

Overview

The MLC V3 offers a high quality, versatile hardware and software platform for LED controls.

The MLC V3 can control separate high-power LEDs or led strips with up to 300 LEDs.

There are a number of models available:

- Basic
- Extended
- Master
- Master Plus

The base configuration is identical for all models. There are 16 independent channels available. Each channel can provide a maximum output current of continuous 2 amperes. The channels can also be operated in parallel, and drive a currency of 20 amperes total.

The supply voltage can be selected between 12 and 24 volts. The supply voltage must be provided by a separate power supply.

The power is sufficient to drive 5 x 5 m RGB LED strip modules (LED type 5050) at 12 V operating voltage. This represents more than 1500 LEDs. Recommended are LED Strips with 60 LEDs / m (14.4 W / m).

With extension boards the number of channels can be extended to nearly any size. They are connected through control lines (RJ-45 connector), or one can use the wireless network via the ant port.

The free software included with the unit allows the user to set and control all channels and parameters via the USB port. The values are stored in the internal memory. It is possible to install additional software packages. The microcontroller STM32F105V8T6 from ST Microelectronics is being used together with an external 16 kB EEPROM. The open-source real-time operating system FreeRTOS is installed.

Thanks to the open-source approach, the interested user will be able to customize the software according to their own needs.

The MLC V3 has an infrared receiver and can easily be controlled with an IR remote control.

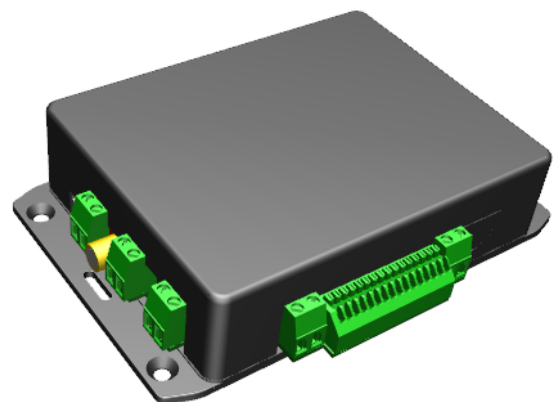
Convenient operation is facilitated via Bluetooth and ANT. An Application for Android is planned.

Standard features such as Flash, Strobe, Fade and Smooth are already implemented and can be expanded according to the user's needs.

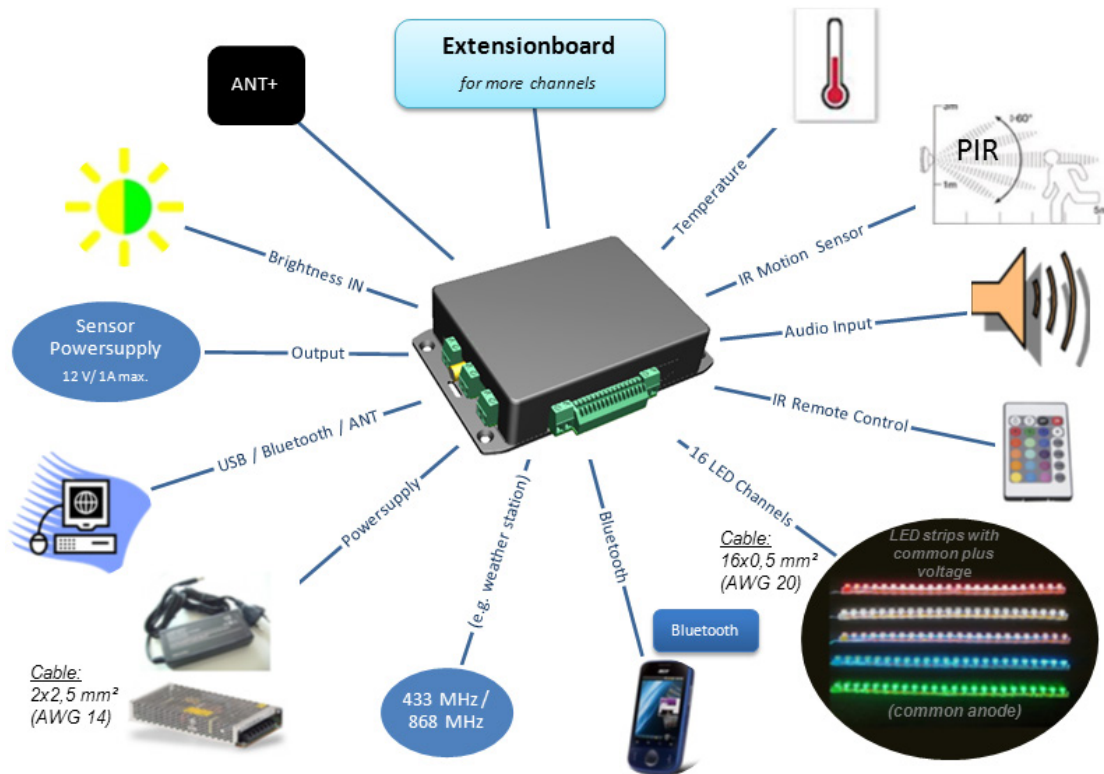
The integrated sensors provide controls based on light, temperature (directly or 433 MHz sensor) or movements. Through the audio input or the built-in microphone a music control can easily be implemented. In addition, the system can be connected to any external sensor.

The MLC V3 is specified for an interior temperature range from 0 °C to + 70 °C.

The applications are extremely diverse and range from networked decorative lighting to Ambilight to complex light organs for entire buildings.



Variants

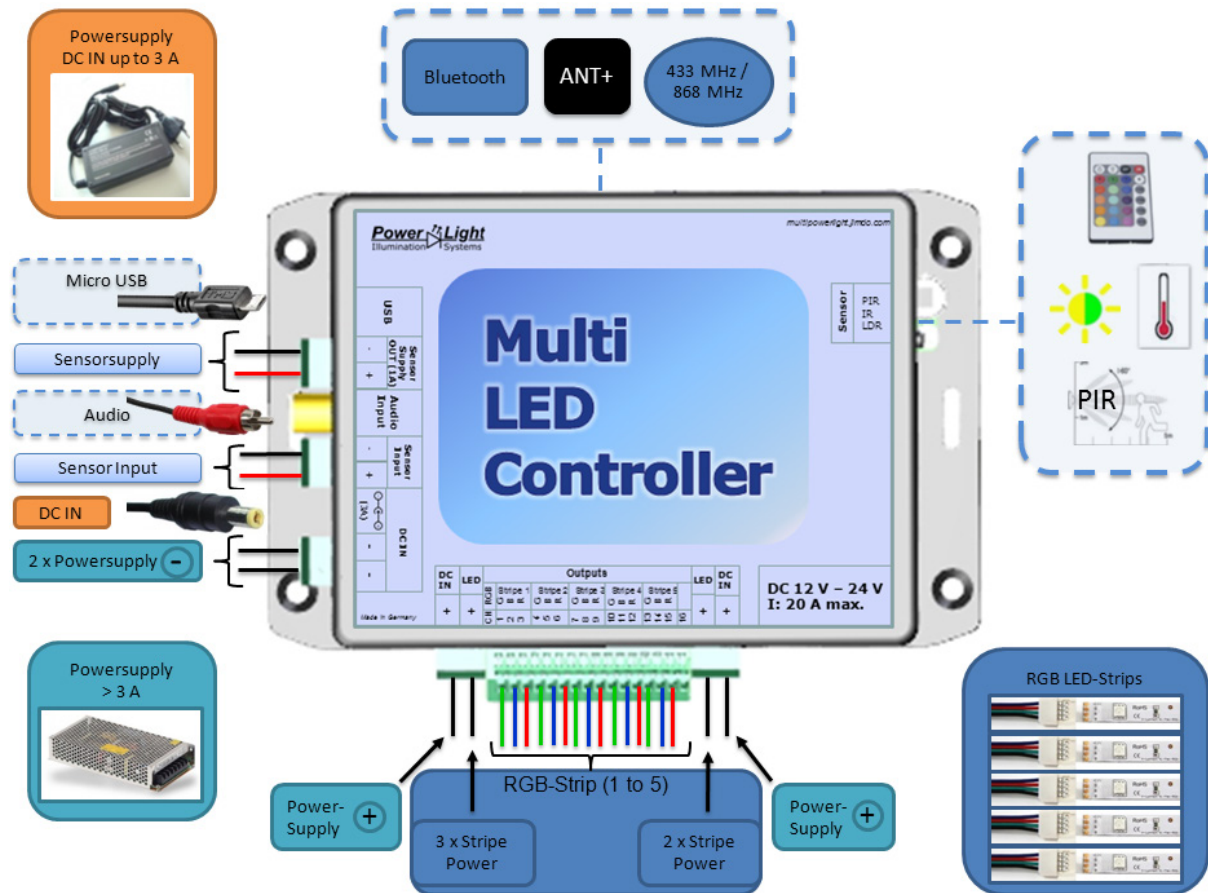


	<i>Basic</i>	<i>Extended</i>	<i>Master</i>	<i>Master Plus</i>	<i>MLC V3 beta</i>
Power supply 12 V	•	•	•	•	•
Power supply 24 V	•	•	•	•	•
16 independent LED- outputs	•	•	•	•	•
USB port	•	•	•	•	•
EEPROM	•	•	•	•	•
IR receiver (remote control)	•	•	•	•	•
Audio input (cinch/ microphon)		•	•	•	•
Bluetooth		•	•	•	•
Bluetooth extended range				•	
I2C (for expansion)			•	•	
ANT				•	
433 MHz / 866 MHz receiver			•	•	
Motion Sensor (PIR)			•	•	•
Temperature (NTC))			•	•	•
Light sensor (LDR)			•	•	•
Sensor power supply (Vout)			•	•	
Digital sensor input			•	•	•
Windows user interface	•	•	•	•	•

Available Software functions:

- RGB control
- Flah, Strobe Fade, Smooth
- Android APP
- all freely configurable (Terminal program)
- Extended Functions
- FreeRTOS and FBL (Flash-Bootloader)

Connecting plan



Examples of the required supply voltage (with 300 Tricolor-5050-LEDs- Strips):

- 3 m RGB-LED-Strips needs 12 V / 3 A (36 W)
- 5 m RGB-LED- Strips needs 12 V / 4 A (48 W)
- 3 x 3 m RGB-LED- Strips needs 12 V / 9 A (108 W)
- 5 x 3 m RGB- LED- Strips needs 12 V / 15 A (180 W)
- 5 x 5 m RGB-LED- Strips needs 12 V / 20 A (240 W)

Examples of the required supply voltage (with 150 Tricolor-5050-LEDs- Strips):

- 5 x 5 m RGB- LED- Strips needs 12 V / 15 A (180 W)

The developer needs for programming the Olimex Debugger ARM-USB-TINY-H.

<https://www.olimex.com/dev/arm-usb-tiny-h.html>

Available accessories

- LED-Strips, 5 m

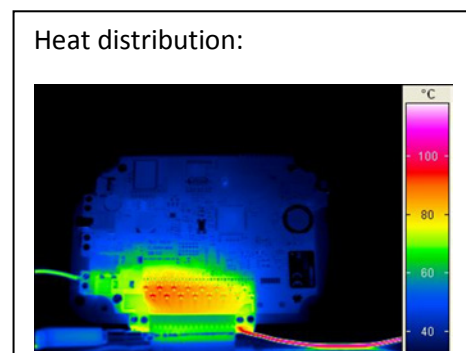
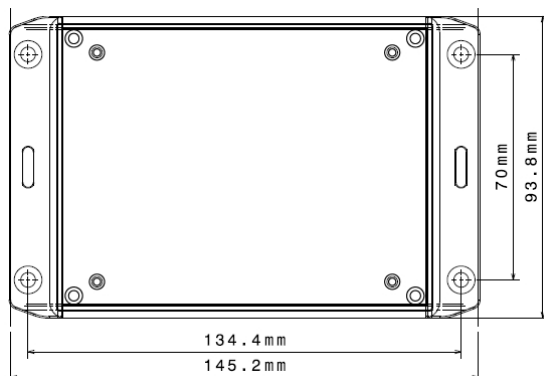
RGB-LED-Strips 5050, flexible, 3M-tape, 12 V DC, 300 Tricolor-LEDs (= 60 LEDs/ m), 72W (= 14,4 W/ m), LED-distance: 16,7 mm, L x B x H = 5000 mm x 12 mm x 3mm, 3 x minus, 1 x plus (Anode)

- Power supply 12 V/ 3 A with DC-Jack
- Power supply 12 V/ 10 A
- IR- Remote control (24 keys)
- Software- Moduls with extended functions

Technical Characteristics

- 10 V bis 28 V input voltage, DC-Jack 2,0 mm/ 6,5 mm (up to 3 A) or screw terminal (2 x AWG 14)
- up to 20 A output current
- 2 A output current per channel, Connect with AWG 20 cable
- temperature range from 0 °C to + 70 °C
- dimensions 146 mm x 94 mm x 38 mm
- weight: 200 g

Assembly drawing



Safety instructions

The MLC V3 is developed according to the state of the art and applicable standards. The MLC V3 may only be used within the supplied specifications. An internal overcurrent protection is not available. Inappropriate use can lead to the destruction of the device. In this case, the manufacturer assumes no liability.

