WINK

blizzard LIGHTING

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1. GETTING STARTED

What's In The Box?

- 1 x Wink™ LED Moving Head Fixture
- 1 x Ever-So-Handy Power Cord
- 1 x Mounting Bracket
- This Lovely User Manual

Getting It Out Of The Box

Congratulations on your purchase of Wink™, your new eye of the storm LED moving head fixture! Now that you've got your Wink™ *(or hopefully Winks)*, 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/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.blizzardlighting.com.

Author:	Date:	Last Edited:	Date:
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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 head. 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 open a support ticket at www.blizzardlighting.com/support.

2. MEET WINK™

MAIN FEATURES

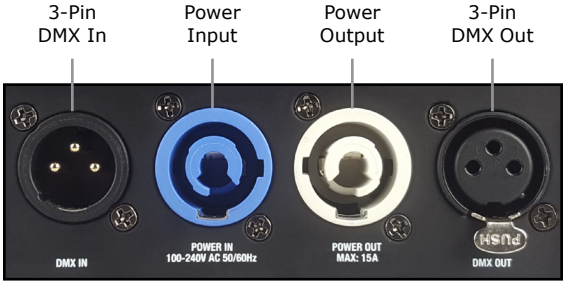
- 1* 60W RGBW high power 4-in-1 LED
- 4-segment RGB colored ring with 8* 0.5W RGB 3-in-1 LEDs
- Individual pixel and LED ring control
- 5-45 degree zoomable beam angle
- Blazing fast 540°/270° + infinite pan/tilt
- Built-in auto and sound active programs
- Multiple static color presets and virtual color wheel
- Variable electronic dimming & strobe effects (1-20Hz)
- Flicker-free constant-current LED driver
- 3-pin male input and 3-pin female output
- PowerCON™ compatible AC power In/Out connectors
- Protocol: USITT DMX-512
- 19/26/35-channel DMX modes
- 2.4 inch TFT color LCD display panel with 4x touch sensitive buttons

DMX Quick Reference (19/26/35-Channel Modes)

CH.	Basic (19ch)	CH.	Standard (26ch)	CH.	Extended (35ch)
1	Pan (0-540°)	1	Pan (0-540°)	1	Pan (0-540°)
2	Tilt (0-270°)	2	Fine Pan (16-bit)	2	Fine Pan (16-bit)
3	Pan & Tilt Speed	3	Tilt (0-270°)	3	Tilt (0-270°)
4	Infinite Pan	4	Fine Tilt (16-bit)	4	Fine Tilt (16-bit)
5	Infinite Tilt	5	Pan & Tilt Speed	5	Pan & Tilt Speed
6	Zoom (45-5°)	6	Infinite Pan	6	Infinite Pan
7	Zoom Speed	7	Infinite Tilt	7	Infinite Tilt
8	Red (0-100%)	8	Zoom (45-5°)	8	Zoom (45-5°)
9	Green (0-100%)	9	Zoom Speed	9	Zoom Speed
10	Blue (0-100%)	10	Red (0-100%)	10	Red (0-100%)
11	White (0-100%)	11	Green (0-100%)	11	Green (0-100%)
12	Strobe	12	Blue (0-100%)	12	Blue (0-100%)
13	Dimmer	13	White (0-100%)	13	White (0-100%)
14	Virtual Color Wheel	14	Strobe	14	Strobe
15	Color Presets	15	Dimmer	15	Dimmer
16	Color Presets Dimmer	16	Virtual Color Wheel	16	Virtual Color Wheel
17	Reset	17	Color Presets	17	Color Presets
18	Ring Macros	18	Color Presets Dimmer	18	Color Presets Dimmer
19	Ring Macro Speed	19	Reset	19	Reset
--	--	20	Ring Red (0-100%)	20	Ring LED 1 - Red
--	--	21	Ring Green (0-100%)	21	Ring LED 1 - Green
--	--	22	Ring Blue (0-100%)	22	Ring LED 1 - Blue
--	--	23	Ring Strobe	23	Ring LED 2 - Red
--	--	24	Ring Dimmer	24	Ring LED 2 - Green
--	--	25	Ring Macro	25	Ring LED 2 - Blue
--	--	26	Ring Macro Speed	26	Ring LED 3 - Red
--	--	--	--	27	Ring LED 3 - Green
--	--	--	--	28	Ring LED 3 - Blue
--	--	--	--	29	Ring LED 4 - Red
--	--	--	--	30	Ring LED 4 - Green
--	--	--	--	31	Ring LED 4 - Blue
--	--	--	--	32	Ring Strobe
--	--	--	--	33	Ring Dimmer
--	--	--	--	34	Ring Macros
--	--	--	--	35	Ring Macro Speed

Figure 1: Wink™ Pin-Up Picture

Figure 2: 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

Wink™ utilizes a high-output switch-mode power supply with an internal fuse. Under normal operating conditions, it should not require replacement. Should the fuse require replacement, please contact Blizzard Lighting for instructions, or to return your unit for service.

Connecting A Bunch of Wink™ 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

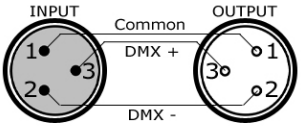
To link fixtures together you'll need data cables. You should use data-grade cables that can carry a high quality signal and are less prone to electromagnetic interference.

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

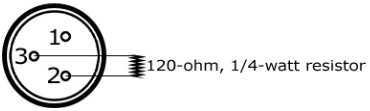
Cable Connectors

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:

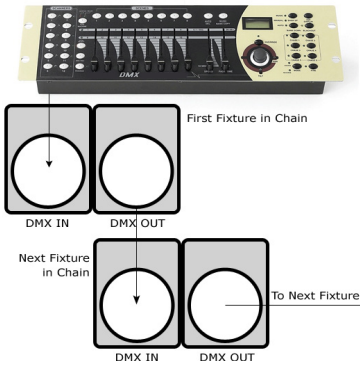
Conductor	3-Pin Female (Output)	5-Pin Male (Input)
Ground/Shield	Pin 1	Pin 1
Data 1- (Primary Data Link)	Pin 2	Pin 2
Data 1+ (Primary Data Link)	Pin 3	Pin 3
Data 2- (Optional Secondary Data Link)	Pin 4	Pin 4
Data 2+ (Optional Secondary Data Link)	Pin 5	Pin 5

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.

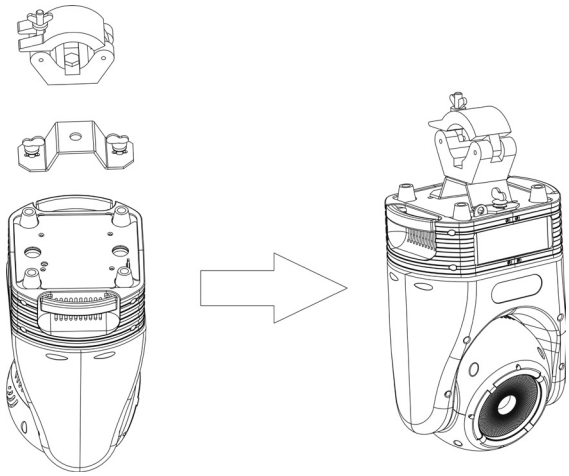


Installation

The fixture can be installed on the floor resting on its rubber feet, or mounted on truss.

- Choose a suitable place to put or hang the equipment when installing. When hanging the fixture, use the included clamp mounting brackets with suitable clamps to properly support the weight of the fixture.
- When installing the equipment, ensure that no flammable or explosive materials are within 1/2 meter distance.
- Please ask professionals to install the equipment. Any improper installation can cause personal injury or material damage.
- The equipment must be placed in a ventilated area, at least 50 cm from the ground, and always ensure that the vents are not clogged.
- Mount the fixture using suitable type clamps. 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.

WARNING: With the exception of when the fixture is positioned on the floor, a safety cable must always be used. It must be securely fixed to the support structure, and then connected to the fixing point on the bottom of the base.



4. OPERATING ADJUSTMENTS

The Control Panel

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

<MODE>

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

<ENTER>

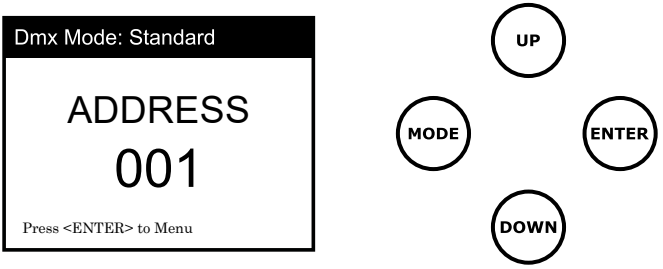
Is used to select and confirm/store the current selection.

<UP>

Scrolls through menu items and numbers in ascending order.

<DOWN>

Scrolls through menu items and numbers in descending order.



The control panel 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 **<MODE>** button.

Control Panel Menu Structure

DMX Settings	Set DMX Address	001-512	
	Channel Mode	Standard	26-channel mode
		Basic	19-channel mode
		Extended	35-channel mode
Run Mode	DMX	DMX mode	
	Auto Program 1	Auto mode 1	
	Auto Program 2	Auto mode 2	
	Sound Active 1	Sound active mode 1	
	Sound Active 2	Sound active mode 2	
	Slave	Slave mode	
	Static Setup	Pan	000-255
		Fine Pan	000-255
		Tilt	000-255
		Fine Tilt	000-255
		Move Speed	000-255
		Pan Rot	000-255
		Tilt Rot	000-255
		Zoom	000-255
		Zoom Speed	000-255
		Red	000-255
		Green	000-255
		Blue	000-255
		White	000-255
		Strobe	000-255
		Dimmer	000-255
		Macro	000-255
		Color Presets	000-255
		Color Presets Dim	000-255
		Reset	000-255
		Ring Red	000-255
		Ring Green	000-255
		Ring Blue	000-255
		Ring Strobe	000-255
		Ring Dimmer	000-255
		Ring Color Chase	000-255
		Ring Chase Speed	000-255
Utilities	Disp. Setting	Display Timeout	02-60 minutes
		Display Invert	Normal
			Invert
		Key Lock Push **<ENTER>** 5s to unlock.	Unlocked
			Locked
	Pan Invert	Normal	
		Invert	
	Tilt Invert	Normal	
		Invert	
	Calibration	Pan	-128 to +127
		Tilt	-128 to +127
		Zoom	000-255
	Fixture Test	All	
		Pan & Tilt	
		LED	
		Ring LED	
	Motor Reset	YES/NO	
	Factory Reset	YES/NO	
	Time Info	Power on	xxx (hours)
		Last Run Hours	xxx (hours)
	Software Ver	Version	Vx.x

DMX Mode

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

Set the Starting DMX Address:

1.) Navigate the main menu to reach **DMX Settings,** press **<ENTER>**.
2.) Highlight **Set DMX Address**, and press **<ENTER>**.
3.) Use the **<UP/DOWN>** buttons to select a DMX channel from **001-512**.
4.) Press the **<ENTER>** button to confirm.

Select the DMX Channel Mode:

1.) Navigate the main menu to reach **DMX Settings,** press **<ENTER>**.
2.) Highlight **Channel Mode**, and press **<ENTER>**.
3.) Use the **<UP/DOWN>** buttons to select **Extended (35CH), Standard (26CH)** or **Basic (19CH).**
4.) Press the **<ENTER>** button to confirm your selection.

DMX Mode:

1.) Navigate the menu until you reach **Run Mode,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to highlight **DMX,** press **<ENTER>**.
3.) In DMX mode, the starting DMX channel is shown prominently in the center of the screen. If a DMX signal is not present or becomes interrupted, the display will flash until the DMX signal is present.

Slave Mode:

1.) Navigate the menu until you reach **Run Mode,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to highlight **Slave,** press **<ENTER>**.
3.) The fixture is now in Slave Mode, and will follow the Master Fixture (the first fixture in the DMX chain.)
4.) In Slave Mode, the starting DMX channel is shown prominently in the center of the screen. If a DMX signal is not present or becomes interrupted, the display will flash until the DMX signal is present.

Auto, Sound Active, & Manual Adjustments:

Allows a single or Master/Slaved units to run factory installed programs.

Auto Mode:

1.) Navigate the main menu until you reach **Run Mode,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to highlight **Auto Program 1** or **2.**
3.) Press the **<ENTER>** button to confirm your selection.

Sound Active Mode:

1.) Navigate the main menu until you reach **Run Mode,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to highlight **Sound Active 1** or **2.**
3.) Press the **<ENTER>** button to confirm your selection.

Static Mode:

1.) Navigate the main menu until you reach **Run Mode,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to select **Static Setup**.
3.) Manual adjustments ranging from **0-255** can be made to any available static mode submenu option.

System Utilities

Other utilities found within the control panel menu.

Display Timeout:

1.) Navigate the main menu until you reach **Utilities,** press **<ENTER>**.
2.) Highlight **Disp. Setting <ENTER>**, then **Display Timeout <ENTER>.**
3.) Set the timer to shut off the display after 2-60 minutes of inactivity.

Display Invert:

1.) Navigate to **Utilities <ENTER>**, then **Disp. Setting <ENTER>.**
2.) Use the **<UP/DOWN>** buttons to select **Display Invert,** press **<ENTER>**.
3.) From here, you can select **Normal** or **Invert** to flip the display.

Pan/Tilt Invert:

1.) Navigate to **Utilities <ENTER>**, then **Pan Invert** or **Tilt Invert <ENTER>.**
2.) Use the **<UP/DOWN>** buttons to highlight **Normal,** or **Invert.**
3.) Press the **<ENTER>** button to confirm.

Calibration Settings:

1.) Navigate to **Utilities <ENTER>**, then **Calibration <ENTER>.**
2.) Highlight either **Pan, Tilt,** or **Zoom,** and press **<ENTER>.**
3.) Make any adjustments needed, then press **<ENTER>** to confirm.

Fixture Test:

1.) Navigate the main menu until you reach **Utilities,** press **<ENTER>**.
2.) Use the **<UP/DOWN>** buttons to select **All** (motors and LEDs), **Pan & Tilt** (motors), **LED** (LEDs only), or **Ring LED** (ring LEDs only.)
3.) Press the **<ENTER>** button to confirm your selection.

Motor/Factory Reset:

1.) Navigate to **Utilities <ENTER>**, then **Motor** or **Factory Reset <ENTER>.**
2.) Use the **<UP/DOWN>** buttons to highlight **Yes** or **No.**
3.) Press the **<ENTER>** button to confirm.

Runtime Info

1.) Navigate to **Utilities <ENTER>**, then **Time Info <ENTER>.**
2.) From here you can view current **Power On** time, and **Last Run** hours.

Software

1.) Navigate to **Utilities <ENTER>**, then **Software <ENTER>.**
2.) From here you can view the installed software version information.

DMX Values In-Depth (19/26/35-Channel Modes)

Basic Mode 19CH	Standard 21CH	Extended 35CH	Value	What it does
1	1	1	000 <-> 255	Pan (0-540°)
--	2	2	000 <-> 255	Fine Pan (16-bit)
2	3	3	000 <-> 255	Tilt (0-270°)
--	4	4	000 <-> 255	Fine Tilt (16-bit)
3	5	5		**Pan & Tilt Speed**
			000 <-> 225	Speed (fast <--> slow)
			226 <-> 235	LEDs Blackout By Movement
			236 <-> 255	No Function
4	6	6		**Infinite Pan**
			000 <-> 127	No Function
			128 <-> 189	Forward Pan (fast <--> slow)
			190 <-> 193	Stop
			194 <-> 255	Backward Pan (slow <--> fast)
5	7	7		**Infinite Tilt**
			000 <-> 127	No Function
			128 <-> 189	Forward Tilt (fast <--> slow)
			190 <-> 193	Stop
			194 <-> 255	Backward Tilt (slow <--> fast)
6	8	8	000 <-> 255	Zoom (wide <--> narrow)
7	9	9	000 <-> 255	Zoom Speed (fast <--> slow)
8	10	10	000 <-> 255	Red Intensity (0% - 100%)
9	11	11	000 <-> 255	Green Intensity (0% - 100%)
10	12	12	000 <-> 255	Blue Intensity (0% - 100%)
11	13	13	000 <-> 255	White Intensity (0% - 100%)
12	14	14		**Strobe**
			000 <-> 031	LEDs Off
			032 <-> 063	LEDs On
			064 <-> 095	Strobe (slow <--> fast)
			096 <-> 127	LEDs On
			128 <-> 159	Pulse Strobe In Sequences
			160 <-> 191	LEDs On
			192 <-> 223	Random Strobe (slow <--> fast)
			224 <-> 255	LEDs On
13	15	15	000 <-> 255	Dimmer (0% - 100%)
14	16	16		**Virtual Color Wheel**
			000 <-> 007	No function
			008 <-> 039	Red to Yellow
			040 <-> 071	Yellow to Green
			072 <-> 103	Green to Cyan
			104 <-> 135	Cyan to Blue
			136 <-> 167	Blue to Magenta
			168 <-> 199	Magenta to Red
			200 <-> 231	Red to White
			232 <-> 255	Crossfading Colors (slow <--> fast)
15	17	17		**Color Presets**
			000 <-> 004	No function
			005 <-> 009	White 2700k
			010 <-> 014	White 3200k
			015 <-> 019	White 4200k
			020 <-> 024	White 5600k
			025 <-> 029	White 6500k
			030 <-> 034	White 8000k
			035 <-> 039	Yellow
			040 <-> 044	Magenta
			045 <-> 049	Cyan
			050 <-> 054	Salmon
			055 <-> 059	Turquoise
			060 <-> 064	Light Green
			065 <-> 069	Steel Blue
			070 <-> 074	Orange
			075 <-> 079	Straw
			080 <-> 084	Pale Lavender
			085 <-> 089	Pink
			090 <-> 094	Red
			095 <-> 099	Green
			100 <-> 104	Blue
			105 <-> 109	White
			110 <-> 255	Reserved

DMX Values In-Depth (19/26/35-Channel Modes), *continued*

Basic Mode 19CH	Standard 21CH	Extended 35CH	Value	What it does
16	18	18	000 <-> 255	Color Preset Dimmer
17	19	19		**Reset**
			000 <-> 005	No function
			006 <-> 063	Head Reset
			064 <-> 127	Pan & Tilit Reset
			128 <-> 191	All Motor Reset
			192 <-> 255	No function
--	--	20	000 <-> 255	Ring LED 1 - Red Intensity (0% - 100%)
--	--	21	000 <-> 255	Ring LED 1 - Green Intensity (0% - 100%)
--	--	22	000 <-> 255	Ring LED 1 - Blue Intensity (0% - 100%)
--	--	23	000 <-> 255	Ring LED 2 - Red Intensity (0% - 100%)
--	--	24	000 <-> 255	Ring LED 2 - Green Intensity (0% - 100%)
--	--	25	000 <-> 255	Ring LED 2 - Blue Intensity (0% - 100%)
--	--	26	000 <-> 255	Ring LED 3 - Red Intensity (0% - 100%)
--	--	27	000 <-> 255	Ring LED 3 - Green Intensity (0% - 100%)
--	--	28	000 <-> 255	Ring LED 3 - Blue Intensity (0% - 100%)
--	--	29	000 <-> 255	Ring LED 4 - Red Intensity (0% - 100%)
--	--	30	000 <-> 255	Ring LED 4 - Green Intensity (0% - 100%)
--	--	31	000 <-> 255	Ring LED 4 - Blue Intensity (0% - 100%)
--	20	--	000 <-> 255	Ring Red Intensity (0% - 100%)
--	21	--	000 <-> 255	Ring Green Intensity (0% - 100%)
--	22	--	000 <-> 255	Ring Blue Intensity (0% - 100%)
--	23	32		**Ring Strobe**
			000 <-> 031	LEDs Off
			032 <-> 250	Strobe (0-20Hz)
			251 <-> 255	LEDs On
--	24	33	000 <-> 255	Ring Dimmer
18	25	34		**Ring Color Macros**
			000 <-> 015	No Function
			016 <-> 027	Macro 1
			028 <-> 039	Macro 2
			040 <-> 051	Macro 3
			052 <-> 063	Macro 4
			064 <-> 075	Macro 5
			076 <-> 087	Macro 6
			088 <-> 099	Macro 7
			100 <-> 111	Macro 8
			112 <-> 123	Macro 9
			124 <-> 135	Macro 10
			136 <-> 147	Macro 11
			148 <-> 159	Macro 12
			160 <-> 171	Macro 13
			172 <-> 183	Macro 14
			184 <-> 195	Macro 15
			196 <-> 207	Macro 16
			208 <-> 219	Macro 17
			220 <-> 231	Macro 18
			232 <-> 243	Macro 19
			244 <-> 255	Macro 20
19	26	35	000 <-> 255	Ring Macro Speed (slow <--> fast)

5. APPENDIX

A Quick Lesson On DMX

DMX (aka DMX-512) was created in 1986 by the United States Institute for Theatre Technology (USITT) as a standardized method for connecting lighting consoles to lighting dimmer modules. It was revised in 1990 and again in 2000 to allow more flexibility. The Entertainment Services and Technology Association (ESTA) has since assumed control over the DMX512 standard. It has also been approved and recognized for ANSI standard classification.

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.

The greatest strength of the DMX communications protocol is that it is very simple and robust. It involves transmitting a reset condition (indicating the start of a new "packet"), a start code, and up to 512 bytes of data. Data packets are transmitted continuously. As soon as one packet is finished, another can begin with no delay if desired (usually another follows within 1 ms). If nothing is changing (i.e. no lamp levels change) the same data will be sent out over and over again. This is a great feature of DMX -- if for some reason the data is not interpreted the first time around, it will be re-sent shortly.

Not all 512 channels need to be output per packet, and in fact, it is very uncommon to find all 512 used. The fewer channels are used, the higher the "refresh" rate. It is possible to get DMX refreshes at around 1000 times per second if only 24 channels are being transmitted. If all 512 channels are being transmitted, the refresh rate is around 44 times per second.

In summary, since its design and evolution in the 1980's DMX has become the standard for lighting control. It is flexible, robust, and scalable, and its ability to control everything from dimmer packs to moving lights to foggers to lasers makes it an indispensable tool for any lighting designer or lighting performer.

Keeping Your Wink™ 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/support, 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.

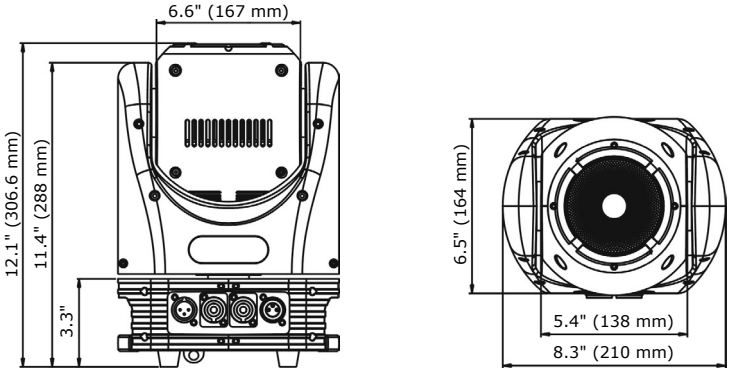
Tech Specs!

Weight & Dimensions	
Width	8.3 inches (210 mm)
Depth	6.5 inches (164 mm)
Height	12.1 inches (306.6 mm)
Weight	12.5 lbs. (5.7 kg)
Power	
Operating Voltage	100V-240VAC, 50-60Hz
Power Consumption	110W, 1.44A, PF: .66
Light Source	
LED	1x 60W RGBW 4-in-1 LED 8* 0.5W RGB 3-in-1 LEDs (Ring)
Thermal	
Max. Operating Temp.	104 degrees F (40 degrees C) ambient
Movement Range	
Pan	540 degree (8-16 bit resolution) / Infinite Pan
Tilt	270 degree (8-16 bit resolution) / Infinite Tilt
Control	
Protocol	USITT DMX-512
DMX Channels	19/26 or 35-channel DMX modes
Input	3-pin XLR Male
Output	3-pin XLR Female
Other Operating Modes	Standalone, Master/Slave, Auto, Sound Active
Warranty	2-year limited warranty, does not cover malfunction caused by damage to LEDs.

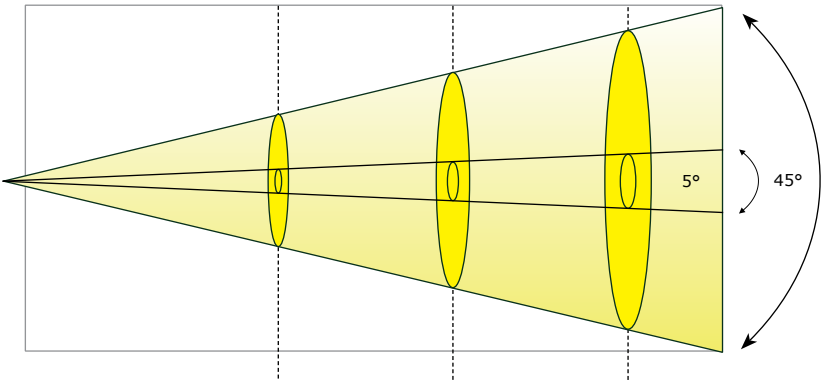
Troubleshooting

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.
No Power	Check fuse, AC cord and circuit for malfunction.
Blown Fuse	Check AC cord and circuit for damage, verify that moving parts are not restricted and that unit's ventilation is not obstructed
Slow Movement	Check that speed channels are set appropriately.
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).

Dimensional Drawings



Photometric Data



Distance:	1m	2.5m	5m
5° beam diameter	3.5" (9 cm)	8.9" (22.5 cm)	17.7" (45 cm)
45° beam diameter	31.9" (81 cm)	79.7' (202.5 cm)	159.5" (405 cm)

Luminous Intensity:

Beam	1m lux	1m fc	2.5m lux	2.5m fc	5m lux	5m fc
5°	28,180	2,618	6,517	605.5	1,700	158
45°	2,458	228.3	425	39.5	130	12.1

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