



**CONTROLLER  
MANUAL  
&  
Technical Specs**

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## Safety instructions

Make sure you understand the function of each connection before you connect it. See that all connections are made correctly before turning on the controller.

Always disconnect the controller from the mains supply when connecting the signal leads, the power cord should be connected last.

Do not apply voltage higher than 260 Vac to the controller. (See also technical data)

In case of an emergency, you can disconnect power from the controller by pulling out the power cord. Keep the power cord easily accessible at all times. If your application set-up does not allow easy access to the power cord, install a mechanical circuit breaker in the supply-line, going to the controller.

The controller has a fuse accessible on the IEC power inlet; replace them only with the correct type. See below how to replace them.

To insure good ventilation in order to prevent fire caused by overheating, do not install or use the controller in a closed space. Make sure that the ventilation exits at the side and the top of the controller are not blocked.

If the controller is not supported by a floor or a table, you must secure it with a mechanical safety. The connecting cables are NOT mechanical safeties! If you are not familiar with mechanical safeties, feel free to contact us. We can provide you with professional advice. (See Contact Information)

Take care with the environmental limits. Do not exceed them. (See technical data)

Keep a minimum distance of 1 meter between you (or the audience) and the LEDs. Do not stare into the LEDs, especially when narrow angle LEDs are used.

This controller is designed and tested for driving LEDs; do not use it for other purposes.

Do not expose the controller to water (rain) or direct sunlight.

Do not subject to excessive shock by dropping the unit.

## How to replace the fuse

Disconnect the powercord! Pull out the fuse drawer below the mains input and replace the fuse at the back of the fuse drawer with the spare fuse at the front of the fuse drawer. If there is no spare fuse use the right kind of fuses. (Fuse, medium delay 5A, 20x5mm). Connect the powercord and check if the controller is working properly.

## Introduction

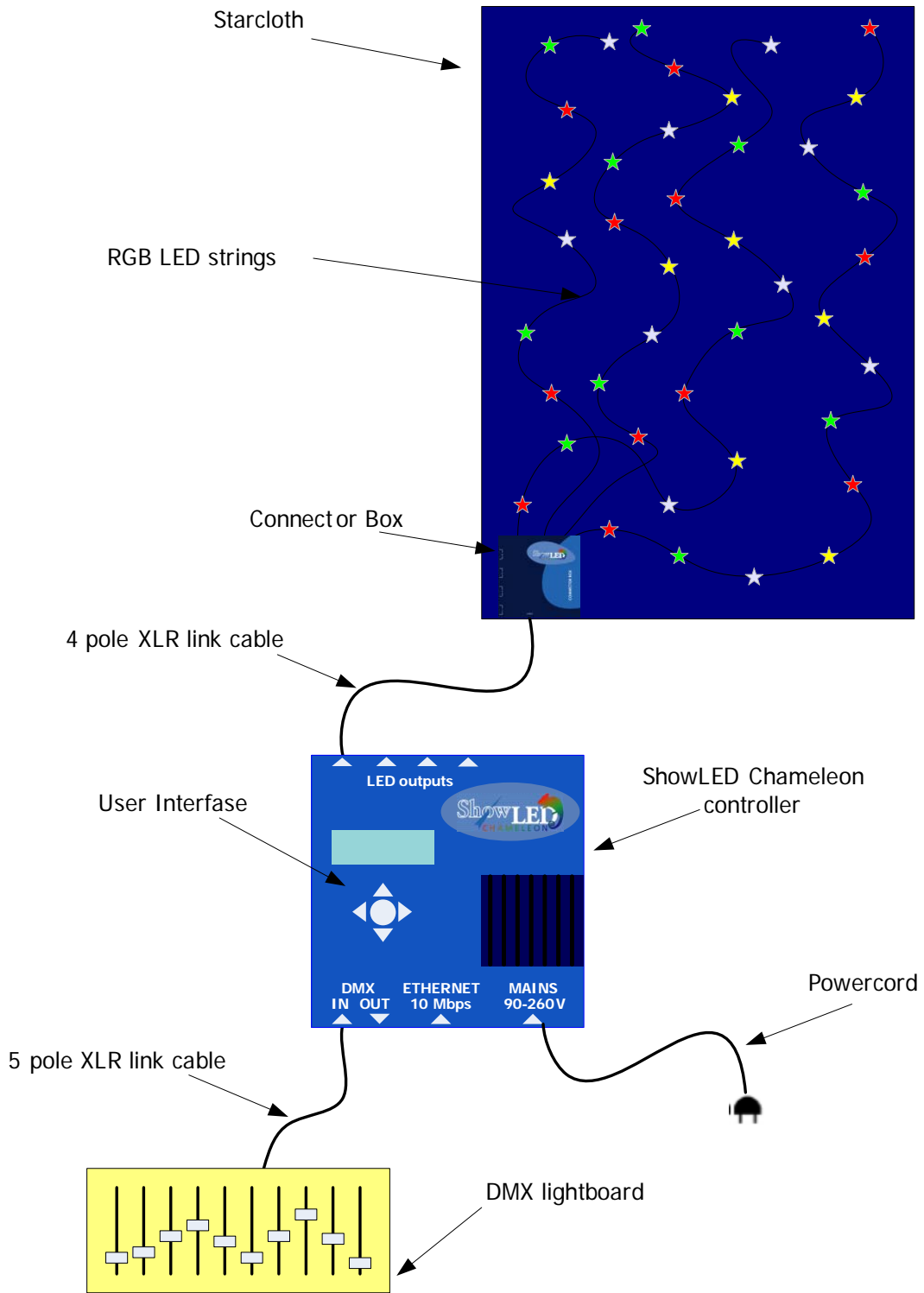
Thank you for buying our product. The ShowLED\* Chameleon controller has the following features.

### Features

- 8 output channels for driving RGB LEDs
- Stand-alone mode with Chase Patterns and Effects Memory
- Chase patterns
  - Stand alone (or selected by DMX signal)
  - Selection hard or soft chase
  - Variable chase speed
  - A number of predefined patterns
  - Interactive colour selecting
- DMX-compatible
  - The DMX signal is cleaned up and amplified every time it passes through a controller.
  - 2 separate DMX modes
    - preset chasers (via 10 DMX channels)
    - individual control 8 RGB output channels (via minimum 24 DMX channels)
- Two or more controllers can be synchronized
- The LED outputs are protected against short circuit
- Uses standard cables (4 or 5 pin XLR-cables, IEC power cord)
- Maximum 512 LEDs per controller
- Maximum 256 LEDs per XLR plug (4x 4-pin plug per controller) via connector box
- 4-line LCD display (20 characters per line)
- Help function
- Master-slave configuration

\* ShowLED is our brand name for LED-products we develop for the entertainment industry. ShowLED products are manufactured and distributed by Amelia N.V.

# Product Overview



## Connections

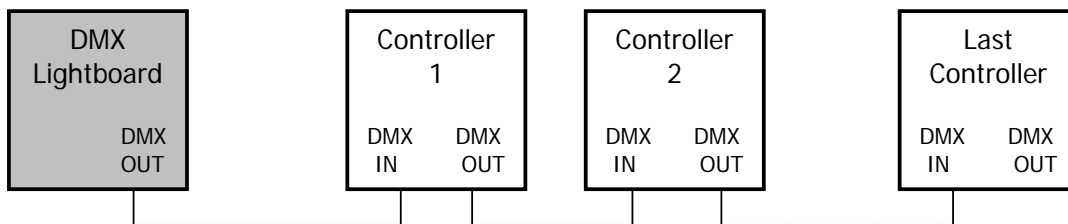
### Connecting the ShowLED controller

Connect your application<sup>1</sup> to the LED output connectors of the controller.  
Insert the powercord into the MAINS (90-260V) input of the controller.  
At this point you will need to set the parameters of the controller. You will learn how to do so from this manual. (See How to setup the controller)  
A DMX lightboard can be connected to the controller via the DMX IN gate.  
If you want to connect two or more controllers together, you can do so by connecting the DMX OUT from the first controller to the DMX IN of the second controller. (See Setting up the control network)

### Setting up the control network

The control network is set up with the use of 5 pole XLR cables. In the following drawings only the control network is drawn. Depending on your application, you will have to choose a configuration.

### Configurations with a DMX lightboard



In configurations with use of a DMX lightboard the first controller can either be set in DMX mode 24 or in DMX mode 10 SYNC.<sup>2</sup>

In DMX mode 24 you can choose if you want to address the controllers all together or separately.

By setting all the controllers in the control network in DMX mode 24 on the same DMX base<sup>2</sup> you can address all the controllers together.

By setting all the controllers in the control network in DMX mode 24 on a different DMX base (e.g. 1, 25, 49, 73 ...) you can address all the controllers separately.

In DMX mode 10 SYNC only the first controller in the control network is set in DMX mode 10 SYNC all the other controllers are set as slave.<sup>2</sup>

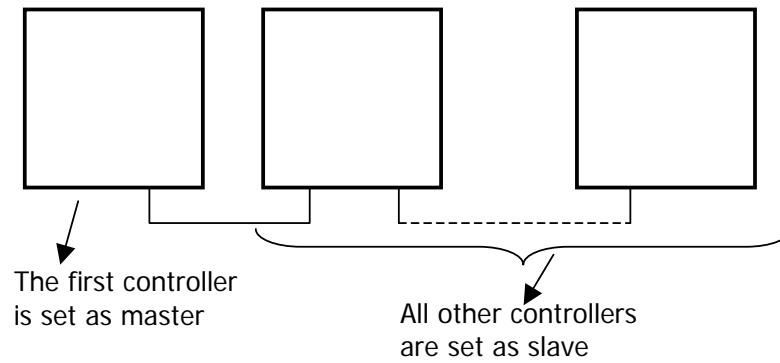
Note that no device can be put after the slave controllers or after the master controller in this control network, only before the first controller!

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<sup>1</sup> For instance, a starcloth, a logo, ...

<sup>2</sup> See "How to setup the controller?"

## Configuration without a DMX lightboard



In a configuration without use of a DMX lightboard the first controller is set as master and all the other controllers are set as slave.

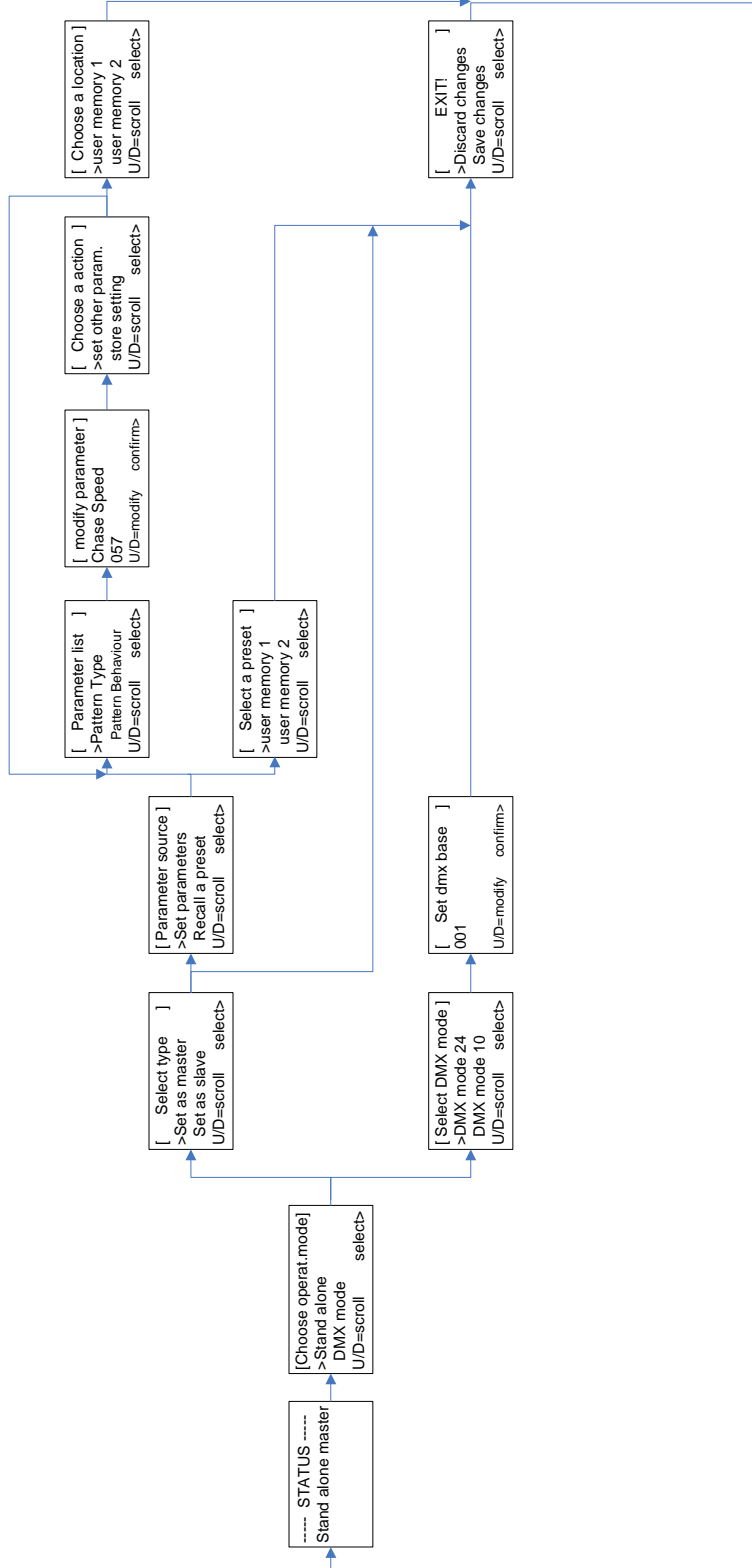
## What is DMX?

DMX 512 is a standard protocol by means of which theatre lighting control desks can communicate with lighting equipment. It was designed to allow equipment from different companies to be used together easily.

Note that the DMX protocol does not have any form of error correction!

# Controller Menu Structure

## Menu structure



## Operator Console

The operator console consists of a LCD display and a keypad with five push buttons. This console is the physical interface that lets you access the menu structure. The menu structure lets you modify the parameters of the controller.

Use the buttons (Up, Down, Left and Right) to scroll through the menu structure.

The UP button lets you scroll up in the menu structure or increase a parameter.

The DOWN button lets you scroll down or decrease a parameter.

The LEFT button lets you go back in the menu structure.

The RIGHT button lets you to select or to confirm a menu item.

Press the UP button and then the DOWN button to unlock the keypad.

## How to setup the controller

After unlocking the controller, [Choose operat. Mode] will appear.

- Choose "Stand alone" if you don't want to use a DMX source.
- Choose "DMX mode" if you want to use a DMX source.

If you choose "Stand alone", [Select type] will appear. Choose whether you want to set the controller as "master" or as "slave".

- If you choose "Set as master", [Parameter source] will appear. Here you can set all the parameters of the controller.
  - Select "Set parameters" if you want to set and modify the parameters. [Parameter list] will appear; select which parameter you want to modify. [Modify parameter] will appear; modify the parameter and confirm. [Choose an action] will appear; select if you want to set another parameter or want to store your settings.
    - If you choose "set other parameter", [Parameter list] will appear.
    - If you choose "store setting", [Choose a location] will appear. Select in which "user memory" you want to store your settings.
  - Select "Recall a preset" if you want to use a previously saved "user memory". [Select a preset] will appear, select a previously saved "user memory". [Exit!] will appear. Choose if you want to "Discard" or "Save" your "changes".
- If you choose "Set as slave", [Exit!] will appear. Choose if you want to "Discard" or "Save" your "changes".

If you choose "DMX mode", [Select DMX mode] will appear. Now you can choose in which DMX mode you want to set the controller.

- Select "DMX mode 24" to control the channels individually.
- Select "DMX mode 10" to control the build in patterns of the master controller.
- Select "DMX mode 10 SYNC" to control the build in patterns of all the controllers in the control network and synchronize all the slave controllers with the master controller.

When you have selected a DMX mode, [Set DMX base] will appear. Here you can choose the DMX base address and confirm. (numbers 001 to 500)

After confirming the DMX base, [Exit!] will appear. Choose if you want to "Discard" or "Save" your "changes".

## Controller Modes

### Stand Alone Mode - setting the parameters

This Mode is accessible via the menu structure as described on previous page. By using the operator console of the controller, the desired effect can easily be programmed by setting the following parameters. The parameters need only be set on the master controller.

- Pattern Type> 1 channel @ maximum intensity  
2 channels @ maximum intensity  
3 channels @ maximum intensity  
4 channels @ maximum intensity  
5 channels @ maximum intensity  
6 channels @ maximum intensity  
7 channels @ maximum intensity  
Strobe effect
- Pattern Behaviour> soft chase  
hard chase
- Chase Speed> 000 (minimum speed)... 255 (maximum speed)
- Minimum Intensity> 000... 255 (See also DMX mode 10 – slider 4 - Minimum Intensity)
- Maximum Intensity> 000... 255 (See also DMX mode 10 – slider 5 - Maximum Intensity)
- Number of Colours> 1 colour  
2 colours  
3 colours  
4 colours  
4 colours rotating  
3 colours rotating  
2 colours rotating  
Chameleon !
- Colour 1> 000... 255 (See DMX mode 10 - Slider 7 to 10 - Selection of colour)
- Colour 2> 000... 255 (See DMX mode 10 - Slider 7 to 10 - Selection of colour)
- Colour 3> 000... 255 (See DMX mode 10 - Slider 7 to 10 - Selection of colour)
- Colour 4> 000... 255 (See DMX mode 10 - Slider 7 to 10 - Selection of colour)

Colours 1 to 4 are colour presets in which you can store a colour from the colour pallet.

## DMX Mode 10 – Controlling the build in patterns

The channel descriptions of DMX Mode 10 have the same meaning as the parameters in the stand alone mode. Only the means of changing them are different. Instead of using the operator console, the channels (sliders) of the DMX lightboard are used.

### Slider 1 - Pattern Type

DMX value	Function	Description
0.. 31	Chase Pattern 1	1 channel @ maximum intensity
32.. 63	Chase Pattern 2	2 channels @ maximum intensity
64.. 91	Chase Pattern 3	3 channels @ maximum intensity
92.. 127	Chase Pattern 4	4 channels @ maximum intensity
128.. 159	Chase Pattern 5	5 channels @ maximum intensity
160.. 191	Chase Pattern 6	6 channels @ maximum intensity
192.. 223	Chase Pattern 7	7 channels @ maximum intensity
224.. 255	Chase Pattern 8	Strobe effect

### Slider 2 - Pattern Behaviour

DMX value	Description
0.. 127	Soft chase
128.. 255	Hard chase

With soft chase the lights will gradually fade in and out.  
With hard chase the lights will blink on and off.

### Slider 3 - Chase Speed

DMX value	Description
0	Minimum speed
..	
255	Maximum speed

### Slider 4 - Minimum Intensity

Limiter function sets the minimum intensity level. When set to a value higher than zero, the LEDs will not dim completely.

### Slider 5 - Maximum Intensity

Limiter function sets the maximum intensity level. When set to a value lower than 255, the LEDs will not burn at full capacity.

Note that the maximum intensity has a higher priority than the minimum intensity!

## Slider 6 - Number of colours

DMX value	Description
0.. 31	1 colour
32.. 63	2 colours
64.. 95	3 colours
96.. 127	4 colours
128.. 159	4 colours rotating
160.. 191	3 colours rotating
192.. 223	2 colours rotating
224.. 255	Chameleon colour change

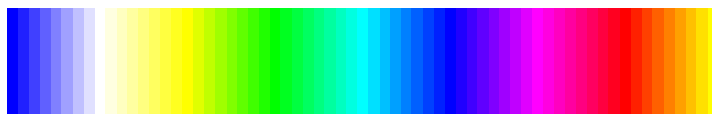
Choose how many different colours you want to use and if they need to be fixed or rotate.

Note that you have to set the colour presets in different colours to see the effect!

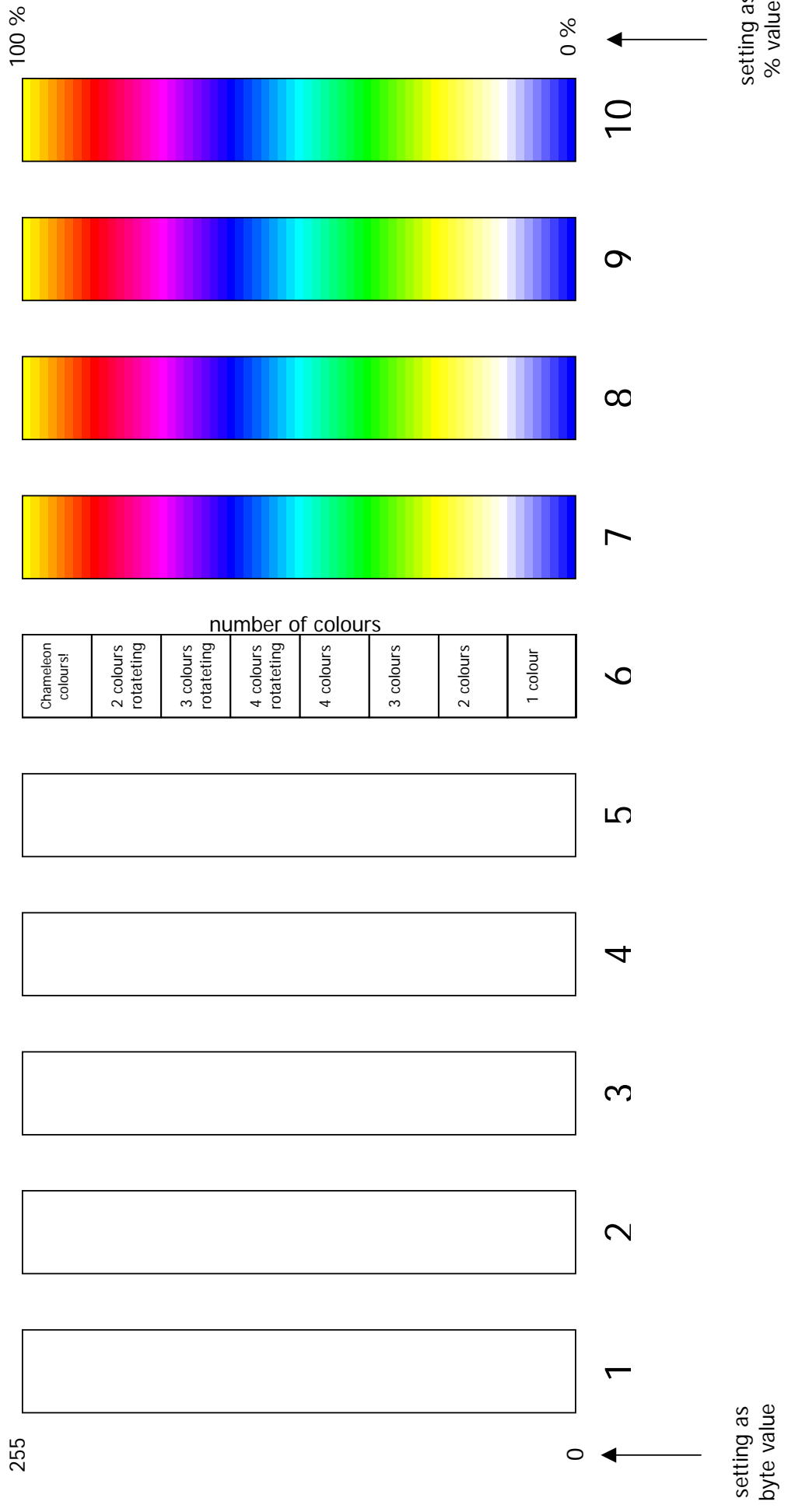
## Slider 7 to 10 - Selection of colour

Choose from the following colour pallet to set the 4 colour presets.

DMX value	Description
0	Blue
1.. 31	bluish white
32	White
33.. 63	yellowish white
64	Yellow
65.. 95	greenish yellow
96	Green
97.. 127	greenish cyan
128	cyan
129.. 159	bluish cyan
160	blue
161.. 191	bluish magenta
192	magenta
193.. 223	reddish magenta
224	red
225.. 254	orange
255	yellow



# Graphical presentation of the DMX channel arrangement



## DMX Mode 24 - Controlling the channels individually

DMX channel offset	Function
0	Red
1	Green LED channel 1
2	Blue
3	Red
4	Green LED channel 2
5	Blue
6	Red
7	Green LED channel 3
8	Blue
9	Red
10	Green LED channel 4
11	Blue
12	Red
13	Green LED channel 5
14	Blue
15	Red
16	Green LED channel 6
17	Blue
18	Red
19	Green LED channel 7
20	Blue
21	Red
22	Green LED channel 8
23	Blue

E.g.: When the DMX base address is set to 171 the red colour of LED channel 1 will appear on DMX channel 171 and the blue colour of LED channel 8 will appear on DMX channel 194.

## Technical Specifications

### *Input*

- Supply voltage: 90 ~ 260 V / 47 ~ 63 Hz
- Mains input: standardized IEC power inlet
- PFC (Power Factor Correction) circuit present
- Input current: 1.4 A
- Input power: 240 Watt
- Fuse, medium delay, 5 A, 20x5mm

### *Output*

- Output Voltage: 24 V
- Total Output Power: 200 Watt (50 Watt / output plug)

### *Data Ports*

- DMX input (5 pole male XLR)
- DMX output (5 pole female XLR)
- Service port (10 Mbps Ethernet)

### *Environmental*

- Operating temperature, humidity\*: -10°C ~ +50°C, < 60% RH
  - Storage temperature, humidity\*: -20°C ~ +80°C, < 50% RH
- (\* non-condensing)

### *Mechanical*

- Dimensions: 263 x 211 x 51,4 mm
- Weight: 2,35 kg

## FAQ's

1. *What is the maximum length of the cable between the controller and the connector box of the application?*

You can determine the maximum length of the cable by using the following table.

		Number of LEDs			
		96	128	192	256
Wire Size (mm <sup>2</sup> )	0,75	34m	26m	17m	13m
	1,0	45m	34m	23m	17m
	1,5	68m	52m	34m	26m

2. *How many DMX channels are required for controlling the ShowLED controller?*

DMX mode 10 (SYNC) requires minimum 10 channels and DMX mode 24 requires minimum 24 channels. Note that if you want to address all the controllers separately in DMX mode 24, you will need 24 channels per controller in the control network. (e.g. 4 controllers require 96 DMX channels)

## Contact Information & Support

- Website: [www.showled.com](http://www.showled.com)
- Email: [info@showled.com](mailto:info@showled.com)
- Contact address:

Amelia NV.  
Biekorfstraat 72  
B-2060 Antwerp  
Belgium