LED–Tile
C50 MK2.6

Product Sheet

Introduction

Use

The Product C-Series LED Tiles are equipped with premium quality, efficient LEDs. Each LED can be individually controlled and are therefore the ideal LED light source for all uses when dynamic surfaces or decorative structures are going to be illuminated with video effects. Whether used for backlighting or as a display, the C-Series LED Tiles bring color and movement to walls, floors, counters, light boxes or architectural features. By using a matrix arrangement, large-scale video effects can be achieved.

Technology

The LED-Tile C50 MK2.6 backlights a 200mm × 200mm surface with 16 LEDs. Due to these practical dimensions the LED Tiles can be adapted to many lighting situations. Each LED can be individually color calibrated so white and pastel shades can be controlled more precisely. The color effect of the LED Tiles is more natural and, unlike with the group controlled RGB systems, shading and color variation are possible within a line. Due to the arrangement of the LEDs there is no color shift in the horizontal viewing angle when mounted vertically. What's more, LEDs in the C-Series are dimmable and therefore more camera-friendly. A DMX converter integrated into the board simplifies the cabling and enables a quick system start-up. And, thanks to our Smart Link Technology elaborate addressing of the Tiles is eliminated.

The C50 MK2.6 LED Tiles belong to Generation 3 and in addition to DMX, can also read the Dynamic-Pixel-Bus protocol (DPB). By using the DPB, more LED Tiles per output of a system power supply are available – up to 3,072 channels. A variable transmission rate enables the best, customized balance of channel count, frame and error rate. When video signals are used, a system-wide synchronization (System Wide Sync) prevents image distortion. The system speed can therefore easily reach the 60 fps update rate and switching between DMX and DPB is possible at all times.

The tile firmware can be updated from a central point via the network with the System Power Supply 4E, which also means that future standards or developments can be supported. Each Tile sends status information such as temperature, data error rate, input voltage or LED defects back to the control system and therefore enabling a problem-free remote diagnosis.

When using diffusers, the distance needed to create a homogeneous surface depends on the material. There should be at least 5cm from the topside of the LED to the diffuser. The LED Tiles are mounted with board holders.

Control

Power is drawn from the System Power Supply 4E, the DPB Pixel-Router or the Sys One. Pixel-accurate control of the C-Series LED Tiles can be achieved with lighting boards, media servers or with our Pixel-Gate video converter via the Ethernet interface of the System Power
Supply 4E.

Mechanical data

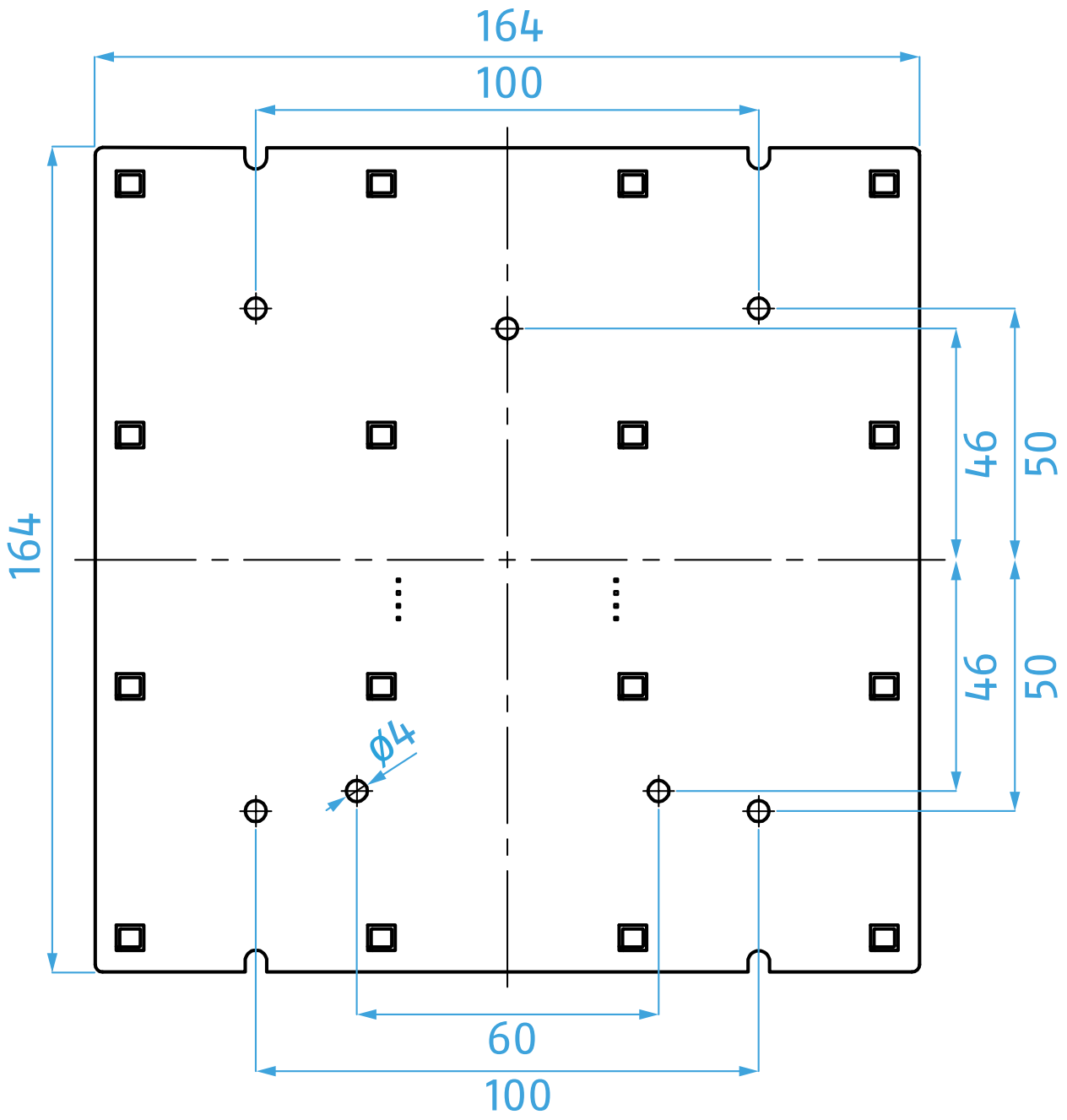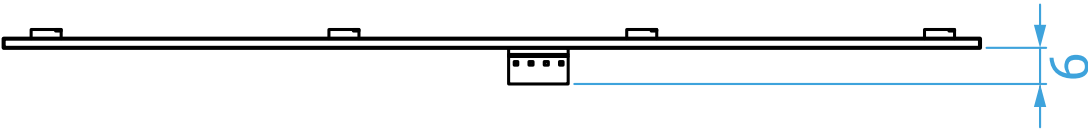| Features	LED–Tile C50 MK2.6
Backlighted area	200mm × 200mm
Dimensions	164mm × 164mm
LED–Pitch	50mm
Number of RGB LEDs	16
Pin connection and –colour	System connector red
Safety class	IP00
Weight	104g
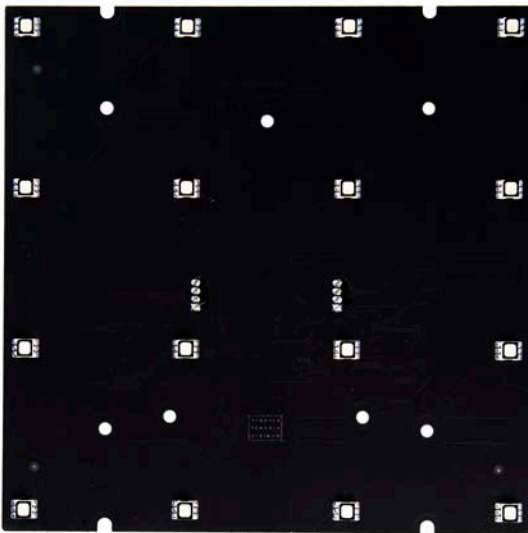
LED–Tile C50 MK2.6 (front view)
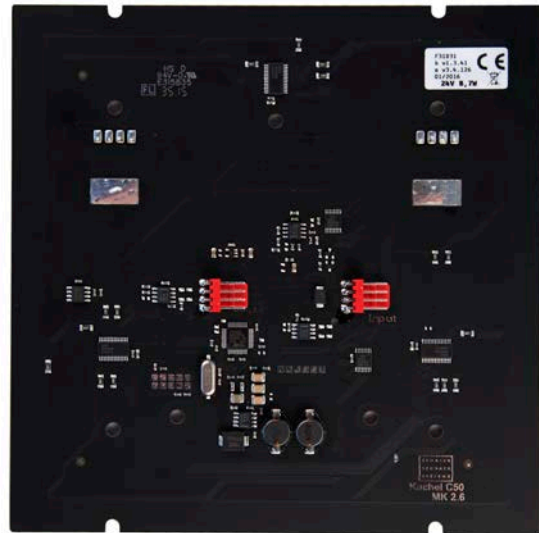
LED–Tile C50 MK2.6 (rear view)

CAD drawing*


* without scale / all units in mm

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Optical data

Features	LED–Tile C50 MK2.6
Colour	RGB
Emission angle	115°
Lighting current	122,4lm*
Light intensity	42,1cd*

Distance/Lux table

Distance	Lux
0,5m	168,4lx*
1m	42,1lx*
2m	10,5lx*

* The data provided are measured values. As these values are subject to fluctuations, the actual values of the delivered LEDs may deviate from them. The photo-metric values apply to full white with RGB = 255.

x-direction
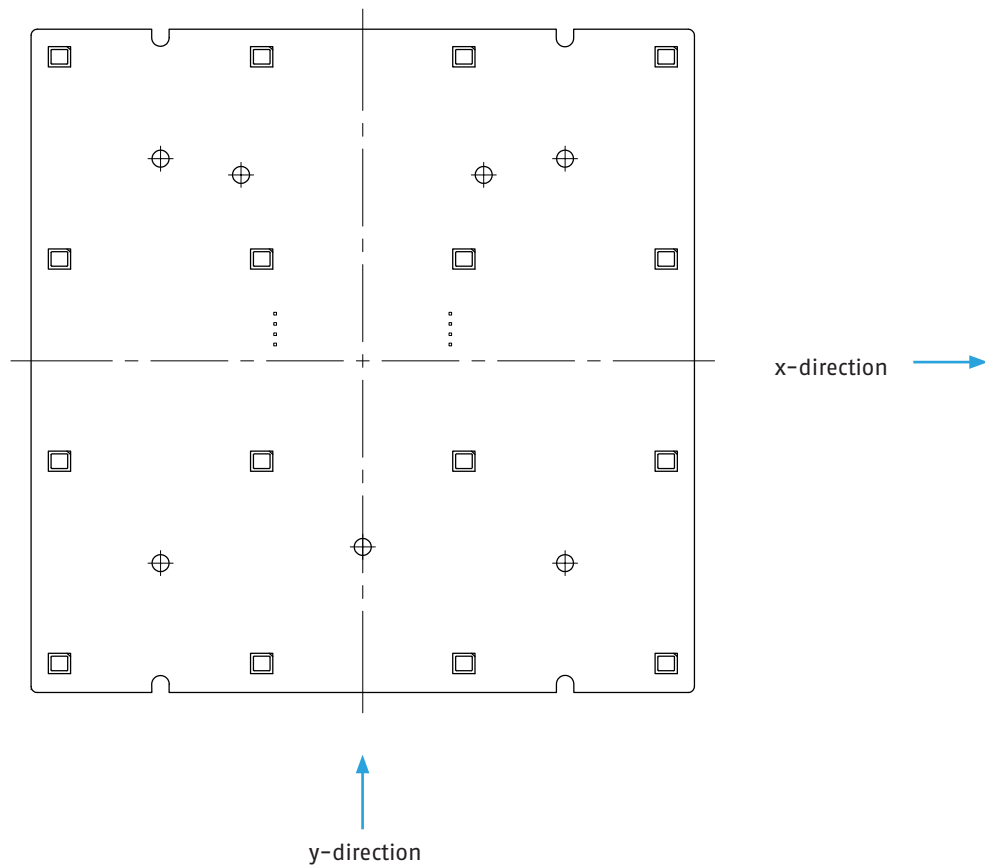
y-direction

Light distribution curves, x-direction
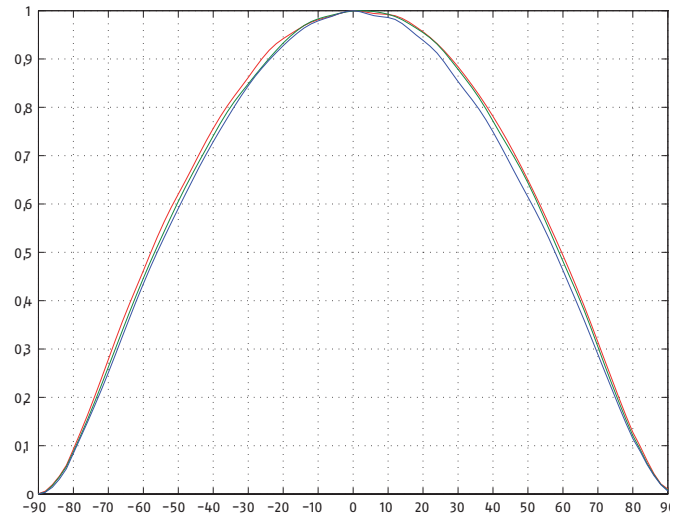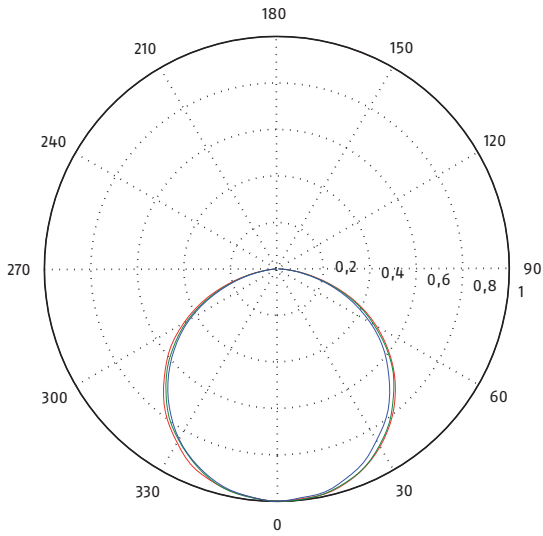
Light distribution curves, y-direction
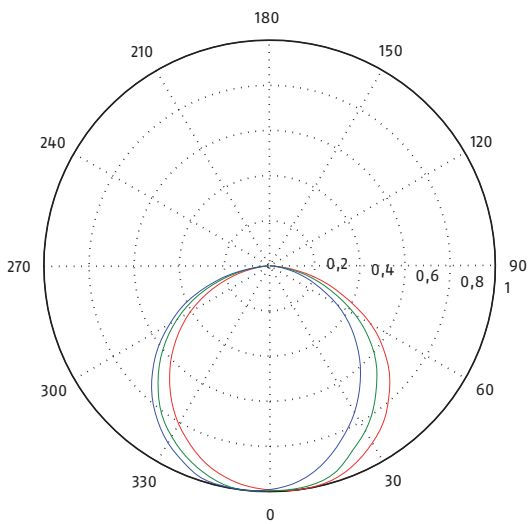
Gamut diagramm
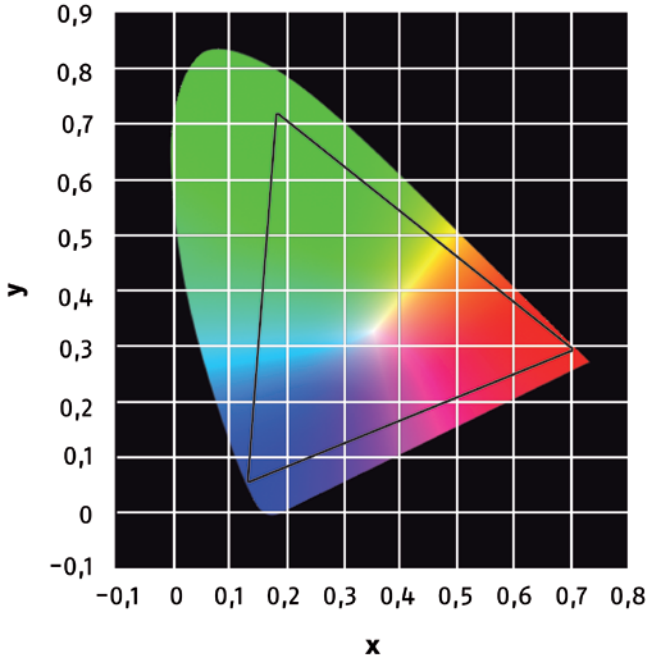
Spectral distribution
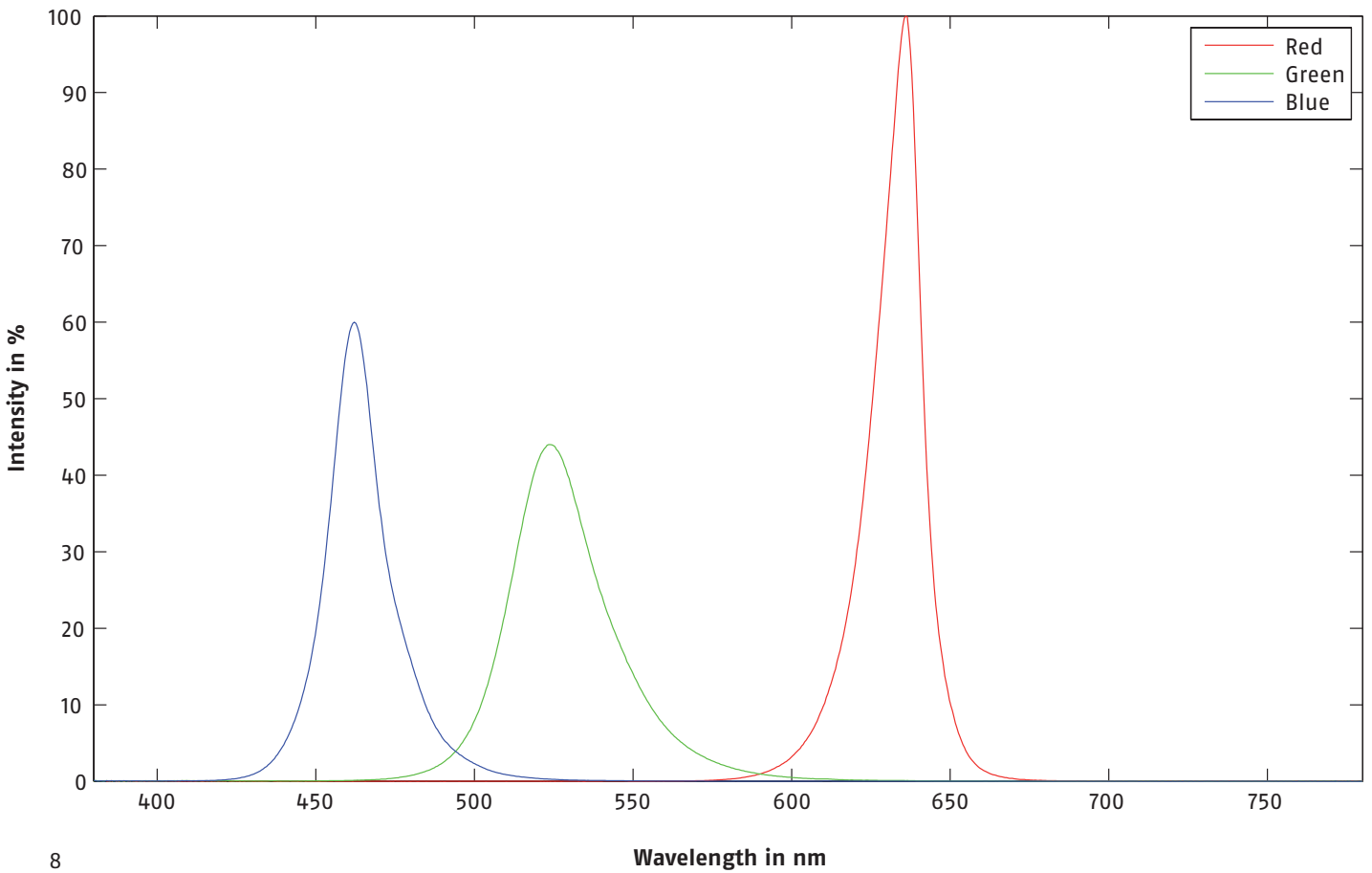
Mounting

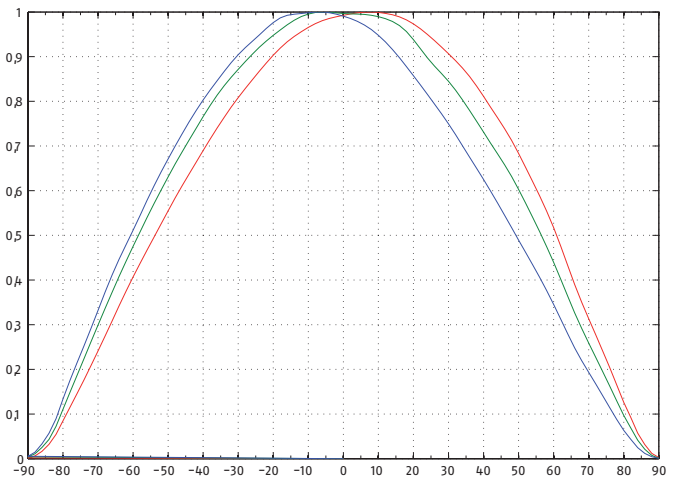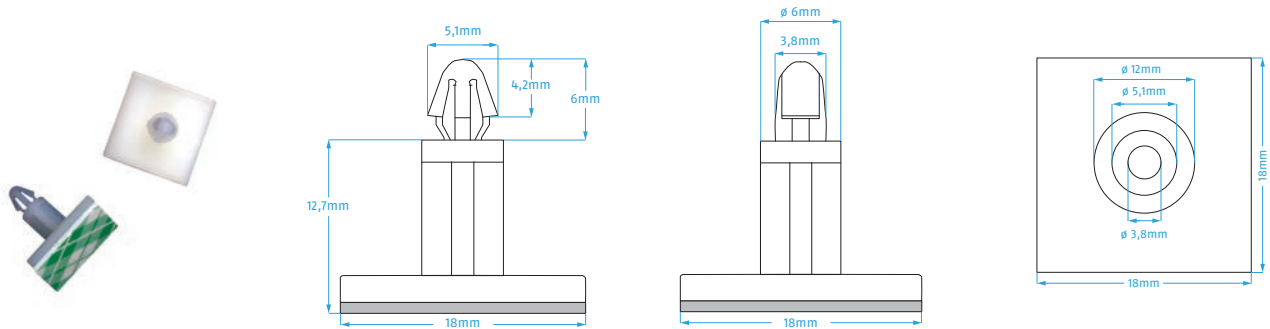| Description		Item number
PCB holder 12mm, self-adhesive version		802.0002
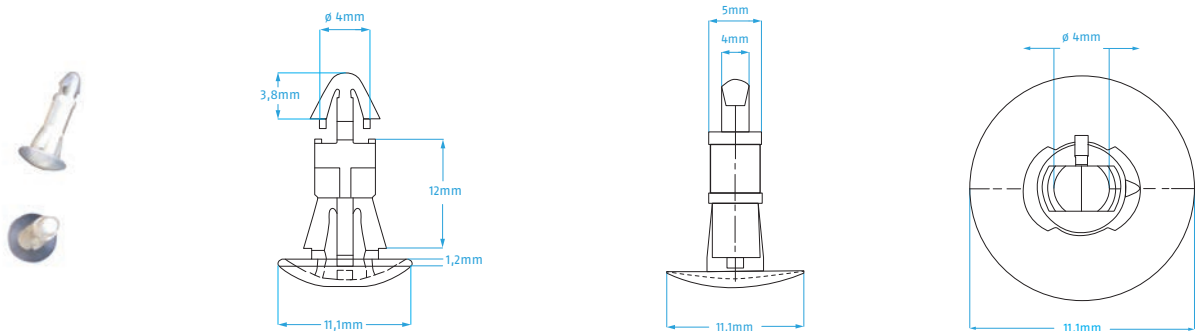
Description	Item number	Drill hole	Material thickness
PCB holder 12mm, plug-in version (for plates)	802.0004	5,4mm	1,5–1,6mm
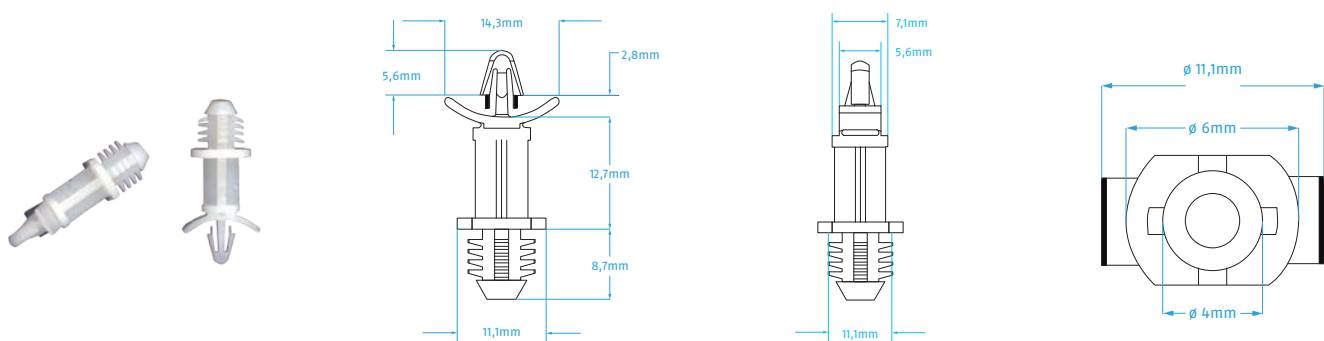
Description	Item number	Drill hole	Material thickness
PCB holder 12mm, drill version (for wood or plastic)	802.0007	7,9mm	minimum 6,4mm
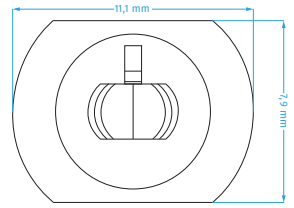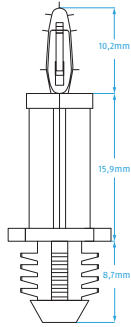
Description	Item number	Drill hole	Material thickness
PCB holder 16mm drill version (for wood or plastic)	802.0008	7,9mm	minimum 6,4mm

Electrical data

Features	LED–Tile C50 MK2.6
Voltage	24V
Current (I_{max})	0,36A

Pin Connection

System connector red

1	GND
2	DMX –
3	DMX +
4	24 V

Control options for LED-Tile C50 MK2.6

System Power Supply 4E

DMX 512*	DPB**
maximum 40 LED-Tiles per controller	maximum 64 LED-Tiles per controller
maximum 10 LED-Tiles per XLR output	maximum 16 LED-Tiles per XLR output
maximum 8 LED-Tiles per System connector red	maximum 8 LED-Tiles per System connector red

*channel-restricted
**current limited

Cabling example System Power Supply 4E with LED-Tile C50 MK2.6

■	DVI/SDI
■	DMX XLR-5pin cable
■	XLR-4pin cable
■	24V DC RGB anode, PCB link cable blue
■	24V DC DMX, PCB link cable red
■	Cross cable
■	Power cable HAN B24 (maximum 30m)
■	CAT6 network cable
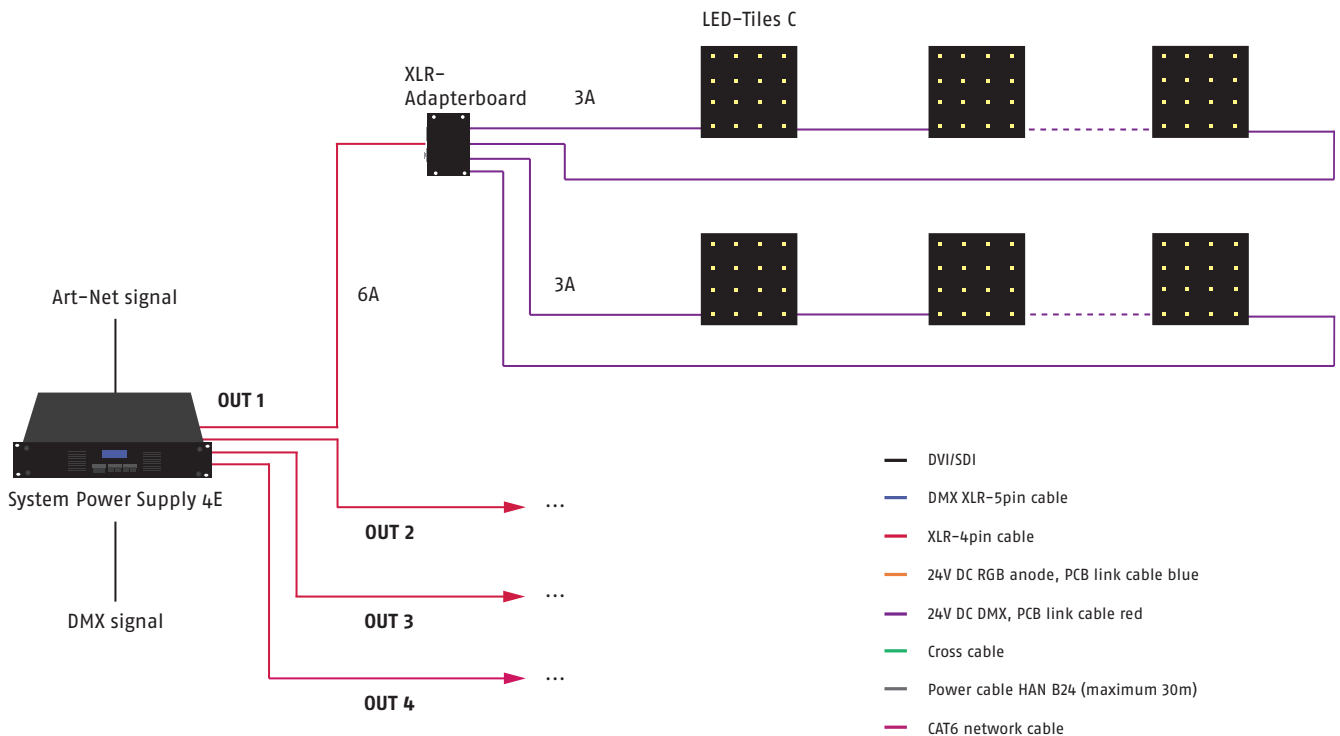
DPB Pixel–Router

DPB

maximum 32 LED–Tiles per controller
maximum 8 LED–Tiles per output

Cabling example DPB Pixel–Router with LED-Tile C50 MK2.6

Art–Net signal

LED–Tiles C

OUT 1   3A

OUT 2

Power supply
DPB Pixel–Router 320W

DPB Pixel–Router   3A

OUT 3   ...

DMX signal   OUT 4   ...

- DVI/SDI
- DMX XLR–5pin cable
- XLR–4pin cable
- 24V DC RGB anode, PCB link cable blue
- 24V DC DMX, PCB link cable red
- Cross cable
- Power cable HAN B24 (maximum 30m)
- CAT6 network cable
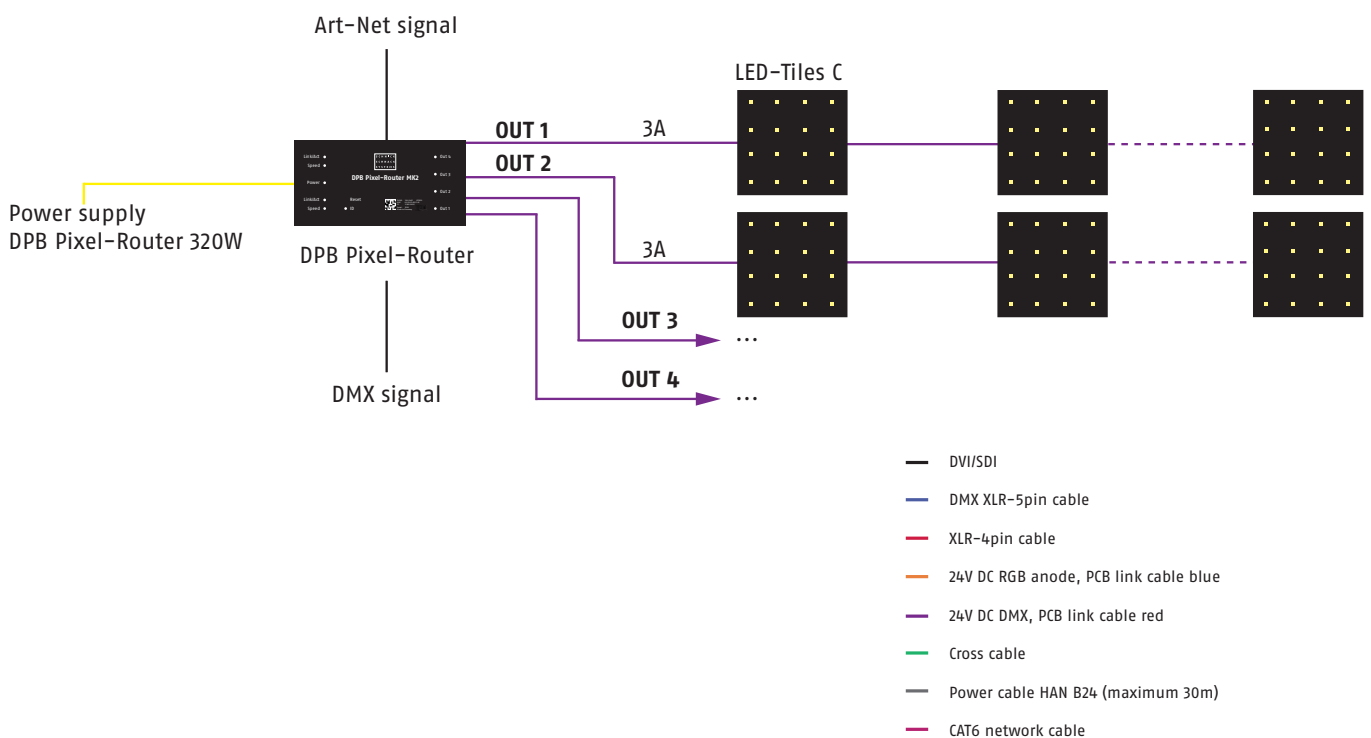
Sys One

Specific feature: fanless operating

Power Data Out	DMX 512
Output XLR–4pin	maximum 10 LED–Tiles per controller
Output System connector red (2 universes, wiring example page 15)	maximum 16 LED–Tiles per controller
	maximum 8 LED–Tiles per System connector red

Please note: connect only one output variable (XLR–4pin or System connector red)!

Cabling example for Sys One (XLR-4pin connector) with LED-Tiles C50 MK2.6

Art-Net signal

XLR-Adapterboard

6A

3A

3A

Sys One

DMX signal

Output 1
LED-Tile C

Output 2
LED-Tile C

— DVI/SDI
— DMX XLR-5pin cable
— XLR-4pin cable
— 24V DC RGB anode, PCB link cable blue
— 24V DC DMX, PCB link cable red
— Cross cable
— Power cable HAN B24 (maximum 30m)
— CAT6 network cable
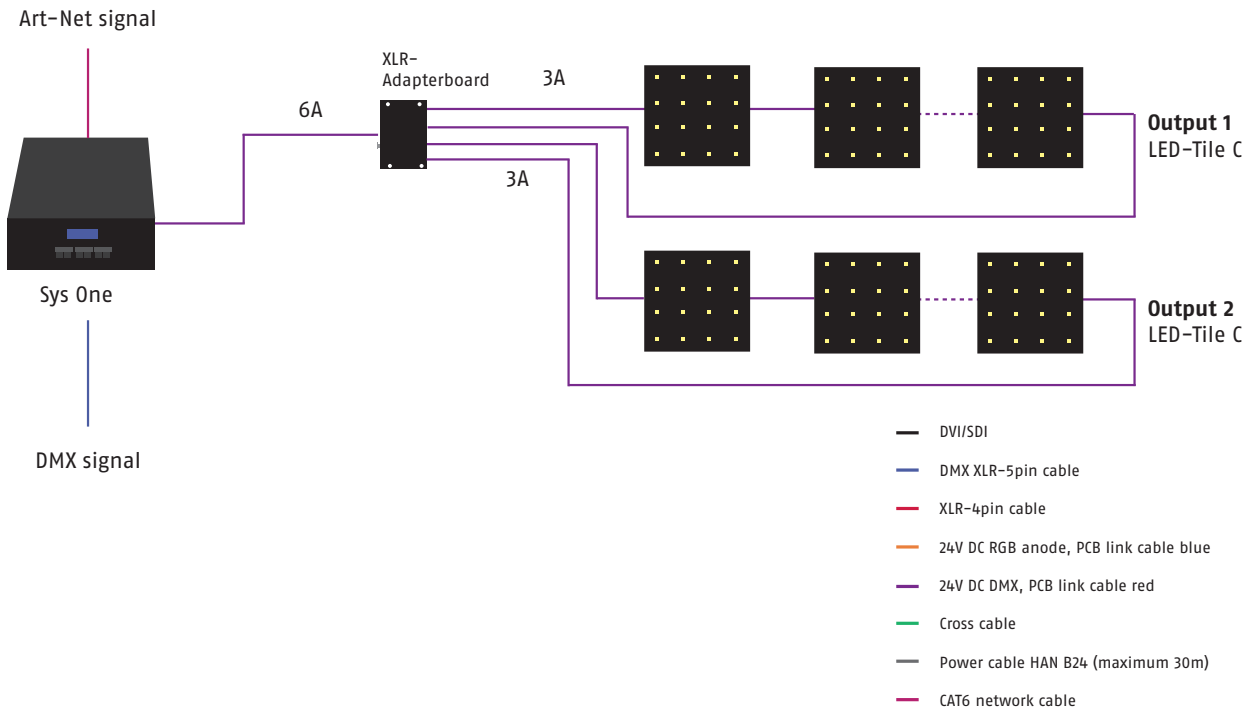
Cabling example for Sys One (System connector red) with LED-Tiles C50 MK2.6

Art-Net signal

DMX OUT 1 (red connector)
LED-Tiles C

Universe 1

3A

No. 1

No. 2

No. ...

Sys One

3A

No. 1

No. 2

No. ...

Universe 2

DMX signal

DMX OUT 2 (red connector)
LED-Tiles C

— DVI/SDI
— DMX XLR-5pin cable
— XLR-4pin cable
— 24V DC RGB anode, PCB link cable blue
— 24V DC DMX, PCB link cable red
— Cross cable
— Power cable HAN B24 (maximum 30m)
— CAT6 network cable
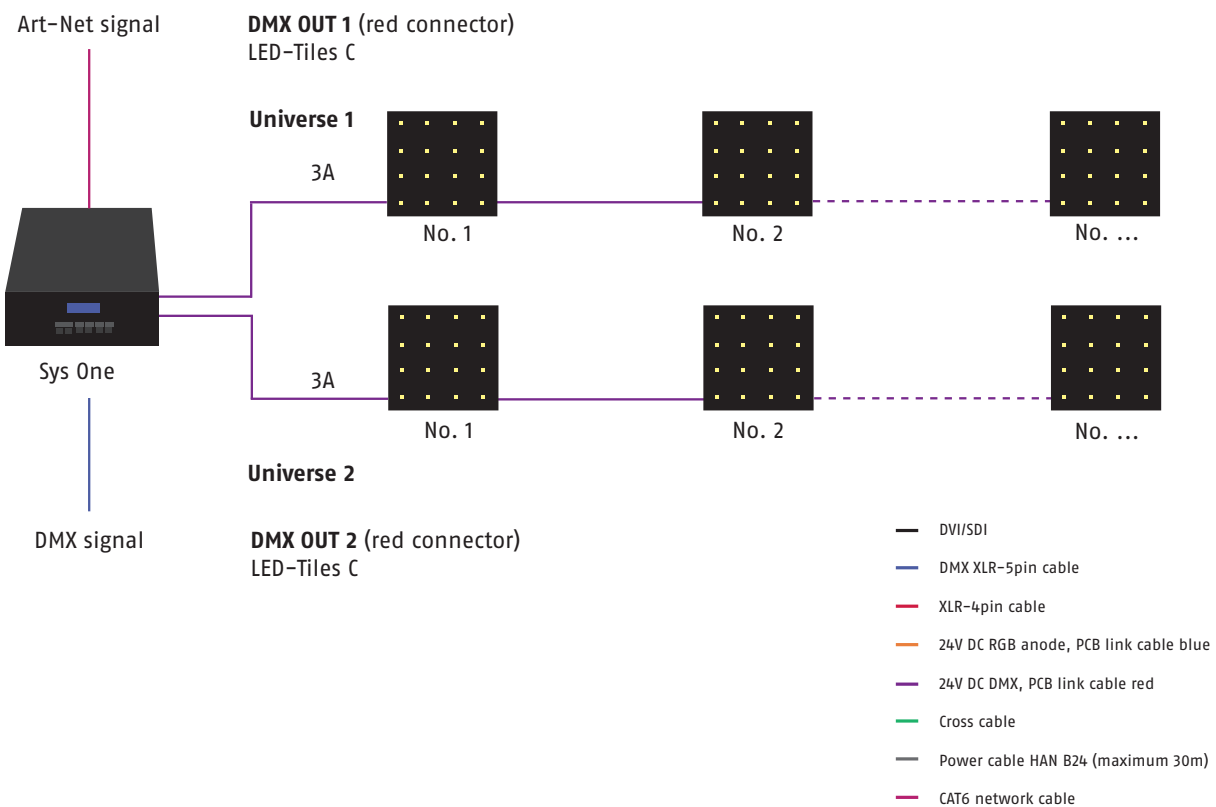
Order numbers

	Colour	LED–Pitch	Backlighted surface	Current (I_{max})	Channels	Connection	Item number
LED–Tile C50 MK2.6	RGB	50mm	200mm × 200mm	0,36A	48	System connector red	102.5026

	Operating voltage	Power (I_{max})	Channels	Input	Output	Item number
System Power Supply 4E	110–240V AC	4 × 6A*	4 × 3072 channels (DPB) 4 × 512 channels (DMX)	Ethercon RJ 45 XLR–5pol IN/Trough	4 × XLR–4pin	203.0003
DPB Pixel–Router MK2	24V DC	4 × 3A	4 × 3072 channels	RJ 45	4 × System connector red	203.0021
DPB Pixel–Router POE MK2	24V DC	4 × 3A	4 × 3072 channels	RJ 45	4 × System connector red	203.0022
Sys One	110–240V AC	1 × 6A or 2 × 3A or 2 × (3 × 1A)	1 × 512** or 2 × 512**	XLR–5pol IN/Trough	1 × XLR–4pin 2 × System connector red 2 × System connector blue	203.0007

 * Note: american version only 4 × 4A at 110V

** depending on the output configuration

ESD warning

Please be aware that electrostatic discharges can destroy LED boards, and our experience shows that this does happen. During assembly, we recommend wearing at least one antistatic wrist strap and avoiding static discharges – such as those that arise when removing protective film or dry cleaning acrylic glass, for example– near LEDs! Antistatic materials should be used when packaging the LED boards. Normal bubble wrap or other plastic bags are not suitable.

For reasons of safety and radio shielding, please only use systems we have approved to provide a power supply for our LED components. All technical information is based on the version at the time of printing.

We reserve the right to make technical specifications in terms of a product improvement without prior notice. Printing – even excerpts – requires the written consent of Schnick-Schnack-Systems GmbH.

Why Schnick Schnack Systems?

As installation times become increasingly shorter the complexity of systems simultaneously increases as do the requirements of customers.

We are a supplier who delivers high-quality reliable systems – under tight deadline constraints that are not only quick to install but also simple to operate and service.

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