User Manual: CoboBar-VT3004



OPERATION HOURS. Use the left/right arrows until the display shows "**HOUR**". The unit will display the operating hours.

FW VERSION. Use the left/right arrows until the display shows "**VERS**". The unit will display the firmware version.

■ Maintenance

This device does not need regular maintenance. It is protected by an internal fuse located on the power supply PCB. If this fuse fails, this usually indicates an internal fault requiring servicing by a qualified engineer. The fuse shall only be replaced by a fuse of same specification, and the replacement has to be made by qualified personnel obeying applicable safety rules.

■ Technical data COBOBAR-VT3004

Panels/Output	4 panels, 540lm each, total 2160 lm
LEDs per panel:	1×19W RGB 3-in-1 COB
Arrangement	4×5W red 4×7W green 4×7W blue COB
Optics	
DMX Control	
IP Rating	20 (indoor)
Mains Input	
Power supply type	switch mode
Power consumption	
Fuse	internal (see service manual)
DMX connections	
Modulation Type	
Control protocol	
Dimensions (with straight bracket) WxHxD	
Weight	

■ Standards

This product complies with the following standards:

EU electrical safety	EN60598-1:2008, EN60598-2-1:1989
EU general safety	EN60598-2-17
EU photobiological safety	EN 62471:2008
	EN55015: 2006 + A1:2007, EN61547:1995 + A1:2000
EU Harmonics	EN61000-3-2:2006
EU Flicker	EN61000-3-3:2008
US safety	UL60065
US EMC	FCC Part 15

This product meets both the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.

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USER MANUAL

COBOBAR-VT3004

High-Power DMX-Controlled 4-Panel RGB LED light source

For firmware 50-010-0158-00103-1-00 MB GII RevD



Updated versions of this document may be available at **WWW.MULTIFORM-LIGHTING.COM**

RevA 08/2013 Order code: 12-010-0153-80100-1-01

■ Introduction

Dear customer.

congratulations on the purchase of a Multiform-branded item and the trust having been put in us with this decision. Multiform is one of the leading global manufacturers of professional lighting equipment and has decades of experience in design, production and quality assurance.

To meet your requirements, this unit has been designed and built to the highest standards, so that we can assure you that you have made a good and satisfying investment. To take full advantage of all possibilities and for your own safety and the safety of your environment, please read these operating instructions carefully before you start using the unit.

■ Description

The CoboBar-VT3004 is a high-power DMX-controlled 4-panel RGB LED light source mainly for stage and entertainment lighting applications. This fixture has been designed for high power density from a small footprint, which makes it ideal for portable lighting systems. A fan-assisted cooling system ensures long LED lifetime.

SAFETY INFORMATION



Read the safety precautions in this chapter before installing, powering up, operating or servicing this device. Failure to do so may void the product warranty, and releases the manufacturer from all product liability.

■ Symbols used in this manual

The following symbols are used to identify important safety information on the product and in this manual:



WARNING! Read manual before installation, operation or servicing.



WARNING! Safety hazard. Risk of injury or death.



WARNING! Hazardous voltage. Risk of severe or fatal electric shock.

■ COLOR BALANCE (CBAL)

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In this Mode you can define your individual fixture's Color Balance by setting a maximum brightness for each LED colour giving you the individual color balance you desire. Press the MODE button until the display shows "CBAL". Use the left/right arrow buttons to select any of the following options: "Rxxx", "Gxxx" and "Bxxx" with "xxx" being values between 200 and 255. Value settings below 200 are disabled to avoid unwanted output reduction of the fixture. If you want to change the maximum output of the colour being displayed use the +/- buttons to do so. For control purposes all LED's are lit with their chosen maximum value. All changes made become effective immediately. If pressing the MODE button during editing a color level, the display returns to 'CBAL'.

Note: Any settings made in this mode will influence the overall color balance of the fixture (in all available operation modes – also DMX). To make sure that several fixtures used together to do not exhibit different color behaviour, please make sure that all fixtures used together are calibrated to the same color behaviour.

■ EDIT

Press the Mode button until the display shows "EDIT". Use the left/right arrows to select any of the following options:

MAXIMUM PATTERN LEVEL. Use the left/right arrows until the display shows "MAXP". Use the +/- buttons to change the brightness level used to execute the switching and fading patterns in the respective modes. For control purposes, all LED panels are fully lit (white). While operating the +/- buttons, the display shows "L000"… "L255".

OUTPUT REVERSE. Use the left/right arrows until the display shows "OREV". Use the +/- button to choose "on" (+) or "off" (-). When on, the unit will swap the output of the 1st panel with the 4th and so on. This can be useful when placing units on opposite sides of a stage, running one with Reverse "off" (regular setting) and one with Reverse "on".

AUTO LOCK. Use the left/right arrows until the display shows ALOK. Use the +/-button to choose "on" (+) or "off" (-). When on, the unit will lock itself after more than 1 minute of no use of the UI. When off, the UI will remain unlocked. To unlock a locked unit, press the left arrow and the + button.

AUTO DISPLAY OFF. Use the left/right arrows until the display shows ADIS. Use the +/- button to choose "on" (+) or "off" (-). When on, the unit will disable the LCD backlight after more than 1 minute of no use of the UI. When off, the display backlight will remain enabled. Note: The display elements themselves remain active.

RESET. Use the left/right arrows until the display shows RSET. Press the + button to activate a reset to the factory default settings and calibration.

₩-MULTIFORM

- FCMS = Full Color Master Strobe = 3 colors RGB + master + strobe (5 channels) for all panels
- SRAW = Single Raw = 3 colors RGB (3 channels) for each panel
- SCCC = Single Color Combined Channels =3 colors RGB + combined master/strobe (4 channels) for each panel
- SCMS = Single Color Master Strobe = 3 colors RGB + master + strobe (5 channels) for each panel
- FMAC = Full Macro Mode = 4 channels: Color/Pattern | Dim | Function | Strobe
 - CH1 = Choice of fixed colors (if CH3 < 25) or fade/switch pattern presets (if CH ≥ 25)
 - CH2 = 000...255 Master Dimmer 0...100%
 - CH3 = Function choice C (Color static) and A (Auto) mode, speed setting for A mode.

CH3 0.....24 selects the fixed color (C) mode. Color choice by CH1.

CH3 25.....234 selects the auto (A) mode and determines the speed. Pattern choice by CH1.

CH3 235...255 selects the sound-to-light (S) mode. Pattern choice by CH1.

CH4 = 000...015 Strobe off, 016...255 Strobe rate (016=slow / 255=max. speed 23 Hz)

Once having chosen the required control mode/channel scheme, please use the + or – buttons to set the required DMX address. Pressing the + or – button for the first time will show the present DMX address, which then can be altered by repeatedly using the +/- buttons in a range from 001 to 512. The display will show "1" ... "512" accordingly. Pressing the +/- buttons for longer than 1 second accelerates the change rate of the displayed value to 3 times.

If no change is made for 0,5 sec. or longer or the MODE button is pressed the relative settings become active. The display will only show the values presently being viewed or changed. After 30 sec. of no alterations or if the MODE button is pressed the display returns to show "GDMX".

NOTE: Whenever a DMX signal is received, the "D" tab in the display is lit – this is valid for all DMX-related modes.

The DMX channel setting is global – if you change the control mode/channel scheme later, the DMX start address will remain valid, but the number of consumed channels may change.

DO NOT try to leave the control mode/channel scheme choice by pressing the left/right arrow buttons; this would change the control mode/channel scheme to the next subsequent choice. Always leave this mode by either pressing the MODE button or by simply waiting until the display returns to show "GDMX".



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WARNING! Shock hazard. Equipment must be properly grounded.



WARNING! Hot surface. Risk of skin burn or skin irritation.



WARNING! Fire hazard.



WARNING! Laser radiation. Risk of surface damage.



WARNING! LED light emission. Risk of eye injury.

■ Security advice before use



General advice:

- 1. Read this manual completely before using the product.
- 2. Keep this manual in your records for future reference.
- 3. Follow all instruction printed in this manual.
- 4. Follow all printed security advice on the product itself.
- 5. Take care of enough distance between this product and sources of hum and noise like electric motors and transformers.
- 6. Carry this product with greatest care. Punches, big forces and heavy vibration may damage this product mechanically.



Protection from eve injury

- 1. Warning: Depending on the configuration of the device, this device may reach or exceed the limits of EN62471, risk group 2, and may hence reach to risk group 3.
- To avoid eye injury, do not look into the beam from a distance of less than 8.5 m (27 ft. 11 ins) from the front surface of the fixture without protective eyewear such as shade-5 welding goggles. At larger distances, light output is harmless to the naked eye provided that the eye's natural aversion response is not affected.
- 3. Do not view the beam directly with optical instruments such as magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light output.
- 4. Ensure that during setup and DMX programming, no persons are inside a 8.50m (27 ft. 11 ins) vicinity of the device's front surface, to avoid that they may accidently be exposed to the light beam.

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Protection from electric shock:

- 1. Only connect this unit to a mains socket outlet with protective earth connection, ground-fault (earth-fault) and overload protection.
- 2. Where the mains plug or an appliance coupler is used as a disconnect device, such device shall remain readily operable.
- 3. To pull the AC Cord out of the wall outlet or the unit's AC socket, never pull the cable itself, but only the AC plug.
- 4. Disconnect the unit from AC supply before any kind of cleaning on the product. Use smooth and dry cloth only for cleaning.
- 5. Do not expose this unit to any dripping or splashing liquids, and do not place objects filled with liquids, such as vases, on the unit.
- 6. Do not operate this unit near to open water or in high humidity.
- Choose the position of the AC cord according to the lowest risk of damage by foot steps or by squeezing it.
- 8. Do not open the unit for service, there are no user-serviceable parts inside. Warranty will be void in any case of unauthorized service by the user or other not authorized persons.



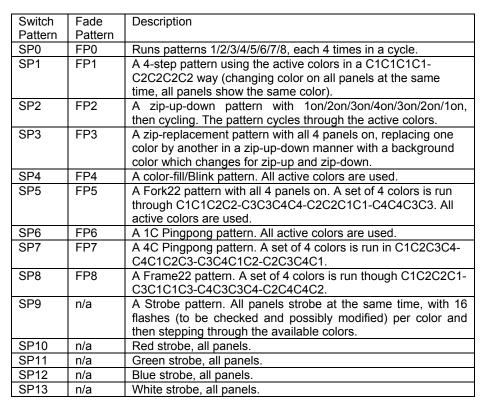
Protection from fire:

- 1. Take care of not placing the unit near sources of heat (e.g. powerful amplifiers, fog machines).
- 2. Allow at least about 0.15m (6 ins.) between this unit and other devices or a wall to allow for proper cooling.
- 3. Take always care of sufficient air convection in the unit's environment to avoid overheating. Make sure air convection slots are not blocked. Do not operate this unit in environmental temperatures exceeding 40 degrees Celsius.
- 4. Be sure this fixture is kept at least 0.75m (30ins.) away from any flammable materials (decoration etc.).
- Do not stick filters, masks or other materials directly on the LEDs or the LED cover screen.
- Check the total maximum power of your AC wall outlet if you connect several units to one wall outlet and avoid any overloading.
- 7. If the device itself has an AC outlet for providing power to other units, make sure to not exceed the specified maximum load.



Protection from injury and damage:

- Never use any accessories or modifications not authorized by the manufacturer of this unit.
- 2. Choose a location for operation where the unit is protected from vibration and where a fixed mounting position is provided. In case of overhead-mounting, follow applicable rigging requirements.
- 3. Before plugging the AC cord in the wall outlet, check whether the AC plug, the mains voltage and frequency are the same as this product is specified for. If not, contact you dealer immediately.



n/a = not available.

Note: Patterns SP9/SP10/SP11/SP12/SP13 are not available in FMAC DMX control mode since the FMAC mode provides a separate channel for strobe function control.

■ DMX GENERAL MODE / ADDRESS SETTING

Press the MODE button until the display shows "GDMX". By the first touch of the left or right arrow button the present DMX Mode will be displayed. Use these left/right arrow buttons to choose between any of the following color control modes/channel schemes:

- FRAW = Full Raw = 3 colors RGB (3 channels) for all panels
- FCCC = Full Color Combined Channel = 3 colors RGB + combined master/strobe for all panels

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ST14	Pink-Turquoise-Pink-Turquoise (PTPT)
ST15	Lime-Orange-Lime-Orange (LOLO)
ST16	Red-Green-Red-Green (RGRG)
ST17	Blue-Yellow-Blue-Yellow (BYBY)
ST18	Pink-Lime-Pink-Lime (PLPL)
ST19	Turquoise-Lime-Turquoise-Lime (TLTL)
ST20	Green-Orange-Green-Orange (GOGO)
ST21	Marine-Frog-Marine-Frog (MFMF)
ST22	Lavender-Turquoise -Lavender-Turquoise (LTLT)
ST23	Red-Green-Blue-Yellow (RGBY)
ST24	Pink-Turquoise-Lime-Orange (PTLO)

■ COLOUR SCROLL

Press the MODE button until the display shows "Cxxx" whereas xxx stands for numbers 000 until 225. A touch of the left/right arrow buttons will lead to a change of the Colour. Choose your desired colour. The display shows "C0"..."C225" * accordingly and will remain to show unless the dim function is used. Use the +/- button to change the dim level. The first touch of the + or - button changes the display, now showing the dimming level "L000"..."L100" representing the relative dimming level chosen. Now the dimming level can be changed by using the +/- buttons. Pressing the +/- buttons for longer than 1 second accelerates the change rate of the displayed value to 3 times. If no further changes are made to the dimming level by the +/- buttons, the display will automatically return to show "C0"..."C225" after 5 seconds, and the dimming level will remain as last set. The same happens if the color is changed by the left/right arrows, in this case the dimming level mode is left immediately and the dimming level will remain as last set.

Note: This mode is intended to offer more color options than the static color mode. It however is not intended to offer more white shades, which means the white channel is not used in the color scroll mode.

■ AUTO Modes: SWITCH PATTERN Mode / FADE PATTERN Mode

Press the mode button until the display shows "SPxy" for the switch pattern mode or "FPxy" for the fade pattern mode. Use the left/right arrows to change the patterns, the display shows "SP 0"..." SP13" or "FP 0"..." FP 8" respectively. Use the +/- buttons to change the speed or to select sound to light. If no change is made for 0,5 seconds or longer, or the Menu is changed by using the MENU button, the relative setting is becoming active. The available patterns are the following:

- 4. The surface of the device may get hot during operation, and heat sink areas may reach to or exceed the limits of EN60950. Do not touch heat sink areas of the device during operation, and allow 20 minutes of cool-down time after powering off before touching.
- 5. If fluids have spilled into the unit or small parts have intruded the unit, immediately switch off the unit and hand it over to the authorized service for a security check.
- 6. Disconnect the unit from AC supply by pulling the AC plug out of the wall outlet or the unit's AC socket during a thunder-storm in order to avoid any damage on the unit due to AC voltage peaks.
- In cause of not correct function of this unit or damaged AC cord or other damaged parts, pull immediately the AC plug out of the wall outlet and hand the unit over to the authorized service for a security check.
- To meet all aspects of functionality and security during maintenance work to be preformed on this unit, all parts should be replaced by genuine spare parts. Consequently, take care of your dealer or maintenance company to be authorized by the manufacturer.

■ Health advice

This unit produces and absorbs electromagnetic radiation. The strength of radiation and the sensitivity for disturbing interference matches the CE and FCC requirements. A corresponding sign is printed on the backside of the unit. Any change or modification may affect the behavior of the unit concerning electromagnetic radiation, with the CE requirements eventually not to be met any more. The manufacturer takes no responsibility in this case.

■ Functional advice

This unit is immune to the presence of electromagnetic disturbances – both conducted and radiated - up to a certain level. Under peak conditions, the unit is classified to show a "class C" performance criteria and may encounter temporary degradation or loss of function which may need manual help to recover. In such case, disconnect the AC power from the unit and reconnect it again to recover.

■ Environmental advice



This unit is built to conform to the ROHS standards and the WEEE directive 2002/96/EC of the European Parliament and of the Council of the European Union. Under these regulations, the product shall not be discarded into regular garbage at the end of its life, but shall be returned to authorized recycling stations.

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■ LED Lifetime advice

LED lifetime is determined by the gradually declining brightness of a LED over time, with a point of 50% brightness reduction marking the defined end of its lifetime. The driving factor of this effect is the heat that the chip inside the LED is exposed to. While a chip may under ideal circumstances reach to more than 100000 hours of lifetime, the real-world lifetime may only be 30000 to 50000 hours or less if the LED is exposed to excessive heat, which can be caused by continuously running all LEDs inside this device at full power and operating the unit in high environmental temperatures. If improving the lifespan expectancy is a priority, take care of providing for lower operational temperatures. This may include forced external cooling and/or the reduction of overall projection intensity.

■ Unpacking

Please check that the box contains the following items, and contact your dealer immediately for replacement if any part is missing:

Main parts: 1 pc. CoboBar-VT3004 LED main unit

1 pc. operation manual

■ Getting started: choosing a location



Risk of fire: The CoboBar-VT3004 has been designed for environmental temperatures of up to 40 degrees Celsius. For proper operation, the unit must be operated with unobstructed air convection to its outside metal case.

Do not:

- Operate the CoboBar-VT3004 in environments with more than 40 degrees environmental temperature
- Operate the CoboBar-VT3004 in any closed environment smaller than 10cbm, unless forced air convection is provided.

■ Getting started: secure mounting

The CoboBar-VT3004 can be mounted in various ways:

Floor standing operation

This requires an optional accessory, the floor standing bracket. Follow the mounting instructions as provided with the accessory to replace the standard bracket with the floor standing bracket.

■ STATIC COLOUR

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Press the mode button until the display shows "STxy". Use the left/right arrows to change the color between any of the 25 presets, out of which the first 12 presets display the same color on all panels while the other 12 show a selection of colors over a split of the panels. The display shows "ST00"…"ST24".

Use the +/- button to change the dim level, the display shows "L000"..."L100" representing the dimming level chosen as percentage. Holding the +/- buttons for longer time accelerates the change rate of the displayed value. Note: the chosen dimming level in static color mode is independent from the maximum pattern level value set in the EDIT mode.

If no change is made for 0,5 seconds or longer, or the Menu is changed by using the MENU button, the display returns to "STxy". The available presests are the following:

Presets ST00....ST12 (all panels same color). The table shows the equivalent DMX values to represent the color mixing balance between R-G-B.

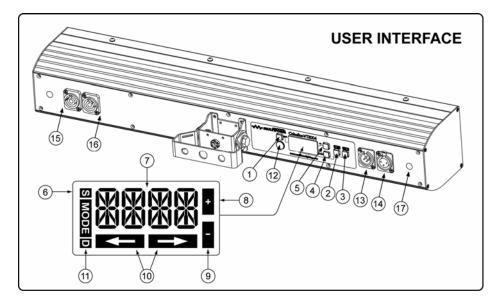
Preset	Color Name	R (DMX)	G (DMX)	B (DMX)
ST00	White (W)	255	255	255
ST01	Red (R)	255	0	0
ST02	Green (G)	0	255	0
ST03	Blue (B)	0	0	255
ST04	Yellow (Y)	255	170	0
ST05	Pink (P)	255	0	255
ST06	Turquoise (T)	0	255	255
ST07	Lime (L)	127	255	0
ST08	Orange (O)	255	85	0
ST09	Marine (M)	0	127	255
ST10	Frog (F)	0	255	127
ST11	Lavender (V)	127	0	255
ST12	Candy (C)	255	0	127

Presets ST13....ST24 (color combinations) The colors used are the same as defined in presets ST00...ST12.

Preset	Color Combination (Panel1-Panel2-Panel3-Panel4)
ST13	Green-Blue-Green-Blue (GBGB)



■ Operation



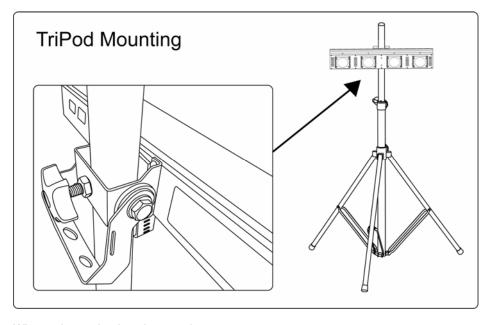
User interface overview:

- 1 MODE selection Button
- 2 LEFT ARROW Button
- 3 RIGHT ARROW Button
- 4 Button
- 5 + Button
- 6 DISPLAY: Sound-to-Light Indicator
- 7 DISPLAY: 4-Digit Message Display Area
- 8 DISPLAY: + Indicator
- 9 DISPLAY: Indicator
- 10 DISPLAY: ARROW Indicators
- 11 DISPLAY: DMX Signal Presence Indicator
- 12 Microphone cover membrane
- 13 DMX Input
- 14 DMX Output
- 15 AC Power Input
- 16 AC Power Output
- 17 M10 mounting point

Upon the user's choice, the unit can work in stand-alone automatic mode, or with fixed colors, or it may be controlled by external DMX-controllers. Available modes:

Floor standing operation (with tripod)

The CoboBar-VT3004 features a multi-purpose bracket, with one of the mounting options being to be mounted on a tripod with 35mm tube diameter. It can both be mounted on top as well as in any other height on the tripod tube. Make sure that the diameter of the inserted tripod tube is not less than 35mm as otherwise secure mounting can not be granted. Slide the tripod adaptor over the tripod tube to full extent and secure the unit with the provided screw handle.



When using a tripod, make sure that:

- the tripod is erected to a height where the audience can neither accidently nor intentionally touch it
- the working height is in enough distance to ceiling or other constructions on top to avoid any heat accumulation
- the working load of the used tripod is sufficient to carry this unit. Do only use safety-certified tripods.
- the tripod has a locking mechanism against unintentional tube retraction.
- the tripod stands on even and firm ground.
- any cable running to and from the trip is not obstructing pathways of the audience, and that no any pull force on a cable can make the tripod fall over.
- the tripod base is either out of audience reach or gated with a security fence
- the tripod is placed outside of any evacuation paths.





Risk of injury: Tripod mounting requires related knowledge and experience, including among others calculating and balancing working load limits, correct positioning and securing, and periodic safety inspection. Improper installation can result in body injury. The manufacturer of this unit does not assume any liability for correct and secure placement and use of tripods – make sure to comply with local safety regulations.

Hanging/Rigging, ceiling-mounted operation

Further to the tripod mounting adaptor, the CoboBar-VT3004 is equipped with two M10 thread insert mounting points on the rear of the unit. These can typically be used to insert truss hooks or other rigging equipment.



Risk of injury: Overhead mounting requires extensive experience, including among others calculating working load limits, good knowledge of the installation material being used, and periodic safety inspection of all installation material and the unit. If you lack such qualifications, do not attempt the installation yourself. Improper installation can result in body injury. Be sure to complete all rigging and installation procedures before applying power to the unit.

- The unit should be installed out of reach of people and outside areas where persons may walk by or be seated.
- Make sure that the installation area can hold a minimum point load of 10 times the device's weight.
- In fixed installations, fix the unit with self-locking screws/nuts to the mounting point.
- When mounting the unit to truss, be sure to secure an appropriately rated clamp to the M10 mounting points.
- Where required, secure the installation with an appropriate safety cable. Always
 use a certified safety cable according to EN60598-2-17 Section 17.6.6 that can
 hold 12 times the weight of the device when installing the unit. This secondary
 safety attachment should be installed in a way that no part of the installation can
 drop more than 20cm if the main attachment fails.
- Never stand directly below the device when mounting, removing, or servicing the
 fixture. Make sure the area below the installation place is free from unwanted
 persons during rigging, de-rigging and servicing.
- The operator has to make sure that the safety-relating and machine-technical installations are approved by an expert before using them for the first time. The installations should be re-inspected every year.
- Make sure to comply with applicable cooling requirements if any.

■ Getting started: making AC supply connections



Risk of fire / Safety risk



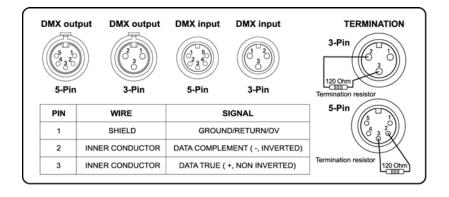
 The COBOBAR-VT3004 LED requires to be connected to an AC power source with sufficient power carriage and proper grounding to ensure safe operation. The AC power source must be equipped with a circuit breaker and earth leakage detector. Make sure to only use compliant AC supply lines.



• The COBOBAR-VT3004 LED has an AC outlet that is designed to carry loads of no more than 10A. Make sure that all connected devices in a chain fed by the first device do not exceed a maximum of 10A current consumption.

■ Getting started: making DMX control connections

Connect the COBOBAR-VT3004 to a suitable DMX controller where needed, and interconnect several units by means of their DMX In/Outputs as required. The last unit shall be fitted with a proper 120 Ohm termination resistor-equipped DMX-plug as shown in below drawing. Please make sure that all used DMX cables comply to below standard:



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