Z30 LED Controller

D.T.S. Product Codes:
03.LA.072.V2 (3CH RJ12 OUTPUT)
03.LA.073.V2 (3CH M12 OUTPUT)
03.LA.077.V2 (PLUG-IN OUTPUT)

User's Manual rel 2.1 **GB**

D.T.S. Illuminazione s.r.l. - ITALY
http://www.dts-lighting.it

DTS
The Lighting Company
Made in Italy

DESCRIPTION

Overview

Z30 is a power supply / DMX LED controller designed to control the following D.T.S. LED products: FOCUS LED projectors, MR16 LED lamps , DIVE 3 FULL COLOUR, DIVE 9 RGB, DIVE 6 FULL COLOUR (2 Output needed), DIVE 18 RGB (2 Output needed)

System

Z30 is fitted with 10 outputs of 3 channels each; max power of each output is 18W, max power of each channel is 6W. (6W RED, 6W GREEN, 6W BLUE)
Each output can supply and control an independent set-up of D.T.S. LED products at the same time, like one of the following:
* max 3 x MR16 RGB LED lamps
* max 1 x MR16 Full Color LED lamps
* max 3 x FOCUS RGB LED projectors
* max 1 x FOCUS Full Color LED projectors
* max 1 x DIVE 3 FULL COLOUR
* max 1 x DIVE 9 RGB

DIVE 6 FULL COLOUR and DIVE 18 RGB need 2 x LEDs output to be properly driven.

Interface

Z30 is fitted with a LED interface that lets you enter all functions of the internal menu.

DMX

Z30 LED CONTROLLER can be used in 10 DMX mode: 120 ch, 90 ch, 80 ch, 60 ch, 50 ch, 30 ch, 12 ch, 9 ch, 1ch full or CUSTOM channels mode.

Operating system update

Z30 internal operating system can be updated via computer, through the dedicated D.T.S. RED BOX interface.

Control

Z30 can be controlled by any DMX console.

Construction

Z30 is housed in a sturdy metal case, that offers high resistance to knocks and mechanical stress.
Z30 is rack mountable.
The protection rating against external agents is IP20.

Connections

DMX IN / OUT 2 XLR 5-pole by Neutrik and 2 XLR 3-pole by Neutrik.
LEDs connector output:
Three models available; RJ12 female connector (03.LA.072.V2) / 6 poles plug-in screw connector (03.LA.077.V2) / M12 3CH CONNECTOR (03.LA.073.V2) .
(The Maximum distance between the Z30 and the last LED unit in the line should not exeed 100 meters).

MAIN ELECTRICAL CHARACTERISTICS

Input Voltage Range
Vin 90 - 260 Vac
Frequency
50 - 60 HZ
Power Consumption Range
20 - 200 W
Power Factor (Pf)
0.95 electronic PFC controller
Efficiency
90% typical

Output
Power Output Range : 10 outputs of 3 channels each
Max power of each output is 18W (6W per channel)
Max power of each channel is 6W (6W Red, 6W Green, 6W Blue)

Output Current : 350 mA @ 100% per channel (0 - 4,5W per channel)
420-500 mA @ 100% per channel in BOOST Mode (0 - 6W per channel)
Output Voltage : Vout 12V
Max Load per output : 3 x MR16 RGB LED lamps, 1 x MR16 Full Color LED lamps,
3 x FOCUS RGB LED projectors, 1 x FOCUS Full Color LED projectors, 1 x DIVE 3 FULL COLOUR
1 x DIVE 9 RGB.
DIVE 6 FULL COLOUR and DIVE 18 RGB need 2 x LEDs output to be properly driven.
Min Load (output) per group: 1 x MR16 RGB LED lamp

Control Input
Control Signal : DMX 512
Dimming System :Constant Current PWM
Address Range : DMX 512 channels addressable by display

IMPORTANT SAFETY INFORMATION

Fire prevention:

Never locate the fixture on any flammable surface.
Minimum distance from flammable materials: 10 cm
Replace any blown or damaged fuses only with those of identical value

Prevention from electric shock:

High voltage is present inside the unit.
Unplug the unit prior to performing any operation which involves touching the inside of the unit.
This equipment must be grounded, do not connect to non-grounded supplies.
The use of a thermal magnetic circuit breaker is recommended for each Z30.
Use only AC supplies 90-260V, 50-60Hz
The unit should never be located in position exposed to rain or in areas of extreme humidity.
A good air ventilation is essential for proper equipment work.

Safety:

The external surface of the unit may exeed 50°C; never handle the unit until at least 5 minutes have elapsed since the unit was turned off.
Never install the unit in an enclosed area lacking sufficient air flow.
The ambient temperature should not exeed 40°C and should not be lower than -10°C

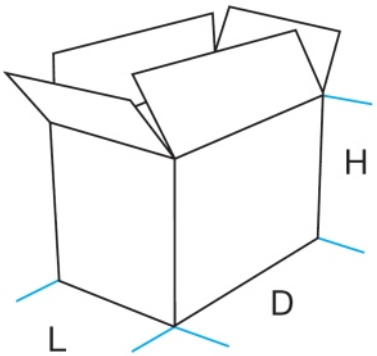
UNIT DIMENSION

Unit Dimensions
(LxDxH)
480 x 385 x 88 mm

Weight
7,5 Kg

Packing Dimensions
(LxDxH)
510 x 560 x 160 mm

Weight
8,5 Kg



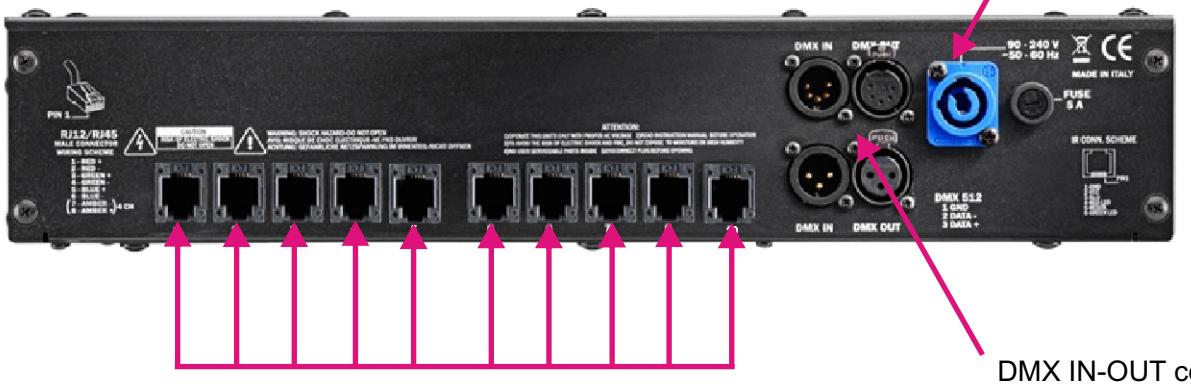
INPUT/OUTPUT CONNECTIONS

03.LA.072.V2 (RJ12 OUTPUT)

Mains Switch

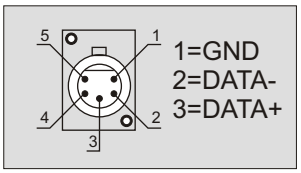
Displays

Mains 90-260 Vac
50-60 Hz
Powercon female panel
connector

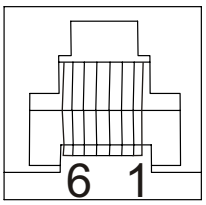


10 x LEDs output
RJ12 Female panel connector

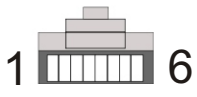
DMX IN-OUT connectors

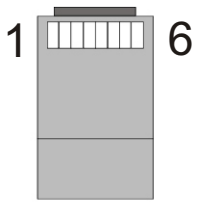


Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -



6-pin Female (RJ12)





6-pin Male (Rj12)
Modular Plug

RJ12 : 6P6C

6P6C indicates 6 positions 6 cables

For application where IP65 rating is not necessary, Z30 LEDs cabling connection can be done with a standard UTP TIA/EIA 568-B2 category 5E cable.
The maximum distance between power supply and the last unit on the line should not exceed 100 meters.
For IP65 rating application, D.T.S. reccomed the use of a IP65/68 cable as the 4X2XAWG24 multipolar black outdoor cable (D.T.S. Code: 0509C062).
The maximum distance between power supply and the last unit on the line should not exceed 100 meters.

INPUT/OUTPUT CONNECTIONS

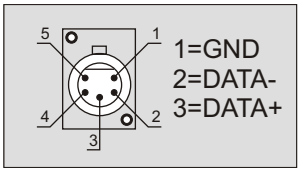
03.LA.077.V2 (PLUG-IN OUTPUT)

Mains Switch

Displays

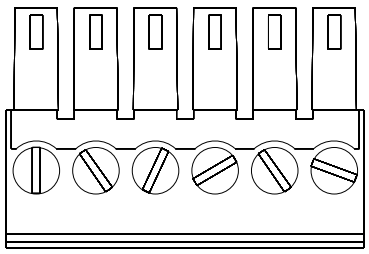
Mains 90-260 Vac
50-60 Hz
Powercon female panel
connector

DMX IN-OUT connectors



10 x LEDs output
6 poles plug-in screw connector

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -



1-----PIN-----6

6 poles plug-in screw connector

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The maximum distance between power supply and the last unit on the line should not exceed 100 meters.

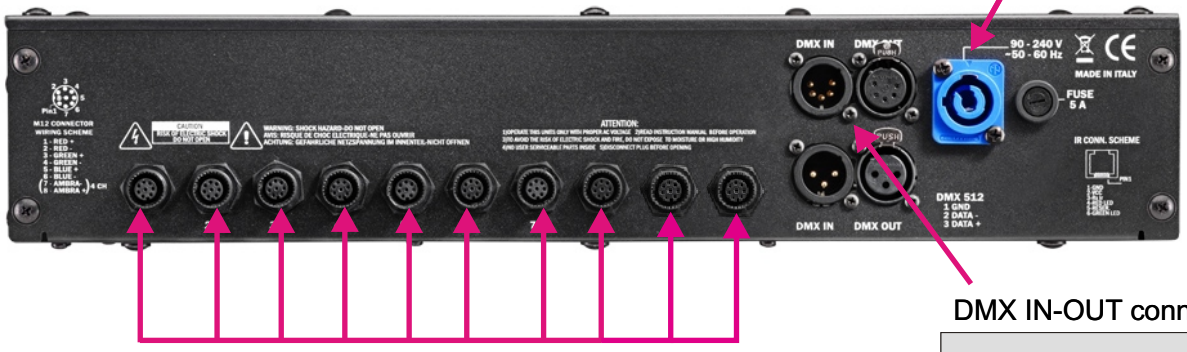
INPUT/OUTPUT CONNECTIONS

03.LA.073.V2 (M12 3CH OUTPUT)

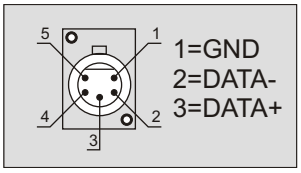
Mains Switch

Displays

Mains 90-260 Vac
50-60 Hz
Powercon female panel
connector



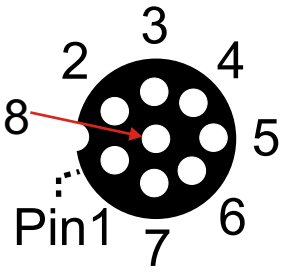
DMX IN-OUT connectors



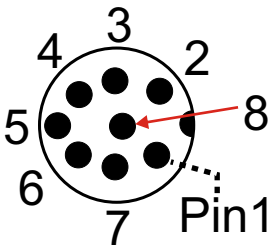
10 x LEDs output
M12 3CH Female panel connector

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -
Pin 7 = NOT CONNECTED
Pin 8 = NOT CONNECTED

M12 LED output
Female panel connector



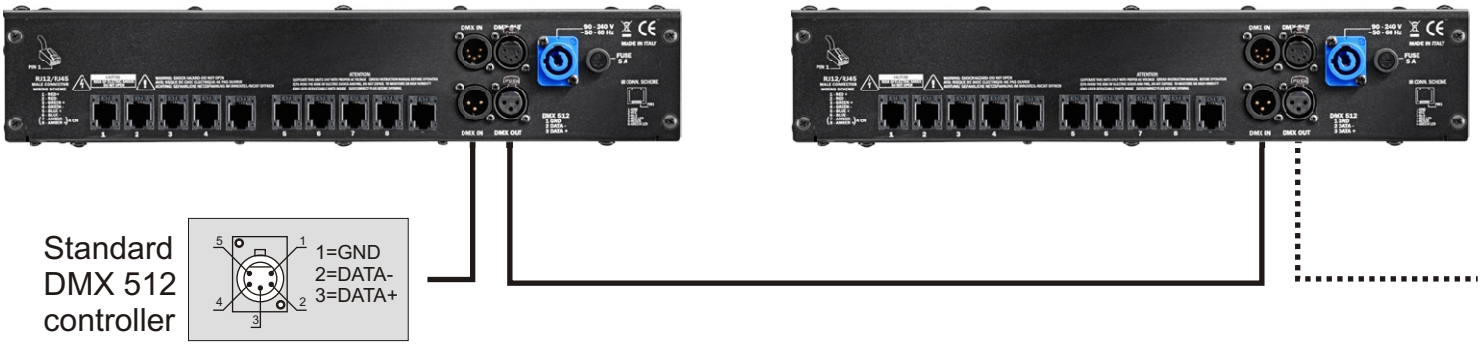
M12 LED input
Male cable connector

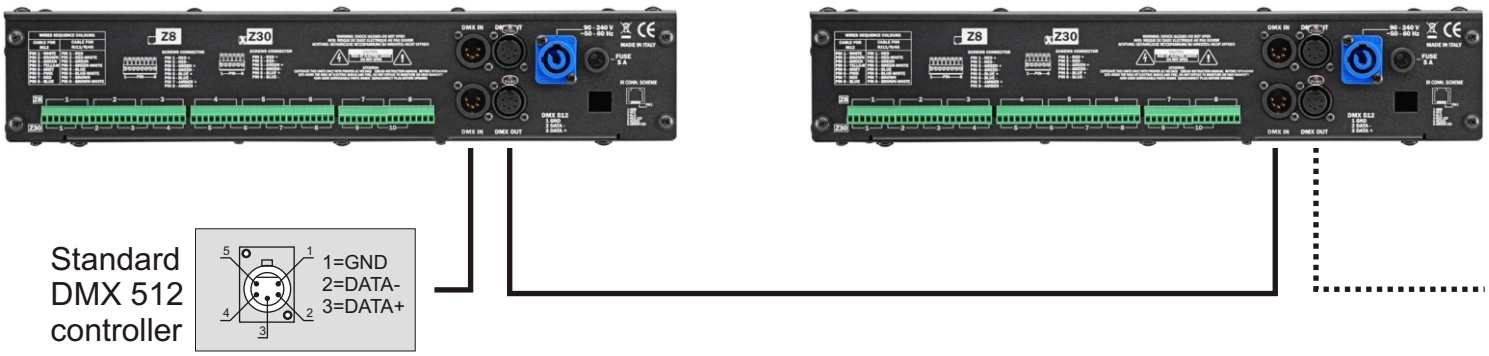


For application where IP65 rating is not necessary, Z30 LEDs cabling connection can be done with a standard UTP TIA/EIA 568-B2 category 5E cable.
The maximum distance between power supply and the last unit on the line should not exceed 100 meters.
For IP65 rating application, D.T.S. reccomed the use of a IP65/68 cable as the 4X2XAWG24 multipolar black outdoor cable (D.T.S. Code: 0509C062).
The maximum distance between power supply and the last unit on the line should not exceed 100 meters.

DMX SIGNAL CONNECTION:

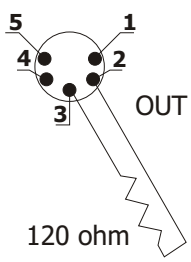
The unit operates using a digital DMX 512 signal. Connection between the controller and the unit or between units must be carried out using a two pair screened ø 0.5 mm cable and a CANNON XLR 3/5 pins connector.
Ensure that the conductors do not touch each other. Do not connect the cable ground to the XLR chassis. The plug housing must be isolated. Connect the mixer signal to the DMX IN of the Z30 plug and connect it to the next unit by connecting the DMX OUT plug on the first Z30 to the DMX IN plug of the second one.
This way, all the projectors are cascade connected.



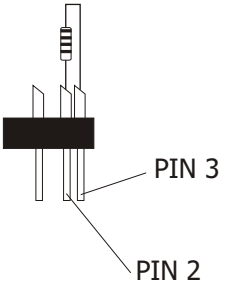


P.S:
If the display showing the DMX address flashes, then one of the following errors has occurred:
- DMX signal not present
- DMX reception problem

For Installations where long distance DMX cable connections are needed, we suggest to use a DMX terminator.
The DMX terminator is a male XLR 3-5 pins connector with a 120 ohm resistor Between pin 2 and 3.
The DMX terminator must be plugged into the last unit (DMX out panel connector) of the DMX line.



PLACE A 120 OHM RESISTOR BETWEEN PIN 2 AND 3 OF A MALE XRL CONNECTOR AND PLUG IT INTO THE DMX OUT PANEL CONNECTOR OF THE LAST UNIT CONNECTED TO THE DMX LINE



DMX ADDRESS

Z30 LED CONTROLLER can be used in 10 DMX mode: 120 ch, 90 ch, 80 ch, 60 ch, 50 ch, 30 ch 12 ch, 9 ch, 1ch full or CUSTOM channels mode.

If you want to use the Z30 in 30 channels mode, select the 30 CH mode from the MODE menu and set the following addresses on the mixer:

Projector 1 A001
Projector 2 A031 If you want to select the next projector, just add "30"
Projector 3 A061
….. A….
projector 6 A151

If you want to use the Z30 in 9 channels mode, select the " Z1 type map " mode from the MODE menu and set the following addresses on the mixer:

Projector 1 A001

Projector 2 A010 If you want to select the next projector, just add "9"

Projector 3 A019

….. A….

projector 6 A046

Selelcting the DMX address

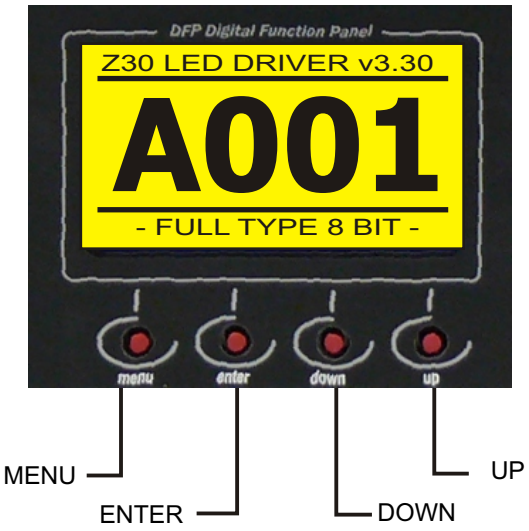
1) Press the UP-DOWN key until you reach the required DMX address. The numbers on the display will start flashing (but the new DMX address hasn't yet been set).
2) Press ENTER to confirm your selection. The numbers on the display will stop flashing and the projector is now controlled by the new DMX address.

TIPS: if you keep pushed the UP or DOWN keys, the channels are calculated more quickly and you get a faster selection.

DISPLAY FUNCTIONS

Z30 LED CONTROLLER

03.LA.072.V2 (3CH RJ12 OUTPUT)
03.LA.073.V2 (3CH M12 OUTPUT)
03.LA.077.V2 (PLUG-IN OUTPUT)

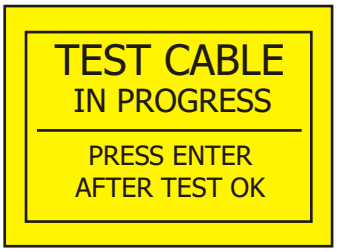


DISPLAY FUNCTIONS

The Z30 display panel shows all the available functions . Using these functions, it is possible to change some of the parameters and add some functions. Changing the D.T.S. setting can vary the functions of the unit so that it does not respond to the DMX 512 signal used to control it. Carefully follow the instructions below before carrying out any variations or selections.
NOTE: the symbol ☞ shows which key has to be pushed to obtain the desired function.

Z30 Software version 3.30

TEST CABLE IN PROGRESS
At the first Start-Up, Z30 is forced in TEST CABLE MODE (20 % Max LEDs power output)
This special function let you test all the LEDs output lines in order to check for possible problems on LEDs cabling connections.
Press Enter to confirm and Exit from TEST



TEST CABLE MODE
Press ENTER to confirm and EXIT from TEST

☞ ENTER

Menu Up-Down Global setting ENTER Up-Down

DEFAULT SETTING
To restore Factory settings

UPLOAD FIRMWARE
Upload the firmware by DMX. This menu allow to upgrade the unit's software by computer

DOWNLOAD FIRMWARE
This menu allow to save unit's programs into computer

FORCE CABLE TEST
This special function let you test all the LEDs output lines in order to check for possible problems on LEDs cabling connections (once selected, the Z30 should be tuned OFF and ON again to launch the TEST).

ABOUT
Master pcb code, pcb revision, SW version

GLOBAL SETTINGS

1. GLOBAL SETTINGS
1. Default settings
2. Upload firmware
3. Download firmware
4. Force cable test
5. About...

DEFAULT SETTING ENTER
To restore Factory settings

UPLOAD FIRMWARE ENTER
Upload the firmware via DMX
This menu allow to upgrade the unit's software by computer

DOWNLOAD FIRMWARE ENTER
This menu allow to save unit's programs into computer

FORCE CABLE TEST ENTER
This special function let you test all the LEDs output lines in order to check for possible problems on LEDs cabling connections (once selected, the Z8 should be tuned OFF and ON again to run the TEST).

ABOUT ENTER
Master pcb code, pcb revision,
SW version

Menu Up-Down Display Setting ENTER Up-Down

Flip Visual / Background colour / contrast level / Screen saver
FLIP VISUAL
Reverses display's reading depending on the mounting position
(on the ground or suspended).
BACKGROUND COLOUR
To select the colour of the display background
CONTRAST LEVEL
Display contrast
SCREEN SAVER
This menu allow to activate the screen saver.

DISPLAY SETTINGS

2. DISPLAY SETTINGS
1. Flip visual
2. Background colour
3. Contrast level
4. Screen saver

FLIP VISUAL ENTER
Flip visual OFF (Default)
Flip visual ON

BACKGROUND COLOR ENTER
Background NORMAL (Default)
Background REVERSE

CONTRAST LEVEL ENTER
0-100% (default 100%)

SCREEN SAVER ENTER
Screen saver TYPE (default disabled)
Screen saver TIME (default 10 sec.)

Menu Up-Down Mode setting ENTER Up-Down

DMX MODE
To select DMX mode :
Full Type 8 bit 30 DMX ch.
Full Type 16 bit 60 DMX ch.
Z1 Type 8 bit 9 DMX ch.
Z1 Type 16 bit 12 DMX ch (for Chase and Cue recording).
Z1 Full 8 bit 9x10 = 90 DMX ch.
Z1 Full 16 bit 12x10 = 120 DMX ch.
Z1 Short Full 8 bit 5x10 = 50 DMX ch.
Z1 Short Full 16 bit 8x10 = 80 DMX ch.
Custom map control.
1CH Full mode.

MODE SETTINGS

3. MODE SETTINGS
1. DMX mode
2. Custom mode setup
3. Master mode setup
4. Chase recorder
5. Cue recorder
6. InfraRed mode
7. Emergency setup

DMX MODE MAP ENTER
Full type - 8 bit = 30 DMX ch (default)
= RGB 3ch each output: 1-Red, 2-Green, 3-Blue

Full type - 16 bit = 60 DMX ch mode
= RGB 2ch each colour; 6ch each output:
1-Red 8 bit, 2-Red 16 bit, 3-Green 8 bit,
4-Green 16 bit, 5-Blue 8 bit, 6-Blue 16 bit

Z1 type - 8 bit = 9 DMX ch mode with all the outputs automatically set on DMX starting channel 1:
1=Shutter, 2=Dimmer, 3=Red, 4=Green, 5=Blue, 6=White control, 7=CTC, 8=Macro, 9=Function

Z1 type - 16 bit = 12 DMX ch mode with Dimmer and RGB channels with 16 bit control and all outputs automatically set on DMX starting address 1:
1=Shutter, 2=Dimmer, 3=Red 8 bit, 4=Red 16 bit,5=Green 8 bit, 6=Green 16 bit, 7=Blue 8 bit, 8=Blue 16 bit, 9=White control, 10=CTC, 11=Macros, 12=Special Function

Z1 full - 8 bit = (9x10) 90 DMX ch mode same as Z1 type 8 bit 9 ch but each output with independent DMX control:
Output 1=DMX 1, Output 2= DMX 10, Output 3= DMX 19 ...

Z1 full - 16 bit = (12x10) 120 DMX ch mode same as Z1 type 16 bit 12ch but each output with independent DMX control:
Output 1 = DMX 1, Output 2 = DMX 13,
Output 3 = DMX 25...

Z1 short full - 8 bit = (5x10) 50 DMX ch. mode with Dimmer, Shutter and RGB 8 bit channels and each output with independent DMX control
Output 1 = DMX 1, Output 2 = DMX 6,
Output 3 = DMX 11...

Z1 short full - 16 bit = (8x10) 80 DMX ch. mode with RGB 16 bit each colour and each output with independent DMX control
Output 1 = DMX 1, Output 2 = DMX 9,
Output 3 = DMX 17...
1-Dimmer, 2-Shutter, 3-Red 8 bit, 4-Red 16 bit, 5-Green 8 bit, 6-Green 16 bit, 7-Blue 8 bit, 8-Blue 16 bit

Custom map = DMX mode channels configuration selectable by user under Custom mode setup menu

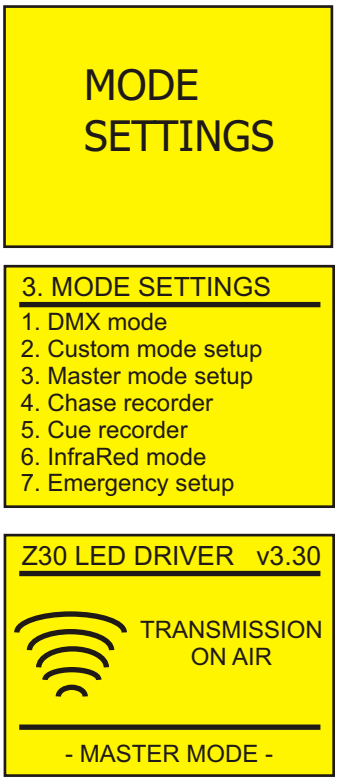
1CH Full = 1 DMX ch mode

CUSTOM MODE SETUP
DMX mode channels configuration selectable by user.
This menu let you set Shutter, Dimmer, Red, Green, Blue, Ctc, Macro and Function to the desired DMX channels. (Custom map control)

MASTER MODE SETUP
Automatic LEDs output settings without needing of an external DMX controller.
3 different selectable options with Dimmer level (Master level output 0-255) selectable by user:
Master Chase: (Rainbow game or Chase with 15 programmable scenes), with Speed time and Wait time selectable by user.
Master Cue: (7 selectable Cues with fixed colours)
Master White RGB: (4 selectable Whites with different colour temperature).

CHASE RECORDER
Chase with 15 user programmable scenes.
(**External DMX controller needed**)
Z30 is automatically forced to 12 DMX receiving channels when entering inside the CHASE RECORDER.
For the programming of Chase by using a DMX controller, besides the 9 channels necessary to control the unit (Z1 type - 8 bit mode) a further 5 DMX channels are needed.
So that in CHASE RECORDER mode the unit will need 12 channels to be correctly programmed.
The five new DMX channels are:
DMX CH 11 = Scene number select
Let you select the Scene to be programmed / viewed (1-15)
DMX ch 12 = Scene status (Edit, Show, Last)
Let you Edit the scenes, View the previously programmed scenes or Set the last scene of the chase.
DMX ch 13 = Scene speed (0-240 seconds)
Let you set the Scene speed time (independend speed time for each scene of the Chase)
DMX ch 14 = Scene wait (0-240 seconds)
Let you set the Scene Wait time (independend Wait time for each scene of the Chase)
DMX ch 15 = Store
Let you store the programmed scenes (Channel 12 "Scene status" should be set to Edit mode or to Set Last mode)

CUE RECORDER
Single step Cue with Red, Greed, Blue output levels selectable by user



CUSTOM MODE SETUP
ENTER
SET dmx order = DMX mode channels configuration selectable by user.
Block set wizard = let you select the DMX starting address on every single output block, 10 output blocks in total. (Example: block 1 DMX 001, block 2 DMX 006, Block 3 DMX 011....)
Clear block setup = DMX starting address reset.

MASTER MODE SETUP
ENTER
Master selection = Master disable, Master Chase, Master Cue, Master White RGB.
Chase selection = Chase Rainbow, Chase Recorded.
Cue Selection = Cue Red, Cue Green , Cue Blue, Cue RED + Green, Cue Red + Blue, Cue Green + Blue, Cue Recorded (configuration selectable by user.)
White selection = White Cold, White Natural, White Warm, White Full.
Speed Time = Chase speed time (1-240 seconds) default 10 sec.
Wait time = Chase wait time (1-240 seconds) default 10 sec.
Dimmer level = Master level output (0-255) default 255.

CHASE RECORDER
ENTER
Scene setup = Scene number, Scene status, Scene speed, Scene wait.
Restore default = Restore Factory settings

CUE RECORDER
ENTER
Cue level Red = Red intensity (0-255) default 255
Cue level Green = Green intensity (0-255) default 255
Cue level Blue = Blue intensity (0-255) default 255

INFRARED MODE
Infrared remote control.
By activating INFRARED MODE, it will be possible to navigate trought the unit functions by using the D.T.S. infrared remote control. D.T.S. Code :0514L008. (Internal hardware interface not yet implemented)

EMERGENCY SETUP
Emergency operating mode.
By setting Emergency mode, it will be possible to select one of the 5 preprogrammed WHITE cues that will then ran if DMX signal is missing or not available (Dimmer level also selectable by user). Usefull for Emergency EXIT ilumination on public areas.

MODE SETTINGS

3. MODE SETTINGS
6. InfraRed mode
7. Emergency setup

INFRARED MODE
Infrared disabled (default)
Infrared enabled
NOTE:
Internal hardware interface not yet implemented
External infrared remote sensor needed.
D.T.S. Code :03.LA.016

EMERGENCY SETUP
Mode selection = ON/OFF (default = OFF)
Macro selection = White COLD, NATURAL, WARM, FULL, DMX.
Macro DMX Program= Save regolation.
Dimmer level = 0-255 (default = 255)

Menu Up-Down LED Setup ENTER Up-Down

Hardware test\ LED min setup\ LED max setup\ MR16 full colour\ Output filter\ output delay\ Led BOOST.

HARDWARE TEST
Complete hardware test

LED MIN SETUP
This menu allow to select the minimum levels for Red, Green, Blue (external DMX controller needed)

LED MAX SETUP
This menu allow to select the maximum levels for Red, Green, Blue (external DMX controller needed)

MR16 FULL COLOUR
Preprogrammed RGB values for MR16 full colour led lamp

OUTPUT FILTER
Output filter OFF
Output fileter ON (default)

OUTPUT DELAY
This menu allow to select the value of the delay (in milliseconds) for RGB and Dimmer channels reaction to DMX or Program variation.
No output delay = 25 ms delay
Short output delay = 80 ms delay
Long output delay = 250 ms delay

LED BOOST
Led BOOST (350mA)
Led BOOST Min (420 mA),
Led BOOST Max (500 mA)

LED SETUP

4. LED SETUP
1. Hardware test
2. Led MIN setup
3. Led MAX setup
4. MR16 full colour
5. Output filter

4. LED SETUP
6. Output delay
7. Led BOOST

HARDWARE TEST ENTER
Hardware test OFF (default)
Hardware test ON

LED MIN SETUP ENTER
(external DMX controller needed)
MIN level RED (default = 0)
MIN level GREEN (default = 0)
MIn level BLUE (default = 0)

LED MAX SETUP ENTER
(External DMX controller needed)
MAX level RED (default = 255)
MAX level GREEN (default = 255)
MAX level BLUE (default = 255)

MR16 FULL COLOUR ENTER
MR16 limit OFF (Default)
MR16 limit ON

OUTPUT FILTER ENTER
Output filter OFF
Output filter ON (Default)

OUTPUT DELAY ENTER
No output delay
Short delay (default)
Long delay

LED BOOST ENTER
Led BOOST disabled (350mA) Default
Led BOOST MIN (420 mA)
Led BOOST MAX (500 mA)

Menu Up-Down Measure ENTER Up-Down

Lifetime\ voltage level \ temperature

LIFETIME
This menu show the total UNIT LIFE TIME (reset not possible) and the RGB life TIME (reset possible)

VOLTAGE LEVEL
Internal voltage measure

TEMPERATURE
Internnal / External temperature measure

MEASURE

5.MEASURE
1.Lifetime
2.Voltage level
3.Temperature

ENTER LIFETIME
Unit lifetime
LED Lifetime

ENTER VOLTAGE LEVEL
Internal voltage measure

ENTER TEMPERATURE
Internal / External temperature measure

DMX PROTOCOL

Z30 RGB 30 CHANNELS MODE

60 CHANNELS
MODE (Default)

1	**RED**	**1**	**16**	**RED**	**6**
2	**GREEN**	**1**	**17**	**GREED**	**6**
3	**BLUE**	**1**	**18**	**BLUE**	**6**
4	**RED**	**2**	**19**	**RED**	**7**
5	**GREEN**	**2**	**20**	**GREEN**	**7**
6	**BLUE**	**2**	**21**	**BLUE**	**7**
7	**RED**	**3**	**22**	**RED**	**8**
8	**GREED**	**3**	**23**	**GREEN**	**8**
9	**BLUE**	**3**	**24**	**BLUE**	**8**
10	**RED**	**4**	**25**	**RED**	**9**
11	**GREEN**	**4**	**26**	**GREED**	**9**
12	**BLUE**	**4**	**27**	**BLUE**	**9**
13	**RED**	**5**	**28**	**RED**	**10**
14	**GREEN**	**5**	**29**	**GREEN**	**10**
15	**BLUE**	**5**	**30**	**BLUE**	**10**

DMX CHANNEL	**1**	Parameter: **RED 1**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**2**	Parameter: **GREEN**1

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**3**	Parameter: **BLUE 1**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	4	Parameter: **RED 2**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	5	Parameter: **GREEN 2**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	6	Parameter: **BLUE 2**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	7	Parameter: **RED 3**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	8	Parameter: **GREEN 3**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	9	Parameter: **BLUE 3**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**10**	Parameter: **RED 4**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**11**	Parameter: **GREEN 4**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**12**	Parameter: **BLUE 4**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**13**	Parameter: **RED 5**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**14**	Parameter: **GREEN 5**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**15**	Parameter: **BLUE 5**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**16**	Parameter: **RED 6**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**17**	Parameter: **GREEN 6**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**18**	Parameter: **BLUE 6**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**19**	Parameter: **RED 7**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**20**	Parameter: **GREEN 7**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	**21**	Parameter: **BLUE 7**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	22	Parameter: **RED 8**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	23	Parameter: **GREEN 8**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	24	Parameter: **BLUE 8**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	25	Parameter: **RED 9**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	26	Parameter: **GREEN 9**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	27	Parameter: **BLUE 9**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	28	Parameter: **RED 10**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	29	Parameter: **GREEN 10**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX CHANNEL	30	Parameter: **BLUE 10**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-255					**Proportional colour**

DMX PROTOCOL

9 CHANNELS MODE

1 SHUTTER
2 DIMMER
3 RED
4 GREEN
5 BLUE
6 WHITE (Pre-programmed whites at different color temperatures)
7 CTC
8 COLOURS MACRO
9 FUNCTIONS

DMX CHANNEL	1	Parameter: **SHUTTER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9	**5**				**Black-out**
10-19	**14**				**Open**
20-29	**24**				**Black-out**
30-119					**Strobe at variable speed from slow to fast (3400ms-20ms)**
120-149					**Pulse open at variable speed from slow to fast (43s-100ms)**
150-179					**Pulse close at variable speed from slow to fast (43s-100ms)**
180-204	**192**				**Random Strobe (Master and RGB active)**
205-229	**218**				**Random Strobe (Full)**
230-255	**240**				**Open**

DMX CHANNEL	2	Parameter: **DIMMER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional dimmer**

DMX CHANNEL	3	Parameter: **RED**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	4	Parameter: **GREEN**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	5	Parameter: **BLUE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	6	Parameter: **WHITE (Pre-programmed White at diff. color temperature)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-55	**23**				**No Function**
56-105	**80**				**Full (Red-Green-Blue at Full)**
106-155	**130**				**White DTS**

IF CHANNEL 9 (FUNCTIONS) = CUSTOM WHITE RECALL (Dmx range value 0 - 79)

156-205	**180**	**Custom White Recall**
206-255	**225**	**White CTC (Channel 7 CTC enabled 43 color temp. Correction Macros: 2000°K-7200°K)**

IF CHANNEL 9 (FUNCTIONS) = CUSTOM WHITE CREATE (Dmx range value 80 - 160)

156-205	**180**	**Custom White Create (RGB levels selectable by DMX)**
206-255	**225**	**White CTC (Channel 7 CTC enabled 43 color temp. Correction Macros: 2000°K-7200°K)**

DMX CHANNEL	7	Parameter: **CTC (Color temperature correction)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function

IF CHANNEL 6 (White) = WHITE CTC (Dmx range value 206 - 255)

0-255	**43 color temp. Correction Macros: 0 = 2000°K / 128 = 5500°K / 255 = 7200°K**

IF CHANNEL 6 (White) = NO FUNCTION (Dmx range value 0 - 43)

0-255	**Smooth RGB linear Hue correction**

DMX CHANNEL	8	Parameter: **COLOUR MACROS**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-14					**No Function**
15-29					**Macro 1**
30-44					**Macro 2**
45-59					**Macro 3**
60-74					**Macro 4**
75-89					**Macro 5**
90-104					**Macro 6**
105-119					**Macro 7**
120-134					**Macro 8**
135-149					**Macro 9**
150-164					**Macro 10**
165-179					**Macro 11**
180-194					**Macro 12**
195-209					**Macro 13**
210-225					**Macro 14**
226-239					**Macro 15**
240-255					**Macro 16**

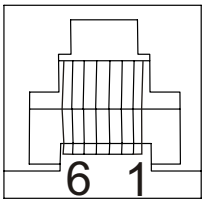
DMX CHANNEL	9	Parameter: **FUNCTIONS (Recall,Create and Store the Custom white)**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-79		**Custom White Recall (Enable CH 6 for Custom white Recall)**			
80-160		**Custom White Create (Enable CH 6 for Custom white Creation)**			
161-255		**Custom White Store (Store the Custom White created)**			

WIRING DIAGRAMS

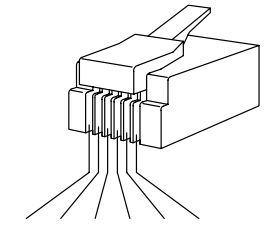
Z30 is available in three version with different LED output connectors:
RJ12 female connectors (03.LA.072.V2), 6 poles plug-in screw connectors (03.LA.077,v2) and M12 3CH connector (03.LA.073.V2) .

RJ12 Female panel connector on board :Z30 LED CONTROLLER (03.LA.072.V2)



6-pin Female (RJ12)

RJ12 LED input male cable connector on board : Focus, Helios, MR16 led lamps

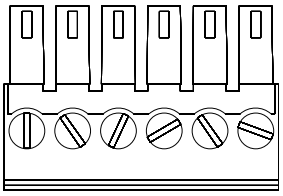


1 2 3 4 5 6

LEDS CONNECTOR PINOUT (Rj12)

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -

6 poles plug-in screw connector on board :Z30 LED CONTROLLER (03.LA.077.V2)



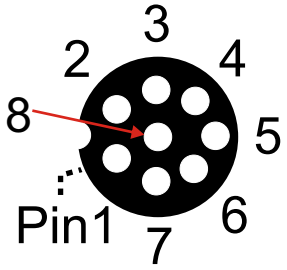
1-----PIN-----6

6 poles plug-in screw connector

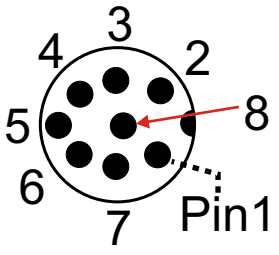
LEDS CONNECTOR PINOUT 6 poles plug-in screw connector

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -

M12 3CH LED output Female panel connector on board : Z30 LED CONTROLLER (03.LA.073.V2)



M12 3CH LED input Male cable connector mountable **on request** on:
FOCUS RGB LED projectors
FOCUS Full Color LED projectors
DIVE 3 / 6 FULL COLOUR
DIVE 9 / 18 RGB

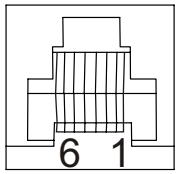


LEDS CONNECTOR PINOUT (M12 3CH)

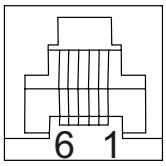
Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -
Pin 7 = NOT CONNECTED
Pin 8 = NOT CONNECTED

LED UNITS WIRING CONNECTION

03.LA.072.V2 (RJ12 OUTPUT)



6-pin Female (RJ12)



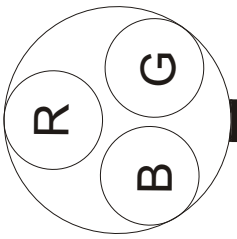
6-pin Female (RJ12)

LEDs OUT 10

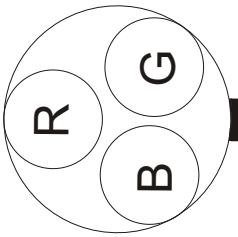
LEDs OUT 5

LEDs OUT 4

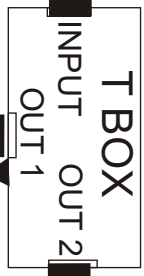
LEDs OUT 3

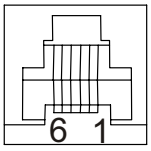


MR16 RGB

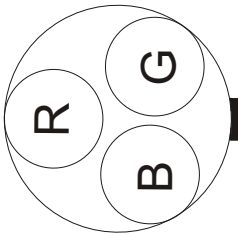


MR16 RGB

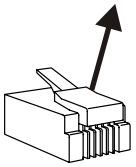




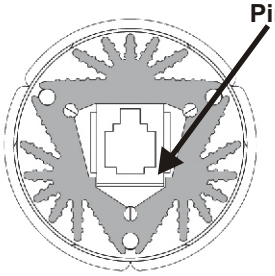
6-pin Female (RJ12)



MR16 RGB



6-pin Male (RJ12)
Modular Plug



D.T.S. T-BOX
CODE 03.LA.001

INPUT

OUT 2

OUT 1

IMPORTANT:

The maximum number of MR16 / FOCUS RGB LED lamps connectable to each Z30 LEDs output is 3 pcs.

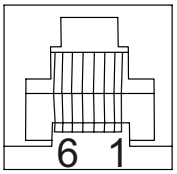
Never plug the cable coming from the Power supply into OUT 1 or OUT 2 of the T-BOX when other MR16 lamps are connected, because a wrong connection can seriously damage the lamps.

NEVER CONNECT NOR DISCONNECT A MR16 UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the last MR16 unit in the line should not exceed 100 meters

LED UNITS WIRING CONNECTION

03.LA.072.V2 (RJ12 OUTPUT)

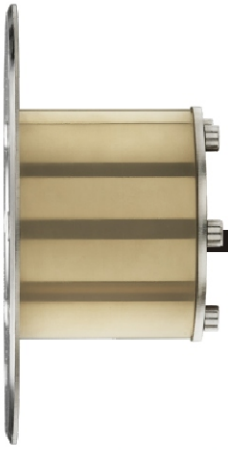


6-pin Female (RJ12)

LEDs OUT 10

LEDs OUT 5

FOCUS FULL COLOUR



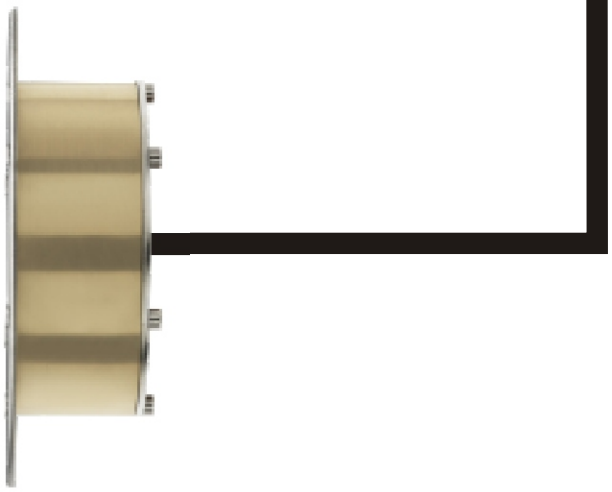
DIVE 3 FULL COLOUR R

IMPORTANT:

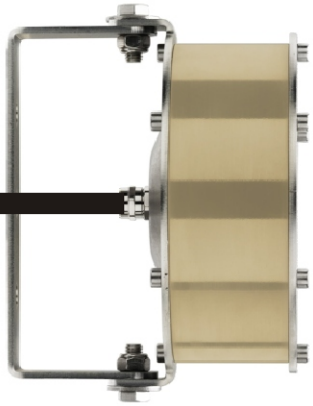
The maximum number of MR16 / FOCUS FULL COLOUR LED lamps, DIVE 3 FULL COLOUR, DIVE 9 RGB connectable to each Z30 LEDs output is 1 pcs.

NEVER CONNECT NOR DISCONNECT A NEW UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the LEDs unit in the line should not exceed 100 meters



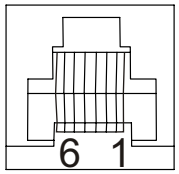
DIVE 9 RGB R



DIVE9 RGB

LED UNITS WIRING CONNECTION

03.LA.072.V2 (RJ12 OUTPUT)



6-pin Female (RJ12)

LEDs OUT 10

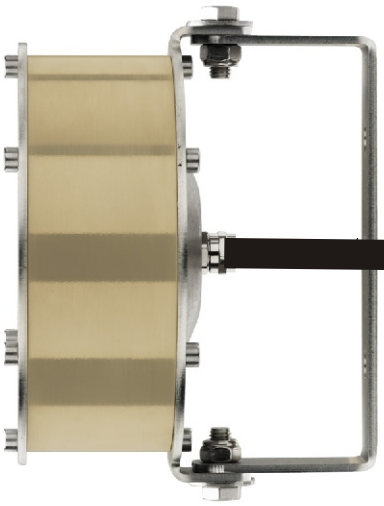
LEDs OUT 10

2 X LED's output

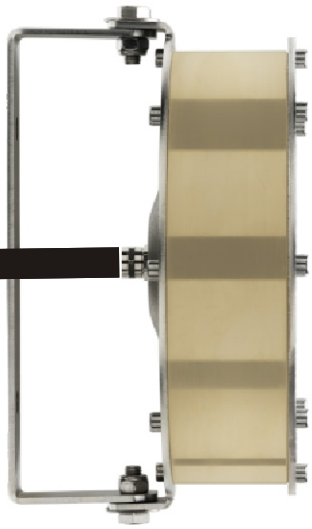
DIVE6 FULL COLOUR R

2 X LED's output

DIVE18 RGB R



2 X LED's output



2 X LED's output

DIVE6 FULL COLOUR

DIVE18 RGB

IMPORTANT:

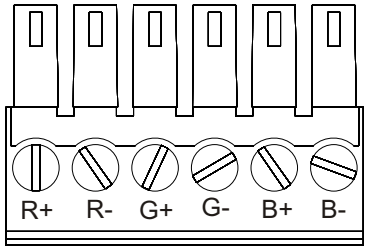
DIVE6 FULL COLOUR and DIVE18 RGB unit are provided with 2 separeted LED's input lines.
DIVE6 FULL COLOUR and DIVE18 RGB unit need 2 x Z30 LED's output each.

NEVER CONNECT NOR DISCONNECT A NEW UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the LEDs unit in the line should not exceed 100 meters

LED UNITS WIRING CONNECTION

03.LA.077.V2 (PLUG-IN OUTPUT)



1-----PIN-----6

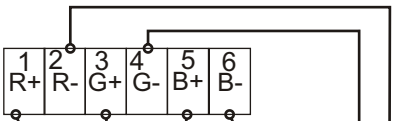
LEDs OUT 10

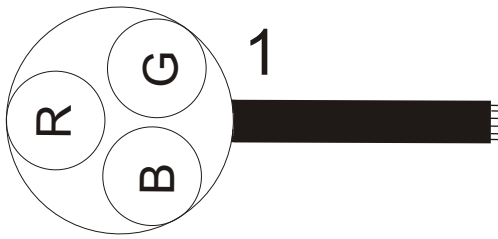
LEDs OUT 4

LEDs OUT 3

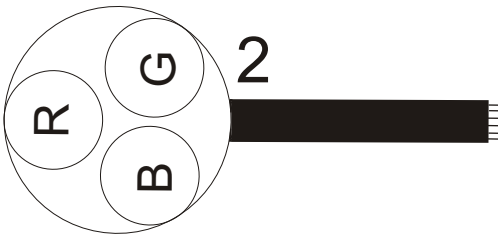
LEDs OUT 2

LEDS OUTPUT

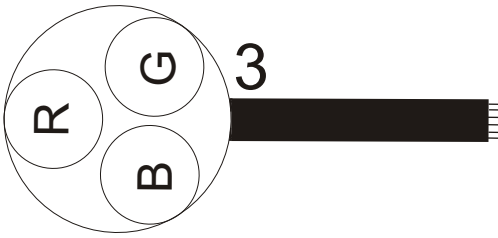




MR16 RGB



MR16 RGB



MR16 RGB

IMPORTANT:

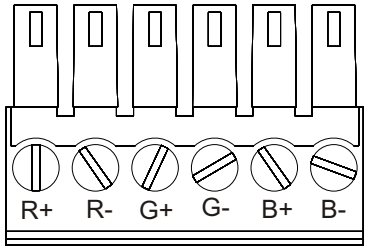
The maximum number of MR16 / FOCUS RGB LED lamps connectable to each Z30 LEDs output is 3 pcs.

NEVER CONNECT NOR DISCONNECT A MR16 UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the last MR16 unit in the line should not exceed 100 meters

LED UNITS WIRING CONNECTION

03.LA.077.V2 (PLUG-IN OUTPUT)

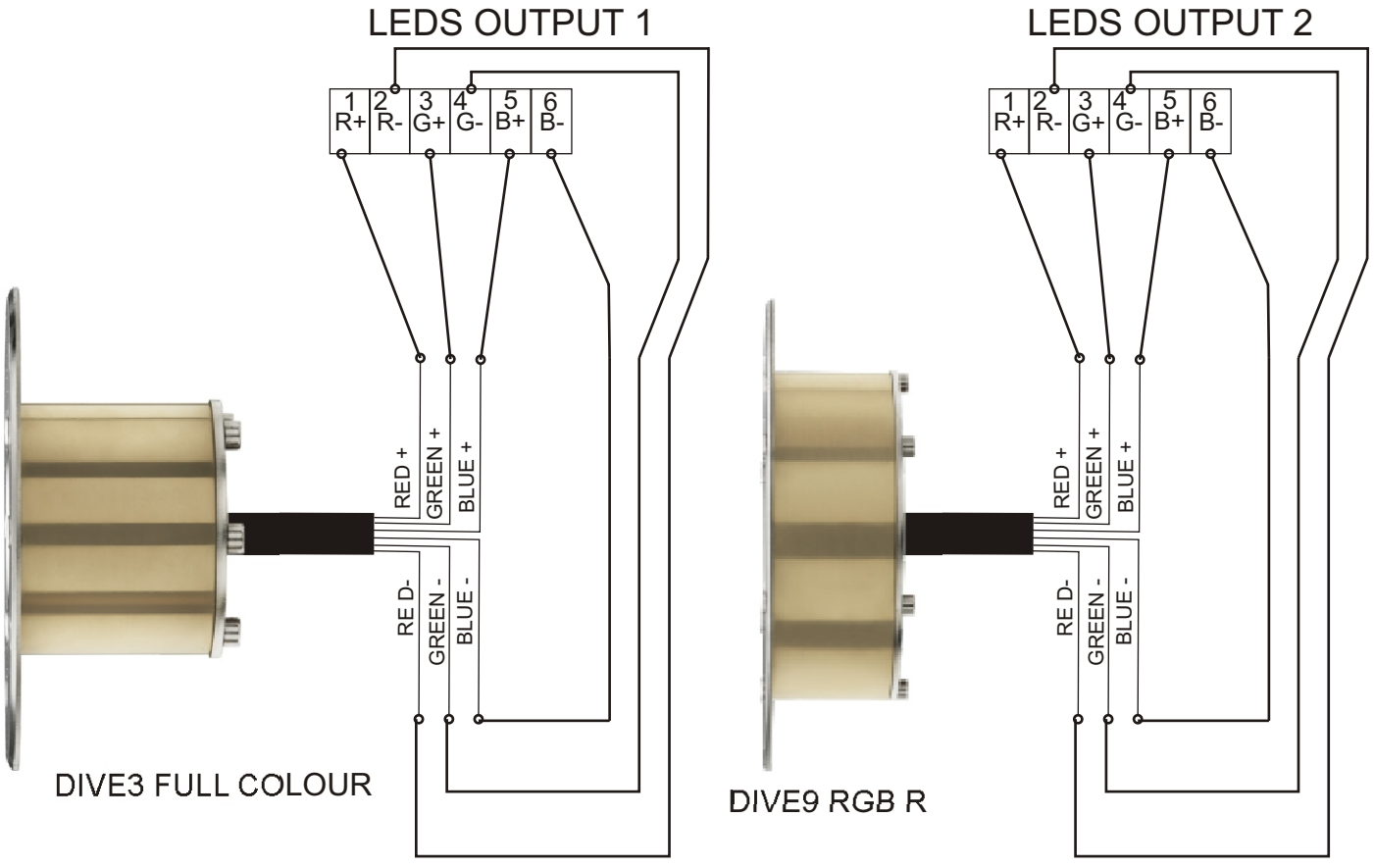


1-----PIN-----6

LEDs OUT 10

LEDs OUT 4

LEDs OUT 3



IMPORTANT:

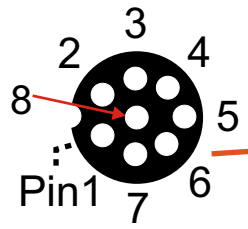
The maximum number of MR16 / FOCUS FULL COLOUR LED lamps, DIVE 3 FULL COLOUR, DIVE 9 RGB connectable to each Z30 LEDs output is 1 pcs.

NEVER CONNECT NOR DISCONNECT A NEW UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the LEDs unit in the line should not exceed 100 meters

LED UNITS WIRING CONNECTION

03.LA.073.V2 (M12 3CH OUTPUT)



M12 3CH LED output
Female panel connector

FOCUS FULL COLOUR

DIVE 3 FULL COLOUR R

DIVE 9 RGB R

DIVE18 RGB

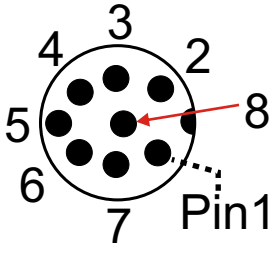
2 X LED's output

IMPORTANT:

The maximum number of MR16 / FOCUS FULL COLOUR LED lamps, DIVE 3 FULL COLOUR, DIVE 9 RGB connectable to each Z30 LEDs output is 1 pcs.

NEVER CONNECT NOR DISCONNECT A NEW UNIT WHEN THE POWER SUPPLY IS TURNED ON.

The Maximum distance between the Z30 and the LEDs unit in the line should not exceed 100 meters



M12 3CH LED input
Male cable connector
mountable **on request**
on board:
FOCUS RGB LED projectors
FOCUS Full Color LED projectors
DIVE 3 / 6 FULL COLOUR
DIVE 9 / 18 RGB

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -
Pin 7 = NOT CONNECTED
Pin 8 = NOT CONNECTED

DIVE 6 FULL COLOUR and DIVE 18 RGB unit are provided with 2 separeted LED's input lines.
DIVE 6 FULL COLOUR and DIVE 18 RGB unit need 2 x Z30 LED's output each.

NOTE

NOTE

NOTE

MADE IN ITALY CE

DTS

The Lighting Company

ISO 9001:2008

D.T.S. quality system
is certified to the
ISO 9001:2008 standard

PROUDLY MADE IN ITALY

D.T.S. products are designed
and manufactured at the D.T.S.
plants in italy

0517I154

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