact Blizzard Lighting for instructions, or to return your unit for service.

Connecting A Bunch of Laser Blade™ G Fixtures

You will need a serial data link to run light shows using a DMX-512 controller or to run shows on two or more fixtures set to sync in master/slave operating mode. The combined number of channels required by all the fixtures on a serial data link determines the number of fixtures the data link can support.

Fixtures on a serial data link must be daisy chained in one single line. Also, connecting more than 32 fixtures on one serial data link without the use of a DMX optically-isolated splitter may result in deterioration of the digital DMX signal. The maximum recommended cable-run distance is 500 meters (1640 ft). The maximum recommended number of fixtures on a serial data link is 32 fixtures.

Data/DMX Cabling

To link fixtures together you'll need data cables. You should use data-grade cables that can carry a high quality signal and are less prone to electromagnetic interference.

For instance, Belden© 9841 meets the specifications for EIA RS-485 applications. Standard microphone cables will "probably" be OK, but note that they cannot transmit DMX data as reliably over long distances. In any event, the cable should have the following characteristics:

2-conductor twisted pair plus a shield

Maximum capacitance between conductors – 30 pF/ft.

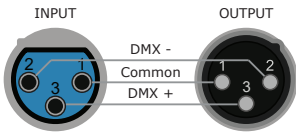
Maximum capacitance between conductor & shield – 55 pF/ft.

Maximum resistance of 20 ohms / 1000 ft.

Nominal impedance 100 – 140 ohms

Cable Connectors

Cables must have a male XLR connector on one end and a female XLR connector on the other end. (Duh!)



A Word on Termination:

DMX is a resilient communication protocol, however errors still occasionally occur. Termination reduces signal errors, and therefore best practices include use of a terminator in all circumstances. If you are experiencing problems with erratic fixture behavior, especially over long signal cable runs, a terminator may help improve performance.

To build your own DMX Terminator:

Obtain a 120-ohm, 1/4-watt resistor, and wire it between pins 2 & 3 of the last fixture. They are also readily available from specialty retailers.

CAUTION: Do not allow contact between the common and the fixture's chassis ground. Grounding the common can cause a ground loop, and your fixture may perform erratically. Test cables with an ohm meter to verify correct polarity and to make sure the pins are not grounded or shorted to the shield or each other.

3-Pin??? 5-Pin??? Huh???

If you use a controller with a 5-pin DMX output connector, you will need to use a 5-pin to 3-pin adapter. If you'd like to build your own, the chart below details a proper cable conversion:

Conductor	3-Pin Female (Output)	5-Pin Male (Input)
Ground/Shield	Pin 1	Pin 1
Data 1- (Primary Data Link)	Pin 2	Pin 2
Data 1+ (Primary Data Link)	Pin 3	Pin 3
Data 2- (Optional Secondary Data Link)	--	No Connection
Data 2+ (Optional Secondary Data Link)	--	No Connection

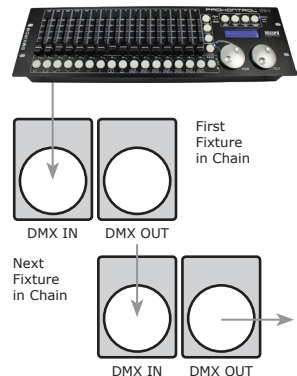
Take It To The Next Level: Setting Up DMX Control

Step 1: Connect the male connector of the DMX cable to the female connector (output) on the controller.

Step 2: Connect the female connector of the DMX cable to the first fixture's male connector (input).

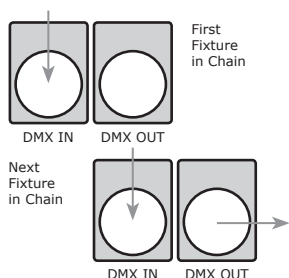
Note: It doesn't matter which fixture address is the first one connected. We recommend connecting the fixtures in terms of their proximity to the controller, rather than connecting the lowest fixture number first, and so on.

Step 3: Connect other fixtures in the chain from output to input as above. Place a DMX terminator on the output of the final fixture to ensure best communication.



Fixture Linking (M/S Mode)

1. Connect the male connector side of the DMX cable to the output female connector of the first fixture.



2. Connect the end of the cable coming from the first fixture which will have a female connector to the input connector of the next fixture consisting of a male connector. Then, proceed to connect from the output as stated above to the input of the following fixture and so on.

A quick note: Often, the setup for Master-Slave and Standalone operation requires that the first fixture in the chain be initialized for this purpose via either settings in the control panel or DIP-switches. Secondly, the fixtures that follow may also require a slave setting.

Check the “**Operating Adjustments**” section in this manual for complete instructions for this type of setup and configuration.

Mounting & Rigging



IMPORTANT: Regardless of the rigging option you choose for your fixtures, always be sure to secure your fixture with a safety cable.

This fixture may be mounted in any SAFE position provided there is enough room for ventilation. The fan or vents pathway must never obstructed.

Mount the fixture using a suitable "C" or "O" type clamp. The clamps should be rated to hold at least 10x the fixture's weight to ensure structural stability. Do not mount to surfaces of unknown strength, and ensure properly rated rigging is used when mounting fixtures overhead.

Overhead mounting requires extensive experience, which includes calculating working load limits, knowledge of the installation material being used, and periodic safety inspections.

If you lack these qualifications, do not attempt the installation yourself. Improper installation can result in bodily injury.

4. OPERATING ADJUSTMENTS

The Control Panel

All the goodies and different modes possible with the Laser Blade™ G are accessed by using the control panel on the front of the fixture. There are 4 control buttons below the LED display which allow you to navigate through the various control panel menus.

<MENU>

Is used to navigate to the previous higher-level menu item.

<UP>

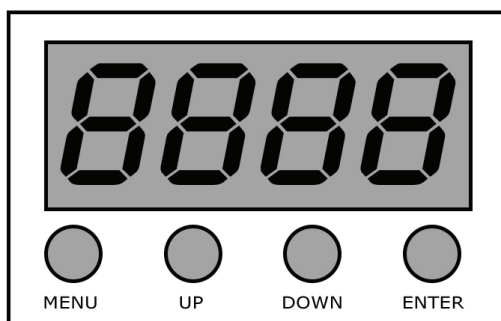
Scrolls through menu items and numbers in ascending order.

<DOWN>

Scrolls through menu items and numbers in descending order.

<ENTER>

Is used to select and confirm/store the current selection.



The control panel LED display shows the menu items you select from the menu map on page #11. When a menu function is selected, the display will show immediately the first available option for the selected menu function. To select a menu item, press **<ENTER>**.

Use the **<UP>** and **<DOWN>** buttons to navigate the menu options. Press the **<ENTER>** button to select the menu function currently displayed, or to enable a menu option. To return to the previous option or menu without changing the value, press the **<MENU>** button.

Control Panel Menu Structure

Address	<ENTER>	To choose a DMX address from 001-512
Work Mode Set	Auto	Auto run mode
	Sound	Sound active mode
	DMX	DMX mode
	Slave	Slave mode
X Mirror Set	Yes/No	X mirror symmetry (reverse) on/off
Y Mirror Set	Yes/No	Y mirror symmetry (reverse) on/off
X Run Set	Run	<ENTER>
	Stop	X Position (+/-) 1 <ENTER>
Y Run Set	Run	<ENTER>
	Stop	X Position (+/-) 1 <ENTER>
Graph Mode Set	<ENTER>	<UP/DOWN> to choose beams/animations
Speed Set	<ENTER>	<UP/DOWN> to increase/decrease speed

DMX Mode

Allows the unit to be controlled by any universal DMX controller.

Set the Starting DMX Address

- 1.) Navigate the menu to reach **Address**, and press the **<ENTER>** button.
- 2.) Use the **<UP/DOWN>** buttons to select a channel from **001-512**, press **<ENTER>**.

Run Mode

- 1.) Navigate the menu to reach **Work Mode Set**, and press the **<ENTER>** button.
- 2.) Highlight **DMX**, **Auto**, or **Sound** and press the **<ENTER>** button.

Slave Mode

- 1.) Daisy chain the fixtures DMX in/out. The 1st fixture will be the master fixture.
- 2.) On slave fixtures, navigate to **Work Mode Set**, select **Slave**, and press **<ENTER>**.

Mirror Symmetry Mode

Reverse/flip the output of either X, Y, or both.

- 1.) Navigate the menu to reach **X Mirror Set** or **Y Mirror Set**, and press **<ENTER>**.
- 2.) Select **Yes** to enable, or **No** to disable. Press **<ENTER>** to confirm.

Running Mode Settings

Fine tune the position of either X, Y, or both.

- 1.) Navigate the menu to reach **X Run Set** or **Y Run Set**, and press **<ENTER>**.
- 2.) Highlight **Run** for default, or **Stop** for incremental positioning, and press **<ENTER>**.

Graphic Mode Settings

- 1.) Navigate the menu to reach **Graph Mode Set**, and press **<ENTER>**.
- 2.) Select **Beam Show** or **Animal Show**, incrementally adjust, then press **<ENTER>**.

Speed Settings

- 1.) Navigate the menu to reach **Speed Set**, and press **<ENTER>**.
- 2.) Use the **<UP/DOWN>** buttons to adjust the speed settings, then press **<ENTER>**.

DMX Values In-Depth (19-Channel Mode)

Channel	Value	What It Does
1	000 <--> 063 064 <--> 127 128 <--> 191 192 <--> 255	Run Mode No function (laser is off) Sound active mode Auto mode DMX mode
2	000 <--> 255	Pan (0 <--> 540°)
3	000 <--> 255	Tilt (0 <--> 270°)
4	000 <--> 255	Vertical Speed (slow <--> fast)
5	000 <--> 001 002 <--> 220 221 <--> 227 228 <--> 229 230 <--> 231 232 <--> 233 234 <--> 235 236 <--> 237 238 <--> 239 240 <--> 241 242 <--> 243 244 <--> 245 246 <--> 247 248 <--> 249 250 <--> 251 252 <--> 255	Group 1, Pattern Selection No function (laser is off) 133 geometric animations Screen theme animation Wedding fly wing to wing animation Halloween theme animation 1 Halloween theme animation 2 Congratulations theme animation Christmas theme animation Happy birthday theme animation Lightning Pole dance Dancing Musical notes Fish big splash Trees Drum beating
6	000 <--> 015 016 <--> 255	Group 1 On/Off Laser off Laser on
7	000 <--> 028 029 <--> 255	Group 2, Pattern Selection No function (laser is off) 76 kinds of beam patterns
8	000 <--> 015 016 <--> 255	Group 2 On/Off Laser off Laser on
9	000 <--> 020 021 <--> 041 042 <--> 062 063 <--> 083 084 <--> 104 105 <--> 125 126 <--> 146 147 <--> 167 168 <--> 188 189 <--> 209 210 <--> 230 231 <--> 251 252 <--> 255	Dual Group Animations Single animation (group 1) X mirror symmetry Y mirror symmetry X/Y mirror symmetry, simultaneously Zoom In/Out, mirror symmetry Group 2 pattern left/right moving, group 1 stationary Group 2 pattern zoom in/out, group 1 stationary Group 2 pattern rotate, group 1 stationary Rotation mirror symmetry Group 1 no Y moving, group 2 no X moving Group 1 no X/Y moving, but group 2 X/Y moving Group 1 no Y dimmer, group 2 no X dimmer Group 1 no X moving, group 2 no Y moving
10	000 <--> 127 128 <--> 160 162 <--> 192 193 <--> 224 225 <--> 239 240 <--> 247 248 <--> 255	Moving X Manual to left/right moving Auto to left moving Auto to right moving Auto to left/right moving Jumping Rhombus shape moving Top left/right moving

DMX Values In-Depth (19-Channel Mode), Continued

Channel	Value	What It Does
11	000 <--> 127 128 <--> 160 162 <--> 192 193 <--> 224 225 <--> 231 232 <--> 239 240 <--> 247 248 <--> 255	Moving Y Manual to up/down moving Auto to down moving Auto to up moving Auto to up/down moving Circle shape moving Sine shape moving Square shape moving Bottom corner up/down moving
12	000 <--> 127 128 <--> 255	X-Axis Rotation Manual Position Auto Position Spin
13	000 <--> 127 128 <--> 255	X-Axis Rotation Manual Position Auto Position Spin
14	000 <--> 127 128 <--> 159 160 <--> 191 192 <--> 223 224 <--> 255	Rotation Manually rotation Auto clockwise rotation Auto counter clockwise rotation Clock pendulum effect Ellipse shape rotation
15	000 <--> 127 128 <--> 159 160 <--> 191 192 <--> 223 224 <--> 255	Zoom No Function Manual zoom(+/-) Auto zoom(+) Auto zoom(-) Auto zoom(+/-)
16	000 <--> 063 064 <--> 127 128 <--> 191 192 <--> 255	Sine Wave Fluctuation No Function X fluctuation Y fluctuation X/Y fluctuation
17	000 <--> 255	Fluctuation Speed Speed adjustment (slow <-- fast)
18	000 <--> 063 064 <--> 255	Drawing Manual Draw Auto Draw (slow <--> fast)

Troubleshooting

Symptom	Solution
Fixture Auto-Shut Off	Please check the power supply, the input voltage and the fuse.
No Light Output	Check to ensure fixture is operating under correct mode, IE DMX/Etc., if applicable.
No Power	Check fuse, AC cord and circuit for malfunction.
Fixture Not Responding / Responding Erratically	Make sure all connectors are seated properly and securely. Use Only DMX cables and/or check cables for defects. Install a Terminator. Reset fixture(s).

**If your problem isn't listed, or if problems persist,
please open a support ticket at www.blizzardpro.com/support.**

5. APPENDIX

Keeping Your Laser Blade™ G As Good As New

The fixture you've received is a rugged, tough piece of pro lighting equipment, and as long as you take care of it, it will take care of you. That said, you'll need to take care of it if you want it to operate as designed. You should keep the fixture clean, especially if you are using it in an environment with a lot of dust, fog, haze, wild animals, wild teenagers or spilled drinks.

Cleaning the optics routinely with a suitable glass cleaner will greatly improve the quality of light output. Keeping the fans free of dust and debris will keep the fixture running cool and prevent damage from overheating.

In transit, keep the fixtures in cases. You wouldn't throw a prized guitar, drumset, or other piece of expensive gear into a gear trailer without a case, and similarly, you shouldn't even think about doing it with your shiny new light fixtures.

Common sense and taking care of your fixtures will be the single biggest thing you can do to keep them running at peak performance and let you worry about designing a great light show, putting on a great concert, or maximizing your client's satisfaction and "wow factor." That's what it's all about, after all!

Returns (Gasp!)

We've taken a lot of precautions to make sure you never even have to worry about sending a defective unit back, or sending a unit in for service. But, like any complex piece of equipment designed and built by humans, once in a while, something doesn't go as planned. If you find yourself with a fixture that isn't behaving like a good little fixture should, you'll need to obtain a Return Authorization (RA).

Don't worry, this is easy. Just visit www.blizzardpro.com/support and open a support ticket, and we'll issue you an RA. Then, you'll need to send the unit to us using a trackable, pre-paid freight method. We suggest using USPS Priority or UPS. Make sure you carefully pack the fixture for transit, and whenever possible, use the original box & packing for shipping.

When returning your fixture for service, be sure to include the following:

- 1.) Your contact information (Name, Address, Phone Number, Email address).
- 2.) The RA# issued to you
- 3.) A brief description of the problem/symptoms.

We will, at our discretion, repair or replace the fixture. Please remember that any shipping damage which occurs in transit to us is the customer's responsibility, so pack it well!

Shipping Issues

Damage incurred in shipping is the responsibility of the shipper, and must be reported to the carrier immediately upon receipt of the items. Claims must be made within seven (7) days of receipt.

Tech Specs!

Weight & Dimensions	
Length	7.1 inches (180 mm)
Width	5.5 inches (140 mm)
Height	10.6 inches (270 mm)
Weight	6.7 lbs (3 kg)
Power	
Operating Voltage	90-240VAC, 50-60 Hertz
Fuse	2A 250V
Power Consumption	20W
Light Source	
Laser	Fat beam 50mW 532nm green DPSS
Scanner	15kpss high-speed optical scanner
Laser Class	Class 3R
Thermal	
Max. Operating Temp.	104 degrees F (40 degrees C) ambient
Control	
Protocol	USITT DMX-512
DMX Channels	18-channel
Input	3-pin XLR Male
Output	3-pin XLR Female
Other Operating Modes	Sound Active, Auto-Beam, Auto-Animation, DMX512, Master/Slave
Warranty	
2-year limited warranty	



Enjoy your product!
Our sincerest thanks for your purchase!
--The team @ Blizzard Lighting