Moodifier™ slim LED driver

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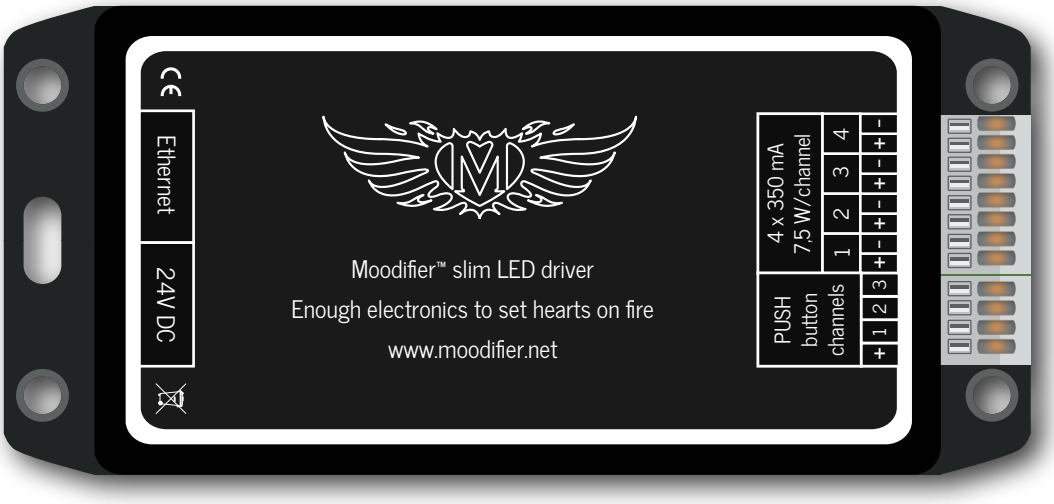
Moodifier slim LED driver is an advanced network-connected driver for LED based lighting.

Moodifier slim LED driver has the following connectors:

- 1 Network port (Ethernet)
- 1 port for connecting a 24V DC power supply.
- 4 sockets for connecting up to 6 wall mounted push buttons.
- 4 sockets for connecting up to 12 1,2W LED in 4 serially connected loops.

Power supply, network and LEDs may only be connected according to the instructions that are printed on top of the Moodifier slim LED driver.



Moodifier slim LED driver seen from above with connectors facing down..

Despite that Moodifier slim LED driver is a low voltage and low current unit it should always be connected in a proper and professional way. You should always consult an authorised electrician if you are insecure on how the unit is to be connected or if you are insecure if you are authorised to connect the unit.

A faulty installation may cause harm or damage..

- Moodifier slim LED driver may only be installed indoors.
- Moodifier slim LED driver may not be installed in wet or damp areas.
- Moodifier slim LED driver may not be encapsulated or enclosed in a way that prevents access to the unit.
- Moodifier slim LED driver should always have a fixed installation with good ventilation.

Main features

- Network (Ethernet 10/100 Base-T)
- 4 individually controlled 350 mA LED-channels.
- Up to 6. 1,2 W LEDs per LED-channel, for a total of 24 LEDs per unit.
- Up to 2400 lumen per unit.
- 0-100% dimming in 250 steps.
- Variable dim/transition-speeds..
- Easy to use and powerful software for controlling lights and create user defined light settings.
- Unlimited number of user defined light settings.
- Organise light settings in user defined zones.
- Automation through scheduling of light settings.
- Password protected and easy to use web interface for remote access of all light settings and zones.
- Remote control all lights with iPhone, iPad and iPod.
- Remote control all lights with Android phones and tablets.
- Remote control all lights with any web browser..
- Music sync in 100Hz (the lights colour and intensity is synchronised to follow the music in realtime).
- Video and screen sync in 30Hz (the lights colour and intensity is synchronised to the video/screen).
- Automated light shows.
- Up to 6 user defined light scenarios for standard wall mounted push buttons.
- User defined default light setting for power up or after power failure..
- Pulse width modulated and flicker-free dimming..
- Adjustable PWM frequency (240Hz - 2,4kHz).
- Status reporting (ip number, temperature, voltage, PWM frequency, power output per channel)
- Overheating protection.
- Surge protection..

Connecting the power supply

Moodifier slim LED driver must be powered by a 12-24V DC power supply. A power supply of 24V DC is required for full armament with up to 6 1,2W LEDs per channel (7,5W/channel). A 12V DC power supply limits the number of 1,2W LEDs per channel to 3 (3,75W/channel).

The power supply needs to be able to provide enough power to drive all LEDs that are connected to the device. A power supply that delivers 30W at 24V DC (1,25A) is needed for full armament with up to 24 1,2W LEDs.

The 24V DC power supply is easily connected by plugging it in to the appropriate port on the Moodifier slim LED driver.

By putting a standard wall switch that cuts the power to the power supply you will get a master power on/off switch for the device. Use the Moodifier application to set the default light setting that is activated whenever the unit is powered up or after power failures.

If you need more advanced push button light scenarios you simply connect up to 6 wall mounted push buttons to the push button channels.

Connecting to the network (Internet)

The Moodifier slim LED driver connects to the network with a standard ethernet cable. The device may also be connected to a Wifi-network by using a Wifi-adaptor from Netgear[1] (sold separately).

The Moodifier slim LED driver will auto-configure itself on the network with DHCP. Once the unit is connected to the network and powered on it will be ready and available on the network. Use the Moodifier application to auto-detect Moodifier devices on the network. Once a Moodifier device is detected on the network you can start to control the lights that are connected to it.

1 http://www.netgear.com/home/products/wireless-adapters/high-performance/WNCE2001.aspx

Connecting LEDs and LED lights

The Moodifier slim LED driver has 12 individually controllable LED-channels where LEDs should be connected in series. Each LED-channel delivers a constant current of 350mA with an effect of 7,5W. This means that 6 1,2W LEDs can be serially connected to each LED-channel. The Moodifier slim LED driver can drive up to 24 1,2W LEDs with a total effect of 28,8W.

Common LED lights

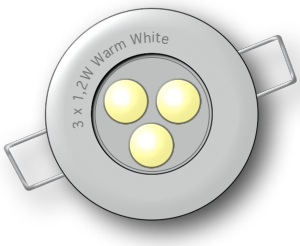
LED stands for "Light Emitting Diode". There are many different types of LEDs. Moodifier slim LED driver is compatible with all LEDs that are meant to be driven by constant current at 350mA and above.

When choosing LEDs or LED based lights it is important to check that they are built to be driven by 350mA constant current.

Some LED based lights are are rated to be driven with a constant current of 700mA with an effect of 2,45W per LED. These LED based lights most often contain exactly the same LEDs as in an LED based light that is rated to be driven with 350mA with an effect of 1,2W per LED. The difference between the two is that the LED based light that is rated for 700mA has a larger and more effective heat sink than the lights that are rated to be driven at 350mA. Driving a LED based light that is rated for 700mA with 350mA works just fine in normal situations (it contains the same LEDs). The lifespan of the LED based light is extended due to better cooling.

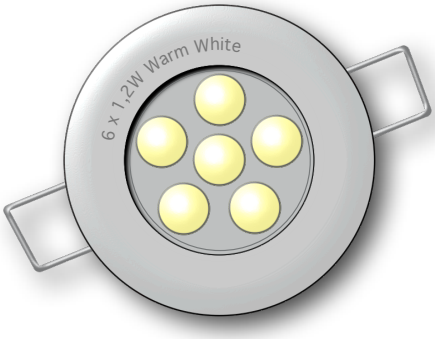
LED based lights ate available in a plethora of models, shapes and colours, below we have chosen to illustrate a few common types of downlights with a few different combinations of LEDs. Moodifier is also capable of driving many other models of LED based lights.

350 mA LED downlight with one LED.
Small but effective light source.
Typical effect 1,2W
Warm white colour (2700-3000K)
Approximate light output 80-100 lumen



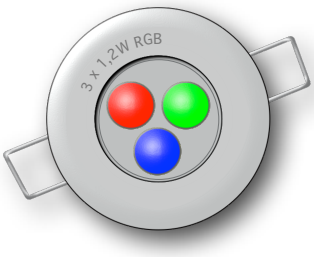
350 mA LED downlight with three LEDs.
Replaces a traditional halogen downlight of 20-30W.

Typical effect 1,2 * 3 = 3,6W.
Warm white colour (2700-3000K)
Approximate light output 240-300 lumen



350 mA LED downlight with 6 LEDs.
Replaces a traditional halogen downlight of 50W and more.

Typical effect 1,2 * 6 = 7,2W
Warm white colour (2700-3000K)
Approximate light output 480-600 lumen

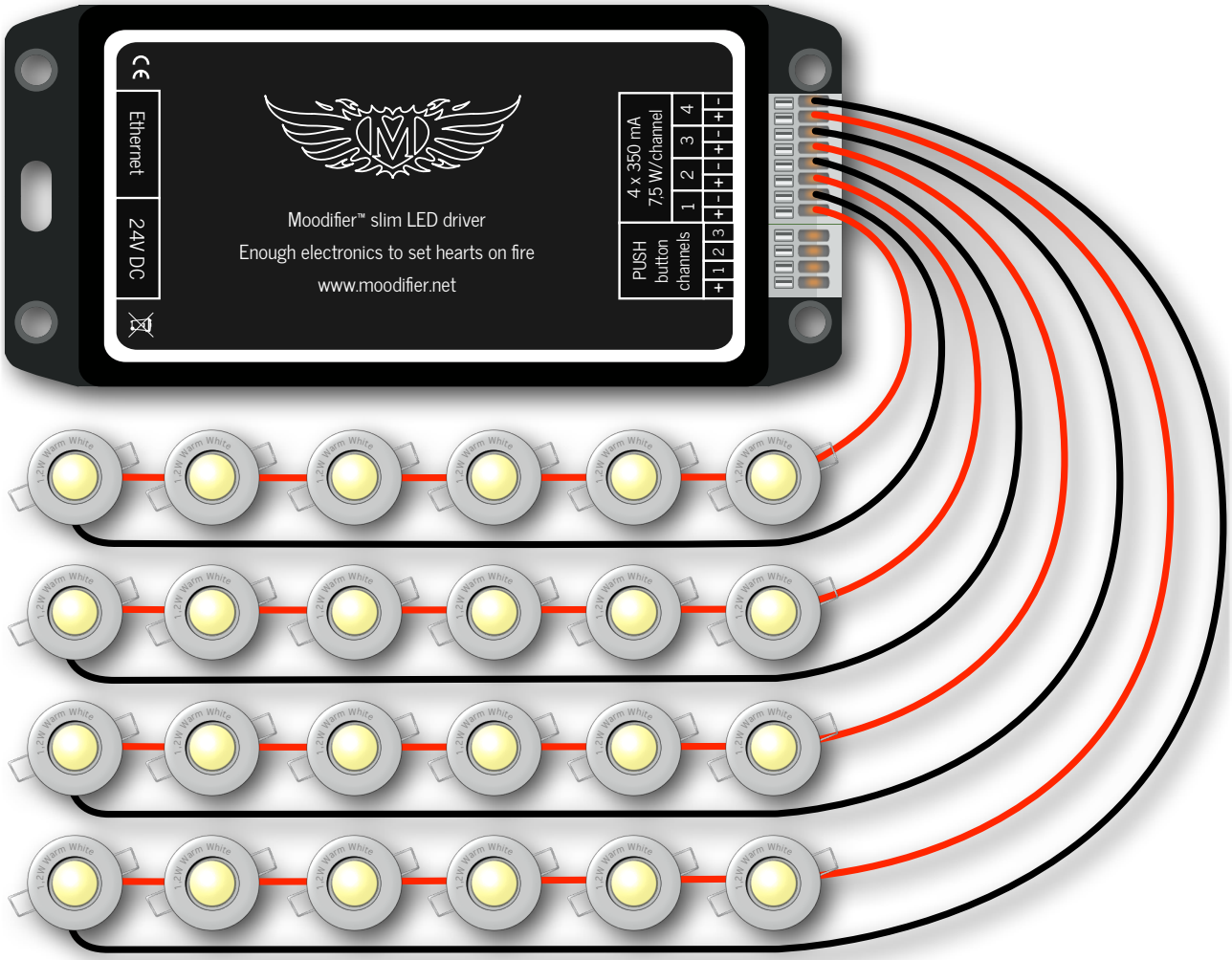


350 mA LED downlight with 3 RGB (red, green, blue) LEDs.
Used to create atmospheres, moods and effects by colouring the light. Many different colours, including white, can be created by mixing the colours red, blue and green.

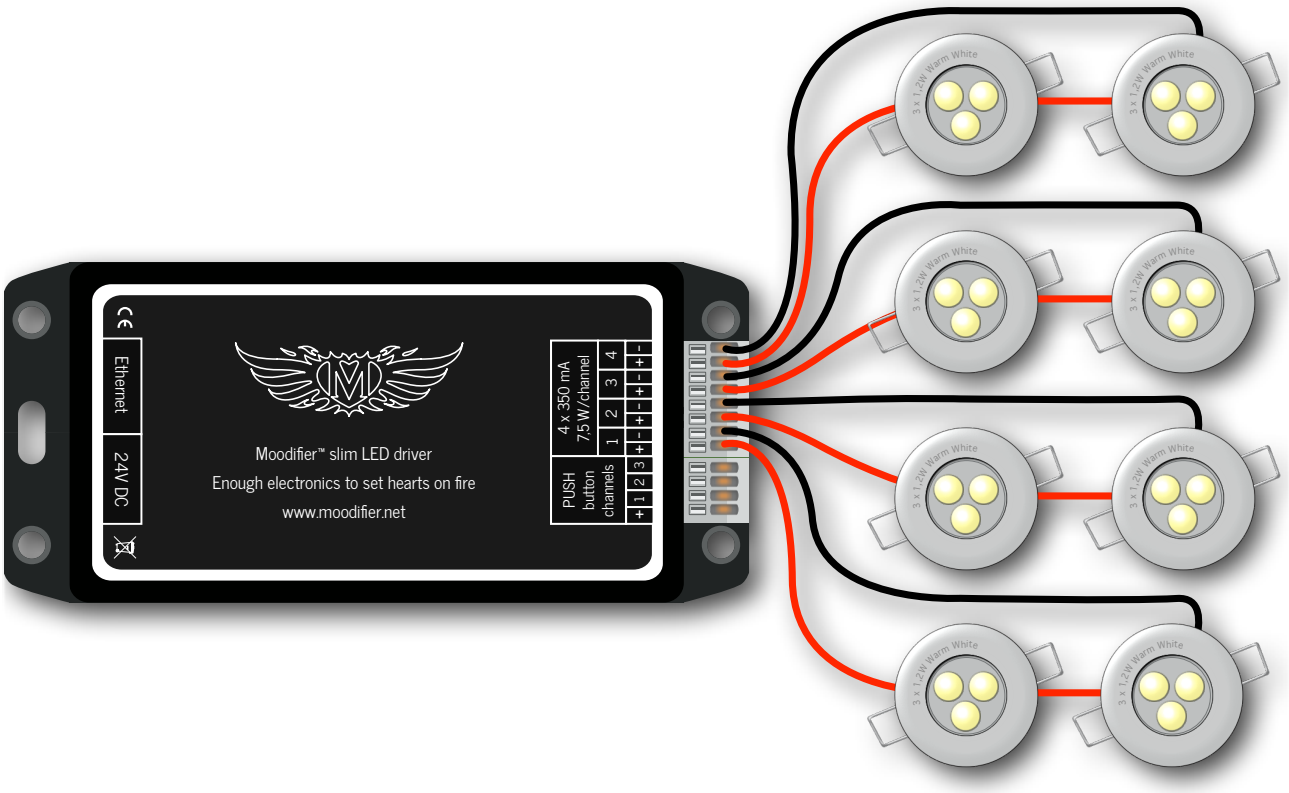
Typical effect 1,2 * 3 = 3,6W
Red, green and blue colour (RGB)
Approximate light output 100-200 lumen

Connecting LED lights

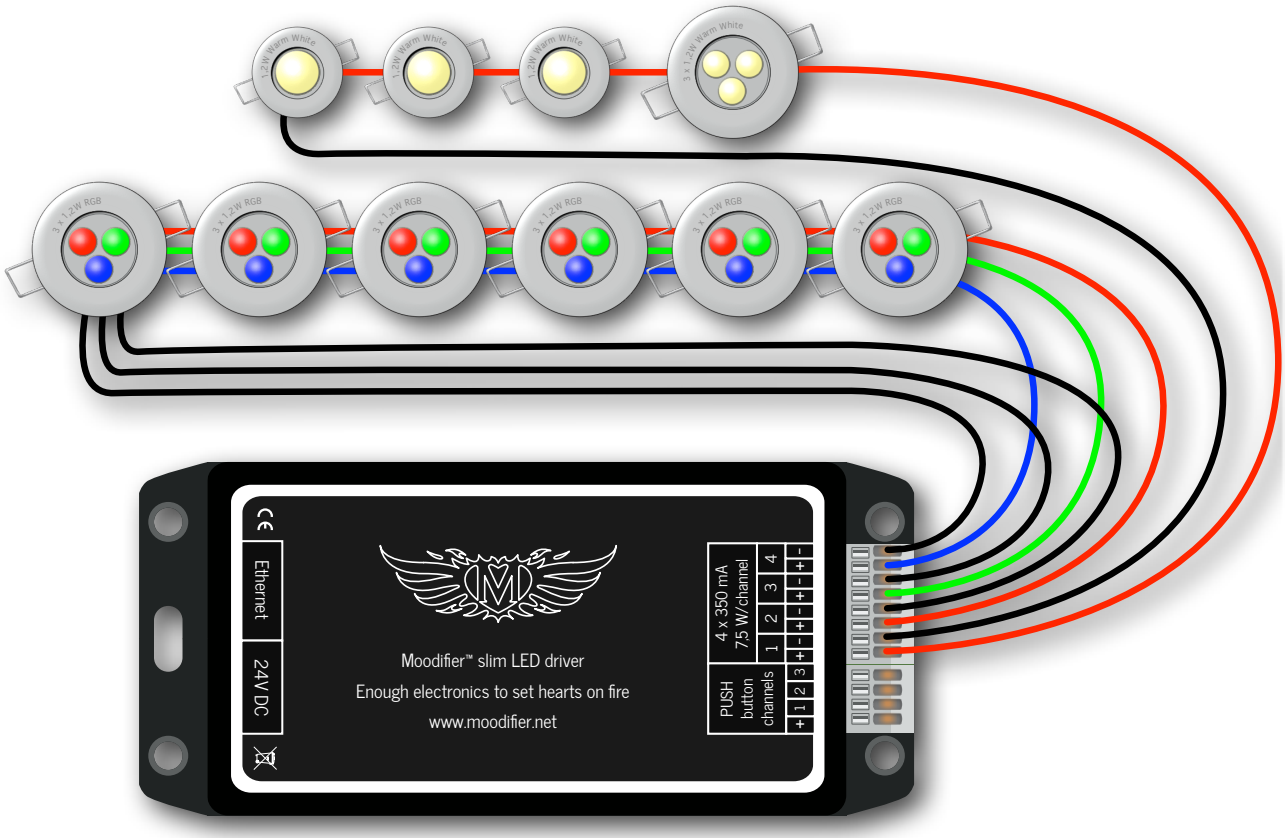
LEDs and LED lights should always be connected, in series, to the positive and negative connectors of each LED-channel on the Moodifier slim LED driver. Below are a few examples of how different types of LED lights are to be connected to the Moodifier slim LED driver.



Moodifier slim LED driver with 24 LED downlights that each contain 1 LED of 1,2W.



Moodifier slim LED driver with 8 LED downlights that each contain 3 LEDs of 1,2W.



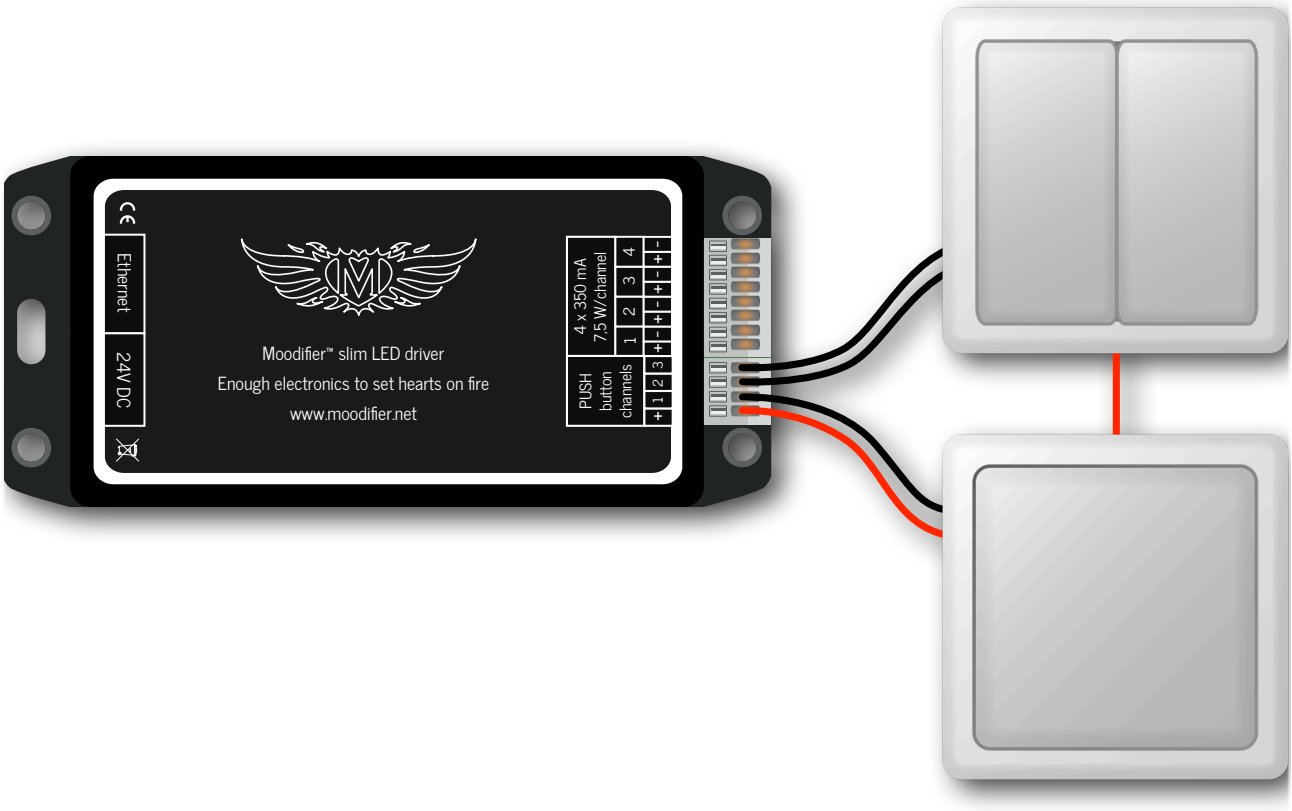
Moodifier slim LED driver with a combination of different LED downlights that contain a different number of LEDs. Note that each LED-channel has a maximum of 6 LEDs with an effect of 1,2W each.

Connecting push buttons

The Moodifier slim LED driver has 4 connectors (PUSH button channels) for connection of up to 6 standard wall mounted push buttons. A push on each button activates/de-activates a user defined light scenario. Holding in the push button will enable dimming of the user defined light scenarios (0-100%). These push buttons enables you to control the Moodifier lighting in a traditional way with standard wall mounted buttons. The push buttons makes the Moodifier slim LED driver fully operational as a stand alone unit without being connected to a network. The Moodifier application makes it easy to alter and customise what should happen when each push button is pressed.

Push button 1-3

By closing a circuit between + and any of the 1, 2 or 3 push button channels a signal is sent to the Moodifier slim LED driver that activates or deactivates the light setting that is set for that push button. Each push button can be set to activate and de-activate its own light scenario. Dimming of the light scenario is achieved by holding in the push button. Use the Moodifier application to set the light scenario that each push button should activate/de-activate.



Moodifier LED with 3 connected push buttons that each activates/de-activates its own light scenario.

Push button 4-6

By closing a circuit between + and two push button channels simultaneously you can connect and use another 3 push buttons that activates/de-activates another 3 light scenarios. Use the Moodifier application to set the light scenario that each push button should activate/de-activate. Closing all 3 push button channels at the same time turns all the lights off.

Technical specification

Power supply	24V DC (1,25 A)
LED channels	4
Current per LED channel	350mA
Power output per LED channel	7,5W
Push button functions	6 + dimming 0-100%
Network	Ethernet 10/100 (DHCP)
PWM Frequency	240Hz - 2,4kHz (adjustable)
Surge Protection	Yes
Overheat protection	Yes
Conforms to European EMC regulations	Yes
CE-marked	Yes
Dimensions (LxWxH)	150(175)x95x50mm
Ambient temperature (operation)	0-35°C

Planing your lighting

In order to get the maximum value and pleasure from your Moodifier lighting it is important to plan how you want your lighting to work. Each LED channel on the Moodifier slim LED driver can be controlled individually (switched on/of or dimmed)

If you want to be able to light up a wall or some other part of a room individually you should dedicate one or more LED-channels for that purpose.

If you want to colour-change the lighting with RGB lights that have 6 wires (positive and negative for each colour, red, green and blue) you need to dedicate 3 LED-channels for that purpose. Keep in mind that coloured light is not visible unless it hits a surface. If you want to colour a room with light you should direct the lights to the walls and ceiling, not to the centre of the room. A good comparison is to think of it is as if you were painting with light.

By planning your lighting well you are able to create unique mood-setting atmospheres with astonishing effects.

Keep in mind:

- Connect a maximum of 6 1,2W LEDs per LED-channel.

Software

The Moodifier application is available as a free download on:
http://www.moodifier.net/software/