

# Ultra **LED** *SERIES*



## **Information specifically for:**

DL-BAR05C126

This manual contains important information.  
Please read before operating fixture.

**V1**

**CE**



## IMPORTANT INFORMATION



**Save original packing and documentation for warranty, service and return issues.**

Limited Warranty: This warranty covers defects or malfunctions in this equipment. This warranty lasts for a period of one year from date of purchase. It is the owner's responsibility to provide invoices for proof of purchase, purchase date and dealer or distributor. If purchase date can not be provided, warranty period will start at manufacture date. It is the sole discretion of Techni-Lux to repair or replace parts or equipment. All shipping will be paid by purchaser. This warranty does not cover lamps, fuses, belts, power semiconductors, relays, cleaning, standard maintenance adjustments or normal wear items or any problem resulting from the following: improper wiring, incorrect voltage (including low or over voltage conditions and lightning), abuse, misuse, improper maintenance or an act of God or damage resulting from shipping. Warranty will be null and void if the product is altered, modified, misused, damaged, or subjected to unauthorized repairs. Lamps are covered by relevant manufacturer warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Any liability for consequential and incidental damages is expressly disclaimed. No other warranty, expressed or implied is made. Techni-Lux liability in all events is limited to, and shall not exceed, the purchase price paid.

Returning equipment and Repairs: All returns must be accompanied by a Return Merchandise Authorization (RMA) number and sent pre-paid. Contact the dealer or Techni-Lux directly to obtain an RMA. The RMA number must be clearly listed on the shipping label. Due care must be exercised in packing all merchandise to be returned. All repairs must be accompanied by a written explanation of the claimed problem or error encountered. Techni-Lux is solely responsible for determining a product's eligibility for coverage under warranty. If returning for consideration of credit, all accessories and documentation, original protective material and cartons must be included and the equipment, packing and carton must be in new resalable condition. Credit for returned merchandise will be issued at the lowest current price and is subject to a restocking fee. No returns accepted on discontinued items. Techni-Lux is not responsible for merchandise damaged in transit and reserves the right to refuse any return that is damaged by the carrier, not accompanied by a Return Authorization Number (RMA#) or sent by freight collect.

Claims: All claims must be made within seven (7) days of receipt of merchandise. Any physical damage must be reported to carrier upon receipt of merchandise.

**Please record the following information for future reference:**

**Model Number (circle):** DL-BAR05C126

Serial Number: \_\_\_\_\_

Dealer: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

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# Specifications

## Fixture Overview

- RGB color mixing with intensity and strobe effects
- 126 ultra bright 10mm LEDs: 24 red, 54 green, 48 blue
- Long Life LED light source
- Controllable as one bar or in 3 segments of 1/3 sections
- Operating modes: DMX, Color Changing, Sound Active, Master/Slave
- Floor standing with side brackets or hanging
- Beam angle: approximately 30 degrees
- DMX512 using up to 12 channels maximum
- DMX input/output via 3 pin XLR
- Dip switch for settings

## Physical

Color	Black
Size	22.6" x 2.5" x 3.5"
Weight	3.4 lbs (1.5 kgs)

## Environmental

Location	Indoor
Max. ambient temperature	105°F (40°C)
Min. distance to flammable surface	3.3ft (1m)
Min. distance to illuminated surface	1ft (0.3m)

## Electrical

Voltage	Auto-Ranging 100-230vAC, 50-60Hz
Rated Power	30W
Fuses	0.5A Mini Size: 5x20mm

## Control

Digital Protocol	USITT DMX512 (1990)
Channels	2, 3, 4, 5, 6, 12 (12 maximum)
Data I/O	3 Pin XLR (Cannon)
Modes	DMX512 or Stand-Alone

## Optics

Light Source	126 High Output 10mm RGB LED Elements
Beam Angle	30 degrees

## Rigging

Orientation	Any
Mounting Points	Angle adjustable bracket with 1/2" (13mm) mounting hole

## Unpacking

Immediately upon receipt, carefully unpack and inspect the fixture to verify that all parts are present and have been received in good condition. If any parts appear damaged from shipping or the shipping carton shows signs of mishandling, notify the shipper immediately. Retain carton and all packing material for inspection. In the event that the merchandise is to be returned, the original carton and packing must be used. The customer will be billed for a new carton and packing if merchandise is received without the original carton and packing.

## Claims

Physical damage must be reported to the Freight Carrier or Shipping Company upon receipt of merchandise. Damage incurred in shipping is the responsibility of the Freight Carrier or Shipping Company. It is the customer's obligation in the event that merchandise is received damaged, to notify the Freight Carrier or Shipping Company immediately. All other claims not related to damage incurred during shipping must be made to the Dealer or Distributor within 7 days of receiving merchandise.

## Returns

Returned merchandise must be in the original packing with a Return Merchandise Authorization number (RMA) clearly listed on the shipping label. Items sent by Freight Collect or without a RMA number will be refused. Call your sales person and request a RMA prior to shipping. Be prepared to provide the model number, serial number and description of the nature of the return. Shipping damage resulting from inadequate packaging is the customer's responsibility. Customer will be charged additional shipping charges to return products received in non original packing and or cartons.

## Power



Do not apply power to the fixture until power source is verified.

For protection against electric shock, fixture must be connected to suitable earth ground.

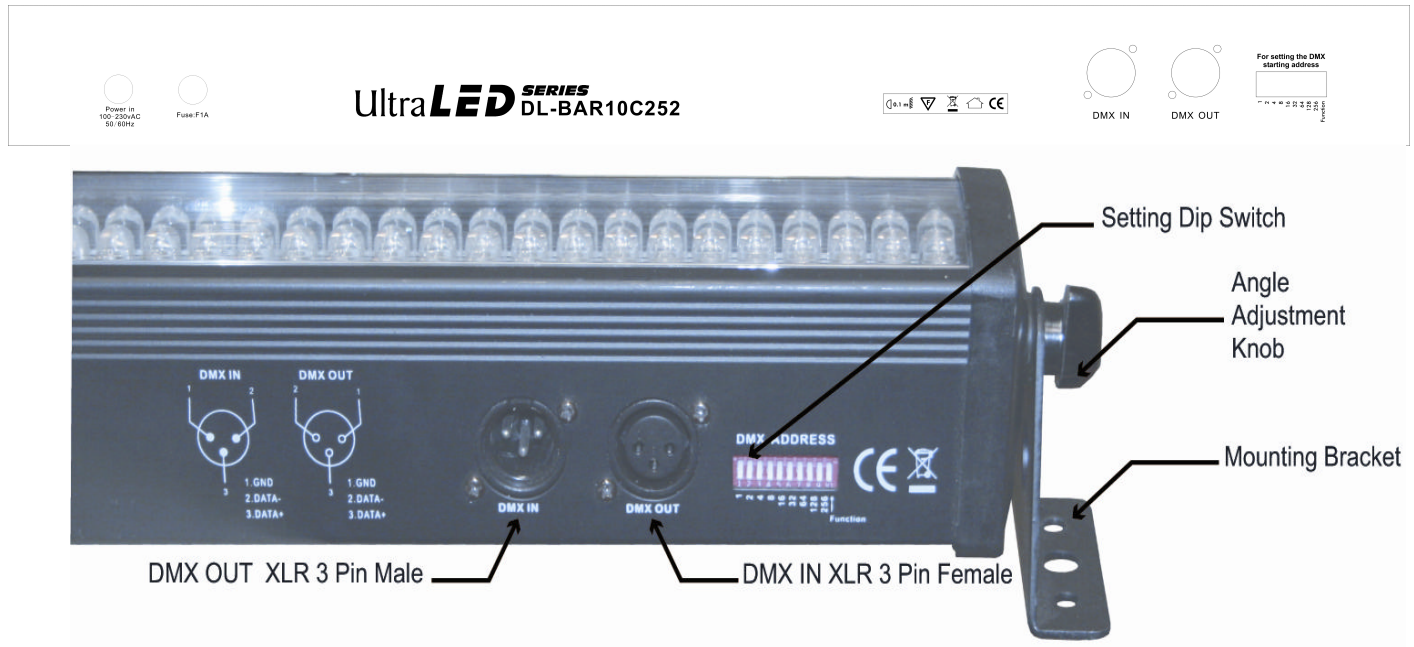
Make sure fixture is disconnected from power mains before any service.

This fixture automatically adjusts to mains voltage and frequency 110-240vac 50/60Hz. The listed power rating is its average wattage under normal conditions. All fixtures must be powered directly from a switched circuit. This fixture cannot be run on a rheostat or dimmer circuit even if used solely for a 0% to 100% switching. Before applying power to a fixture, check that the fixture's input voltage matches the power source voltage. Consult a qualified electrician if there are any concerns about proper connection to power.

## Mounting

Always consult a qualified professional when rigging. Consider access for routine maintenance when selecting a mounting position. This fixture may be mounted in any position provided there is adequate room for movement and ventilation. Mount the fixture securely using a mounting clamp and a safety cable. Do not mount where the fixture will be exposed to rain, high humidity, extreme temperature changes or restricted ventilation. Do not obstruct any vents.

# Basic Reference



## Setup & Operation Modes

For this fixture to operate correctly you must first set the dip switches to the desired operation mode. This tells the fixture how it is to perform and what signals (if any) it is to respond to. When DIP Switch #10 is in the OFF position, the remaining switches Dips 1-9 can be used to set the fixture in various stand-alone modes. Stand-alone refers to using the fixture without a controller.

### Stand-alone Mode

With Dip 9 OFF & Dip 10 OFF:

- Dip 1 - Dip 4 to select different built-in running programs.
- Dip 5 – Dip 6 allows adjustment of the color change speed.
- Dip 7 – Dip 8 adjusts the strobe flash speed.

### Sound-active Mode

With Dip 9 ON and Dip 10 OFF:

- Dip 1 – Dip 4 set the sound sensitivity.

### Master / Slave Mode

With Dip 10 set to ON, and all other dipswitches set to OFF, the unit will go into SLAVE mode and follow the master unit. Standard DMX interconnect cables between fixtures is required for this mode to operate.

### DMX Controlling Mode

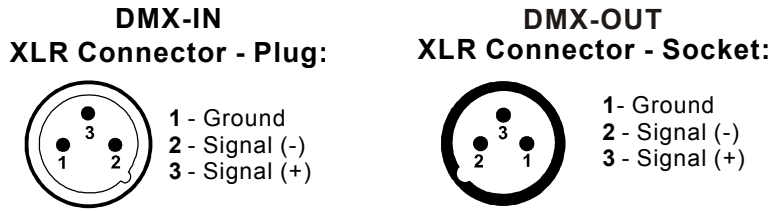
Set Dip 10 to ON, and use Dips 1-9 to set the start address. Refer to the section titled, "DMX Control Mode".

# DMX-512 Control Mode

Fixtures require a "Start Address" from 1 to 512, setting the first DMX channel containing data for the fixture (see DMX Background). Before addressing fixtures, consult the manual of the system's DMX controller to select a desirable addressing scheme. Valid Start Addresses range from 1 to 512. Fixtures requiring more than one channel for control will read subsequent channels up to the total number of channels required. Since this fixture requires 12 channels maximum of DMX, if set to a Start Address of 7 it would use data from channels: 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18. Choose a Start Address so the channels used do not overlap with other fixtures. In some cases, it may be desirable to set two or more same type fixtures to the same Start Address. In this case, the fixtures will be slaved together and respond to the same data. Because all fixtures see the same data, fixtures may be set to any address without concern for the physical order they are connected by the DMX cables. This fixture has multiple DMX channel settings, 12 channels being the maximum and offering the maximum controllability over the fixture. Other more conservative DMX modes that use fewer DMX channels are available. All examples given are based on using the maximum feature set of 12 DMX channels.

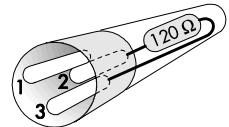
## DMX Data Connection

This fixture uses 3 pin XLR type connectors and shielded twisted pair cable approved for EIA-422/EIA485 use. Fixtures are connected in Daisy Chain topography: Connection is made from the controller to the DMX-IN of the first light, then from the DMX-OUT to the DMX-IN of the next light and so on. Only one data source can be on a chain and no branching is allowed. The physical order in which the fixtures are connected is not important, use the most convenient.



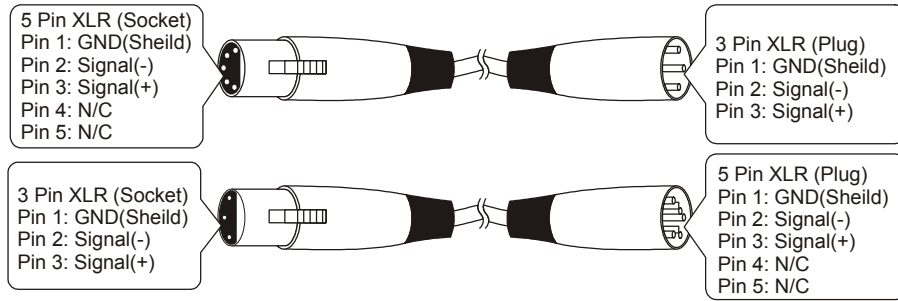
## Data Terminator

A Data Terminator can be connected to the DMX-OUT of the last fixture to reduce the effects of signal noise; it is not required for all installations. To make a Terminator, connect a 120-ohm ¼ watt resistor across pin 2, Data Negative (S-) and pin 3, Data positive (S+). A qualified technician can determine if a Data Terminator is needed.



## Adapter 5-to-3 pin

Systems using 5 pin DMX interfaces can be accommodated by purchasing 3-to-5 pin adapters or building adapter cables. Numbers designating each pin can be found on connectors. Converting between the two XLR types is done in a pin-to-pin fashion. Connect the shields to pin 1, then connect pin 2 to pin 2 and pin 3 to pin 3, regardless of either connector's gender or pin count. No connection is made to Pins 4 & 5.

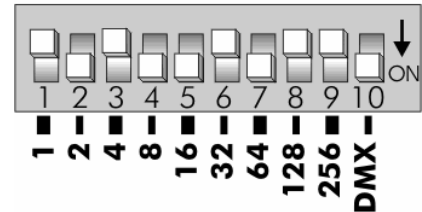


## DMX Start Address

To place the fixture in DMX mode, DIP Switch #10 is set ON. Next, set the start address using the other DIP Switches located on the back of the fixture. Each switch has an associated value. Adding the value of each switch in the ON position gives the start address. Determining which switches to toggle ON given a specific start address is accomplished by subtracting the largest switch value possible from the selected start address which does not cause a negative number. Continue this process until zero is reached, always subtracting the largest possible value that does not cause a negative.

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

**Example1:** DIP Switch settings for the address of 90: *Listed with each switch is its associated binary value. The first switch has a value of 1 and each following switch doubles in value. Do not confuse the switch with its value. Start by subtracting the largest switch value possible that doesn't cause a negative result:  $90 - 64 = 26$ . Continue by subtracting the next largest switch value possible until zero is reached:  $26 - 16 = 10$ ,  $10 - 8 = 2$ ,  $2 - 2 = 0$ . Set the switches corresponding to the values 64, 16, 8 and 2 to the ON position: switch # 7, switch # 5, switch # 4 and switch # 2 – plus the DMX switch #10.*



Addressing multiple fixtures of the same type is accomplished by simply adding the number of channels required to the start address of the first fixture to yield the start address of the next fixture. Although this fixture can be used in modes that occupy less than 12 channels, it is highly recommended that the units are still addressed 12 channels apart. This reduces the chances of data overlapping if the console or control is to become temporarily mis-configured or unstable.

**Example2** *Select Start Addresses for 4 fixtures each requiring 12 channels of DMX.*

For this example, start with the first unit set to the first possible Start Address = 1. This fixture occupies DMX channels 1 thru 12. The next DMX channel available for a Start Address is found by adding the previous fixture's Start Address to its channel requirement:  $1 + 12 = 13$ . To maximize channel usage, we will leave no empty channels between fixtures so the second Start Address is set to DMX channel 13 and that fixture occupies channels 13 thru 24. The third fixture will be addressed  $13 + 12 = 25$  and occupy channels 25 thru 36. The last fixture is addressed  $25 + 12 = 37$  and will occupy channels 37 thru 48. Thus, 4 fixtures using 12 channels each have Start Addresses of **1, 13, 25** and **37** and the next free channel in the system is  $37 + 12 = 49$ .



# DMX Channel Assignment

## DMX Function Table – Based on first channel

The DMX channel functions in the table below depend on the value of channel 1. Channel 1 of the fixture which is also the start address, sets what the rest of the channels will do. If you wish to use this fixture in the most versatile mode, channel 1 would be set to a DMX value between 1 to 12 from your DMX controller. The table below applies to the fixture when function Dip switch # 10 is set to ON and a start address is set using Dips 1-9.

CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
000	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout	Blackout
1-15	Master dimmer 0-255	Flash 0-255	Red Section1 0-255	Green Section1 0-255	Blue Section1 0-255	Red Section2 0-255	Green Section2 0-255	Blue Section2 0-255	Red Section3 0-255	Green Section3 0-255	Blue Section3 0-255
16-31	Master dimmer 0-255	Flash 0-255	Red Sections 1,2,3 0-255	Green Sections 1,2,3 0-255	Blue Sections 1,2,3 0-255						
32-47 Red		Flash 0-255									
48-63 Green		Flash 0-255									
64-79 Blue		Flash 0-255									
80-95 Purple		Flash 0-255									
96-111 Yellow		Flash 0-255									
112-127 Cyan		Flash 0-255									
128-143 White		Flash 0-255									
144-159 Color change	Speed 0-255	Flash 0-255									
160-175 Color chase	Speed 0-255	Flash 0-255									
176-191 Color fade	Speed 0-255	Flash 0-255									
192-207 Multi color chase	Speed 0-255	Flash 0-255									
208-223 Fading flow	Speed 0-255	Flash 0-255	Color select 0-255								
224-239 Two color flow	Speed 0-255	Flash 0-255	Color select 0-255	Color select 0-255							
240-255 Sound control	Sensitivity 0-255										

# Maintenance



Make sure fixture is cool and disconnected from power mains before any service.

Weekly operating hours and environmental conditions will establish how often the fixtures need cleaning. Fixtures should be cleaned and inspected at least once a month to maintain optimum performance. Accumulation of dust and fog residue increases heat build up, can lead to malfunctions, overheating and reduction in maximum light output, reduced fixture life and over all performance. Before conducting any maintenance, disconnect fixture from power mains.

- 1) Disconnect fixture from power mains.
- 2) Use a vacuum with a soft brush to remove dust collected on external vents and internal components. If using an air compressor, use low pressures and extreme care to prevent damaging any internal parts or effects.
- 4) Clean all optical elements when the fixture is cold. Use a soft lint free cotton cloth or tissue and cleaner safe for plastics.
- 5) Inspect clamps and safety cables to ensure fixture is secure and safe.

## Accessory Items (sold separately)

Order Code	Description
CLAMP-C	Medium Duty C-Clamp
CLAMP-MEGA/B	Mega Clamp – Heavy Duty – Black for 1” to 2” diameter pipe
CLAMP-MINI/B	Mini Clamp Black for 3/4" - 2"
CLAMP-CBHALF/N	Half Cheeseborough Coupler Narrow 300kg Max Load
SAFETYCABLE18B	Safety Cable Black 18”
SAFETYCABLE18S	Safety Cable Silver 18”
CA-XLR3/1	Pre-made 1’ 3-pin XLR Cable
CA-XLR3/5	Pre-made 5’ 3-pin XLR Cable
CA-XLR3/10	Pre-made 10’ 3-pin XLR Cable
CA-XLR3/25	Pre-made 25’ 3-pin XLR Cable
CA-XLR3/50	Pre-made 50’ 3-pin XLR Cable
CA-XLR3/100	Pre-made 100’ 3-pin XLR Cable
CO-XLR3M	XLR Connector 3-pin Male
CO-XLR3F	XLR Connector 3-pin Female
CO-XLR5M	XLR Connector 5-pin Male
CO-XLR5F	XLR Connector 5-pin Female
CO-XLRTERM3	XLR 3 Pin Data Terminator
CO-XLR3MTO5F	XLR 3 Pin Male to 5 Pin Female Adapter
CO-XLR5MTO3F	XLR 5 Pin Male to 3 Pin Female Adapter

# Troubleshooting

Symptom	Possible Cause / Solution
No Power	Check for power on mains
	Check main fuse and fuse holder
Erratic / No response to DMX	Check data cables: connection and proper wiring
	Check DIP Switch settings (#10 set to on)
	Check Start Address
Incorrectly responds to DMX (Diagnostic technique for DMX issues: Set suspect fixture's Start Address the same as a correctly functioning fixture. If both units then function correctly, issue is programming)	Check Start Address
	Check for overlapping addresses
	Check DIP Switch settings
	Check Data cables (faults and proper wiring)

## DMX-512 Background

DMX-512 is a digital data transmission standard developed by the United States Institute for Theater Technology (USITT). It is designed to enable control of lighting equipment. DMX deals solely with the formatting of data for transmission and does not dictate how the data is created or used.

Under DMX, signals are transmitted in much the same way a computer modem transmits data. The Data, divided into channels, is "Framed" using a start bit, high (1), eight data bits and finally, two stop bits, both high (1). DMX uses no parity to check the integrity of the signal. Instead, DMX relies on the ultra low probability of an error occurring in the same place when the data is resent. The rate at which data is sent is fixed at 250k bps, almost four and a half times faster than a 56k modem. This speed allows all data on a DMX chain to be updated more than 44 times every second.

The transmitted data follows a specific format. DMX allows for 512 channels each with eight data bits, giving each channel the possibility of 256 values. When a data "Packet" is sent, all channels are transmitted one after another. Even if the data on a specific channel has not been changed, it must be sent. In a packet, a "start code" of all zeros is sent before the data to identify the signal as a Standard DMX transmission. This start code is transparent to the user and is handled by the controller.

The physical signals are transmitted using a twisted pair of wires and a common shield, a configuration called Balanced. The controller and all receiving equipment are connected using a "Daisy Chain" connection. The signal is jumped from the controller to a piece of DMX equipment. From there, the signal is jumped to the next piece of equipment and so on until the last piece of equipment is connected. No branches are allowed and the signal does not come back to the controller. The final piece of equipment will have only one cable connection. As a result, all equipment connected to the chain will see exactly the same signal whether it is first or last. When connecting equipment, no particular attention needs to be paid to the order in which the equipment is connected. Depending on the conditions and equipment, a line terminator may be required. If there is any question, in most circumstances the addition of a terminator will not degrade the signal. To make a terminator, attach a 120-ohm resistor between the Signal Data Negative and Signal Data Positive pins of a connector in the last piece of equipment in the chain.

The DMX Standard uses 5 pin XLR connectors. However, it is common to see fixtures with 3 pin XLR connectors as these types of balanced or "Lo-Z" cables are common in the audio industry. In either case, pin numbers are the same and carry the same signals.

Pin	Connection
1	Common (Shield)
2	Data Negative (S- or Cold)
3	Data Positive (S+ or Hot)
4	n/c (not used)
5	n/c (not used)



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