Color Blaster™ CB-250/B/T

Compact case, outstanding output,
Color Blaster™ color changer gets it right.
Color Blaster™ delivers a broad, strong beam of light;
Ten dichroic colors, + white, rainbow effect,
strobe and dimming.

CAUTION!

Risk of electric shock
Read instructions before installing
or connecting to power

DMX Address Chart

DMX starting addresses and dip switch settings for 28 Color Blaster™ color changers follow. For more information about the DMX512 addressing system, please see the guide *DMX512 Basics*.

Unit	Address	Dip Switches	Unit	Address	Dip Switches
Unit 1	1		Unit 15	29	
Unit 2	3		Unit 16	31	
Unit 3	5		Unit 17	33	
Unit 4	7		Unit 18	35	
Unit 5	9		Unit 19	37	
Unit 6	11		Unit 20	39	
Unit 7	13		Unit 21	41	
Unit 8	15		Unit 22	43	
Unit 9	17		Unit 23	45	
Unit 10	19		Unit 24	47	
Unit 11	21		Unit 25	49	
Unit 12	23		Unit 26	51	
Unit 13	25		Unit 27	53	
Unit 14	27		Unit 28	55	

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Color Blaster™

Description

A compact, powerful color changer, Color Blaster™ delivers a broad, strong beam of colored light. You get ten dichroic colors + white, along with 1 to 5 frequency-per-second strobe and 0 to 100% dimming. Either turn on the music to enjoy a preprogrammed audio-controlled show or use DMX control. Both are chosen simply with the flip of a dip switch.

User-oriented design lets you work at your convenience. User aids include focus assistance, selection of a four- or eight-unit audio program, self-test function, and DMX signal termination.

Use Color Blaster™ color changer as a companion to Nimbus™ or Shiva™ series scanners, or make a powerful color show with Color Blaster™ alone.

With Color Blaster™, you get a reliable, easy-to-use color changer that's value-engineered to serve you for years to come.

Features

- High lumen output: large optical path
  AR & IR coated lenses, high quality optics
- Effect variety: Ten dichroic colors + white
  Rainbow effect; shutter and dimming
- Engineered to perform:
  Electronic dimming 0-100%
  Up to five frequency-per-second (fps) strobe
  Audio and DMX512 control
  Self-test and focus assistance functions
- Powerful fan for efficient cooling
  Built for lasting value:
  One precision, quality stepper motor
- Convenient to use:
  Two preprogrammed audio-controlled shows
  Standard DMX512 control and address
  Convenient 3-pin XLR signal connection
  Two channels: color/shutter; dimmer
  Built-in focus assistance and self-test functions

Appendix 1

Setting DMX Addresses

To set DMX addresses, you must know about (1) the relationship between DMX512 dip switches and address values, (2) your equipment, and (3) how to compute DMX addresses. The following is a brief explanation of the DMX512 system. For a more thorough guide, please see the booklet *DMX512 Basics*.

1. The relationship between DMX512 dip switches and address values:

Dip Switch	1	2	3	4	5	6	7	8	9
DMX Value	1	2	4	8	16	32	64	128	256

   Note that DMX values double progressively: the first DMX dip switch has a DMX address value of 1; The second DMX dip switch has a value of 2; the third DMX dip switch has a value of 4, etc., as shown above.

2. Your equipment. Since each Color Blaster™ color changer has two DMX channels, each starting addresses advances two places. In this example, we have no other DMX equipment in front of our color changers, so the first effect unit's starting address should = 1; The second unit's starting address should = 3, etc. List the DMX starting values that your equipment should have.

3. Set DMX dip switches to appropriate DMX starting addresses. Begin with the highest dip switch value possible and work down from there. For a DMX starting address of 19, for example, activate DMX dip switch #5 (with a value of 16), then work down, activating dip switch #2, (with a value of 2), and dip switch #1 (with a value of 1). Use a ballpoint pen or a toothpick to flip DMX dip switches to the appropriate address settings.

For convenience, Color Blaster™ color changer starting addresses for 28 units and corresponding DMX dip switch settings are shown on the following page.

Product Specifications

Model: CB-250
Voltage: 120V~60Hz input
Lamp: 82V/250W EXY GX5.3 (200-hr)
Dimensions: 280x150x155mm (LxWxH)
Weight: 3.35 kg
Power consumption: 300VA
Signal: USITT DMX512
Signal connection: 3 pin XLR
Addressing: Standard DMX512 9-pin binary
Channels: 2 Fuse: T5A/250V 20mm
Termination: Built-in (manual)

Model: CB-250B
Voltage: 120V~50Hz; 230V~50Hz(CE Approved)
Lamp: 24V/250W EHJ G6.35 (No: 64655, 50-hr.; No: 64657 300-hr)
Dimensions: 280x150x155mm (LxWxH)
Weight: 5.70 kg
Power consumption: 300VA
Signal: USITT DMX512
Signal connection: 3 pin XLR
Addressing: Standard DMX512 9-pin binary
Channels: 2 Fuse: T5A/250V 20mm
Termination: Built-in (manual)

Model: CB-250T
Voltage: 120V~50Hz; 230V~50Hz(CE Approved)
Lamp: 24V/250W ELC GX5.3 (50-hr)
Dimensions: 280x150x155mm (LxWxH)
Weight: 5.70 kg
Power consumption: 300VA
Signal: USITT DMX512
Signal connection: 3 pin XLR
Addressing: Standard DMX512 9-pin binary
Channels: 2 Fuse: T5A/250V 20mm
Termination: Built-in (manual)

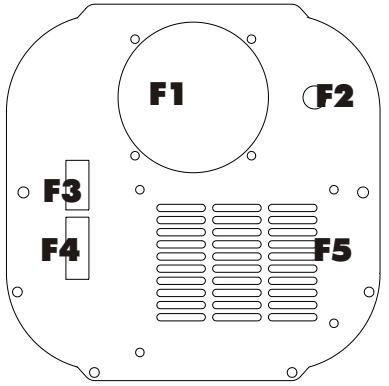
Color Changer Diagrams

Three-dimensional Diagram

T1 - Bracket
T2 - Unit Cover
T3 - Cover Screws
T4 - Bracket Knob

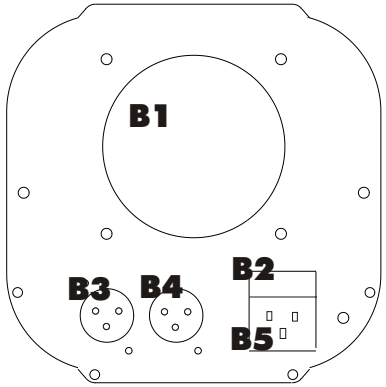
Front and Back Views

Front



F1 - Lens
F2 - Built-in Microphone
F3 - Function Dip Switches
F4 - DMX512 Dip Switches
F5 - Air Vents

Back



B1 - Fan Hole
B2 - Fuse Holder
B3 - Canon XLR Socket (DMX in)
B4 - Canon XLR Socket (DMX out)
B5 - Mains IEC Power Socket

Warning!

Follow standard precautions for all electronic products.

- This appliance must be earthed (grounded). Disconnect from power before removing covers or servicing. Keep case closed while operating.
- Color Blaster™ color changer contains no user serviceable parts. Servicing must be conducted by qualified service personnel.
- Lamp and components become hot during operation. Allow time to cool before handling.
- Keep flammable material at least one meter away from unit. Do not operate in wet conditions or near liquids.
- Keep air vents clear to avoid overheating. Never insert objects into air vents.
- Lamp produces hazardous UV light. Do not look directly at lamp when lit. Do not expose skin to uncovered lamp.
- If objects fall on unit, disconnect mains power supply immediately. Have a qualified technician inspect for safety before operating.
- Never remove warning or informative labels from the unit.

Section 1 - Setting Up

Inspection

Every Color Blaster™ color changer was thoroughly tested and shipped in perfect condition. Carefully unpack your Color Blaster™ color changer and remove the bag with components from the carton. Inspect equipment for shipping damage. If shipping damage has occurred, contact your Geni dealer immediately.

Packing list:

1. Color Blaster™ color changer
2. IEC power cord
3. Operating manual

Problem: Function dip switches have been set for "audio mode," but color changer does not respond to music.

Solution:

1. Disconnect power. Turnon Function dip switch #1. Turn off other Function dip switches. Disconnect DMX signal cables. Reconnect power supply. Turn on music.
2. Have a qualified service technician inspect the PC board.

Problem: Color changer light does not dim according to DMX slider positions.

Solution:

1. Have a qualified service technician inspect the unit, including Triac 41600.

Trouble-shooting

The following tips are provided to help users solve minor problems. Always refer servicing to qualified technicians.

Problem: Lamp is not lit and fan (B1) is not spinning.

Solution:

1. Check for proper power connection and supply.
2. Disconnect power supply. Use a flat-head screw driver to pry open the fuse holder (B2) above the IEC power socket (B5). Check the fuse. If the fuse is discolored, rather than clear, replace it. A replacement fuse is provided in the fuse holder. Always use appropriate type of fuse.

Problem: Lamp is not lit, but fan is operating.

Solution:

1. Disconnect power (D5). Let unit cool. Check the lamp. If lamp is discolored or broken, replace it with a new lamp of the appropriate type.
2. If lamp is not burnt or broken, re-insert it. If you accidentally touch the lamp bulb with your bare hands, wipe the bulb clean with a lint-free cloth.
3. Close the case (T2), tighten case screws (T3), and reconnect power. If unit still doesn't operate properly, refer servicing to a qualified service technician.

Problem: Colors don't change according to DMX512 slider positions.

Solution:

1. Check DMX512 dip switch settings (F4). Make sure unit is addressed properly. Make sure that Function dip switches (F3) 1-5 and 7 are off.
2. Turn on self-test function, Function dip switch #3. If unit operates properly, replace the original DMX signal cable with a good cable.
3. Have a qualified service technician check the unit, including the stepper motor and its driver, IC 2069.

Lamp Installation

Caution! Lamp and metal components get hot during operation. Always disconnect power and allow unit to cool before changing lamps or opening unit cover.

Note: There are three types of Color Blaster™ color changers, each of which uses a different lamp. Be sure to use the proper lamp for your unit.

- CB-250 is designed for use where there is 120V~50/60Hz power supply. It uses EXY 93510 GV5.3 82V/250W (200-hour) lamp. This lamp is sometimes referred to as a "cup lamp" because the bulb is in the center of a cup-shaped reflector.
- CB-250B is designed for use where there is 120V~50/60Hz or 230V~50/60Hz power supply. It uses EHJ 64655 G6.35 24V/250W (50hour) or EHJ 64657 G6.35 24V/250W (300-hour) lamp. This lamp slips into the center of a reflector plate that is built into the unit.
- CB-250T is designed for use where there is 120V~50/60Hz or 230V~50/60Hz power supply. It uses HLX 64653 ELC 24V/250W (50-hour) lamp. Like the lamp of CB-250, this lamp is a "cup lamp."

Follow lamp installation instructions for your specific product. Always disconnect from power source before opening cover or servicing.

CB-250B

1. Loosen the two screws (T3) on the unit cover (T2). Remove cover (T2).
2. Remove lamp from packaging. Read lamp instructions. Grasp the lamp stem, not the lamp bulb glass. Touching the glass with bare hands can shorten the lamp life. (Lamp not included with Color Blaster™ color changer.)
3. Cover the lamp bulb glass with a lint-free cloth or paper. Hold the covered bulb in one hand and insert the lamp stem through the hole in the reflector cup.
4. With your other hand, guide the lamp pins into the holes in the lamp socket. Insert firmly.
5. Replace unit cover (T2) and fasten screws (T3) firmly.

CB-250 and CB-250T

1. Loosen the two screws (T3) on the unit cover (T2). Remove the cover.
2. Remove lamp from packaging. Read lamp instructions. Do not touch lamp bulb with bare hands, as this could damage the lamp. (Lamp not included with Color Blaster™ color changer.)
3. Holding the lamp reflector cup in one hand and the lamp socket in the other, insert the lamp pins into the holes in the lamp socket.
4. Slide the reflector cup fully down into the lamp holder. The lamp lever will move forward.
5. Replace unit cover (F2) and fasten screws (F3) firmly.

Color Changer Installation

Follow the steps below to install Color Blaster™ color changer.

1. Use a 12-kg rated or stronger clamp to fasten Color Blaster™ color changer bracket (T1) onto a good truss. Allow one meter on all sides for proper cooling. Keep unit away from liquids and flammable items. Adjust tilt and tighten bracket knob (T4).
2. "Daisy chain" the color changers as illustrated in *DMX Basics*. Always use high quality, twisted pair 120 ohm shielded, 22 or 24 AWG, braided shield microphone cables and three-pin canon XLR connectors.
3. Set Function dip switch #6. Flip the dip switch as appropriate with either a toothpick or ballpoint pen. In areas with 50 Hz power supply, turn Fuction dip switch #6 off. In areas with 60 Hz power, turn Fuction dip switch #6 on.
4. Use appropriate power supply for your unit. Plug mains power supply cord into the unit's mains IEC power socket (B5), then plug other end into appropriate power supply socket.
5. Adjust focus. First, turn on Function dip (F3) switch #4: a white spot will appear, then rotate lens until a good focus is obtained.

Section 3 - General Use

Maintenance

Warning: Disconnect power and let unit cool before handling. Never open unit when in use. Keep away from water and other liquids.

To maintain maximum brightness, clean the unit regularly with a damp cloth or glass cleaner. Do not use alcohol or solvents.

1. Wipe lens clean regularly.
2. Keep internal optical path free from dust or cobwebs.
3. Clean internal parts once a year with a brush and strong vacuum cleaner.

Lamp Removal

Disconnect power, let unit cool, then follow the directions below for your specific product.

CB-250B

1. Loosen the two screws (T3) on the unit cover (T2). Remove cover (T2).
2. With one hand on the lamp socket, pull the lamp stem away from the lamp socket.
3. Dispose lamps properly. Keep old lamps away from children and animals.

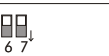
CB-250 and CB-250T

1. Loosen the two screws (T3) on the lamp cover (T2). Remove cover (T2).
2. Note that the lamp holder assembly includes a lever. While holding the cup-shaped lamp reflector in one hand, pull the lever toward the back of the unit.
3. With one hand holding the lamp socket, gently pull the cup-shaped lamp reflector stem out of the lamp socket.
4. Dispose lamps properly. Keep old lamps away from children and animals.

Function Dip Switches

The following functions are designed to enhance user convenience. Simply flip the appropriate function dip switch as shown to activate the desired function.

Function Dip Switch Chart

#1 Off  *Activates DMX controller mode*	*#1 On*  *Activates 4-unit audio mode; Please refer to the audio control section.*
#2 Off  *Activates DMX controller mode*	*#2 On*  *Activates 8-unit audio mode; Please refer to the audio control section.*
#3 Off  *Activates DMX controller mode*	*#3 On*  *Activates self-test function; Unit runs through a set pattern of actions.*
#4 Off  *Activates DMX controller mode*	*#4 On*  *Activates focus assistance; A white spot appears for easy focusing.*
#5 Off  *Activates DMX controller mode*	*#5 On*  *Not presently used*
#6 Off  *50 Hz power supply*	*#6 On*  *60 Hz power supply; Activate this dip switch if you have 60 Hz power supply.*
#7 Off  *Normal DMX operation*	*#7 On*  *DMX signal termination; Activate this on the last unit in a series of DMX equipment. This keeps the DMX signal free from interference.*

Note: Your color changer power supply should be disconnected when you adjust dip switches. Reconnect power supply after setting Function dip switches.

Section 2 - Operation

DMX512 Control

Each Color Blaster™ color changer has two DMX channels. The first channel controls strobe, rotation, and color. The second channel controls dimming. Please see the *DMX Channel Position Diagram* on the next page for details.

Follow the directions below to use a DMX512 controller with Color Blaster™ color changer.

1. Link DMX signal cables to each unit properly, plugging signal cable connectors into canon connectors (B4 and B5). (See the guide *DMX512 Basics* for more information.)

2. Set DMX512 dip switches settings. Use a toothpick or ballpoint pen to flip dip switches to the appropriate address. See *DMX Basics* for information. Or use Appendix 1 as reference.

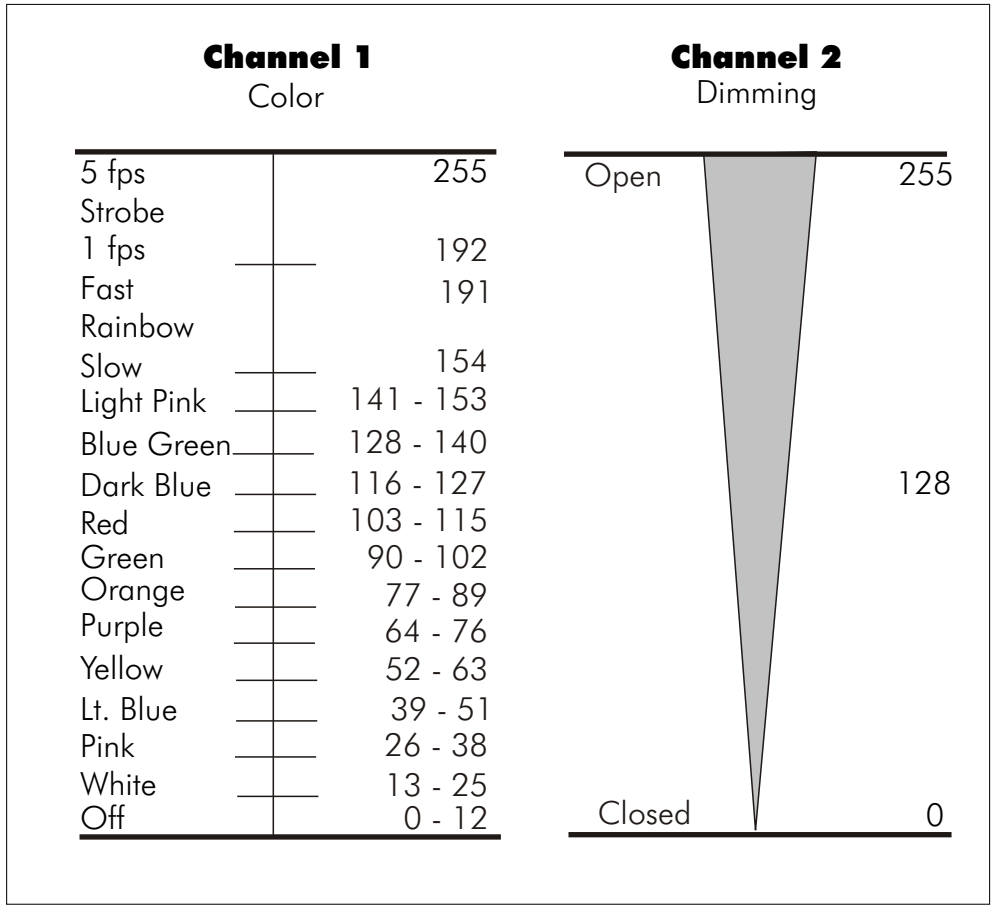
3. Activate Function dip switch #7 on the last in a series of units. This will keep the DMX signal clear.

4. Make sure that your power source and the unit's specified power voltage are the same. Plug power cords into color changer IEC socket (B5), then connect effect units and controller to power source.

5. Please refer to the Color Blaster™ color changer *DMX Channel Control Diagram* for programming positions.

DMX Channel Control Diagram

Channel positions produce effects as indicated below.



For example, when using a DMX512 controller on channel one, from position 103 to 115, a red-colored light will be projected. On channel two, at position 255, light output will be on full power.

Audio Control for 4 or 8 Units

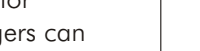
Color Blaster™ color changer has two sound activated shows in memory. One show is for four units; the other is for eight units. 1. For an automatic, sound activated four-unit show, turn on Function dip switch #1 of the first unit in the daisy chain. For an automatic, sound activated eight-unit show, turn on Function dip switch #2 of the first unit in the daisy chain. Turn on the music. The light show will begin.

To operate more units on audio control, "double up" the DMX dip switch addresses. For example, on the four-unit audio mode, the first, fifth, ninth, and 13th units (etc.) would have the same DMX starting address value, 1. And the second, sixth, tenth, (etc.) units would have the same dip switch starting address value, 3. Refer to the diagram below for assistance.

Four-unit Audio Mode - DMX Dip Switch Settings

Color Changer Units	Starting Address	DMX Dip Switches
1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45	1	
2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46	3	
3, 7, 11, 15, 19, 23, 27, 31, 35, 39, 43,47	5	
4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48	7	

Eight-unit Audio Mode - DMX Dip Switch Settings

Color Changer Units	Starting Address	DMX Dip Switches
1, 9, 17, 25, 33, 41	1	
2, 10, 18, 26, 34, 42	3	
3, 11, 19, 27, 35, 43	5	
4, 12, 20, 28, 36, 44	7	
5, 13, 21, 29, 37, 45	9	
6, 14, 22, 30, 38, 46	11	
7, 15, 23, 31, 39, 47	13	
8, 16, 24, 32, 40, 48	15	

Note: Up to 48 color changers can be operated in the four-unit or eight-unit audio modes, or in DMX mode. Keep DMX cable length within 100 meters from the controller to the last color changer.