SNOKONTROL

blizzard LIGHTING

TABLE OF CONTENTS

1. GETTING STARTED

1.1 What's In The Box?

- 1x SNOKONTROL™ DMX Controller
- 1x 12 VDC, 500ma AC/DC Adaptor
- A Warranty Card & Warranty Info
- This Lovely User Manual

1.2 Getting It Out Of The Box

We could tell just by lookin' atcha. You're a bit of a control freak, aren't ya? Just kidding! CON-GRATULATIONS! You've purchased a GREAT little DMX controller! Bravo! Now that you've got your SNOKONTROL™, 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.

1.3 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).

1.4 Getting A Hold Of Us

If something is wrong, just give us a call or send an email. We'll be happy to help, honest.

Blizzard Lighting
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support@blizzardlighting.com | Phone: 866-493-6025
www.blizzardlighting.com

IMPORTANT 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 contact Blizzard Lighting at support@blizzardlighting.com.

1.5 Instructions on Our Instructions

We try to make these manuals easy to read and as fun as reading an instruction manual can be. Because there are buttons, switches, sliders and knobs galore on most of our products, it makes sense to refer to things in a consistent fashion. So, when you see text formatted in certain ways, it should say to you "Hey! Look at me! I MEAN something, dammit!"

Special Text	What It Means
LED	Text displayed on the fixture's LED control panel
<MENU>	Button <X> to be pressed
MENU --> SHMD	A sequence to be followed
000 <-> 255	A range of values

2. INTRODUCTION

2.1 Features

- DMX512/1990 Standard
- Controls 24 intelligent lights of up to 16 channels, totally 384 channels
- 30 banks, each with 8 scenes; 6 chase, each with up to 240 scenes
- Record up to 6 chases with fade time and speeds
- 16 sliders for direct control of channels
- MIDI control over banks, chases and blackout
- Built-in microphone for music mode
- Auto mode program controlled by fade time sliders
- DMX in/out: 3 pin XLR
- LED gooseneck lamp
- Plastic end housing

2.2 General Overview

The Controller is a universal intelligent lighting controller. It allows the control of 24 fixtures composed of 16 channels each and up to 240 programmable scenes. Six chase banks can contain up to 240 steps composed of the saved scenes and in any order. Programs can be triggered by music, midi,automatically or manually. All chases can be executed at the same time.

On the surface you will find various programming tools such as 16 universal channel sliders, quick access scanner and scene buttons, and an LED display indicator for easier navigation of controls and menu functions.

2.3 Nifty, Spiffy Diagram (front)
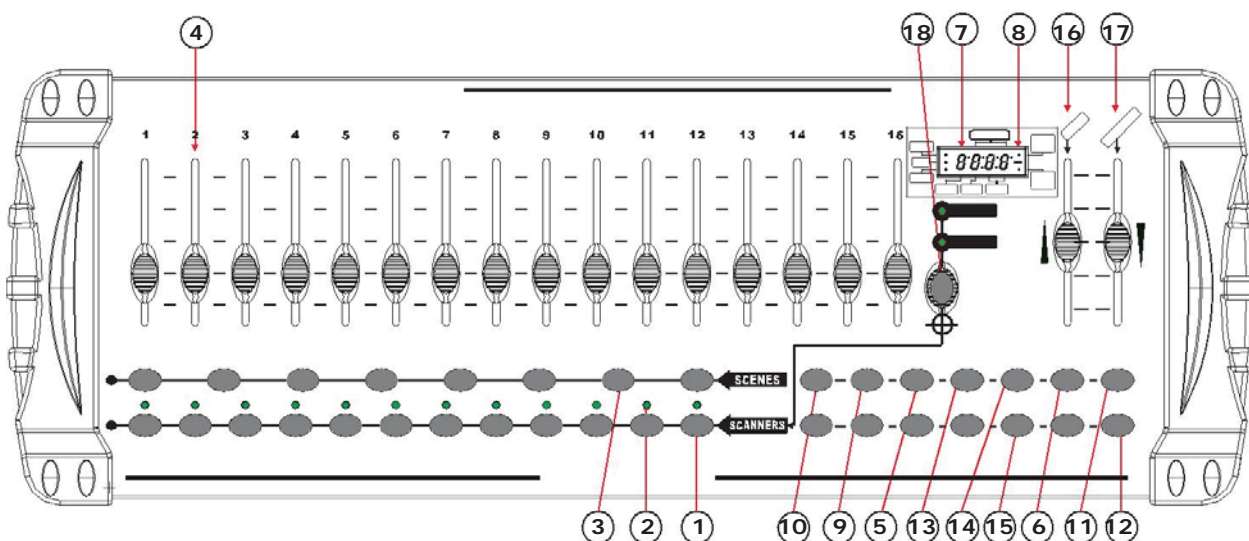
| Number	Button/Fader/Connection	Does...
1	Scanner Select Buttons	Fixture selection
2	Scanner Indicator LEDs	Indicates the fixture(s) currently selected
3	Scene Select Buttons	Universal bump buttons representing scene location for storage and selection
4	Channel Faders	Adjusts DMX values - Channel 1-16 may be adjusted after pressing the respective scanner select button
5	Program Button	Enters programming mode
6	Music/Bank Copy Button	Activates Music mode -or- functions as the command copy button during programming
7	LED Display	Displays pertinent operating data
8	Mode Indicator LEDs	Provides operating mode status - (manual, music or auto)
9	Bank Up Button	Increments scene/step in bank/chase
10	Bank Down Button	Decrements scene/step in bank/chase
11	Tap Display Button	Sets the chase speed by tapping the button -or- toggles between DMX value and percentage
12	Blackout Button	Sets the shutter/dimmer value of all fixtures to ZERO
13	Midi/ADD Button	Activates MIDI external control -or- confirms the record/save process
14	Auto/Del Button	Activates Auto mode -or- functions as the delete button during programming
15	Chaser Buttons	Activates/accesses chase 1-6
16	Speed Fader	Adjusts scene hold time or step speed within a chase
17	Fade Time Fader	Sets the fade time between two scenes in a chase (crossfade)
18	Page Select Button	Toggles between fader page A and B while in manual mode
19	MIDI Input Jack	For external triggering of banks & chases using a MIDI device
20	DMX Output Jack	DMX signal output
21	DC Input Jack	Power input, DC9V @2.0A
22	USB Lamp Jack ONLY	ONLY for use with the included USB LED lamp
23	Power Switch	Turns the unit On/Off

2.4 Nifty, Spiffy Diagram (back)
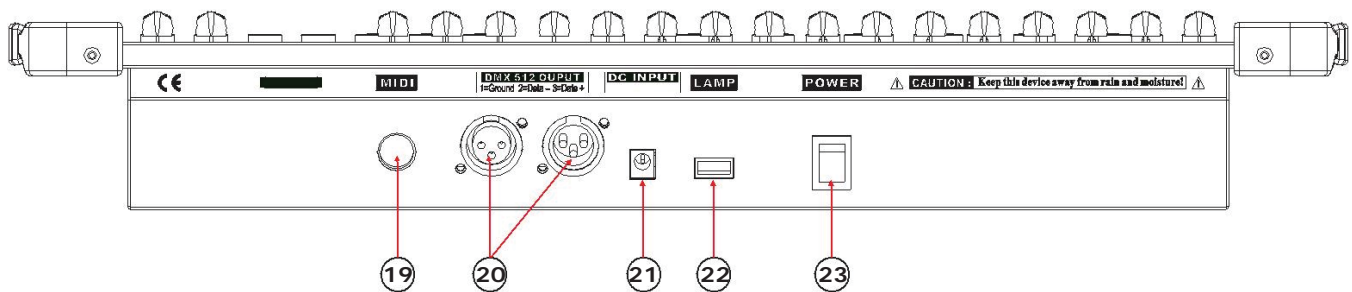
2.5 Common Terms

The following are common terms used in intelligent light programming, so pay attention! We'll be using them throughout the manual.

- **Blackout** is a state by where all lighting fixtures light output are set to 0 or off, usually on a temporary basis.

- **DMX-512** stands for **D**igital **M**ultiple**X** is an industry standard digital communication protocol used in entertainment lighting equipment. For more information read the *DMX Primer* and *DMX Control Mode* Sections later in the manual.

- **Fixture** refers to your lighting instrument or other device such as a fogger or dimmer of which you can control.

- **Programs** are a bunch of scenes stacked one after another. It can be programmed as either a single scene or multiple scenes in sequence.

- **Scenes** are static lighting states.

- **Sliders** are a delicious small burger or sandwich, but here they are used in the same context as faders.

- **Chases** can also be called programs. A chase consists of a number of scenes stacked one after another.

- **Scanner** refers to a lighting instrument with a pan and tilt mirror; however, in the SNOKONTROL controller it can be used to control any DMX-512 compatible device as a generic fixture.

- **MIDI** stands for **M**usical **I**nstrument **D**igital **I**nterface, and is a standard for representing musical information in a digital format. A MIDI input would provide external triggering of scenes using midi device such as a midi keyboard.

- **Stand Alone** refers to a fixture's ability to function independently of an external controller and usually in sync to music, due to a built in microphone.

- **Fade Slider** is used to adjust the time between scenes within a chase.

- **Speed Slider** affects the amount of time a scene will hold its state. It is also considered a wait time.

- **Shutter** is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output and to strobe.

- **Patching** refers to the process of assigning fixtures a DMX channel.

- **Playbacks** can be either scenes or chases that are directly called to execution by the user. A playback can also be considered program memory that can be recalled during a show.

3.OPERATING INSTRUCTIONS

3.1   Setup

3.1.1 Setting Up The System

Plug the AC to DC power supply to the system back panel and to the mains outlet.

Plug in your DMX cable(s) to your intelligent lighting as described in the fixtures respective manual. For a quick lesson on DMX see the *DMX Primer* section in the Appendix of this manual.

3.1.2 Fixture Addressing

The Controller is programmed to control 16 channels of DMX per fixture, therefore the fixtures you wish to control with the corresponding **SCANNER** buttons on the unit, must be spaced 16 channels apart.

Fixture / Scanner Number	DMX Start Address	Binary DIP Switch Settings (SET TO ON POSITION)	Fixture / Scanner Number	DMX Start Address	Binary DIP Switch Settings (SET TO ON POSITION)
1	1	1	13	193	1
2	17	1, 5	14	209	1, 5
3	33	1, 6	15	225	1, 6
4	49	1, 5, 6	16	241	1, 5, 6
5	65	1, 7	17	257	1, 7
6	81	1, 5, 7	18	273	1, 5, 7
7	97	1, 6, 7	19	289	1, 6, 7
8	113	1, 5, 6, 7	20	305	1, 5, 6, 7
9	129	1, 8	21	321	1, 8
10	145	1, 5, 8	22	337	1, 5, 8
11	161	1, 6, 8	23	353	1, 6, 8
12	177	1, 5, 6, 8	24	369	1, 5, 6, 8

Please refer to your individual fixture's manual for detailed DMX addressing instructions. The table above refers to a standard 9-DIP Switch binary configurable device.

3.1.3 Pan & Tilt Channels

Because not all intelligent lighting fixtures are alike or share the same control attributes, the Controller allows the user to assign the correct pan and tilt channel for every individual fixture.

1.   Press and hold **<PROGRAM>** & **<TAPSYNC DISPLAY>** until the display flashes.
2.   Press then **<SCANNER>** or **<PAGE SELECT>** button that represents the fixture whose faders you would like to reassign.
3.   Move the fader corresponding with the pan channel for the selected fixture.
4.   Press the **<TAPSYNC DISPLAY>** button to confirm.
5.   Move the fader corresponding with the tilt channel for the selected fixture.
6.   Press and hold **<PROGRAM>** & **<TAPSYNC DISPLAY>** until the display flashes.

3.1.4 Resetting The System

WARNING: This will reset the controller to its factory defaults. ALL PROGRAMS AND SETTINGS WILL BE ERASED!

1.	Turn the unit off.
2.	Press and hold **<BANK UP>** & **<AUTO/DEL>**
3.	Turn the unit on while you continue to hold **<BANK UP>** & **<AUTO/DEL>**
4.	The settings will be reset to factory defaults.

3.1.5 Fixture Copy

This allows the user to copy the attributes of one fixture to another (IE Scanner 1 to Scanner 2)

1.	Press and hold the **<SCANNER>** button to be copied.
2.	While holding the first button, press and hold the **<SCANNER>** button to receive the copied data.
3.	Release the first **<SCANNER>** button, then the second.
4.	The Scanner LED indicators will flash to confirm a successful copy.

3.1.6 Fade Time Assign

This allows the user to assign fade times either globally or to PAN/TILT channels only. This is useful because typically the user will not want to fade gobos/colors/etc.

1.	Turn the controller off.
2.	Hold the **<BLACKOUT>** and **<TAPSYNC DISPLAY>** buttons simultaneously.
3.	Turn the controller on.
4.	Press the **<TAPSYNC DISPLAY>** button to toggle between the two modes. Either all channels (A) or PAN/TILT channels only (P).
5.	Press **<BLACKOUT>** and **<TAPSYNC DISPLAY>** to save the setting. All LEDs will blink to confirm the selection.

3.2 Manual Mode

Manual mode allows direct control of all scanners. You are able to move them and change attributes by using the channel faders.

Note: All changes made while in Manual Mode are temporary and will not be recorded.

1.	Press the **<AUTO DEL>** button until the Auto Trigger LED is unlit.
2.	Select a **<SCANNER>** button.
3.	Move the faders to change fixture attributes corresponding with each fader channel.
4.	Pressing the **<TAPSYNC DISPLAY>** button toggles between displaying the DMX value ($0\text{-}255$) and percentage ($0\text{-}100$)

3.3 Programming

A program (bank) is a sequence of different scenes or steps which are called one after another. SNOKONTROL can store up to 30 programs of 8 scenes each.

3.3.1 Entering Program Mode

1.   Make sure that MANUAL mode is selected.
2.   Press and hold the **<PROGRAM>** button until the Program LED blinks rapidly.

3.3.2 Create A Scene

A scene is a static lighting look. Scenes are stored in banks. SNOKONTROL features 30 bank memories, and each bank holds up to 8 scenes. In total, SNOKONTROL is capable of storing up to 240 scenes.

1.   Ensure that the BLACKOUT LED is not lit. If it is, press the **<BLACKOUT>** button to deselect.
2.   Press and hold the **<PROGRAM>** button until the Program LED blinks rapidly.
3.   Set the **SPEED** and **FADE TIME** sliders at their lowest level.
4.   Select the fixture(s) you wish to include in the scene by pressing the appropriate **<SCANNER>** buttons.
5.   Create your look by using the sliders.
6.   Tap the **<MIDI/ADD>** button.
7.   Using the **<BANK UP>** and **<BANK DOWN>** buttons, select a bank from $01-30$.
8.   Using the **<SCENES>** button, select the scene (1-8) that you wish to program. All LEDs will flash to confirm. The LED display will indicate the scene number ($1-8$) which was programmed.
9.   Repeat steps 5-7 as necessary. Up to 8 scenes may be recorded to each program bank.
10.   To exit program mode, press and hold the **<PROGRAM>** button.

3.3.2.1 Review A Scene Or Chase

This section assumes that you have already recorded scenes and chases in the controller.

To Review a Scene:

1.   Select any one of the 30 banks by pressing the **<BANK UP>/<BANK DOWN>** buttons.
2.   Select a **<SCENE>** button (1-8) to review.
3.   Move the faders to change fixture attributes.

To Review a Chase:

1.   Press any one of the 6 **<CHASE>** buttons.
2.   Press the **<TAPSYNC DISPLAY>** button to view the step number on the display.
3.   Press the **<BANK UP>/<BANK DOWN>** buttons to review all scenes in the chase.

3.3.3 Running A Program

1.   Use the **<BANK UP>/<BANK DOWN>** buttons to change program banks as needed.

2. Press the **<AUTO/DEL>** button repeatedly until the Auto Trigger LED turns on.
3. Adjust the program speed using the **SPEED** fader and the fade time using the **FADE TIME** fader.
4. Alternately, tapping the **<TAPSYNC DISPLAY>** button to change scenes. This is useful for allowing fixtures to follow the beat of music, etc.

3.3.4 Check Program

1. Press and hold **<PROGRAM>** button until the PROGRAM LED blinks.
2. Use the **<BANK UP>/<BANK DOWN>** buttons to select the program bank to review.
3. Press the **<SCENES>** buttons to review each scene individually.

3.3.5 Editing A Program

1. Press and hold **<PROGRAM>** button until the PROGRAM LED blinks.
2. Use the **<BANK UP>/<BANK DOWN>** buttons to select the program bank to edit.
3. Select the desired fixture using the appropriate **<SCANNER>** button or **<PAGE SELECT>** button.
4. Adjust and change fixture attributes using teh channel faders.
5. Press the **<MIDI/ADD>** button to prepare the save.
6. Select the desired **<SCENES>** button to save.

3.3.6 Copy A Program

1. Press and hold **<PROGRAM>** button until the PROGRAM LED blinks.
2. Use the **<BANK UP>/<BANK DOWN>** buttons to select the program bank to review.
3. Press the **<MIDI/ADD>** button to prepare the copy.
4. Use the **<BANK UP>/<BANK DOWN>** buttons to select the program bank to copy.
5. Press the **<MUSIC BANK COPY>** button to execute the copy. All LEDs on the controller will blink to confirm. All 8 scenes in the program bank will be copied.

3.4 Chase Programming

*A chase is created by using previously created scenes. Scenes become steps in a chase and can be arranged in any order you choose. It is highly recommended that prior to programming chases for the first time; you delete all chases from memory. See **Delete All Chases** for instructions.*

3.4.1 Create A Chase

A Chase can contain 240 scenes as steps. The term steps and scenes are used interchangeably.

1. Press the **<PROGRAM>** button until the Program LED blinks
2. Press the **<CHASE>** (1-6) button to select which chase to program.
3. Use the **<BANK UP>/<BANK DOWN>** buttons to select a scene if needed.
4. Select the **<SCENE>** button corresponding to the scene you would like to insert.
5. Tap the **<MIDI/ADD>** button to store.
6. Repeat steps 3-5 to add additional steps to the chase. Up to 240 steps may be programmed.
7. Press and hold the **<PROGRAM>** button to save the chase.

3.4.2 Running A Chase

1. Press a **<CHASE>** button then press the **<AUTO/DEL>** button.
2. Adjust the chase speed by tapping the **<TAPSYNC DISPLAY>** button (up to 10 minutes between taps… seriously… that would be a long chase.)

3.4.3 Checking A Chase

1. Press and hold the **<PROGRAM>** button until the PROGRAM LED blinks.
2. Select the desired **<CHASE>** button
3. Press the **<TAPSYNC DISPLAY>** button to switch the LED display to steps.
4. Review each scene/step individually by using the **<BANK UP>/<BANK DOWN>** buttons.

3.4.4 Edit A Chase (Copy A Bank Into A Chase)

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Select the BANK to be copied using the **<BANK UP>/<BANK DOWN>** buttons.
4. Press**<MUSIC/BANK COPY>** button to prepare to copy.
5. Press **<MIDI/ADD>** button to copy the bank. All LEDs will blink.

3.4.5 Edit A Chase (Copy A Scene Into A Chase)

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Select the BANK that contains the scene to be copied using the **<BANK UP>/<BANK DOWN>** buttons.
4. Press the **<SCENE>** button that corresponds to the scene to be copied.
5. Press **<MIDI/ADD>** button to copy the scene. All LEDs will blink.

3.4.6 Edit A Chase (Insert A Scene Into A Chase)

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Press the **<TAPSYNC DISPLAY>** button to switch the LED display to steps.
4. Use the **<BANK UP>/<BANK DOWN>** buttons to navitage between steps and locate the insert point for the new scene. The display will read the step number (*0-240*)
5. Press **<MIDI/ADD>** button to prepare the insert.
6. Use the **<BANK UP>/<BANK DOWN>** buttons to locate the scene to insert.
7. Press the **<SCENE>** button that corresponds to the scene to be inserted.
8. Press **<MIDI/ADD>** button to insert the scene. All LEDs will blink.

3.4.7 Delete A Scene In A Chase

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Press the **<TAPSYNC DISPLAY>** button to switch the LED display to steps.
4. Use the **<BANK UP>/<BANK DOWN>** buttons to navitage between steps and locate the scene to be deleted. The display will read the step number (*0-240*)
5. Press the **<AUTO/DEL>** button to delete the scene/step. All LEDs will blink.

3.4.8 Delete A Scene In A Chase

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Press and hold the **<AUTO/DEL>** button and the respective **<CHASE>** button to delete the chase. All LEDs will blink.

3.4.9 Delete All Chase Programs

CAUTION! *This procedure will result in irrevocable loss of chase step memory. The individual scenes and program banks will be preserved.*

1. Turn the controller OFF.
2. Press and hold the **<BANK DOWN>** button and the **<AUTO/DEL>** button while turning the controller ON.
3. All LEDs will blink for confirmation.

3.5 Scene Programming (Step Programming)

3.5.1 Insert A Scene

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Press the desired **<CHASE>** button.
3. Press the **<TAPSYNC DISPLAY>** button to switch the LED display to step view.
4. Use the **<BANK UP>/<BANK DOWN>** buttons to navitage between steps and locate the insert point for the new scene. The display will read the step number (*0-240*)
5. Press **<MIDI/ADD>** button to prepare the insert.
6. Use the **<BANK UP>/<BANK DOWN>** buttons to locate the scene to insert.
7. Press the **<SCENE>** button that corresponds to the scene to be inserted.
8. Press **<MIDI/ADD>** button to insert the scene. All LEDs will blink.

3.5.2 Copy A Scene

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Select the BANK that contains the scene to be copied using the **<BANK UP>/<BANK DOWN>** buttons.
3. Press the **<SCENE>** button that corresponds to the scene to be copied.
4. Press **<MIDI/ADD>** button to copy the scene.
5. Select the destination BANK to receive the copied data using the **<BANK UP>/<BANK DOWN>** buttons.
6. Press the **<SCENE>** button to complete the copy. All LEDs will blink.

3.5.3 Delete A Scene

1. Press and hold the **<PROGRAM>** button to enter programming mode.
2. Select the BANK that contains the scene to be deleted using the **<BANK UP>/<BANK DOWN>** buttons.
3. Press the **<AUTO/DEL>** button to delete the scene/step.
4. Press the **<SCENE>** button that corresponds to the scene you want to delete. All LEDs will blink.

3.5.3 Delete All Scenes

CAUTION! This procedure will result in irrevocable loss of scene data.

1. Press and hold the **<PROGRAM>** and **<BANK DOWN>** buttons while switching the controller OFF.
2. Turn the controller back ON.

3.6 Playback

3.6.1 Sound Active Mode

In Sound Active mode, programs will be triggered by the built-in microphone.

1. Press the **<MUSIC BANK COPY>** button until the **MUSIC LED** is lit.
2. Select the BANK to run in sound active mode using the **<BANK UP>/<BANK DOWN>** buttons.
3. Alternately, you can press a single **<CHASE>** button (1-6) or several **<CHASE>** buttons in sequence, and all selected chases will loop in the order in which they were selected.
4. Fade time may be adjusted using the **FADE TIME** fader.

3.6.2 Auto Mode

In Sound Active mode, programs will be triggered by the built-in microphone.

1. Press **<AUTO/DEL>** button until the **AUTO LED** is lit.
2. If a **<CHASE>** button is not pressed, SNOKONTROL will automatically run a BANK program.
3. Change BANK programs by using the **<BANK UP>/<BANK DOWN>** buttons.
4. Alternately, you can press a single **<CHASE>** button (1-6) or several **<CHASE>** buttons in sequence, and all selected chases will loop in the order in which they were selected.
5. Program speed may be adjusted using the **SPEED** fader. Fade time may be adjusted using the **FADE TIME** fader.

3.6.3 Blackout

The **<BLACKOUT>** button *brings all lighting output to ZERO (OFF).*

3.7 MIDI Operation

The controller will only respond to MIDI commands on the MIDI channel which it is set to full stop. All MIDI control is performed using Note on commands. All other MIDI instructions are ignored. To stop a chase, send the blackout on note.

1. Press and hold the **<MIDI/ADD>** button for at least 3 seconds.
2. Select the MIDI control channel (1~16) via the **<BANK UP>/<BANK DOWN>** buttons to set.
3. Press and hold the **<MIDI/ADD>** button for 3 seconds to save settings.
4. To release MIDI control, press any other button except the **<BANK>** buttons during step 2.

MIDI NOTE	Function (ON/OFF)	MIDI NOTE	Function (ON/OFF)
00-07	Scenes 1-8 in BANK 1	88-95	Scenes 1-8 in BANK 12
08-15	Scenes 1-8 in BANK 2	96-103	Scenes 1-8 in BANK 13
16-23	Scenes 1-8 in BANK 3	104-111	Scenes 1-8 in BANK 14
24-31	Scenes 1-8 in BANK 4	112-119	Scenes 1-8 in BANK 15
32-39	Scenes 1-8 in BANK 5	120	Chase 1
40-47	Scenes 1-8 in BANK 6	121	Chase 2
48-55	Scenes 1-8 in BANK 7	122	Chase 3
56-63	Scenes 1-8 in BANK 8	123	Chase 4
64-71	Scenes 1-8 in BANK 9	124	Chase 5
72-79	Scenes 1-8 in BANK 10	125	Chase 6
80-87	Scenes 1-8 in BANK 11	126	BLACKOUT

4. APPENDIX

4.1 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.

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 indispensible tool for any lighting designer or lighting performer.

4.2 Keeping Your SNOKONTROL As Good As New

The SNOKONTROL 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 surface routinely with a suitable cleaner is useful for keeping the faders clean and in good operating condition.

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 satistfaction and "wow factor." That's what it's all about, after all!

4.3 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 send an email to support@blizzardlighting.com, 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!

4.4 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.

4.5 TECH SPECS!
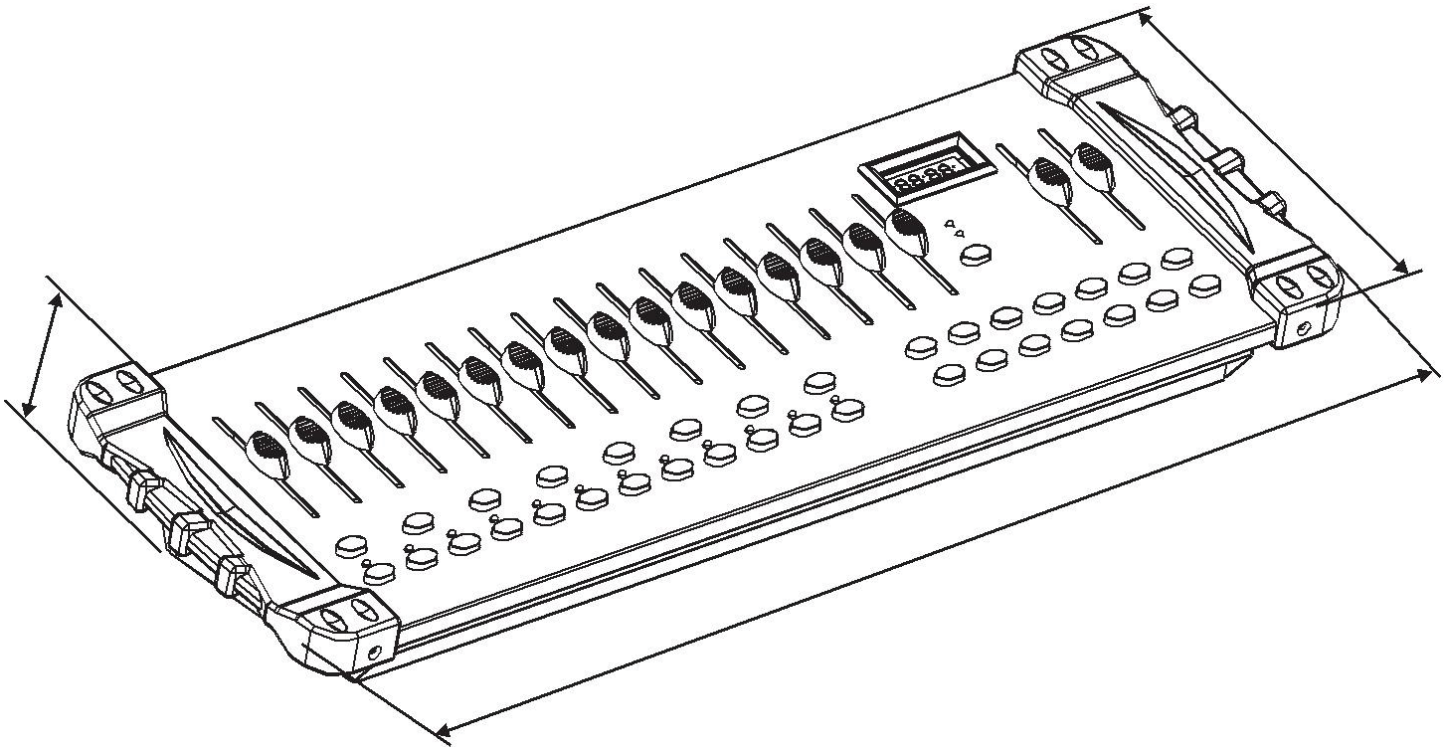
Weight & Dimensions	
Length	20.5 inches (520 mm)
Width	7.25 inches (183 mm)
Height	2.9 inches (73 mm)
Weight	1.4 lbs (3 kg)
Power	
Operating Voltage	DC9V, 2A (From included power supply)
Thermal	
Max. Operating Temp.	104 degrees F (40 degrees C) ambient
Control	
Protocol	USITT DMX-512
DMX Channels	384
Output	3-pin XLR Female
Roy Lichtenstein Paintings	
Are very cool.	
Warranty	2-year limited warranty.