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1. GETTING STARTED

What's In The Box?

- 1 x Lil' G™ Moving Head Fixture
- An Ever-So-Handy Power Cord
- A Sweet Mounting Bracket
- This Lovely User Manual

Getting It Out Of The Box

Congratulations on purchasing Lil' G™, the fun sized moving spot head fixture that is small in stature, but big where it counts! Now that you're the proud owner of a Lil' G™ (or hopefully, Lil' Gees!), 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.**

AC Voltage Switch - Not all fixtures have a voltage select switch, so please verify that the fixture you receive is suitable for your local power supply. See the label on the fixture or refer to the fixture's specifications chart for more information. A fixture's listed current rating is its average current draw under normal conditions. Check the fixture or device carefully to make sure that if a voltage selection switch exists that it is set to the correct line voltage you will use.

Warning! Verify that the voltage select switch on your unit matches the line voltage applied. Damage to your fixture may result if the line voltage applied does not match the voltage indicated on the voltage selector switch. All fixtures must be connected to circuits with a suitable Ground (Earthing).

Getting A Hold Of Us

If something is wrong, please just visit our website at www.blizzardlighting.com and open a support ticket. We'll be happy to help, honest.

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Author:	Date:	Last Edited:	Date:
J. Thomas	10/3/2014	J. Thomas	10/31/2014

SAFETY INSTRUCTIONS



Please read these instructions carefully. They include important information about the installation, usage and maintenance of this product.

- Please keep this User Guide for future use. If you sell the unit to someone else, be sure that they also receive this User Guide.
- ALWAYS make sure that you are connecting to the proper voltage, and that the line voltage you are connecting to is not higher than that stated on the decal or rear panel of the fixture.
- This product is intended for indoor use only.
- To prevent risk of fire or shock, do not expose fixture to rain or moisture.
- Make sure there are no flammable materials close to the unit while operating.
- The unit must be installed in a location with adequate ventilation, at least 20in (50cm) from adjacent surfaces. Be sure that no ventilation slots are blocked.
- ALWAYS disconnect from the power source before servicing or replacing fuse and be sure to replace with same fuse size and type.
- ALWAYS secure fixture using a safety chain. NEVER carry the fixture by its cord. Use its carrying handles.
- DO NOT operate at ambient temperatures higher than 104°F (40°C).
- In the event of a serious operating problem, stop using the unit immediately. NEVER try to repair the unit by yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center. Always use the same type spare parts.
- NEVER connect the device to a dimmer pack.
- Make sure the power cord is never crimped or damaged.
- Never disconnect the power cord by pulling or tugging on the cord.
- Avoid direct eye exposure to the light source while it is on.

Caution! There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please visit our support website at: www.blizzardlighting.com/tickets.

2. MEET THE LIL' G™ MOVING HEAD

MAIN FEATURES:

- Ultra-bright 40-watt white LED source
- Pan: 540°/ Tilt: 220° (8-16 Bit Resolution)
- Sharp 9° beam angle
- 7 color + white color wheel with rainbow effect
- 9 fixed gobos + open w/bi-directional rotation & shake
- Built-in automated programs via master/slave
- Built-in sound activated programs via master/slave
- Ultra-smooth 16-bit dimming system
- Defeatable pan/tilt correction with trim adjustment
- Intelligent fan cooling system with temperature auto detect
- 1-10Hz/second strobe effects
- 3-pin male input and 3-pin female output
- Compact, high quality housing

CONTROL:

- USITT DMX-512 (11-channels)
- Easy-to-use 4-button LCD control panel menu

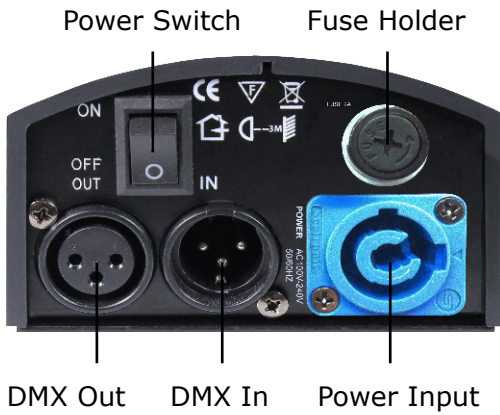
DMX Quick Reference (11-Channel Mode)

Channel	What is does
1	Pan
2	Tilt
3	Fine Pan
4	Fine Tilt
5	Pan/Tilt Speed (Fast <--> Slow)
6	Dimmer (0% <--> 100%)
7	Strobe (Slow <--> Fast)
8	Color Wheel
9	Gobo Wheel
10	Auto + Sound Active Mode
11	Motor Reset

Figure 1: The Lil' G™ Pin-Up Picture



Figure 2: The Rear Connections



3. SETUP



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

Fuse Replacement

With a flat head screwdriver, wedge the fuse holder out of its housing. Remove the damaged fuse from its holder and replace with exact same type fuse. Insert the fuse holder back in its place and reconnect power.

Connecting A Bunch of Lil' 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

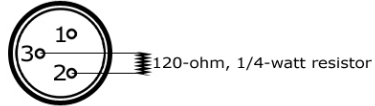
Cable Connectors

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. They are widely available over the internet and from specialty retailers. If you'd like to build your own, the chart below details a proper cable conversion:

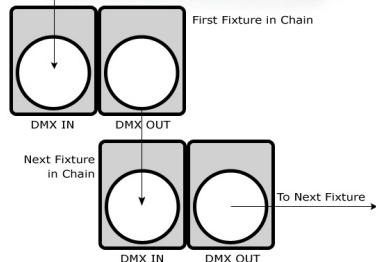
Conductor	3-Pin Female (Output)	5-Pin Male (Input)
Ground/Shield	Pin 1	Pin 1
DMX Data (-)	Pin 2	Pin 2
DMX Data (+)	Pin 3	Pin 3
Not Used.	No Connection.	No Connection.
Not Used.	No Connection.	No Connection.

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.



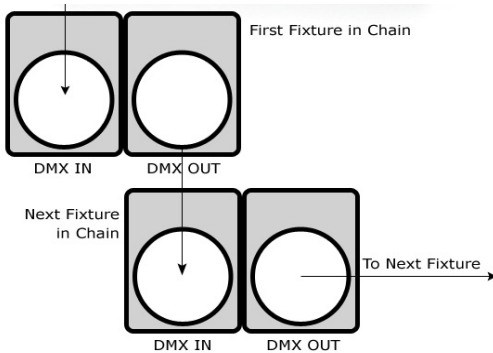
Step 2: Connect the female connector of the DMX cable to the first fixture's male connector (input). *Note:* It doesn't matter which fixture address is the first one connected. We recommend connecting the fixtures in terms of their proximity to the controller, rather than connecting the lowest fixture 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 (Master/Slave Mode)

1. Connect the (male) 3 pin connector side of the DMX cable to the output (female) 3 pin connector of the first fixture.
2. Connect the end of the cable coming from the first fixture which will have a (female) 3 pin connector to the input connector of the next fixture consisting of a (male) 3 pin 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

This fixture may be mounted in any SAFE position provided there is enough room for ventilation.

It is important never to obstruct the fan or vents pathway. Mount the fixture using a suitable “C” or “O” type clamp. The clamp should be rated to hold at least 10x the fixture’s weight to ensure structural stability. Do not mount to surfaces with unknown strength, and ensure properly “rated” rigging is used when mounting fixtures overhead.

Adjust the angle of the fixture by loosening both knobs and tilting the fixture. After finding the desired position, retighten both knobs.

- When selecting installation location, take into consideration lamp replacement access (if applicable) and routine maintenance.
- Safety cables **MUST ALWAYS** be used.
- Never mount in places where the fixture will be exposed to rain, high humidity, extreme temperature changes or restricted ventilation.

4. OPERATING ADJUSTMENTS

The Control Panel

All the goodies and different modes possible with the Lil' G™ are accessed by using the control panel on the rear of the fixture. There are 4 control buttons below the LCD 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>

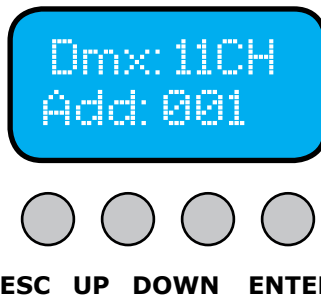
Scrolls through menu items and numbers in ascending order.

<DOWN>

Scrolls through menu items and numbers in descending order.

<ENTER>

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



The control panel LCD 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.

Press the **<ESC>** button to access the main menu. Then use the **<UP/ DOWN>** buttons to navigate the main menu options. Press the **<ENTER>** button to select any menu function currently displayed, then use the **<UP/ DOWN>** buttons to scroll through any submenu options. You can the press **<ENTER>** to save any changes made, or press **<ESC>** to exit without saving.

Control Panel Menu Structure

DMX: 11CH	<ENTER>	To choose a DMX address from 001-512
Test	Auto	Auto run mode
	Sound	Sound active mode
PAN Inverse	<ENTER>	Invert pan (yes/no)
TILT Inverse	<ENTER>	Invert tilt (yes/no)
Manual *Follow DMX channel values for each listed on page 13-14.	CH01	Pan (0° <-> 540°)
	CH02	Tilt (0° <-> 220°)
	CH03	Fine pan (16-bit)
	CH04	Fine tilt (16-bit)
	CH05	Pan/tilt speed (fast <-> slow)
	CH06	Dimmer
	CH07	Strobe (1Hz-10Hz)
	CH08	Color wheel
	CH09	Gobo wheel
	CH10	Auto + sound active
	CH11	Motor reset
Option	Pan	Invert pan (yes/no)
	Tilt	Invert pan (yes/no)
	YSet	Fine tilt adjustment (0-255)
	Color	Fine color wheel adjustment (0-255)
	Gobo	Fine color wheel adjustment (0-255)
	Sound	Mic sensitivity adjustment (0-255)
PassWord	PassWord Lock	Enter password 988 to enable menu password protection upon system restart
	PassWord UnLock	Enter password 988 to disable menu password protection upon system restart
Re- Def-	<ENTER>	Reset system default settings
Reset All	<ENTER>	Motor reset

DMX Mode

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

Set The DMX Starting Address

- 1.) To assign a DMX starting address to the fixture, press the **<ESC>** button until you reach the top menu level (and then use the **<UP/DOWN>** buttons if necessary) to navigate to **MENU1: Dmx 11CH**, and press the **<ENTER>** button. Then use the **<UP/DOWN>** buttons to display any value within the range of **001-512**, then push the **<ENTER>** button.

Slave Mode

- 1.) Connect fixtures together via DMX, then set each fixture to the same starting DMX address.
- 2.) The first fixture in the DMX chain is the master fixture, and the following fixtures will follow the master.

Auto, Stand-Alone, Sound Active Modes:

Allows single or M/S units to run factory installed programs at user selectable speeds.

Auto Mode

- 1.) Press the **<ESC>** button until you reach the top menu level (and then use the **<UP/DOWN>** buttons if necessary) to navigate to **Menu2: Test**, and press the **<ENTER>** button.
- 2.) Press the **<UP/DOWN>** buttons to highlight **AUTO**, then press **<ENTER>**.

Sound Active Mode

- 1.) Press the **<ESC>** button until you reach the top menu level (and then use the **<UP/DOWN>** buttons if necessary) to navigate to **Menu2: Test**, and press the **<ENTER>** button.
- 2.) Press the **<UP/DOWN>** buttons to highlight **Sound**, and then press the **<ENTER>** button.
- 3.) You can then adjust the mic sensitivity level by returning to the top menu level, and then in the same manner navigate to **Menu4: Option > Sound**, and choose a mic level setting between the values of 000-255.

Manual Adjustments & Built-in Programs

- 1.) Press the **<ESC>** button until you reach the top menu level (and then use the **<UP/DOWN>** buttons if necessary) to navigate to **Menu3: Manual**, and press the **<ENTER>** button.
- 2.) Press the **<UP/DOWN>** buttons to highlight **CH1-CH11**, and then press the **<ENTER>** button.
- 3.) Every option for **CH1-CH11** uses the exact same values of 000-255 as listed on the DMX chart on page 13.

Menu Password Protection

Allows you to enable/disable the menu password protection feature.

- 1.) Press the **<ESC>** button until you reach the top menu level (and then use the **<UP/DOWN>** buttons if necessary) to navigate to **Menu5: PassWord**, and press the **<ENTER>** button.
- 2.) Press the **<UP/DOWN>** buttons to highlight **PassWord Lock** or **PassWord UnLock**, and then press the **<ENTER>** button. Enter the three digit code: 988, then press the **<ENTER>** button.
- 3.) Power off/on. You have now enabled/disabled the password protect feature.

System Reset

- 1.) To automatically reset the X/Y motors to automatically realign the moving head position, press the **<ESC>** to reach the top menu level, and use the **<UP/DOWN>** buttons navigate to **Menu7: Reset**, and press **<ENTER>**. Then simply press **<ENTER>** again to confirm.

Restore Factory Settings

- 1.) To reset the fixture to its factory default settings, press the **<ESC>** to reach the top menu level, and use the **<UP/DOWN>** buttons navigate to **Menu6: Re-Def-**, and press **<ENTER>**.

DMX Values In-Depth (11-Channel Mode)

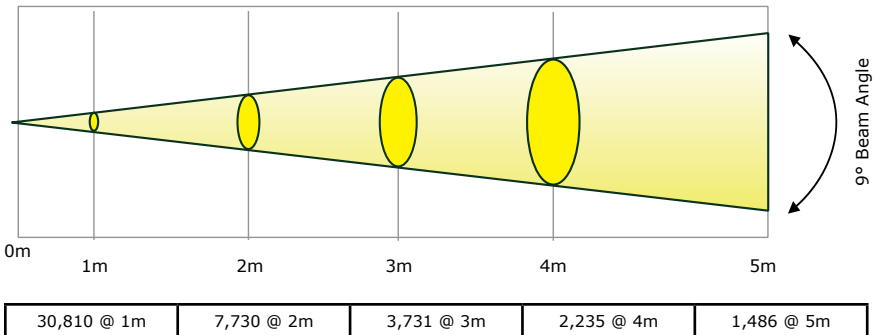
Channel	Value	What It Does
1	000 <--> 255	Pan
2	000 <--> 255	Tilt
3	000 <--> 255	Fine Pan (16-bit)
4	000 <--> 255	Fine Tilt (16-bit)
5	000 <--> 255	Pan/Tilt Speed (Fast <--> Slow)
6	000 <--> 255	Dimmer (0% <--> 100%)
7	000 <--> 255	Strobe (Slow <--> Fast)
8		Color Wheel
	000 <--> 019	White
	020 <--> 039	Pink
	040 <--> 059	Green
	060 <--> 079	Blue
	080 <--> 099	Yellow
	100 <--> 119	Purple
	120 <--> 139	Teal
	140 <--> 159	Orange
	160 <--> 207	Clockwise Rainbow Effect
	208 <--> 255	Counterclockwise Rainbow Effect

DMX Values In-Depth (11-Channel Mode, Continued)

Channel	Value	What It Does
9		Gobo Wheel
	000 <--> 009	Open
	010 <--> 019	Gobo 1
	020 <--> 029	Gobo 2
	030 <--> 039	Gobo 3
	040 <--> 049	Gobo 4
	050 <--> 059	Gobo 5
	060 <--> 069	Gobo 6
	070 <--> 079	Gobo 7
	080 <--> 089	Gobo 8
	090 <--> 099	Gobo 9
	100 <--> 109	Gobo 9 Shake (slow <-> fast)
	110 <--> 119	Gobo 8 Shake (slow <-> fast)
	120 <--> 129	Gobo 7 Shake (slow <-> fast)
	130 <--> 139	Gobo 6 Shake (slow <-> fast)
	140 <--> 149	Gobo 5 Shake (slow <-> fast)
	150 <--> 159	Gobo 4 Shake (slow <-> fast)
	160 <--> 169	Gobo 3 Shake (slow <-> fast)
	170 <--> 179	Gobo 2 Shake (slow <-> fast)
	180 <--> 189	Gobo 1 Shake (slow <-> fast)
190 <--> 222	Gobo Flow Clockwise (slow <-> fast)	
223 <--> 255	Gobo Flow Counterclockwise (slow <-> fast)	
10		Auto/Sound Active
	001 <--> 128	Auto Mode
	129 <--> 255	Sound Active Mode
11		Reset
	000 <--> 254	No Function
	255	Fixture resets in 3 seconds

Photometric Data

9° Beam Angle LUX (White)



5. APPENDIX

A Quick Lesson On DMX

DMX covers (and is an abbreviation for) Digital MultipleXed signals. It is the most common communications standard used by lighting and related stage equipment.

DMX provides up to 512 control "channels" per data link. Each of these channels was originally intended to control lamp dimmer levels. You can think of it as 512 faders on a lighting console, connected to 512 light bulbs. Each slider's position is sent over the data link as an 8-bit number having a value between 0 and 255. The value 0 corresponds to the light bulb being completely off while 255 corresponds to the light bulb being fully on.

DMX data is transmitted at 250,000 bits per second using the RS-485 transmission standard over two wires. As with microphone cables, a grounded cable shield is used to prevent interference with other signals.

There are five pins on a DMX connector: a wire for ground (cable shield), two wires for "Primary" communication which goes from a DMX source to a DMX receiver, and two wires for a "Secondary" communication which goes from a DMX receiver back to a DMX source. Generally, the "Secondary" channel is not used so data flows only from sources to receivers. Hence, most of us are most familiar with DMX-512 as being employer over typical 3-pin "mic cables," although this does not conform to the defined standard.

DMX is connected using a daisy-chain configuration where the source connects to the input of the first device, the output of the first device connects to the input of the next device, and so on. The standard allows for up to 32 devices on a single DMX link.

Each receiving device typically has a means for setting the "starting channel number" that it will respond to. For example, if two 6-channel fixtures are used, the first fixture might be set to start at channel 1 so it would respond to DMX channels 1 through 6, and the next fixture would be set to start at channel 7 so it would respond to channels 7 through 12.

Troubleshooting

Symptom	Solution
Fixture Auto-Shut Off	Check the fan in the fixture. If it is stopped or moving slower than normal, the unit may have shut itself off due to high heat. This is to protect the fixture from overheating. Clear the fan of obstructions, or return the unit for service.
Beam is Dim	Check optical system and clean excess dust/grime. Also ensure that the 220V/110V switch is in the correct position, if applicable.
No Light Output	Check to ensure fixture is operating under correct mode, IE sound active/auto/DMX/Etc., if applicable. Contact service for more information.
Chase Speed Too Fast/Slow	Check to ensure proper setup of speed adjustment.
No Power	Check fuse, AC cord and circuit for malfunction.
No Response to Audio	Verify that the fixture is in "Sound Active" mode. Adjust Audio Sensitivity, If Applicable.
Fixture Not Responding / Responding Erratically	Make sure all connectors are seated properly and securely. Use Only DMX Cables. Install a Terminator. Check all cables for defects. Reset fixture(s).

Keeping Your Lil' 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, like anything, you'll need to take care of it if you want it to operate as designed. You should absolutely 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 go to our website and open a support ticket at www.blizzardlighting.com/tickets, 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	
Width	7.9 inches (20.1 cm)
Depth	7.7 inches (19.6 cm)
Height	12.5 inches (31.7 cm)
Weight	7.7 lbs (3.5 kg)
Power	
Operating Voltage	AC 110-240VAC, 50/60 Hz
Power Consumption	59W, .79A
Power Factor	.63
Light Source	
LED	40-watt white LED
Optical	
Beam Angle	9° Beam Angle
Thermal	
Max. Operating Temp.	104 degrees F (40 degrees C) ambient
Control	
Protocol	USITT DMX-512
DMX Channels	11-Channel
Input	3-pin XLR Male
Output	3-pin XLR Female
Other Operating Modes	Standalone, Master/Slave, Sound Active
Other Information	
Behind every girls selfie is approximately 47 nearly identical photos that just didn't cut it.	
Warranty	2-year limited warranty, does not cover malfunction caused by damage to LEDs.

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