Overled

professional led lighting

Professional control led lighting

about us

Overled it is a Brand name of DDS elettronica srl.

Overled design and develop electronics solution for LED application since 2002, switching power supply, constant current controls, embedded electronics and LED.

Overled have produced several thousand controller in the years, where our electronics and led lamp found application in several different field as, Cruise boat (last generation) with switching power supply, TV stages all Italian television are using Overled products, Hotels, restaurant etc.

Overled develop more than 50 new project per year, DMX controller, DALI, ART NET NODE, BUS system (DoMONET) power supply and DMX, intelligent lamp solution, or customized application on customer request. Overled is serving the best illumination customer giving all kind solution electronic and led to help it's customer on LED LAMP design process.

Overled it's also a partner for design and installation of big illumination system LED based, helping it's customer on design and develop installation.

OverLed Installation Example_ DMX_

Lighting Control

DMX/RDM
max 32 devices

>32devices

12/24Vdc

12/48Vdc power

12/24Vdc

DMX

DMX

DMX

DMX BUFFER

DMXOUT
Overled
Dmx Cable
balanced up
to 1200mt

DDS453
constant
V

DDS453
constant
I

DDS344

DDS166

220VAC

1ch

2ch

3ch

R G B W C

R G B W C

R G B C

DMX

non optoinsulated

POWER SUPPLY

4/5 wires

max 12 led
x channel

4wires

Constant Current
150W max

DMX/RDM SPLITTER

DMX/
RDM

12/48Vdc

DDS378

1ch

2ch

12/48Vdc

3ch

220VAC
100VAC

Constant Voltage
250W max

Constant Voltage
150W max

optoinsulated

4ch

OverLed Installation Example _ Art-Net_

DMX
max 32 devices

>32devices

Lighting Control

12/24Vdc   12/48Vdc power   12/24Vdc

DMX   DMX   DMX

DMX BUFFER

| DDS453 constant V | DDS453 constant I | DDS344 | DDS166 |

Ethernet Cable

DMXOUT Overled Dmx Cable balanced up to 1200mt

220VAC

→1ch

→2ch

→3ch

HUB ETHERNET POE

| R | G | B | W | C | | R | G | B | W | C |

R G B C

DMX →

Artnet

Ethernet Cable

CAPIBARA

4/5 wires

max 12 led x channel

4wires

non optoinsulated

Constant Current 150W max

DMX/RDM SPLITTER

DMX/ RDM

- Artnet
- Dmx out
- Dmx recorder
- RDM

POWER SUPPLY

DDS378

↔1ch

12/48Vdc

↔2ch

220VAC 100VAC

↔3ch

Constant Voltage 250W max

Constant Voltage 150W max

↔4ch

optoinsulated

Overled Bus

Lighting Control

HUB ETHERNET POE

To Artnet Nodes
(Overled Bus Pilot)

SD MEMORY

Overled Bus OUT

POWER IN

Ethernet   dmx IN   dmx OUT

12/48Vdc

RDM

Artnet

Dmx IN

Dmx OUT

PILOT

SD MEMORY

#1

LAMP

LAMP

LAMP

#32 MAX

4 wires

4 wires

DRIVER

DRIVER

DRIVER

< 500W
300mt
Twisted pair cable

customized module on request

POWER SUPPLY

220VAC
100VAC

OVERLED BUS

2 wires no polarity twisted pair

NODE

32 MAX DEVICE

Max 8 led x 3 channels
Constant
Current

Constant
Voltage

* **LAMP + DRIVER**

+ =

Overled Embedded Module

Low Voltage

DDS386

24-48Vdc Driver I/V DMX driver

Your Fixture is a Wall Washer?

YOUR FIXTURE

DDS309

**3X12LED 350mA 220VAC 50/60Hz**

DDS243

4X12LED 350mA 220VAC 50/60Hz

Your customized control Your specs...

- dmx protocol
- rdm capability
- thermal protection
- all electronic opto insulated

DDS588   **Constant I module**

DMX/RDM DRIVER

DDS555   **Constant V module**

12-24VDC
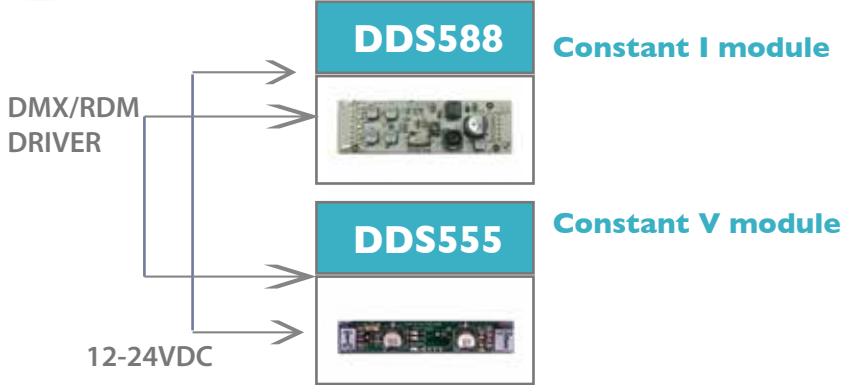
DDS. 643 DMX generator (custom panel available on request)

- DMX GENERATOR
- LED RGBW FOR MONITORING COLOUR EFFECT
- AUTO SETTIMG OVERLED MODULE
- CONFIGURABLE CUSTOMIZED CAPACITIVE AREA
- TUNABLE WHITE READY
- CHASE PROGRAMMING
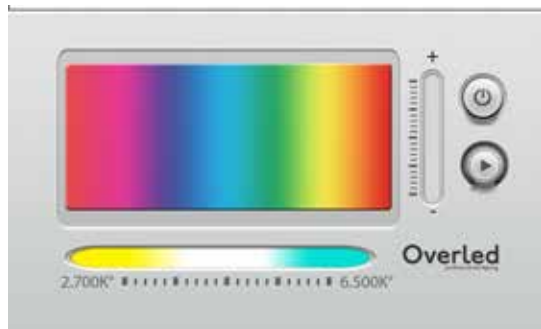
POWER SUPPLY 12-24V

DMX/RDM

SIZE

18mm

55mm

122mm
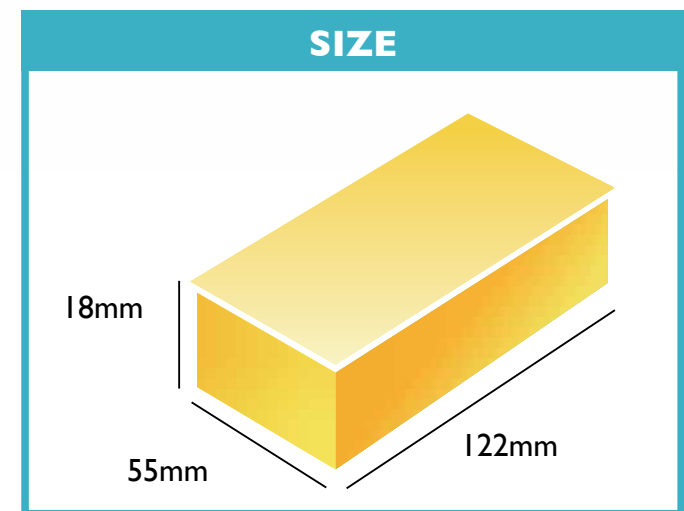
overled BUS PILOT

OverledBUSpilot it's a data over power system,the DMX signal or ART NET signal it is converted and transmitted over power. The power supply of this system can be 12VDC or 24VDC, the data trasmission over power is made on twisted wire cat 5, with correct section depending on the total power required from the fixture connected. The maximum number of the fixture are 32, the maximum DMX channel per fixture are 8, the maximum power possible is 500W, and 100mt cable.OverledBUSpilot it is also a DMX recorder and ART NET node for one Universe (512 DMX channel). OverledBUSpilot it is the MASTER of the entire system, where the data are transmitted in time slot, error free, if a data packet isn't received correctly from the slave module (driver or node), this will be sent again in 20-35mSec. OverledBUSpilot, it is a proprietary Overled bus and send also DMX out on the connector in the front panel, the available channels are from 256-up to 512. The OverledBUS system require Master (OverledBUSpilot) and Slave OverledBUSdriver or node, those board can drive LED or STRIP led with power top.The OverledBUSdriver can be integrated with the lamp, the OverledBUSnode it is native in a box, for external applications, with screw driver connectors for the Harness.
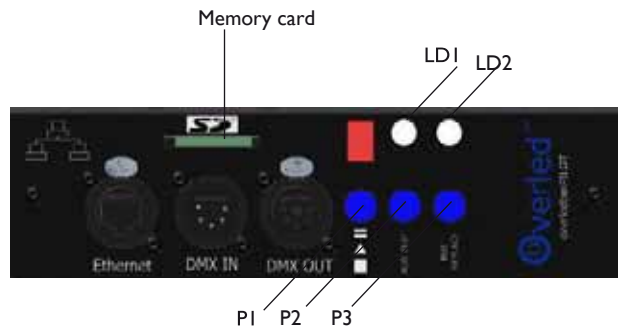
- RDM/DMX/ArtNet to OverLed Bus   Network
- ArtNet to DMX
- DMX to ArtNet
- ArtNet Recorder
- DMX Recorder
- ArtNet + DMX Player
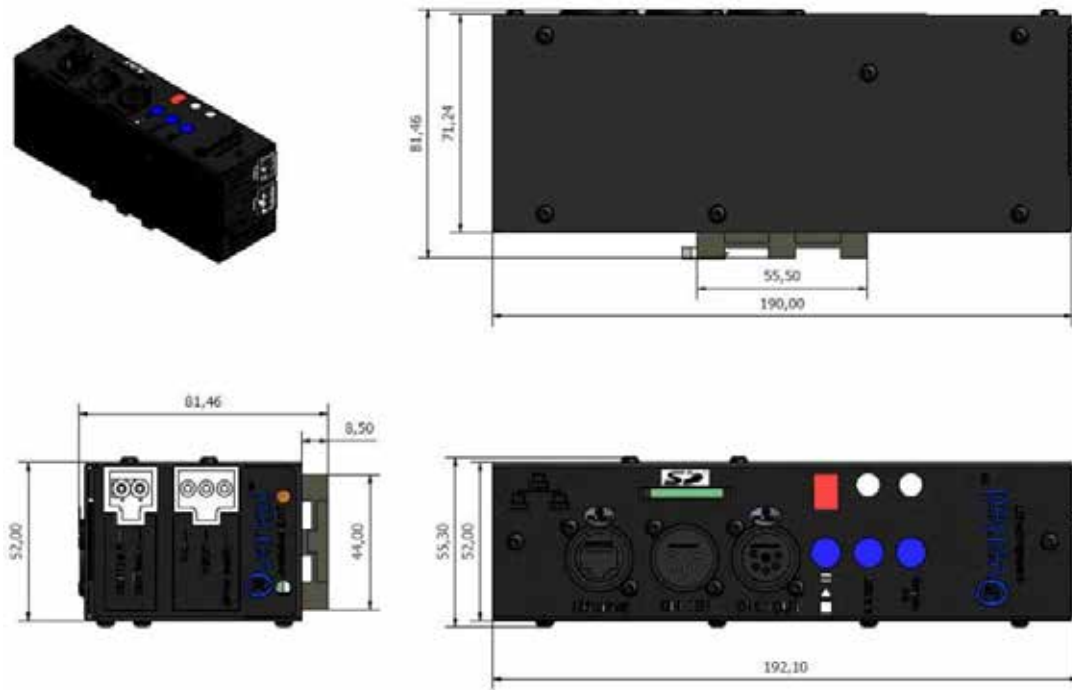
Connectors: From left to the right: Ethernet, DMX-IN, DMX-OUT

LD1 = DMX IN / DMX OUT / Play / Record
LD2 = Monitor DMX, OverLed Bus
P1 = Play / Record / Stop
P2 = OverLed Bus test / Select
P3 = OverLed Bus Replace

Memory card

LD1 LD2

P1 P2 P3

Ethernet DMX IN DMX OUT

Slave discovery
Slave identification on Bus
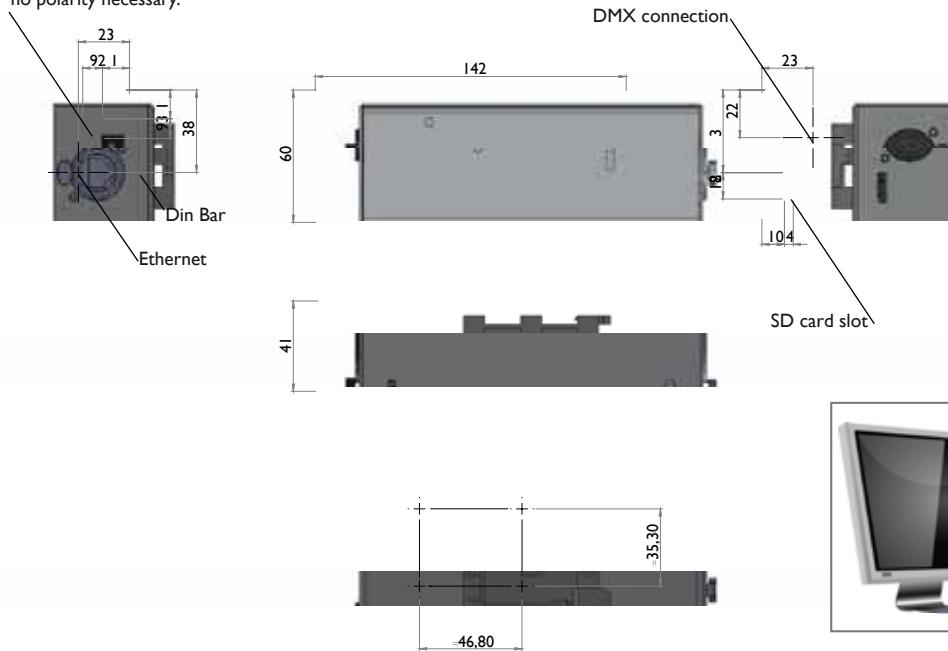Subnet device
DMX Address

CAPYBARA ArtNetNode

Capybara it is ART NET node, one universe available (512 dmx channel), it is a DMX recorder, DMX to Art Net Node, RDM over Art Net interface, DMX player. SD memory (optional) for a large DMX show storage, one show per SD, no multi show selection available. Capybara it is compatible with Art Net node protocol for setting IP, broadcast please use Esuite or Jartnet405 from site, the software it is free of charge. Capybara can be powered by external power supply (not included) with it's connector or by POE power over ether- net HUB. Capybara it can be mounted on electrical DIN BAR or by velcro strips on request.

- RDM/DMX/ArtNet
- ArtNet To DMX
- RDM E1.20 Compliance
- DMX To ArtNet
- ArtNet Recorder
- DMX Recorder
- ArtNet + DMX Player

Power supply 12-48vdc no polarity necessary.

23
92 1
93 1
38
Din Bar
Ethernet

DMX connection
142
60
23
22
3
8
10 4
SD card slot

41

35.30
46,80

Lighting Control

DMX/RDM
max 32 devices

>32devices

12/24Vdc
12/48Vdc power
12/24Vdc
DMX
DMX
DMX

DMXOUT
Overled
Dmx Cable
balanced up
to 1200mt

POWER SUPPLY

12/48Vdc

220VAC

DDS453
constant
V

DDS453
constant
I

DDS344

R G B W C
R G B W C
R G B C

4/5 wires

max 12 led
x channel

4wires

Constant Voltage
250W max

Constant Current
150W max

Constant Voltage
150W max

220VAC

DMX BUFFER
DDS166

no optoinsulated

1ch
2ch
3ch
DMX

DMX/RDM SPLITTER
DDS378
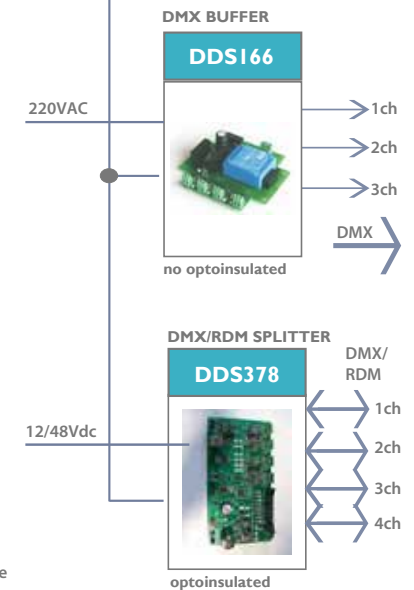
12/48Vdc

optoinsulated

DMX/
RDM
1ch
2ch
3ch
4ch

- Aluminum satined
- Ethernet IEEE 802.3 10Base-T
- USITT DMX512 B
- 2GB microSD card
- IP 30
- Operating Temp -5°C + 50°C
- Power supply 12- 48 VDC – 500 mA
- Power consumption 350 mA @ 12 VDC
- Mounting DIN BAR or velcro strips
- Humidity HR from 30 to 85%
Size; 140 X 42 X 60 cm
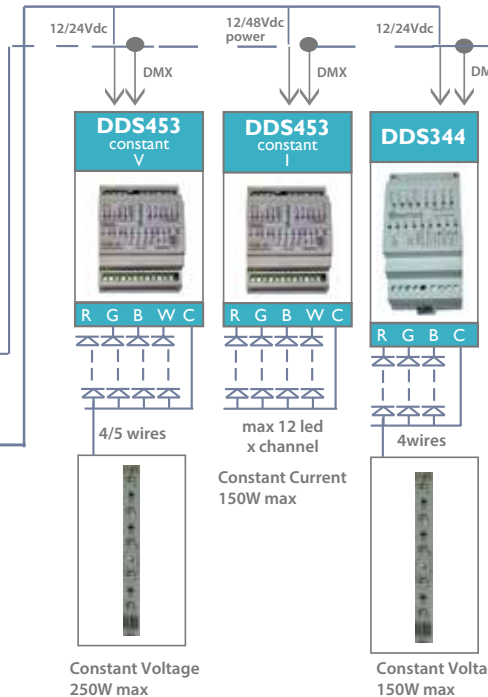
ECCO USB-DMX/RDM interface

ECCO ReadySteadyGo device can be defined and classified as universal-translator for all users of USB/DMX/RDM protocols. ReadySteadyGo is totally compatible with standard E1.20 RDM & DMX USITT 1990. ReadySteadyGo is opto isolated and can be powered directly from any PC USB port (Mac too). This device is totally free-electric interferences between DMX & PC. Should the device, inadvertently, be disconnected and immediately reconnected, the software will instantly reinstate connections. The hardware of the ColoursReadySteadyGo is robust and ergonomically designed to be handled without any fear of breaking if incidentally dropped. ColoursReadySteadyGo has been designed to facilitate RDM bi-directional communications using the 2-core DMX protocol. ColoursReadySteadyGo integrates the discovery RDM protocol that identifies all fixtures connected with DMX protocol.

The ColoursReadySteadyGo is also the perfect interface DMX pass-thorugh gear compatible with the majority of all existing world's software.
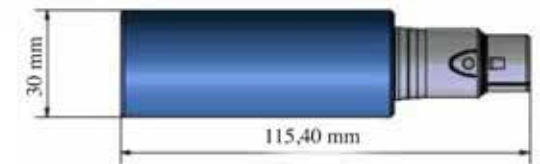
- Power supply: from PC 200mA
- DMX USITT compliance
- RDM e1.20 Compliance
- DMX optoinsulation :
- 2500VRMS Bus Isolation Using On-Chip High-Voltage Capacitors
- +4.5V to +5.5V Power-Supply Voltage Range
- ±15kV ESD Protection
- Hot-Swap-Protected Driver-Enable Input
- Undervoltage Lockout
- Isolation-Barrier Fault Detection
- Short-Circuit Protection
- Thermal Shutdown
- Open-Line and Shorted-Line Fail-Safe Receiver

Esuite Lighting design software

The program works as a DMX/RDM/ArtNet console, ArtNet viewer, can encapsulate RDM packets over Ethernet (ArtRdm) to discover remote devices and is especially designed to work with Overled Modules. Designed shows can be recorded into Overled modules with just a click and then recalled using eSuite or ePanel, available for MAC, PC and iPad. eSuite works with both local USB/RDM/ArtNet devices and remote ArtNet/ArtRdm devices; a special ArtRdm discovery function is provided in order to find internet-connected nodes.

MAC Version of eSuite is available on Apple Store.

DDS. 555 Voltage mode dmx/rdm led controller

DDS.555 it is constant voltage controller, 3 channel. This module can work in several mode DMX/ RDM/ stand-alone/infrared remote control. This unit can supply up to 150w of strip led or any kind of led with on board constant current. All output are positive common, and ground is the control. The power supply is applied to connector screwdriver isn't necessary for wiring.

Multi board DDS555 DMX connection
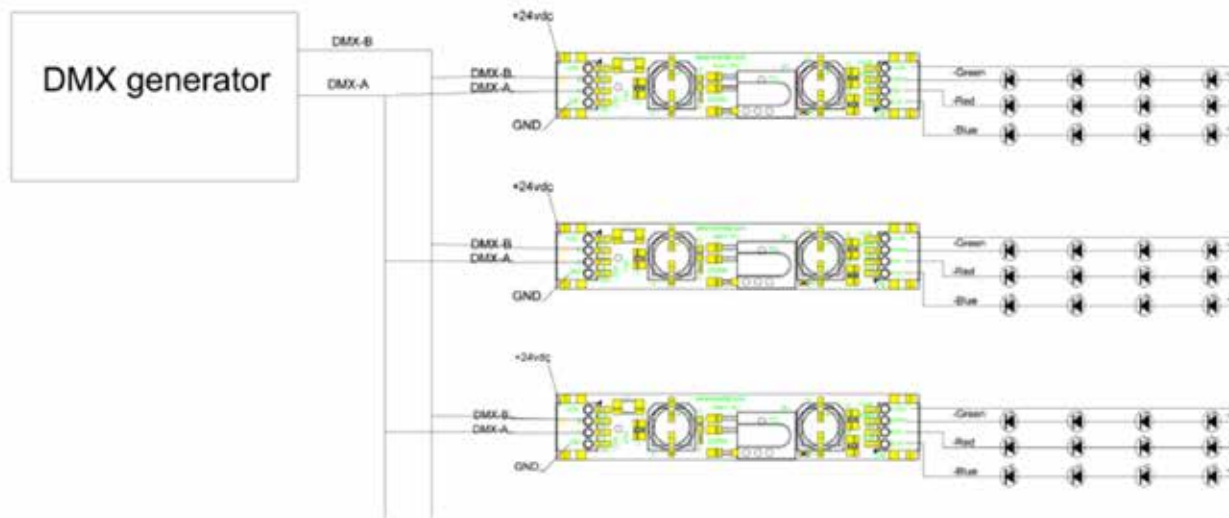
Electrical
- Power Supply: 24-12Vdc
- Max Current Per Channel 3,5A
- DMX Standard USITT512
- RDM 2.0
- Common Positive
- 3 Channels Output
- Infrared Receiver
- Operating Temperature: -10°C To +54° C
- Storage Temperature: Tst -20°C To +85° C
- Relative Humidity: RH 80%
- SIZE: 80X15 mm weight 40gr

HOW TO DISCOVER RDM MODULE

– Connect Ecco RDM signal to the device DMX input , A and B or + and -
 (A+) (B-)
– Run Ecco or Esuite in PC /MAC
– Power device On (DDS555)
– USE Discovery button on the screen of your pc, to get all devices
 connected on the DMX line
– In to the left window a complete list of device appear
– Select with the mouse one of device on the list
– Click on right button on you mouse to get info from device
– Choice the personality you wanted
– Now the device have stored in memory the personality
_ Same for addressing , select device you want to change Address and edit
 the new one in the ADDRESS window.
– Select also what the device must do if no DMX available, just click in the
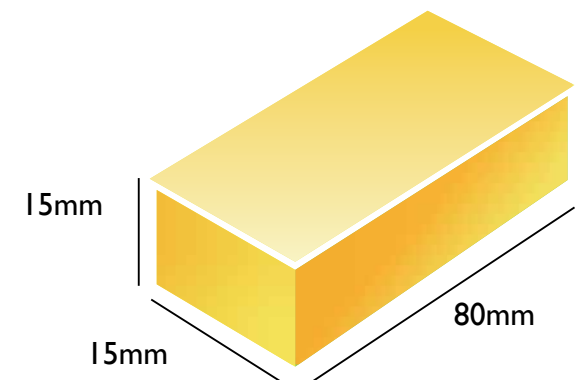 window "ACTION IF NO DMX"and select all available for this device.
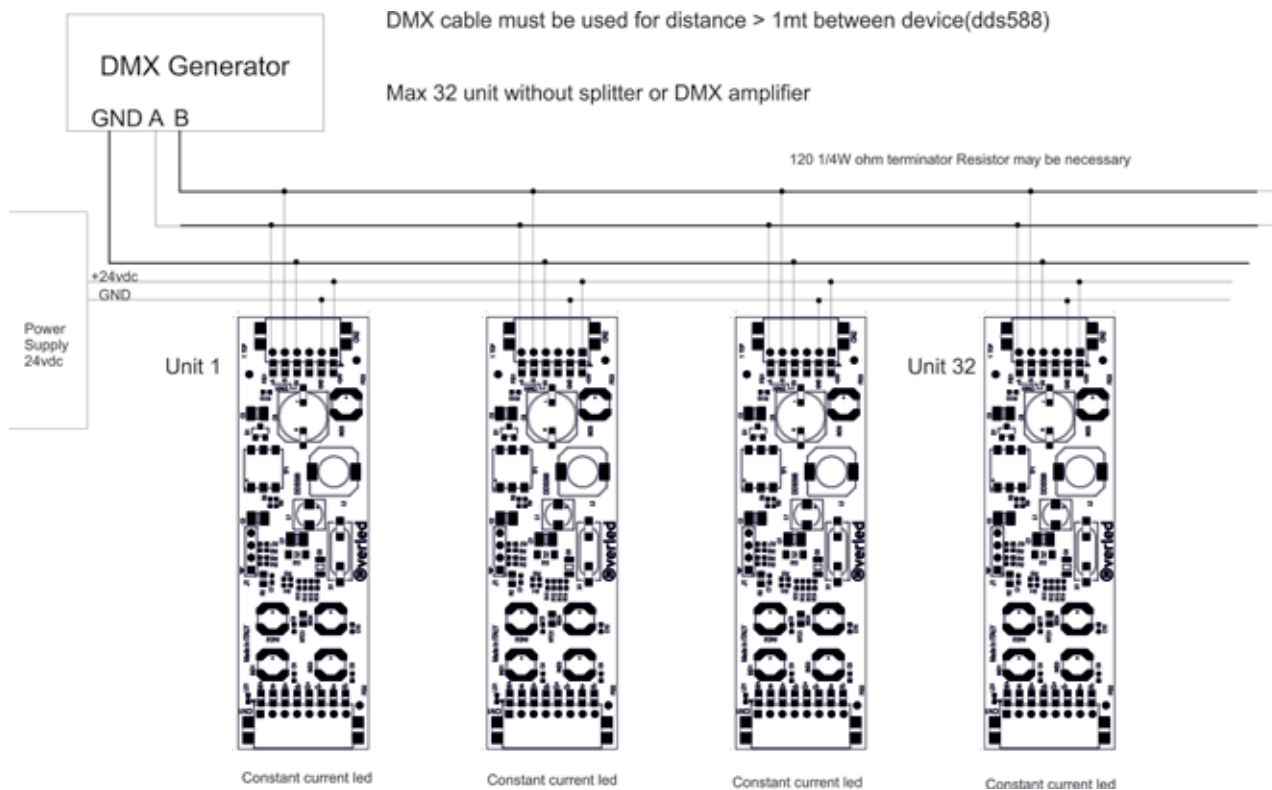

DDS555 with IR Receiver
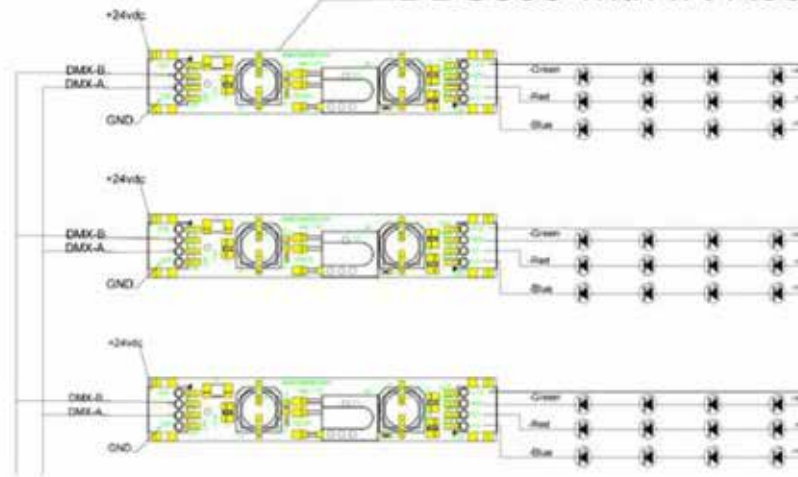
To the next module

SIZE

15mm
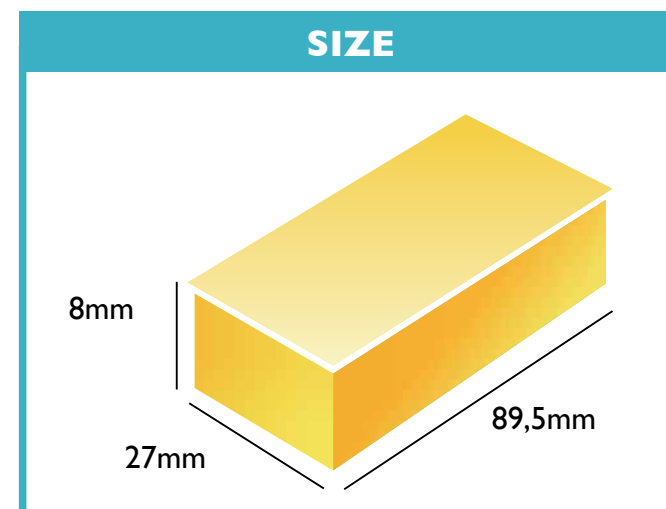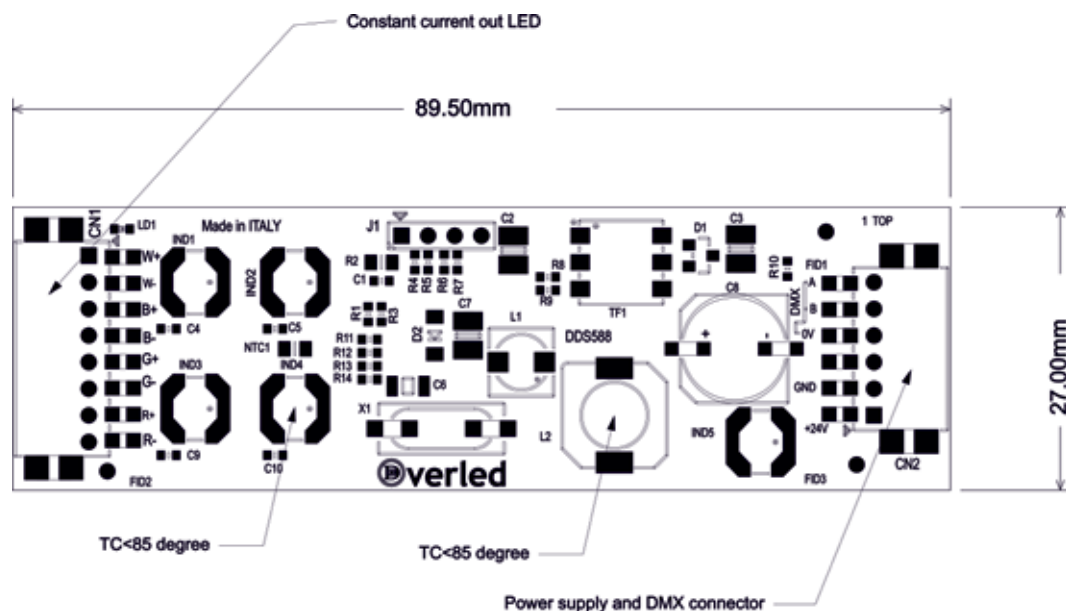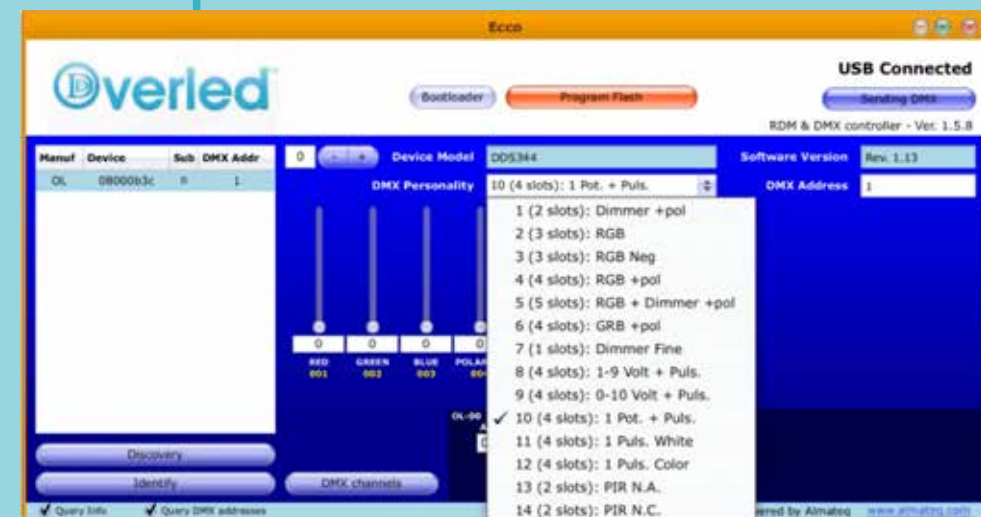
15mm

80mm

DDS. 558 Current mode dmx/rdm led controller

DDS588 4 channel in constant current can supply up to 6 led in series @24vd 350mA. This module can work in several mode DMX/RDM/ and stand alone.In current mode the hysteretic control guarantee the best light dimmering performance..All output are positive and negative per each color. The power supply is applied to connector.

DMX cable must be used for distance > 1mt between device(dds588)

Max 32 unit without splitter or DMX amplifier

120 1/4W ohm terminator Resistor may be necessary

DMX Generator

GND A B

+24vdc
GND

Power
Supply
24vdc

Unit 1

Unit 32

Constant current led

Constant current led

Constant current led

Constant current led

Power Supply:24Vdc
Current Per Channel 350mA
DMX Standard USITT512
DMX Optoinsulated
RDM 2.0 Compatible
Short Circuit Output Protection
Common Positive/negative For Each Led Out
Hysteretic Frequency Out 500Khz
Hysteretic Constant Current
4 Channel Output
up To 6 Led Per Channel @24vdc
MAX Led 24x1W Each
Spring Connector For Power Supply And Led
environmental
operating Temperature: -10° To +54°C
Storage Temperature: Tst -20° To +85°
Case Temperature: Tc +65°
Relative Humidity: RH 80%
SIZE: 27x89x18mm
Wight: 22gr

RDM INTERFACE OPERATING MODE

– Connect Ecco RDM signal to the device DMX input , A and B or + and -
(A+) (B-)
– Run Ecco or Esuite in PC /MAC
– Power device On (DDS588)
– USE Discovery button on the screen of your pc, to get all devices
connected on the DMX line
– In to the left window a complete list of device appear
– Select with the mouse one of device on the list
– Click on right button on you mouse to get info from device
– Choice the personality you wanted
– Now the device have stored in memory the personality
- Same for addressing , select device you want to change Address and edit
the new one in the ADDRESS window.
–Select also what the device must do if no DMX available, just click in the
window "ACTION IF NO DMX"and select all available for this device.

Constant current out LED

89.50mm

27.00mm

Made in ITALY

DDS588

Overled

TC<85 degree

TC<85 degree

Power supply and DMX connector

SIZE

8mm

27mm

89,5mm

OVERLED BUS NODE

OverledBUS node, it is a slave module of OverledBUS, this can be connected in the network as overledBUS driver,but not integrated in the fixture.This module have a cable lock and connectors for harness and holes for electrical housing or wall mounting. OverledBUS node can drive constant current led or power top led, thanks to two separated RGB output. Constant current can drive 4 led per channel at 24vdc supply with Vf<3,5vdc, the voltage PWM output can drive up to 30W.Always 32 unit maxim they can be connected to overledBUS, they can be NODE or DRIVE tipology, and they have ID assigned by RDM using subnet mask in the ECCO RDM interface window.The ID it can be seen as one of 512 DMX addressspace. Red led on board indicate bus activity, receive and transmit data. OverLed Bus Pilot (master) can manage up to 32 slave on the bus.OverLedBUS architecture is master/slave based,the overledBUS slave can be Driver for internal fixture application or node for external fixture application those electronics have inside constant current driver for led power supply or PWM voltage output for powertop strip led.Each slave have factory ID that can't be changed, this default data it is used for network identification.In the overledBUS architecture, as soon a slave is connected, it's ID is checked with internal (OverledBUSnode) database list if this not recognized, not memorized before,a new DMX addres on the BUS it is assigned =1 as default, if this units is recognized (found it's ID in database) start to run on the BUS
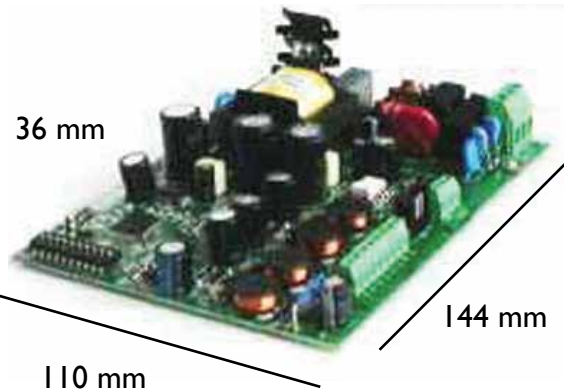
- RGB Constant Current 350mA
- RGB PWM Output
- OverledBUS Module
- Power Supply 12/24vdc
- 3 Constant Current Out 350mA
- 3 PWM Rgb Out For Power Top

DRIVER
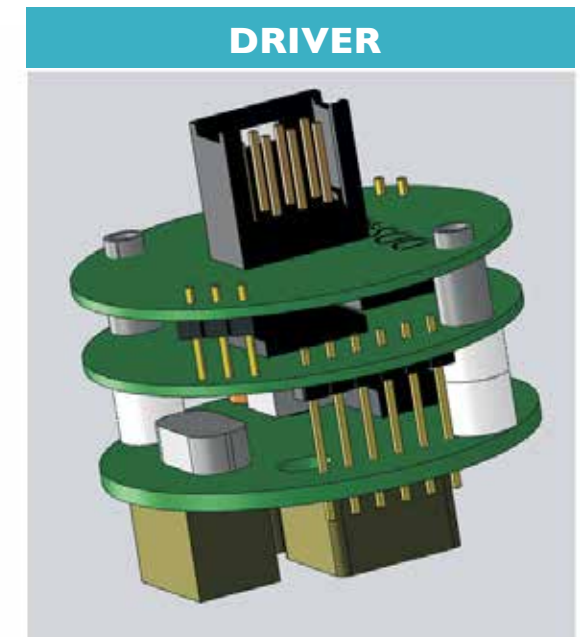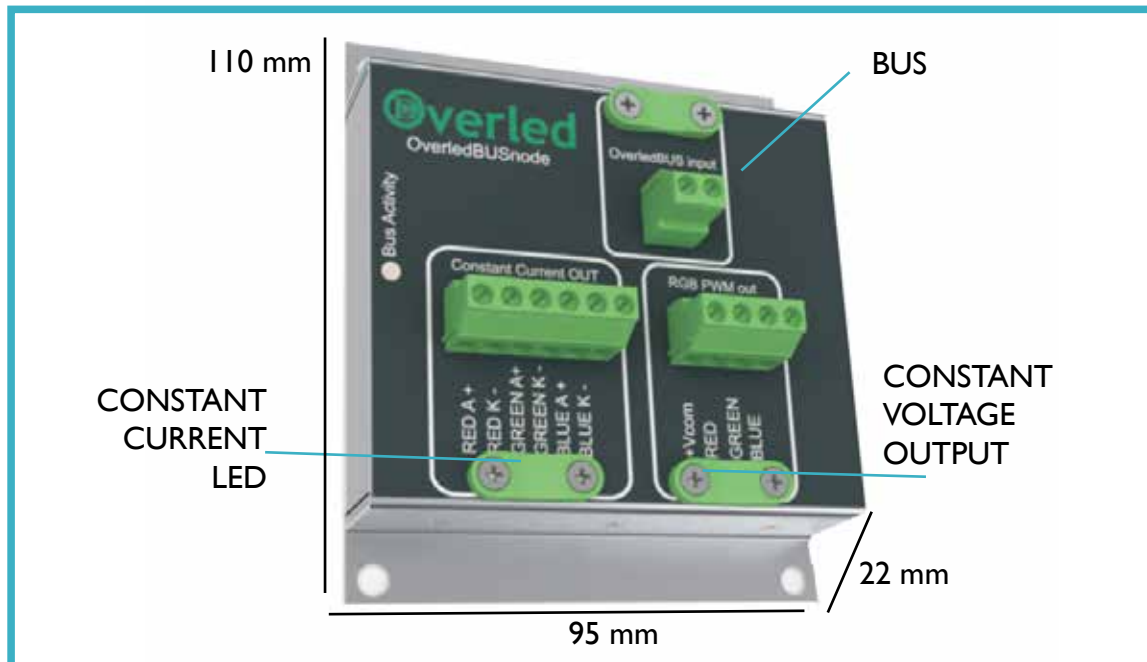
DDS. 243 Dmx Led Controller

DMX controller designed for RGB light fitting, with 4 constant current channel to control powerful LED; insulated DMX input is compatible with the 512DMX standards, and it is also provide infrared input for remote control suitable to activate single colours or auto sequences.

DDS. 309 Dmx Led Controller

DMX controller designed for RGB Streep line, with 3 constant current channel to control powerful LED; insulated DMX input is compatible with the 512DMX standards, and it is also provide infrared input for remote control suitable to activate single colours or auto sequences. DDS309 it is perfect to be installed in wall washer light fitting.

- Input Voltage Range: Vin 195-265Vac
- Frequency: F 50 - 60Hz
- Power Consumption Range: 6-50W
- Power Output Range: 4.8-12W
- Output Current: 350mA @ 100%
- Output Voltage: Vo 48Vdc
- Constant Current PWM
- Serial Connection
- Dimming Control: DMX512
- Operating Temperature: Top -10° To +54°C
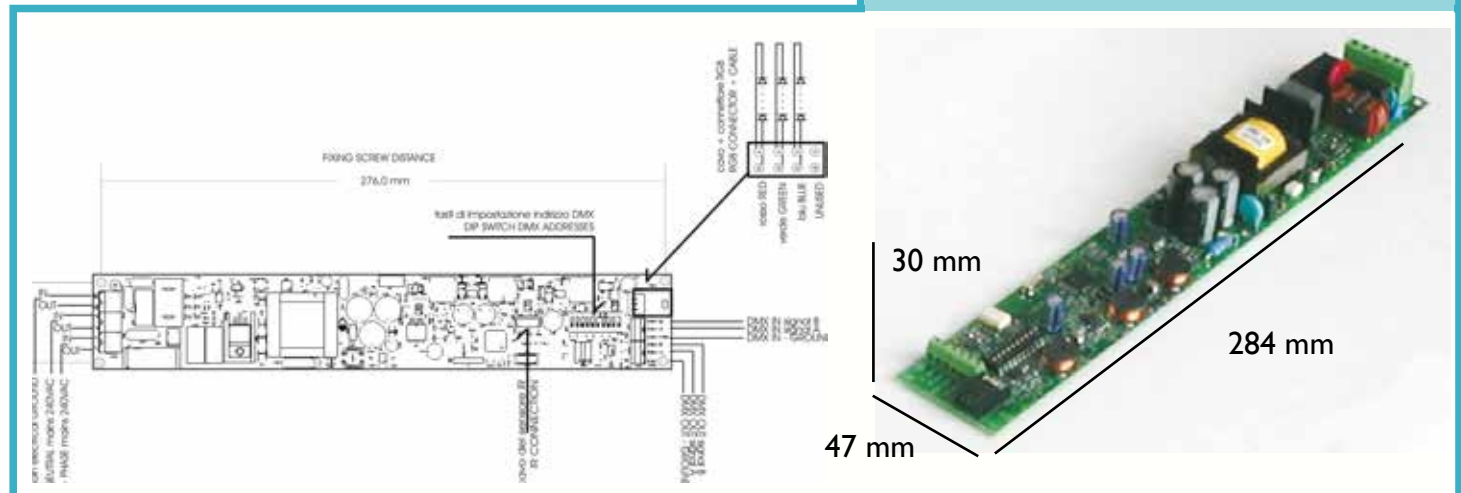- Storage Temperature: Tst -20° To +85°

IR REMOTE for DDS.243 e DDS.309

Class effect
Colour table
Off all the light
White
White level

- Input Voltage Range: Vin 195-265Vac
- Frequency: F 50 - 60Hz
- Power Consumption Range: 6-50W
- Max Power Output : 4.8-12W
- Output Current Per Channel 350mA @ 100%
- Output Voltage: Vo 48Vdc
- Constant Current PWM
- Dimming Control: DMX512
- Address Range: 512 Via DIP SWITCH
- DMX Standard 1990 USIT
- Operating Temperature: Top -10° To +54°C
- Storage Temperature: Tst -20° To +85°
- Relative Humidity: RH 80%
Case Temperature: Tc +65°

36 mm

144 mm

110 mm

FIXING SCREW DISTANCE
276,0 mm

DIP SWITCH DMX ADDRESSES

30 mm

284 mm

47 mm

DDS. 344 Dmx/Rdm Led Control (Voltage Mode)

DDS344A DMX,0/10V,potentiometer PWM con- troller for power top strip led,this controller is not suitable for led in constant current control. PWM output up to 2A per channel total 6A are available for supply power top strip led, two operation mode are available DMX, or stand alone the selection of operation mode depend if DMX is present or not. If DMX is not available the system go in stand alone mode, then is possible to use external switches, potentiometer 0/10 vdc signal to obtain PWM output. DDS344A is provided in DIN bar Box mounting, connectors are available for DMX power supply and interface.
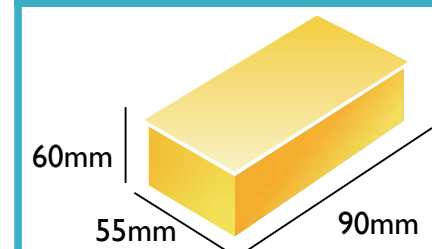

RDM SETTING SCREEN SHOT

- Power Supply: 24-12Vdc
- Current Max 150W @24 Full Power
- DMX Standard USITT512
- DMX Addressing Self Learning
- Open Drain Mosfet Output Max 48w
- PWM Out 150Hz
- RDM 2.0 Compliant 5 Personality
- Operating Temperature: -10°C To +54° C
- Storage Temperature: Tst -20°C To +85° C
- Relative Humidity: RH 80%

SIZE

60mm
55mm
90mm

DDS. 453 Dmx/Rdm Led Control (Current Mode)

DDS. 453 it is constant current or constant voltage controller, 4 channel. In constant current can supply up to 12 led in series @48 vdc1-3W. This module can work in several mode DMX / RDM / stand alone/potentiometer/ switches/enocean wireless switches/infrared remote control. In current mode hysteretic control guarantee the best light dimmering performance. In voltage mode the controls options are same DMX/RDM... but the led used they must be constant voltage kind, this unit can supply up to 250w of strip led or led with embedded electronic for current mode @24vdc, it can also supplied at 12vdc. All output are positive common, and ground control.

Power Supply: 24-48Vdc
Total Power Max 250W Max Current Per Channel 700mA
DMX Standard USITT512
DMX Self Learning, Addressing Mode
DMX Optoinsulated
RDM 2.0 Compatible
ENOCEAN Wireless Compatible
Common Positive For Led Connection Short Circuit Protection All 4 Output
protection
Operating Temperature: -10°C To +54°C
Common Positive For Led Connection
Storage Temperature: Tst -20°C To +85°C
Hysteretic Frequency Out 500Khz
Case Temperature: Tc +65°C Hysteretic Constant Current
Relative Humidity: RH 80% 4 Channel Output Up To 12 Led Per Channel @48vdc
MAX Led 48 3W Each
INFRARED Receiver
Operating Temperature: -10°C To +54°C
Storage Temperature: Tst -20° C To +85°
Relative Humidity: RH 80%

IR REMOTE

Class effect

Colour table

Off all the light

White

White level

MTL Remote Controller

SIZE

60mm

74mm

90mm
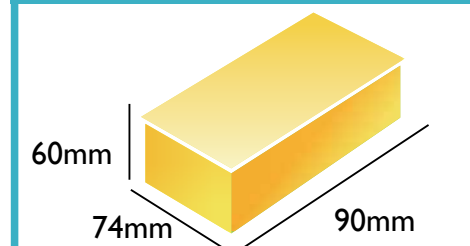
DDS. 561 Dmx Led Control

DDS561 it is constant current,4 channel this unit can supply up to 12 led in series 1W each or 15 led depending on Forward voltage.
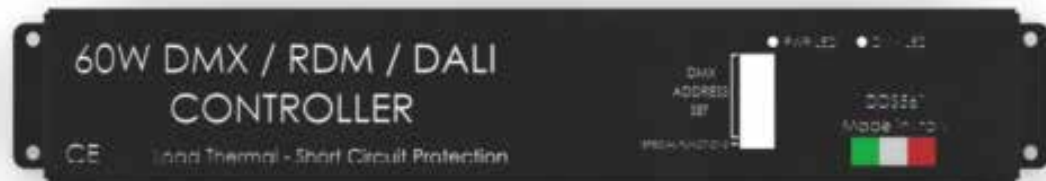This module can work in several mode DMX/RDM/stand-Alone/ and DALI.
The constant current is made by hysteretic control to guarantee the best light dimmering performance. All output are positive common, and ground control.
Din Bar mounting accessories available.

INPUT:
Power Supply V= 100-265 VAC Wide Range
Current MA = 600mA@110v/300mA@230v
THD = 14,6 %
Frequency = 47-63 Hz
Power Factor = 0,94 @ Full Load
OUTPUT:
Volatage Max = 50Vdc
Current Max Per Channel = 350mA
Total Power Out = 60W
Maximum Channel = 4
Maximum Led Per Channel = 12 /(15 If Vfled < 3Vdc)
Short Circuit Protection All 4 Output protection
Common Positive For Led Connection
Hysteretic Frequency Out 500Khz
Hysteretic Constant Current
4 Channel Output
LED Thermal Protection External NTC
Internal Thermal Protection NTC
CONTROL MODE:
DMX Standard USITT512
DMX Input Optoinsulated
RDM 2.0 Compatible
DALI

OUTPUT CONNECTOR VIEW

DMX

DALI   DMX
1 2 Gnd B A   NTC

LED THERMAL
PROTECTION

Ch1 Ch2 Ch3 Ch4 V+ Common
LED OUT

DALI

LED OUTPUT
4 CHANNEL
X 12 LED IN
SERIES 350mA
EACH ONE

DMX cable must be used for distance > 1mt between device(dds561)
Utilizzare cavo DMX se distanze superiori al metro

DMX Generator

Max 32 unit without splitter or DMX amplifier
32 unità massime collegabili senza amplificatore DMX

GND B A

120 1/4W ohm terminator Resistor may be necessary
Una Resistenza di terminazione da 120 ohm 1/4 potrebbe essere necessaria

Unit 1

Unit 32

60W DMX / RDM / DALI CONTROLLER

L
N

Max 16 Amp,MAX wire section 2.5mm
Massimo 16 A, sezione cavo massima 2.5mm

SIZE

50 mm

36mm   310mm

MACCARONE LEDTUBE

Maccarone integrates 10 POWER TOP LED, high-efficiency, FULL COLOR technology that allows to reach high-definition colors and shades.Every single full-color LED is controlled with DMX address individual colors and led, so each bar Maccarone occupies 30 DMX channels. Maccarone is designed to be mounted on the chain, male and female connectors connect power and DMX signal between the various modules, up to a maximum of 6 meters. The modules are fixed by plastic hooks, which allow the adjustability to 120 degrees.

Maccarone is native DMX, therefore compatible with the network standard USITT DMX 1990, the network address can be assigned with a button inside the module so Maccarone autolearn assigned address, or by using DMX control mode that allows you to configure automatically addresses an entire branch from 6meters.

Maccarone can be mount as a ledwall. The LED version WALL, requires the DVI> DMX: this is able to convert the signal VIDEO to a resolution of 1024x768 pixels, or less.
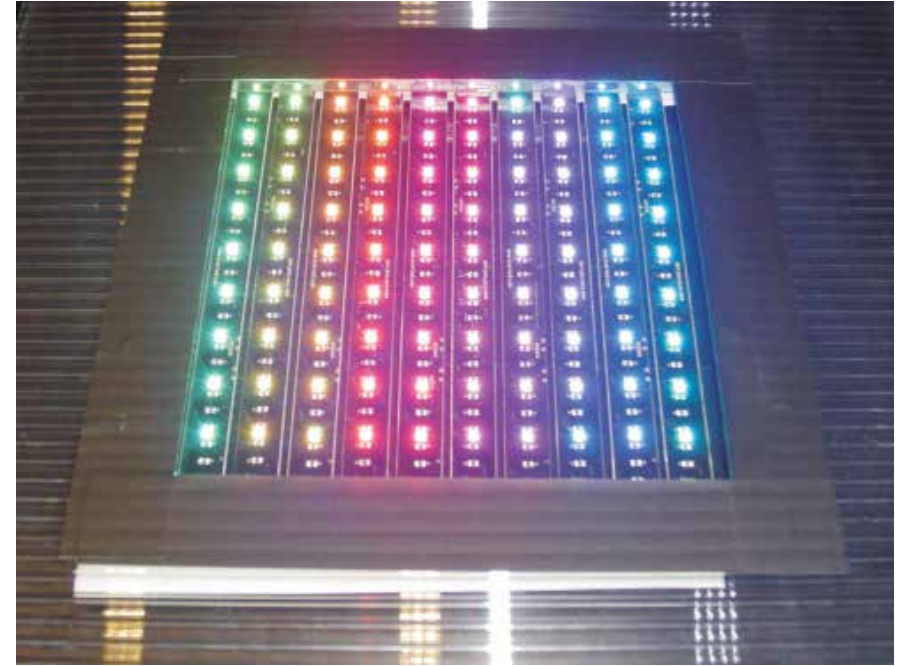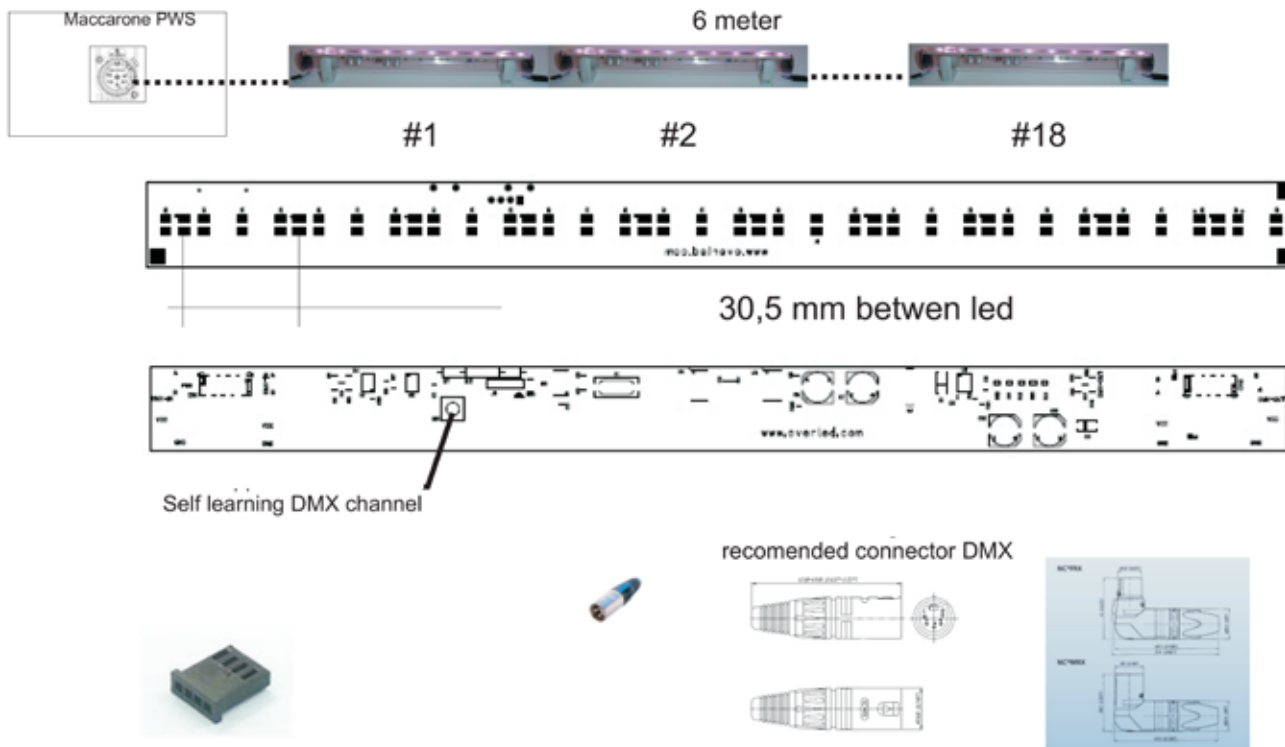
- Power Supply: 12-24Vdc
- Current : 240mA @ 24vdc
- DMX USITT
- Number Of Used DMX Slot Per Maccarone 30
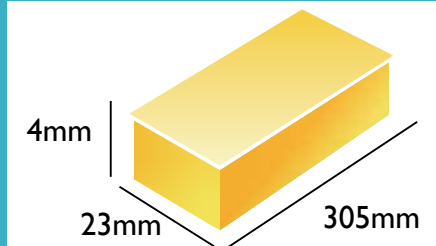- Lenght 305mm , Diameter 30,5mm

Maccarone, connections are made by input/output connectors, male and female already present on the module, the cable length of Maccarone, units can be connected in sequence up to a maximum of 6 meters. Maccarone may be used in either wall mounting the LED modules to create a matrix, this application requires a different interface that interprets the DVI signal and converts it to DMX. The DVI interface is called MaccaroneDVI.

Each branch can be powered by MaccaronePWS, this converts the network NET ART in DMX and feeds up to 18 units Maccarone the power goes out on pins 4 and 5 of XLR MaccaronePWS front of the box is also in charge of configuring the addresses sequentially entire branch connected to it. Maccarone, however, can be connected to any DMX controller and powered with 24vdc or 12vdc switching power supply suitable for the division to turn.

TECHNICAL SPECIFICATIONS

Maccarone PWS

6 meter

#1   #2   #18

30,5 mm betwen led

Self learning DMX channel

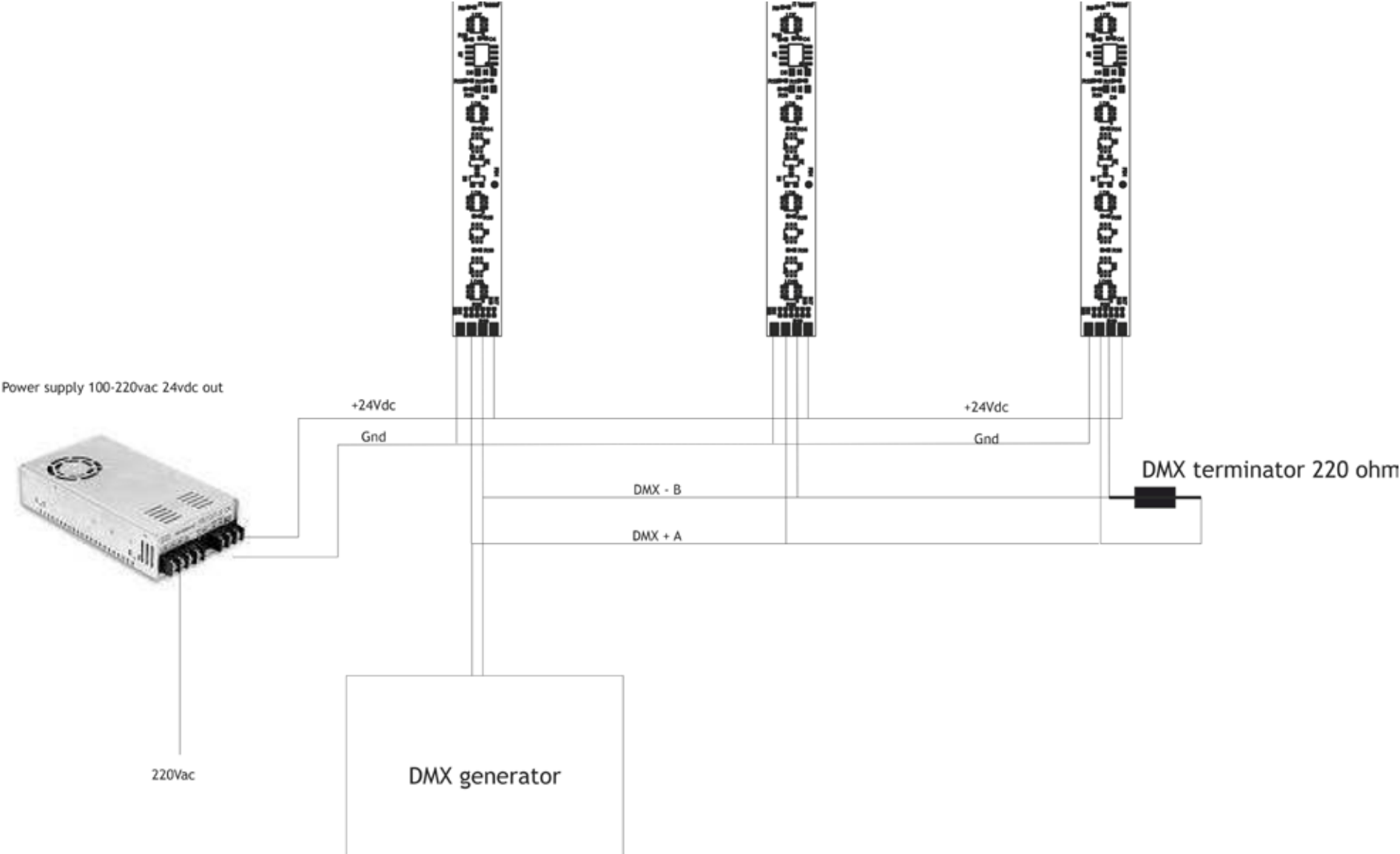recomended connector DMX

SIZE

4mm
23mm
305mm

LAMP. 532 Flex RGB, DMX/RDM embedded

Lamp532Flex RGB, flexible strip with on board constant current regulator each 5 led RGB. The power supply for this strip is 24Vdc constant voltage,**DMX / RDM on board** allow direct control from DMX consolle, and by RDM remote addressing possible. RDM setting available, several personality, one channel dimmer or RGB, it can be also possible set activity if no DMX, this permit to the strip to be set for automatic show (prememorized inside the microcontroller), or to light all led's on or off depending from setting. Using several Lamp.532 flex it can be possibile set different DMX address for show lighing. The connection for power supply is made by soldering wire to the pads on pcb, only 4 wire are necessary, +/- 24vdc and DMX+/DMX-, the DMX gnd is common to the power supply. Cutting every 10cmt it is possible, also re utilization of cutted parts

	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	24	27
Current per meter	mA/m RGB Full	1010	1000	3080
Total current per 5 meters	mA	2900	3000	3100
Total W	W	70	72	84
Thermal resistance	°C/(Wm)			0,1
Operating temperature	C°		70	80
Maximum lenght	mt			5
Life time	hours		>50000	
Led per meter	n			45
Lumen per meter	lm/mt	75	110	135
Light emission angle	Degree	120	120	120

- Power SupplyVV 23,8 24 27
- Current Per MeterVmA/m
- RGB Full 1010 1000 3080
- Total Current 5 Meter MA 2900 3000 3100
- Total W W 70 72 84
- Thermal Resistance °C/(W ·m) 0,1
- Operating Temperature °C 70 80
- Life Time Hours > 50000
- Led Per Meter N 45
- Lumen Per Meter Lm/mt 75 110 135
- Angle Light Emission Degree 120 120 120

Power supply 100-220vac 24vdc out

+24Vdc

Gnd

+24Vdc

Gnd

DMX terminator 220 ohm

DMX - B

DMX + A

220Vac

DMX generator

LAMP. 605 Flex white strip

Lamp605Flex, flexible strip with on board constant current regulation each 7 led, the power supply for this strip is 24Vdc constant voltage, it can be possible to cut every 11,4 centimeter, and by wire soldering on the provided pads it is possible to connect power supply. Thermal dissipation is required. Remote Phosphor version available.

	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	24	27
Current per meter	mA/m	815	825	850
Total current per 5 meters	mA	3200	3300	3400
Total W	W	76	80	92
Thermal resistance	°C/(Wm)			5
Operating temperature	C°	-10	60	70
Maximum lenght	mt			4
Life time	hours		>30000	
Led per meter	n			126
Lumen per meter/high flux version	lm/mt	2268/9000	2520/10.080	2646/10584
Light emission angle	Degree	120	120	120
CRI		75	80	92
EFF. LM/W		118	126	115

- Voltage V 23,8 24 27
- Power Consumption: MA/m 815 825 850
- Total Current MA 3200 3300 3400
- Watt 4 Meters W 76 80 92
- Thermal Resistance Heatsink °C/(W·m) 5
- Operating Temperature °C -10 60 70
- Expected Life 60degree Ore/hour > 30000
- Led Meter N 126
- Lumen Meter 3000K/high Flux Version
- Emission Angle 120 120 120
- CRI 75 80 92
- Eff. LM/w 118 126 115

LAMP. 552 Flex white strip

Lamp552Flex, flexible strip with on board constant current regulation each 7 led, the power supply for this strip is 24Vdc constant voltage, it can be possible to cut every 9,4 centimeter, and by wire soldering on the provided pads it is possible to connect power supply. Thermal dissipation is on pcb doesn't need any aluminium.

|	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	24	27
Current per meter	mA/m	170	180	190
Total current per 5 meters	mA	960	1000	1050
Total W	W	22/24	24/28	29/30
Thermal resistance	°C/(Wm)			0
Operating temperature	C°	-10	70	80
Maximum lenght	mt			5
Life time	hours		>30000	
Led per meter	n			72
Lumen per meter/high flux version	lm/mt	410/580	430/590	460/600
Light emission angle	Degree	120	120	120
CRI		89	90	92
EFF. LM/W		90	93	85

- Voltage V 23,8 24 27
- power Consumption: MA/m 170 180 190
- total Current MA 960 1000 1050
- Watt 5 Meters W 22/24 24/28 29/30
- Resistance Heatsink °C/(W·m) 0
- Temperature °C -10 70 80
- expected Life 60degree Ore/hour > 30000
- led Meter N 72
- meter 3000K/high Flux Version
- lm/meter 410 / 580 430 / 590 460 / 600
- emission Angle Gradi 120 120 120
- CRI 89 90 92
- eff. LM/w 90 93 85

LAMP. 517 Flex white strip

Lamp517Flex, flexible strip with on board constant current regulato each 5 led, the power supply for this strip 24Vdc constant voltage, it can be possible to cut every 15 centimeter, and by wire soldering on the provided pads it is possible to connect power supply. Double side adhesive Tape isprovided for thermal dissipation on aluminium bar, this adhesive have very high mechanicalstrenght, is not possible to remove the strip easy.

	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	24	27
Current per meter	mA/m	1600	1670	1750
Total current per 5 meters	mA	4800	5040	5250
Total W	W	84	120	140
Thermal resistance	°C/(Wm)			0,8
Operating temperature	C°		70	80
Maximum lenght	mt			3
Life time	hours		>50000	
Led per meter	n			30
Lumen per meter	lm/mt	2700	3000	3300
Light emission angle	Degree	120	120	120
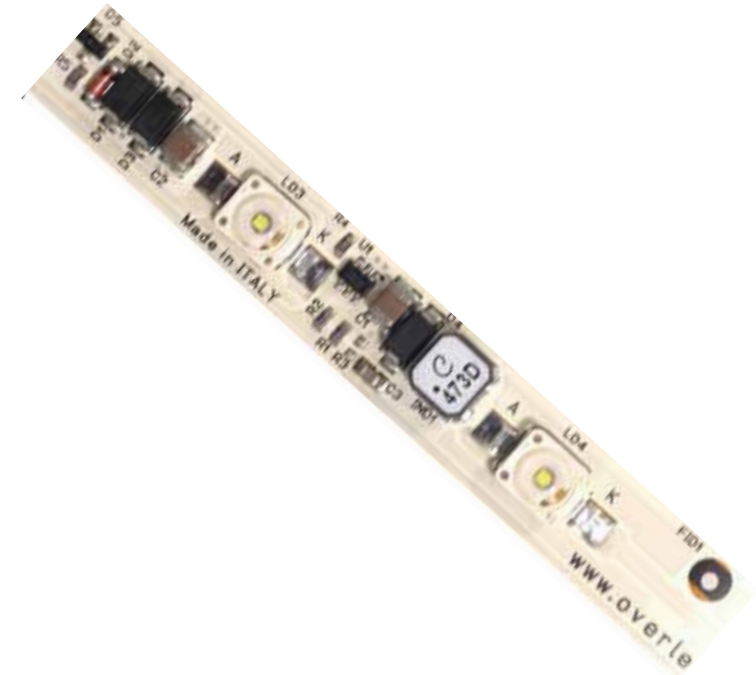
- Power Supply V 18 24 27
- Current Per Meter MA/m 1600 1670 1750
- Total Current 3 Meter MA 4800 5040 5250
- Total W 84 120 140
- Thermal Resistance °C/(W·m) 0,8
- Operating Temperature °C 70 80
- Maximum Lenght Mt 3
- Life Time Hours > 50000
- Led Per Meter N 30
- Lumen Per Meter Lm/mt 2700 3000 3300
- Angle Light Emission Degree 120 120 120

LAMP. 535 Flex white strip

Flexible strip with on board constant current regulation each 7 led, the power supply for this strip is 24Vdc constant voltage, it can be possible to cut every 3,5 centimeters, and by wire soldering on the provided pads it is possible to connect power supply.Double side adhesive Tape is provided for thermal dissipation on aluminium bar, this adhesive have very high mechanical strenght, is not possible to remove the strip easy.

	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	24	27
Total current per 5 meters	mA	2360	2470	2800
Total W	W	55	59	75
Thermal resistance	°C/(Wm)			0,9
Operating temperature	C°	-5	50	60
Maximum lenght	mt			5
Life time	hours		>50000	
Led per meter	n			72
Lumen per meter	lm/mt	1200	1350	1450
Light emission angle	Degree	120	120	120

- Power Supply:V 23,8 24 27
- TC Temperature °C 60 80
- Total Current 5 Meter MA 2360 2470 2800
- Total W 55 59 75
- Thermal Resistance °C/(W m) 0,9
- Operating Temperature °C -5 50 60
- Maximum Lenght Mt 5
- Expeted Life Time Hours > 50000
- Led Per Meter N 210
- Lumen Per Meter Lm/mt 1200 1350 1450
- Angle Light Emission Degree 120 120 120

LAMP. 653   Flex white strip

Flexible strip with on board constant current regulation each 7 led, the power supply for this strip is 24Vdc constant voltage, it can be possible to cut every 3,5 centimeters, and by wire soldering on the provided pads it is possible to connect power supply.Double side adhesive Tape is provided for thermal dissipation on aluminium bar, this adhesive have very high mechanical strenght, is not possible to remove the strip easy.

	UNIT	VALUE		
		Min	Typical	Max
Power supply	V.	23,8	26	27
Total current per 3 meters	lm/m	15000	15200	15300
Total W 3 meter	W	153	150	160
Thermal resistance	°C/(Wm)			0,9
Operating temperature	C°	-5	40	55
Maximum lenght wide 11mm	mt			3
Life time	hours		>40000	
Lumen per meter	lm/mt	5000	5200	5300
Light emission angle	Degree	120	120	120

DDS. 543   Touchless LED controller (custom available on request)

DDS.543 This is a touchless module for LED control, IR receiver and IR transmitter detect the distance of your hand or your finger, the distance from sensor adjust the led light output, dimmering softly the led connected, distance for light adjusting are in the range of 5-7 cm, from IR sensor. Another option for this module, is for light on and off inside Closet, installed near to the closet door, when open, a soft start light on, and stay on for 10 minute (other timing available on request), after the timeout, light goes off, close and open the door again the light come on again, if door closed the light goes off immediately.
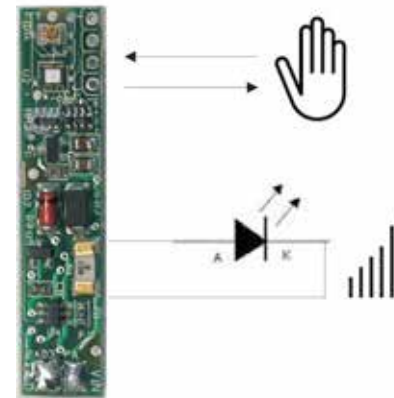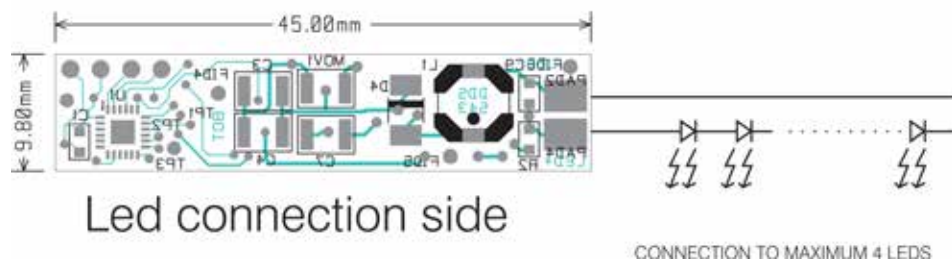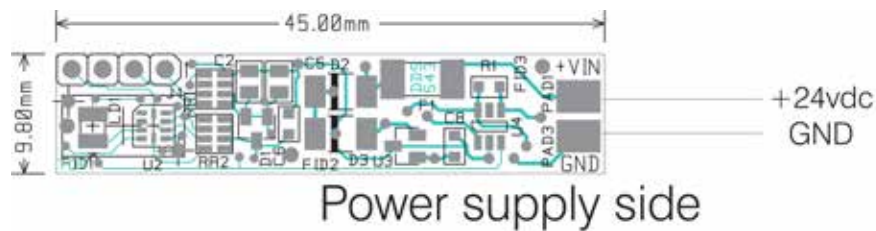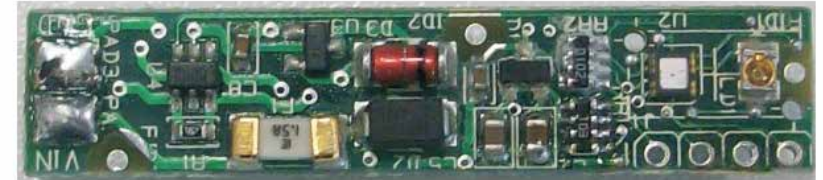
Electrical Specification:
- Supply Voltage Vin24Vdc
- Power Consumption Range: 1W Or 3W

Output
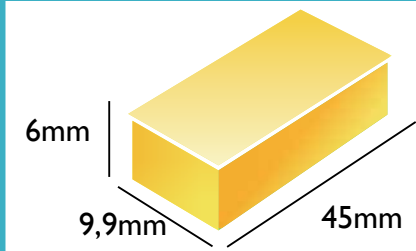- Power Output: 350mA Or 600mA
- Output Voltage:24Vdc
- Maximum 4 LEDs From 1W To 3W
or Strip Led Constant Voltage

Environmental
- Operating Temperature: -10° To +54°C
- Storage Temperature: Tst -20° To +85°
- Case Temperature: Tc +75°
- Relative Humidity: RH 80%

45.00mm
9.80mm

+24vdc
GND

Power supply side

45.00mm
9.80mm

Led connection side

CONNECTION TO MAXIMUM 4 LEDS

SIZE

6mm
9,9mm
45mm

DDS. 264 Touch module for LED control (custom available on request)

DDS.264 This is a capacitive touch module for LED control, conductive metal plate must be used for capacitive application, this metal plate must be insulated from chasis or any other different metallic material. The capacitive sensor can work with insulated material with thikness of 3mm. The sensor plate must be connected by screw or wire from connector, this module need to be set for the application, in our factory, and must adjusted on finished product.

tc 75 degree

sensor

GND

+24vdc

Electrical Specification:
- Supply Voltage Vin24Vdc
- Power Consumption Range: 1W Or 3W
Output
- Power Output: 350mA Or 600mA
- Output Voltage:22Vdc
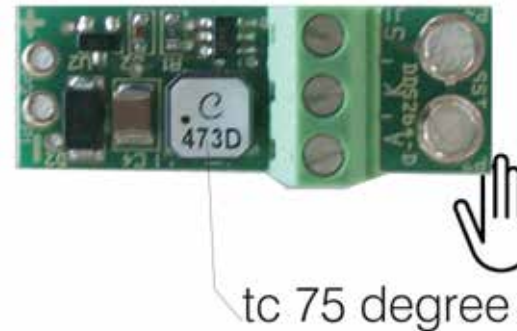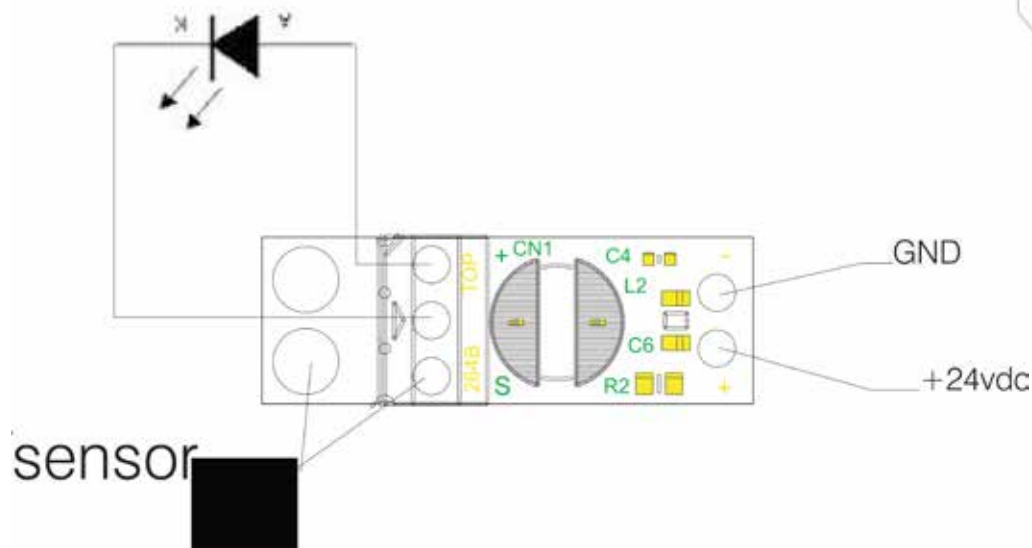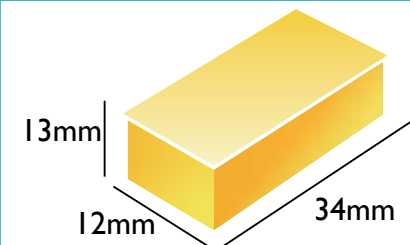- Maximum 4 LEDs From 1W To 3W
or Strip Led Constant Voltage
Environmental
- Operating Temperature: -10° To +54°C
- Storage Temperature: Tst -20° To +85°
- Case Temperature: Tc +75°
- Relative Humidity: RH 80%

SIZE

13mm

12mm

34mm

DDS. 547 costant current converter (custom available on request)

DDS.547 Voltage to constant current converter, with high voltage power supply from 30-48vdc. Maximum current output is 750mA or 350mA adjustable by jumper on board. This constant current driver can be dimmered by PWM on the power supply. Can supply LED with VF up to supply voltage.

Electrical Specification:
- Supply Voltage Vin 30-48Vdc
- Surge Protection And Fuse On Board

Output
- Power Output: 350mA Or 750mA
- Output Voltage= Vin - 4vdc (drop Out)
- Max Power Out 36W

Environmental
- Operating Temperature: -10° To +54°C
- Storage Temperature: Tst -20° To +85°
- Case Temperature: Tc +75°
- Relative Humidity: RH 80%

top side view

40.00mm

20.00mm

bottom side view

jumper close = 750mA
Open = 350mA

TC < 75 degree C

SIZE

6mm

20mm

40mm

CONTROL SYSTEM
DMX- RDM- ARTNET

DMX 512

Developed by the Engineering Commission of United States Institute for Theatre Technology (USITT), the standard was created in 1986, with subsequent revisions in 1990 leading to USITT DMX512/1990.DMX512-A In 1998 the Entertainment Services and Technology Association (ESTA) began a revision process to develop the standard as an ANSI standard. The resulting revised standard, known officially as "Entertainment Technology — USITT DMX512-A — Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories", was approved by the American National Standards Institute (ANSI) in November 2004. This current standard is also known as "E1.11, USITT DMX512-A", or just "DMX512-A", and is maintained by ESTA.

Network tipology

DMX512 network employs a multi-drop bus topology with nodes strung together in what is commonly called a daisy chain. Anetwork consists of a single DMX512 controller — which is the sole master of the network — and one or more slave devices. For example, a lighting console is frequently employed as the controller for a network of slave devices such as dimmers, fog machines and intelligent moving lights. Each slave device has a DMX512 "IN" connector and, in many case, a DMX512 "OUT" connector (sometimes marked "THRU") as well. The controller, which has only an OUT connector, is connected via a DMX512 cable to the IN connector of the first slave. Asecond cable then links the OUTor THRU connector of the first slave to the IN connector of the next slave in the chain, and so on. The final, empty, OUTor THRU connector of the last slave on the daisy chain should have a terminator plugged into it. Aterminator is a stand-alone male connector with a built-in resistor. The resistor — typically 120 Oto match the cable characteristic impedance, is connected across the primary data signal pair. If a secondary data pair is used, then another termination resistor is connected across it as well. Although simple systems, i.e., systems having few devices and short cable runs, may work reliably without a terminator, it is considered good practice always to use a terminator at the end of the daisy chain. Some DMX devices have built-in terminators that can be manually activated with a mechanical switch or by software, or by automatically sensing the absence of a connected cable.
Each DMX network is called a "DMX universe". Large control desks (operator consoles) may have the capacity to control multiple universes, with an OUTconnector provided for each universe.

Electrical

DMX512 data are sent using EIA-485 voltage levels. However, quoting from E1.11, "The electrical specifications of this Standard are those of EIA-
485-A, except where specifically stated in this document. Where a conflict between EIA-485-A and this document exists, this document is controlling as far as this Standard is concerned."
DMX512 is a bus network no more than 1200 meters long, with not more than 32 devices on a single bus. If more than 32 devices need to communicate, the network can be expanded across parallel buses using DMX splitters. Network wiring consists of a shielded twisted pair, with a characteristic impedance of 120 Ohms, with a termination resistor at the end of the cable furthest from the controller to absorb signal reflections.

Connectors

DMX512 1990 specifies that where connectors are used, the data link shall use five-pin XLR style electrical connectors (XLR-5), with female connectors used on transmitting (OUT) ports and male connectors on receiving ports. DMX512-A (E1.11) requires the use of an XLR-5 connector, unless there is insufficient physical space on the device, in which case an XLR-5 adapter shall be supplied. DMX512-A(E1.11-2008) allows the use of eight-pin modular (RJ-45) connectors for fixed installations where regular plugging and unplugging of equipment is not required. Some DMX512 equipment manufacturers employ non-compliant connectors and pinouts; the most common of these is the three-pin XLR connector, since the electrical specification currently only defines a purpose for a single wire pair. There is risk of equipment damage if a novice unfamiliar with lighting technology accidentally plugs XLR 3-pin DMX into an audio device, since the DMX signal voltages are much higher than what audio equipment normally uses. Also, devices are sometimes fitted with four-pin connectors when both communications and power are sent through a common cable.

XLR-5 pinout
1. Signal Common
2. Data 1- (Primary Data Link)
3. Data 1+ (Primary Data Link)
4. Data 2- (Optional Secondary Data Link)
5. Data 2+ (Optional Secondary Data Link)

RJ-45 pinout
1. Data 1+
2. Data 1-
3. Data 2+
4. Not Assigned
5. Not Assigned
6. Data 2-
7. Signal Common (0 V) for Data 1
8. Signal Common (0 V) for Data 2

The RJ-45 connector pinout matches the conductor pairing scheme used by Category 5 (Cat5) twisted pair patch cables. The avoidance of pins 4 and 5 helps to prevent equipment damage, if the cabling is accidentally plugged into a single-line public switched telephone network phone jack. Cabling for DMX512 was removed from the standard and a separate cabling standards project was started in 2004. Two cabling standards have been developed, one for portable DMX512 cables (ANSI E1.27-1 - 2006) and one for permanent installations (draft standard BSR E1.27-2). This resolved issues arising from the differences in requirements for cables used in touring shows versus those used for permanent infrastructure. The electrical characteristics of DMX512 cable are specified in terms of impedance and capacitance, although there are often mechanical and other considerations that must be considered as well. Cable types that are appropriate for DMX512 usage will have a nominal characteristic impedance of 120 ohms. Cat5 cable, commonly used for networking and telecommunications, has been tested by ESTA for use with DMX512A. Also, cables designed for EIA485 typically meet the DMX512 electrical specifications. Conversely, microphone and line level audio cables lack the requisite electrical characteristics and thus are not suitable for DMX512 cabling. The significantly lower impedance and higher capacitance of these cables distort the DMX512 digital waveforms, which in turn can cause irregular operation or intermittent errors that are difficult to identify and correct.

RDM

The RDM protocol and the RDM physical layer were designed to be compatible with legacy equipment. All compliant legacy DMX512 receivers should be usable in mixed systems with an RDM controller (console) and RDM responders (receivers). DMX receivers and RDM responders can be used with a legacy DMX console to form a DMX512 only system. From a user's point of view the system layout is very similar to a DMX system. The controller is placed at one end of the main cable segment. The cable is run receiver to receiver in a daisy-chain fashion. RDM enabled splitters are used the same way DMX splitters would be. The far end (the non console or splitter end) of a cable segment should be terminated. RDM requires two significant topology changes compared to DMX. However, these changes are generally internal to equipment and therefore not seen by the user. First, a controller's (console's) output is terminated. Second, this termination must provide a bias to keep the line in the 'marking state'when no

driver is enabled. The reason for the additional termination is that a network segment will be driven at many points along its length. Hence, either end of the segment, if unterminated, will cause reflections. A DMX console's output drivers are always enabled. The RDM protocol is designed so that except during discovery, there should never be data collisions. To assure this lack of collisions, while making possible implementation on different platforms, there are times when all line drivers are required to be disabled. If nothing more than the termination was done, the line would float to some unknown level. In that case one or more random changes might be read on the line. These random changes greatly decrease system accuracy. So the biasing of the line is requiredTo assure this, section 2.4.1 (Line Bias Networks) of the standard says; "The command port shall provide a means to bias the termination of the data link to a value of at least 245 mV and verified by using the test circuit described in Appendix F."The standard further

states that, the biasing mean "shall be polarized such that Data+ of the data link is positive with respect to Data- the data link. The Line Biasing network shall maintain this bias when the data link is loaded with the equivalent of 32 unit loads and common mode voltage is varied over the range of +7 volts to -7 voltThe standard does not require any particular circuit for providing the basis and termination; however, the simplest method is often a passive pull apart network. Whatever method is used must be tested with the chosen driver chip to see that the design combination still meets the requirement of E1.20. Tests are given in Appendix F of the standard. These tests are for design verification and are not required as production testing. Experience has shown many EIA485 drivers designed for 5 volt operation will pass the required tests. It is not so clear that all 3.3 volt parts will pass. In either case this performance must be verified. Details of the pull apart network and the tests can be found in ANSI E1.20 - 2006.

Protocol

RDM packets are inserted in-between the existing DMX data packets being used to control the lighting data. The DMX 512 specification always requires that DMX packets begin with the start code. The default Start Code is 0x00(also known as the Null Start Code). By using the start code 0xCC, RDM packets can be safely inserted between DMX data packets without older non-RDM aware devices attempting to read them. The DMX 512 specification required DMX connectors to be a 5-pin XLR type, with only the first 3 pins being used (pins 4 and 5 were reserved for "future use"). Unfortunately, various manufacturers started using the final two pins for various, proprietary purposes, such as low-voltage power or proprietary talkback protocols. As a result, the decision was made to have all RDM communication on pins 2 and 3. This raises data collision concerns. The RDM standard addresses this problem by ensuring that in all cases (except discovery) only one device is authorized to be transmitting at any given time

(somewhat similar to the token passing approach). Only the controller (of which there can be only one) can start an RDM exchange. Responders can speak only if spoken to. The controller will always initiate all RDM communication. All RDM devices have a unique identifier (UID) that consists of a manufacturer ID and serial number. Protocol RDM packets are inserted in-between the existing DMX data packets being used to control the lighting data. The DMX 512 specification always requires that DMX packets begin with the start code. The default Start Code is 0x00(also known as the Null Start Code). By using the start code 0xCC, RDM packets can be safely inserted between DMX data packets without older non-RDM aware devices attempting to read them.

ArtNet

Art-Net is an Ethernet protocol based on the TCP/IP protocol suite. Its purpose is to allow transferof large amounts of DMX512 data over a wide area using standard networking technology. The latest revision of the protocol implements a number of new features and also simplifies thedata transfer mechanism. The hanges are all based on feed back from manufacturers who are usingthe protocol.

Limitations

A theoretical limit of 255 universes of DMX512 exists in this specification. However a simplistic data rate comparison (DMX runs at 250KBaud, 10BaseT at 10MBaud) suggests a maximum of 40 universes of DMX is the limit. Art-Net uses a simple delta transmission compression technique that will provide about 40 universes. If an installation of more than say 30 universes is contemplated, then it is necessary to use the unicast features of Art-Net II and 100BaseT or better physical layer. If this is done the number of universes limit becomes purely related to the network bandwidth.

Credits

Artistic Licence require that companies who implement Art-Net in their products include a user guide credit of: "Art-Net™ Designed by and Copyright Artistic Licence (UK) Ltd".

Protocol Operation

ArtNode operates in one mode, each Node having a unique IP address derived from its Ethernet MAC address. The UDPport used as sources and destinations is 0x1936. IP address configuration The Art-Net protocol can operate on either a DHCP managed address scheme or using static addresses. By default an Art-Net product will factory start using a Class A IP address scheme. This

allows Art-Net products to communicate directly and without the need for a DHCP server to be connected to the network.IP address configuration - DHCPNodes report whether they are DHCP capable in the ArtPollReply packet. This document details packets on the assumption that static addressing is used. When DHCPis used, the addressing and subnet masks will be modified as dictated by the DHCP server.IP address configuration – Static AddressingThe use of Class A addressing is allowed within a closed network. It is important to ensure that Art-Net data is not routed onto the Internet.Products implementing Art-Net should default to the Primary IP address of 2.?.?.?.The IP address consists of a 32 bit number designated as A.B.C.D.The lower the bytes B.C.D is calculated from the MAC address.The high byte 'A' is set to one of two values as shown in the following table.The MAC address is a 48 bit number designated u:v:w:x:y:z.This is a globally unique number.The upper three bytes 'u.v.w' are registered to a specific organisation.The lower three bytes 'x.y.z' are assigned by that organisation. In order to ensure that there is minimal possibility of IP address conflicts between different manufacturers supporting Art-Net, the product OEM code is added to the MAC address. The 'B' field of the IP address is calculated by adding the high byte of the OEM code with the low byte of the OEM code and the 'x' field of the MAC address.On power up, the Node checks its configuration for IP addressing mode. If it has been programmed to use a custom IP address, the following procedure is not used.

COMPANY PROFILE

DDS elettronica it is a service company that operates since 1992 in the most different fields where electronics is used, design for its clients, equipment and electronic systems starting from the beginning that this is only an 'idea and following them in various stages of design, prototyping, testing and EMC precompilances tuning and finally to the production of electronic boards.

DDS ELETTRONICA

OVERLED   **OEM BOARDS**

.
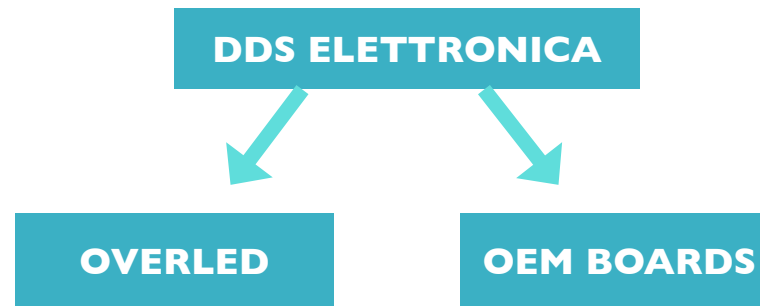
Overled is a DDS Elettronica brand name dedicated to led solution! DDS Elettronica was founded in 1992 it has been designing and making specialised electronic equipment in every field where custom built electronics find application. DDS Elettronica starts by consulting with the customer to define an initial specification, benefiting from their many years experience. Then follows a step by step process taking the initial specification through design, production of photo stencils, production of printed circuit boards, assembly by SMD machinery, EMC compliance testing and final approval before starting production in either high or low volumes. Overled is dedicated to all LEDS application , producing many different board as switching power supply , DMX led controller, DMX generator , heat sink with pcb for high power led cooling, leds assembling by special machinery. Overled can develop custom solutions as switching power supply or led controller. Overled feels confident that it can provide you with innovative solutions to your LED lighting electronics problems taking advantage of the very latest leading edge technology.

R&D

DDS ELETTRONICA, from several years in lighitng, follow the market investing money on R&D and quality improvement.

- **Automatic storage system** Especially dedicated for LED component, REEL TRAYS ecc. with ESD   protection, and humidity controlled to avoid reflow soldering problem with LED.
- **ESD STORAGE** ESD protection manual Storage system, to avoid humidity and soldering problem.
- **OVEN** for Backing LED REEL, this help reflow soldering and avoid humidity in the opened LED REEL.
- **MICROSCOPE** Microscope for visual inspection of led and soldering procedure.
- **THERMAL CAMER** Thermal camer, for thermal testing and visual thermal radiation of
- **SMD ASSEMBLY LINE** TWO SMD assembly line, screen machine with optical recognition, and SMT machine wit camera inspection for components placing.LED heat sink, or led life prediction.
- **ASSEMBLYNG** ASSEMBLYNG custom made OEM board, on specification, we can assembly MPCB, FR4, CopperPCB with testing and packaging.
- **LASER CUT**: LASER CUT machine for labelling and Kapton cutting, especially for flexible REEL.
- **LED REWORK STATION**, with IR sensor and IR heater for MPCB rework.
- **IN CIRCUIT TESTER**, for led flux measuring and testing, all led are measured and it's value stored in our system, for each production lot.
- **SPECTROPHOTOMETER** for LED cie TESTING, CRI, Flux and Lumen testing, we can test each production lot and divide for binning.
- **EMC** precompliance equipment, we can test the electronic and led module before official EMC testing laboratory submission.
- **3D cad** for electronic and mechanical parts testing, this allow us to verify mechanical size and electronic, before to make it real parts. Thermal simulation and optical available.
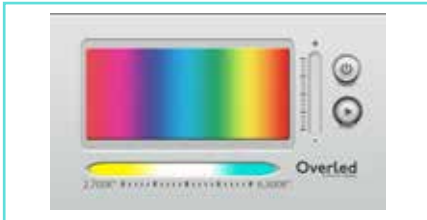
OVERLED PRODUCTS

ROUND LED BOARD

DMX CONTROLLER

ARTNET CONTROLLER

OVERLED BUS

LED BAR

FLEXIBLE LED REEL

POWER LED BOARD

Oevrled LED controller DIN bar or OEM Module

Light Application

Industrial Application

White goods Application

Overled

italian professional led lighting

OVERLED IS A BRAND OF

DDS ELETTRONICA srl
Via Nicolò Biondo , 171
41100 Modena ITALY
Tel + 39 059 331465
Fax + 39 059 827353

info@ddselettronica.com
www.overled.com