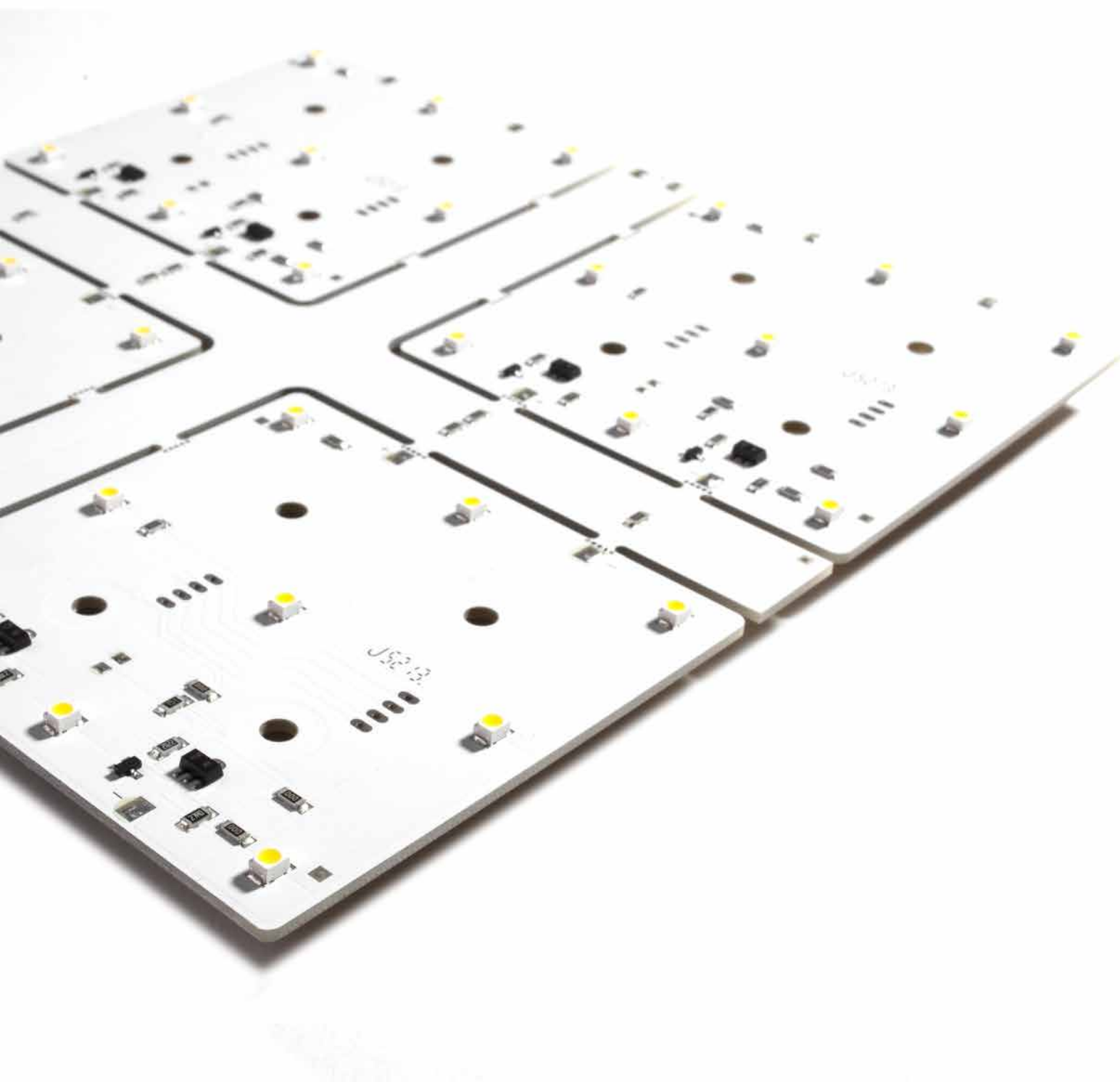


LED-Tile L33

Product Sheet



Introduction

FEATURES

- System compatible with other series from Schnick-Schnack-Systems
- Made in Germany

- High-quality LEDs
- Even colours thanks to best possible degree of sorting (ANSI batch selected)
- Wide emission angle 115°
- Dimmable in a way suitable for cameras
- Linear light dimming, also for stageless control in the lower intensity range, using patented Lehmann-Modulation
- Even brightness despite various supply line lengths due to integrated linear regulator
- Enough "headroom" for longer durability

- Can be directly connected to 24V DC

- Low surface temperature
- With connected (through hole) plug connectors
- Extremely robust and reliable
- Various mounting options

Use

The LED-Tiles of series L are equipped with high-quality, efficient single-colour or white LEDs. The LEDs can be activated in blocks. Thus, they are the ideal LED light source for all large-area applications for which only one solid light colour is needed. The LED-Tiles L are used in, amongst other things, architecture (e.g. accents on walls, floors, counters/bars, decoration elements), in backlighting for light boxes and stretch ceilings, in light pens and in trade fair appearances.

Technology

The LED-Tiles L33 are available in seven different shades of white and four colours:

- Warm white (2700K, 3000K, 3500K)
- Neutral white (4000K)
- Cold white (5000K, 5700K, 6500K)
- Red
- Green
- Blue
- Amber

The LED-Tile L33-6-6 is available in the dimensions of 180mm × 180mm equipped with 36 LEDs in a pitch of 33mm. The LED-Tile can be easily disassembled by hand into four smaller tiles with dimensions 80mm × 80mm. Thanks to the ability to easily divide the tiles, the LED-Tile can be easily adjusted to just about every lighting situation.

The distance between the individual LEDs is dimensioned in a way that results in homogenous illumination. Thanks to the Lehmann-Modulation, stageless brightness control is also possible in the lower intensity range, as is (flicker-free) dimming that is suitable for cameras.

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 LEDs are mounted with board holders.

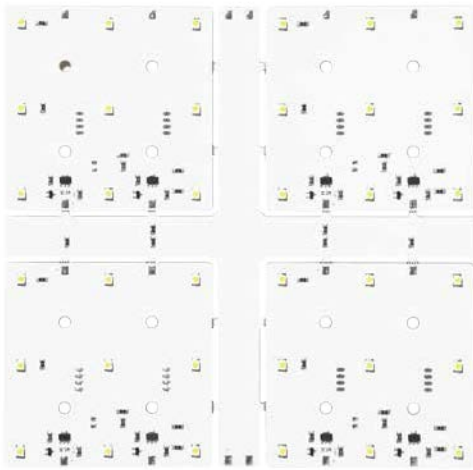
Control

The LED-Tiles L33 are activated via the Long Distance Controller, the Sys One or System Power Supplies 4 and 4E with a Big Intelli XLR. In terms of small installations, the LED-Tiles can also be activated via a corresponding power supply and – if dimmability is desired – with a Big Intelli Monochrome.

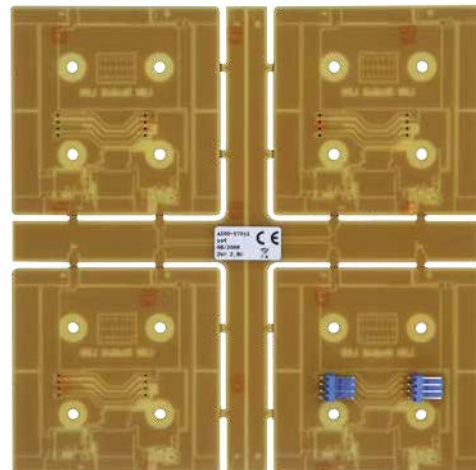
The LED-Tiles L33 are plug-compatible with the existing RGB LED system from Schnick-Schnack-Systems: Each of the three RGB channels is used to activate the LED-Tiles L. By using special cross cables, each LED-Tile in a section can be assigned to a channel. So the structure is simple. Thanks to the cross principle RGB controller can be used sustainably for monochrome LED-Tiles. Thanks to the integrated current regulator, even long power lines do not result in a decrease in brightness on the tile.

Mechanical data

Features	LED-Tile L33-6-6	LED-Tile L33-3-3
Dimensions	180mm × 180mm	80mm × 80mm
Backlighted area	200mm × 200mm	100mm × 100mm
LED-Pitch	33mm	33mm
Number of LEDs	36	9
Pin connection and -colour	System connector blue	System connector blue
Safety class	IP00	IP00
Weight	102g	22g



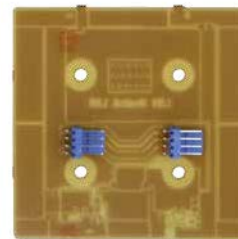
LED-Tile L33-6-6 (front view)



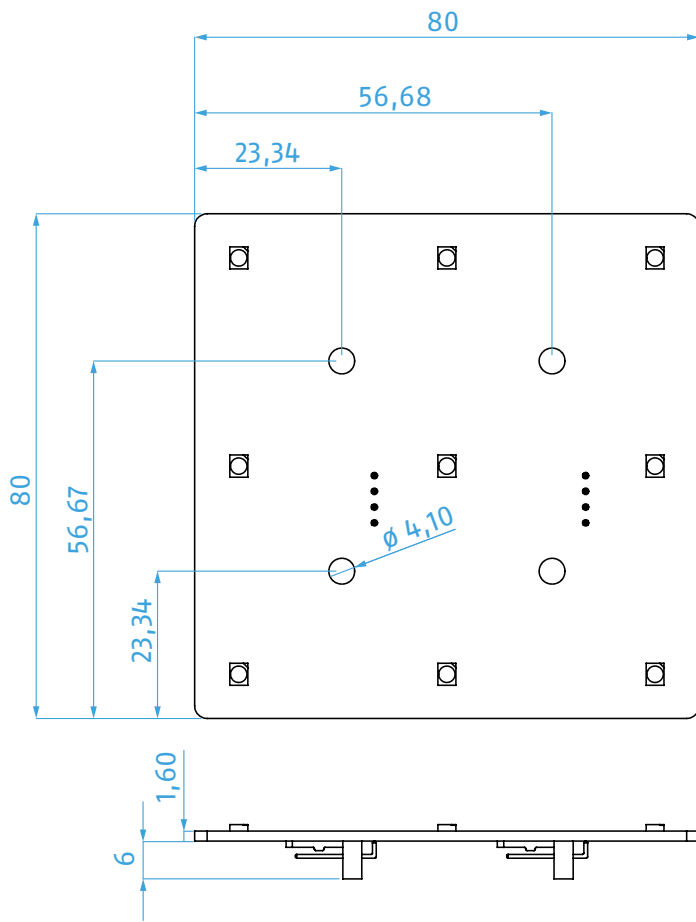
LED-Tile L33-6-6 (rear view)



LED-Tile L33-3-3 (front view)



LED-Tile L33-3-3 (rear view)



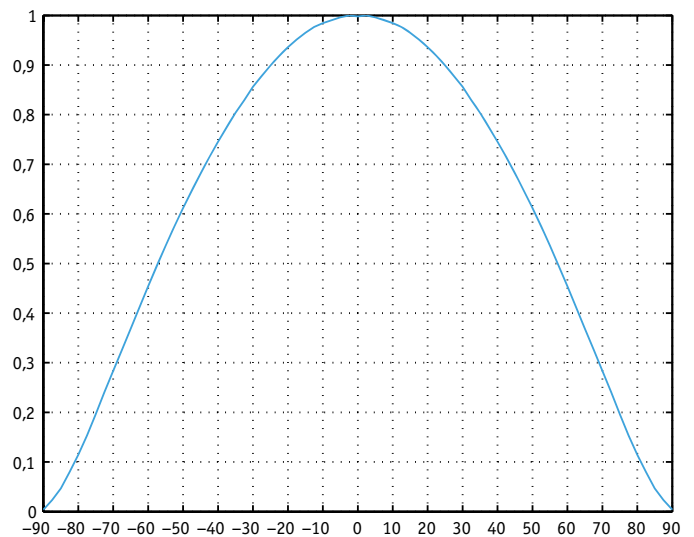
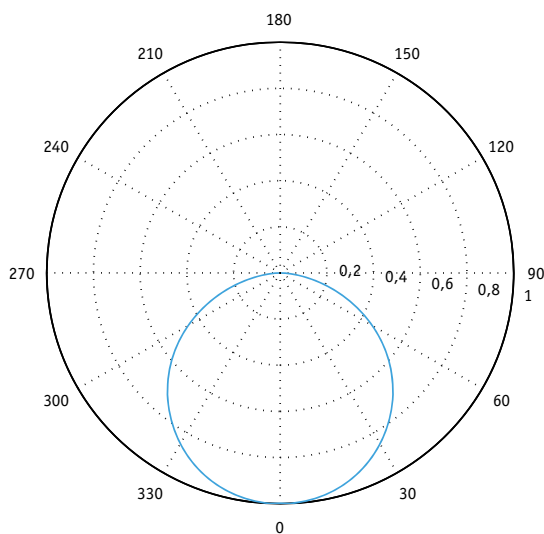
Optical Data

Features	LED-Tile L33-6-6	LED-Tile L33-3-3
Colour	6500K**	6500K**
	5700K	5700K
	5000K	5000K
	4000K	4000K
	3500K	3500K
	3000K	3000K
	2700K	2700K
Emission angle	115°	115°
Lighting current	209lm*	52lm*
Efficiency (at 20V)	65lm/W*	65lm/W*
Colour reproduction R_a	ca. 80*	ca. 80*
Light intensity	72cd	18cd

Distance/Lux table

Distance	LED-Tile L33-6-6	LED-Tile L33-3-3
0,5m	288lx*	72lx*
1m	72lx*	18lx*
2m	18lx*	4,5lx*

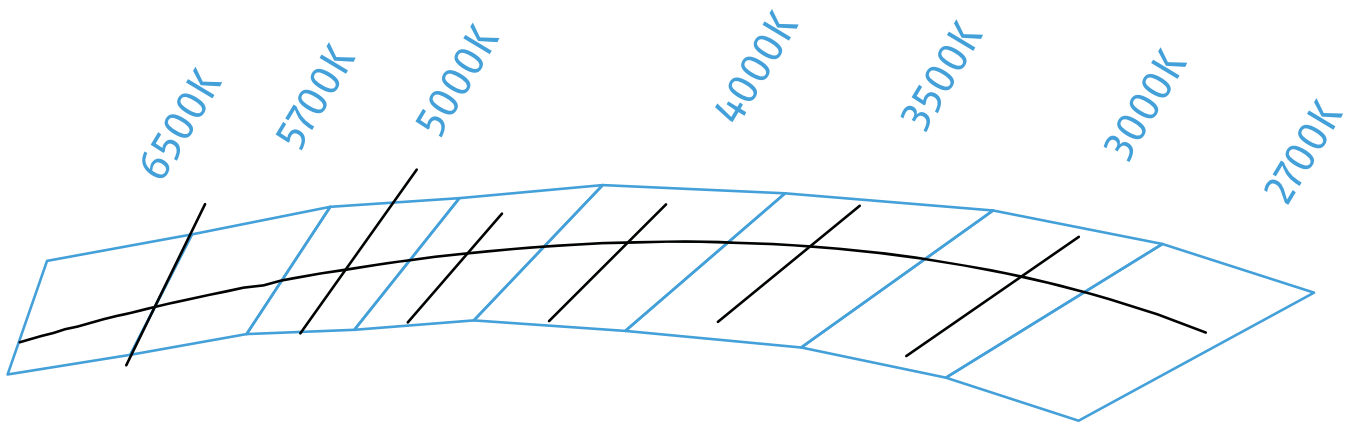
Light distribution curves



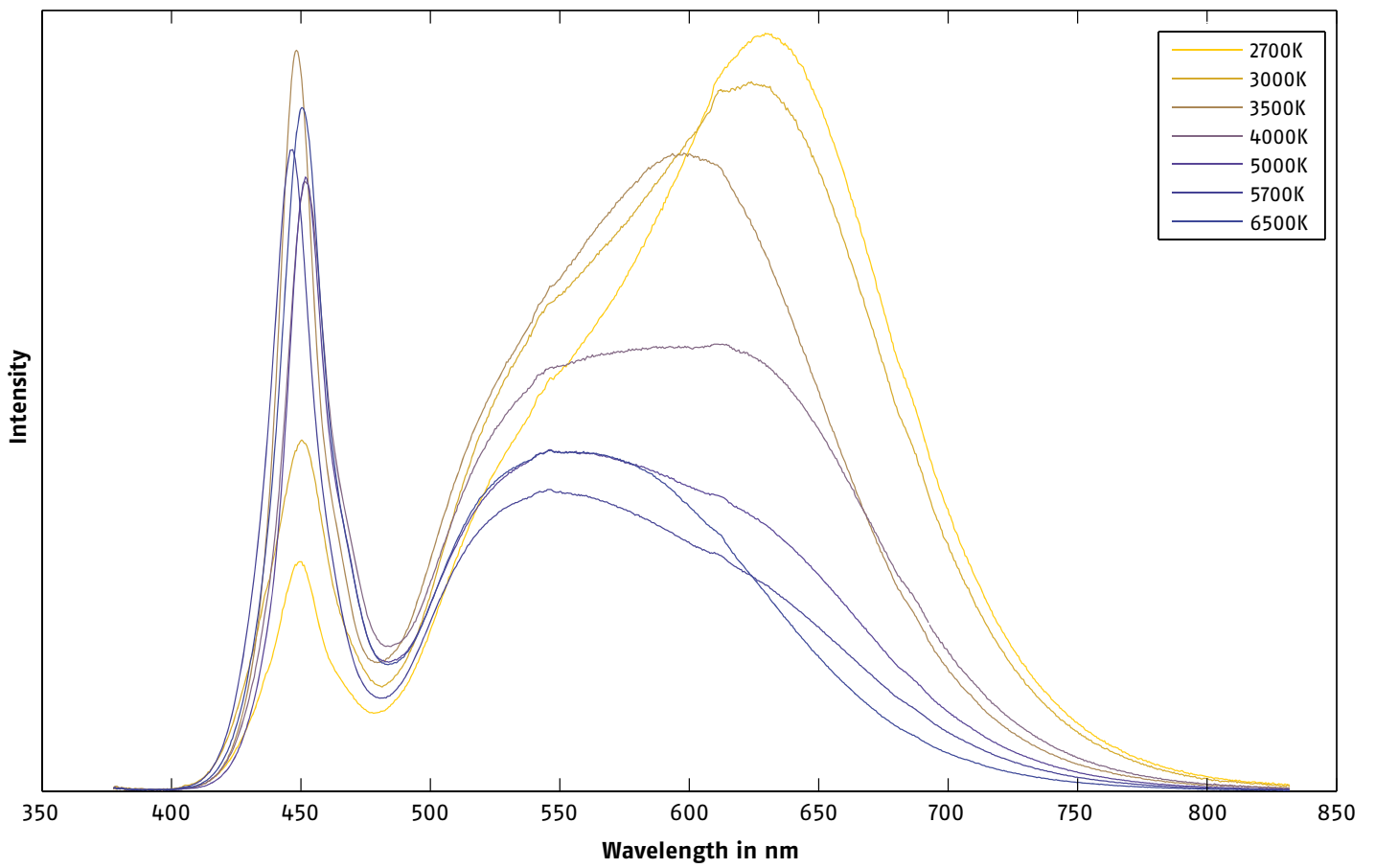
*The data provided are measured values. As these values are subject to fluctuations, the actual values of the delivered LEDs may deviate from them. The photometric values were measured using an LED-Tile L33-6-6 in white (red, green, blue and amber on request).

** For 6500K the R_a is at least 70

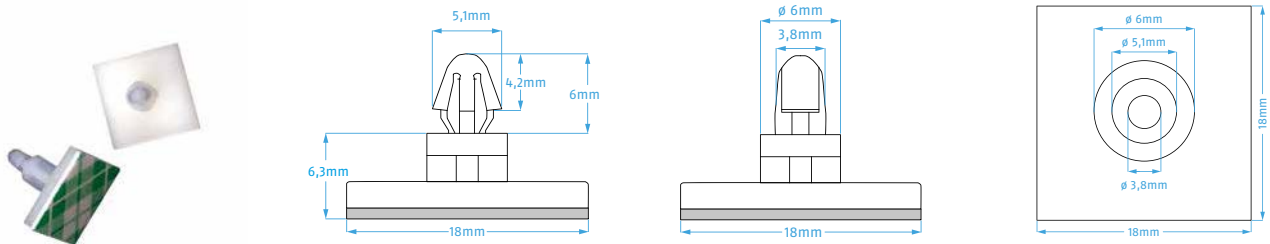
Binning (ANSI)



Spectral distribution



Mounting

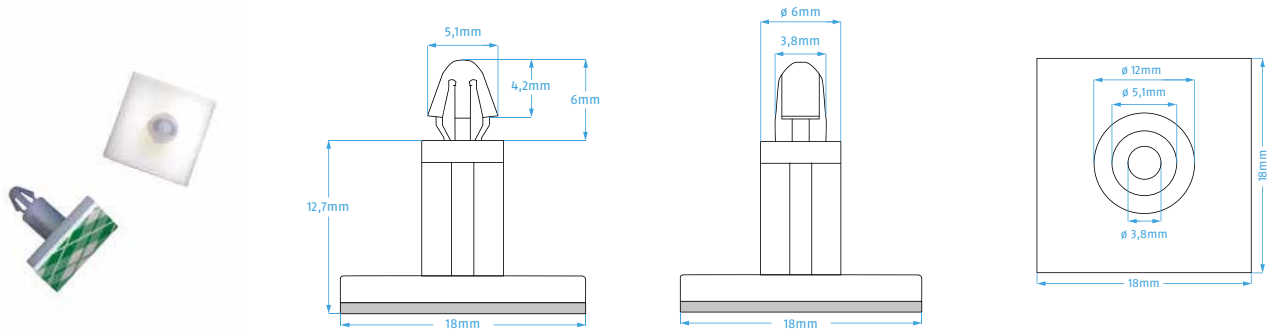


Description

PCB holder 6mm, self-adhesive version

Item number

802.0001

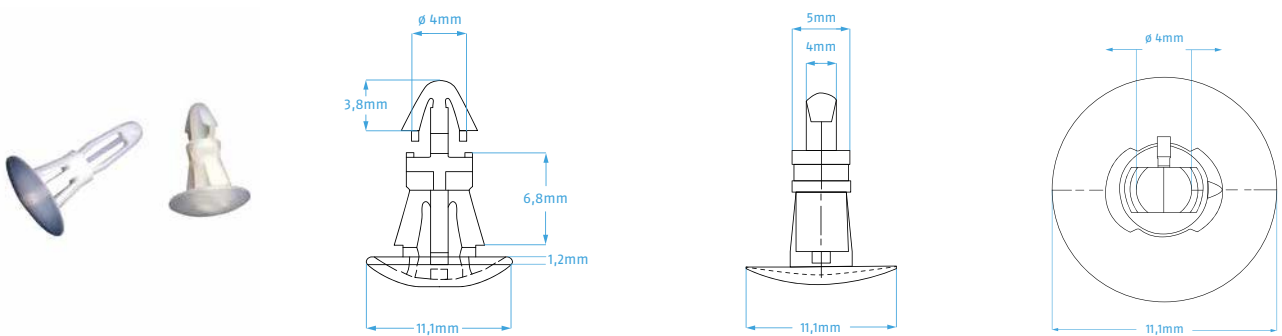


Description

PCB holder 12mm, self-adhesive version

Item number

802.0002



Description

PCB holder 6mm, plug-in version (for plates)

Item number

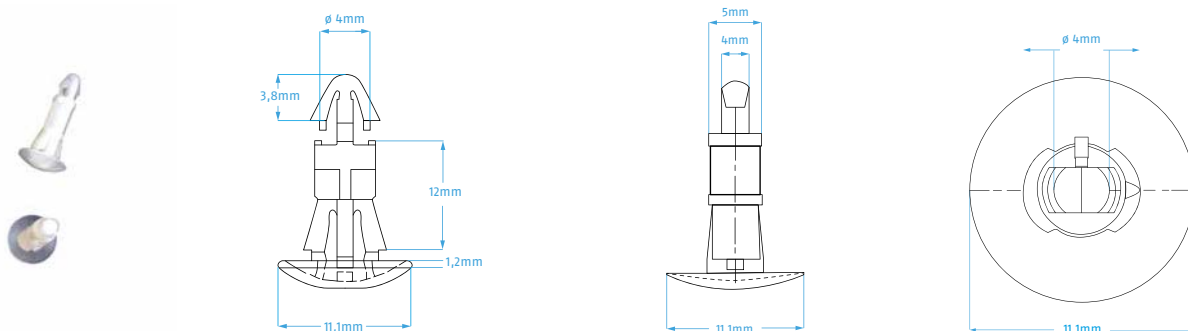
802.0003

Drill hole

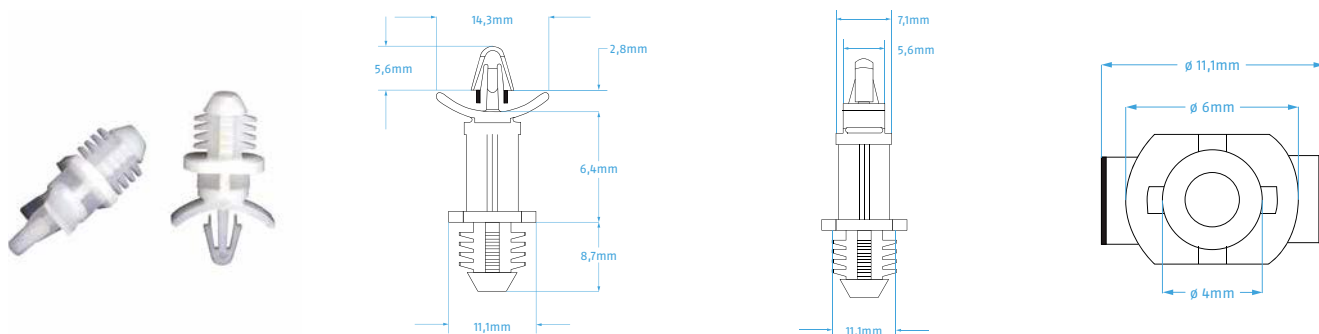
5,4mm

Material thickness

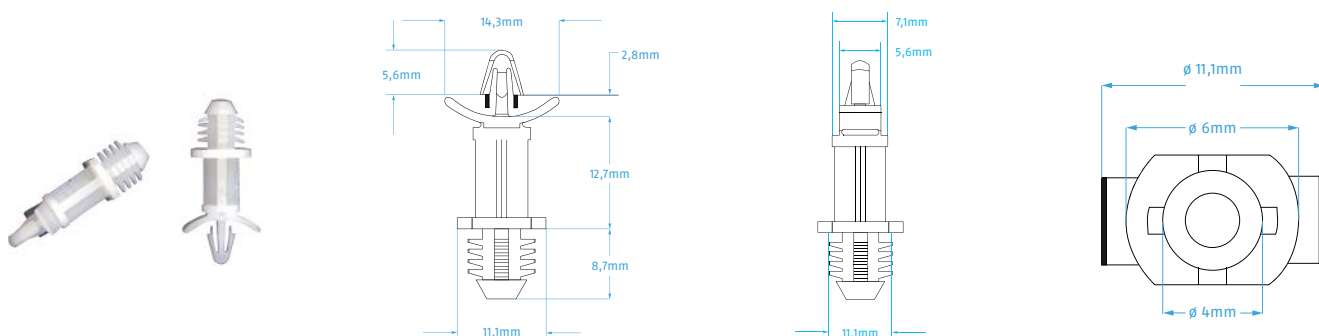
1,5-1,6mm



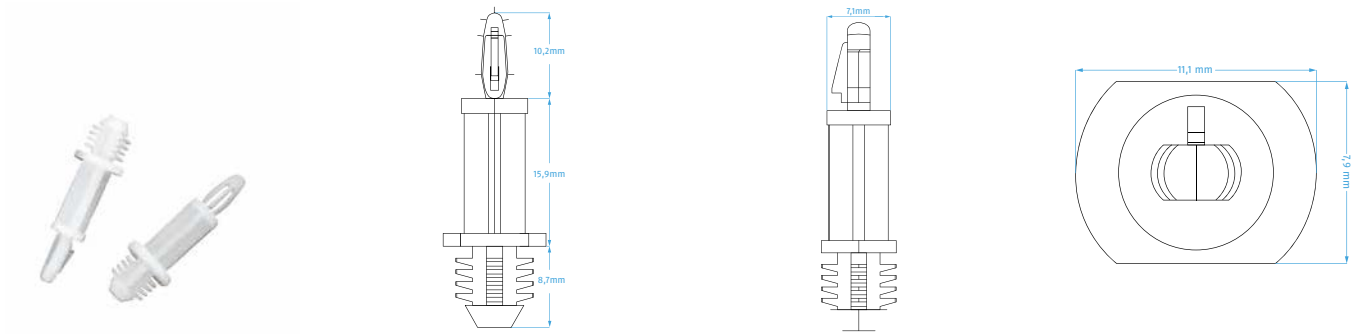
Description	Item number	Drill hole	Material thickness
PCB holder 12mm, plug-in version (for plates)	802.0004	5,4mm	1,5-1,6mm



Description	Item number	Drill hole	Material thickness
PCB holder 6mm, drill version (for wood or plastic)	802.0006	7,9mm	minimum 6,4mm



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 L33-6-6	LED-Tile L33-3-3
Voltage	20-27V	20-27V
Current (I_{\max} White)*	0,18A	0,045A
Current (I_{\max} Green and Blue)*	0,14A	0,035A
Current (I_{\max} Red and Amber)*	0,28A	0,07A

*At 24V

Pin Connection

System connector blue



Control options for LED-Tiles L33

There are countless combinations when using our LED-Tile L33 with Intelligence. Of course, the possible combinations always depend on the respective product.

However, in order to give you an overview of our system, we have presented some scenarios with example calculations and cabling examples on the following pages.

Overview of control options for LED-Tile L33-6-6 in white

	Control channels	LED-Strip per channel	LED-Strip per power supply	Details see on page	Calculation example see on page
System Power Supply 4E with Intelligence (with 1 LED tile per control channel)	120	1	120	16	20
System Power Supply 4 with Intelligence* (with 1 LED tile per control channel)	120	1	120		
System Power Supply 4/4E with Intelligence (maximum number of LED tiles per control channel)	120	1	120		20
System Power Supply 4/4E with Big Intelli XLR (two Big Intellis each output)	24	5	120	16	
Sys One with Intelligence (XLR-Adapterboard), (with 1 LED tile per control channel)	30	1	30	14	
Sys One with Intelligence (XLR-Adapterboard), (maximum number of LED tiles per control channel)	30	1	30		
Sys One (System connector blue)	6	5	30	14	
Long Distance Controller	18	5	90	13	
Big Intelli monochrome with 70W power supply	1	16	16	18	
60W power supply (undimmed)			16	19	

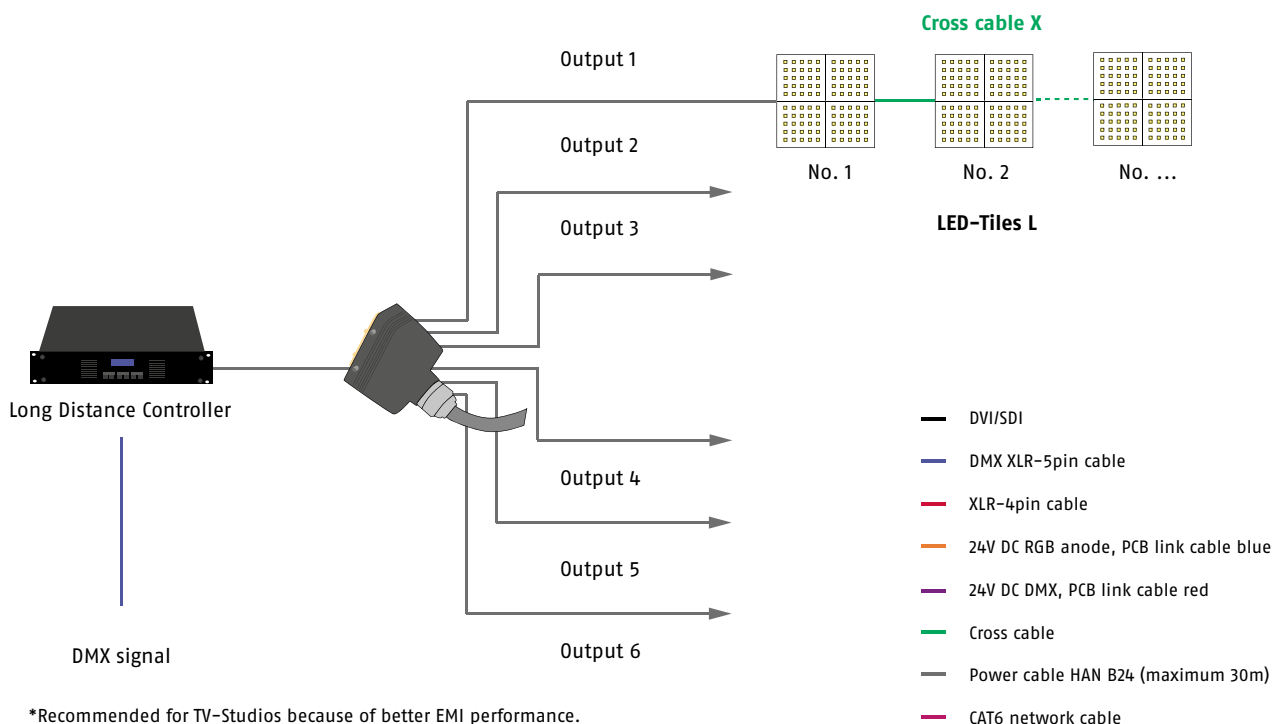
*A System Power Supply 4 cannot control more than 60 channels per output.

Long Distance Controller



	LED-Tile L33-6-6	LED-Tile L33-3-3
White	90 LED-Tiles per controller 15 LED-Tiles per output 5 LED-Tiles per channel	378 LED-Tiles per controller 63 LED-Tiles per output 21 LED-Tiles per channel
Blue and Green	54 LED-Tiles per controller 9 LED-Tiles per output 3 LED-Tiles per channel	234 LED-Tiles per controller 39 LED-Tiles per output 13 LED-Tiles per channel
Red and Amber	108 LED-Tiles per controller 18 LED-Tiles per output 6 LED-Tiles per channel	486 LED-Tiles per controller 81 LED-Tiles per output 27 LED-Tiles per channel

Cabling example for Long Distance Controller with LED-Tile L33*



Sys One

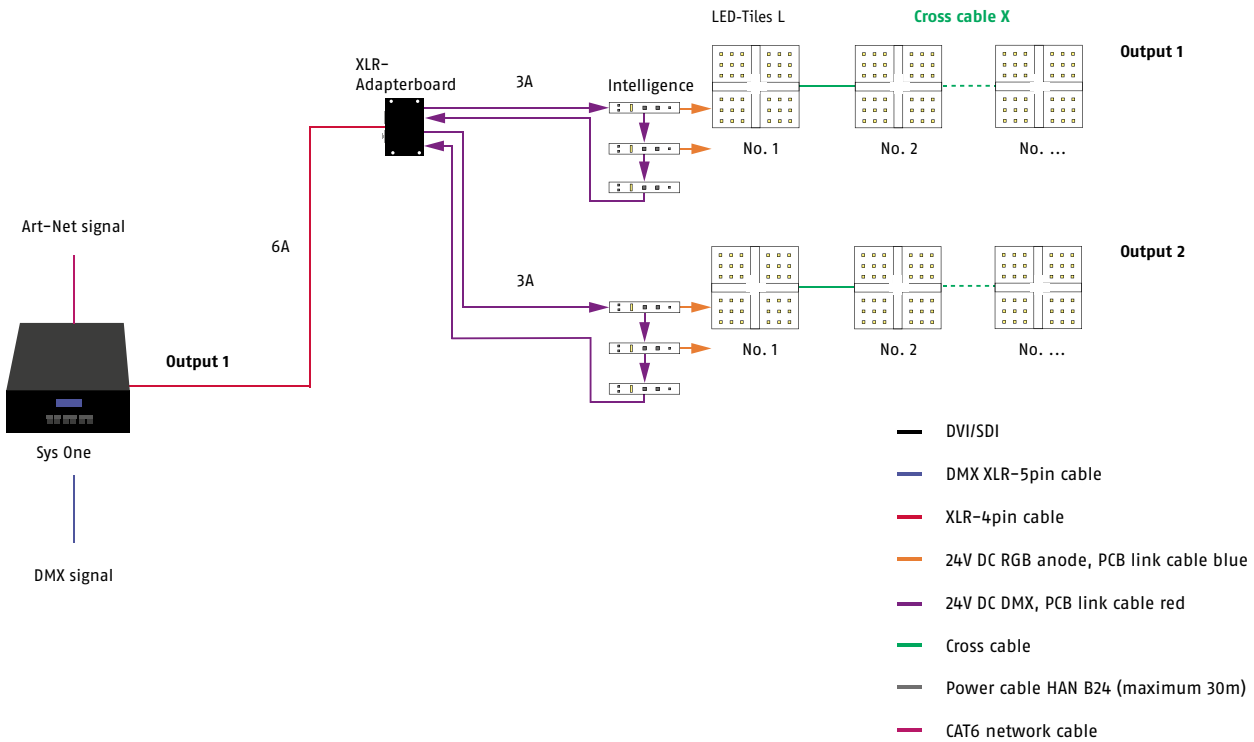
Specific feature: fanless operating



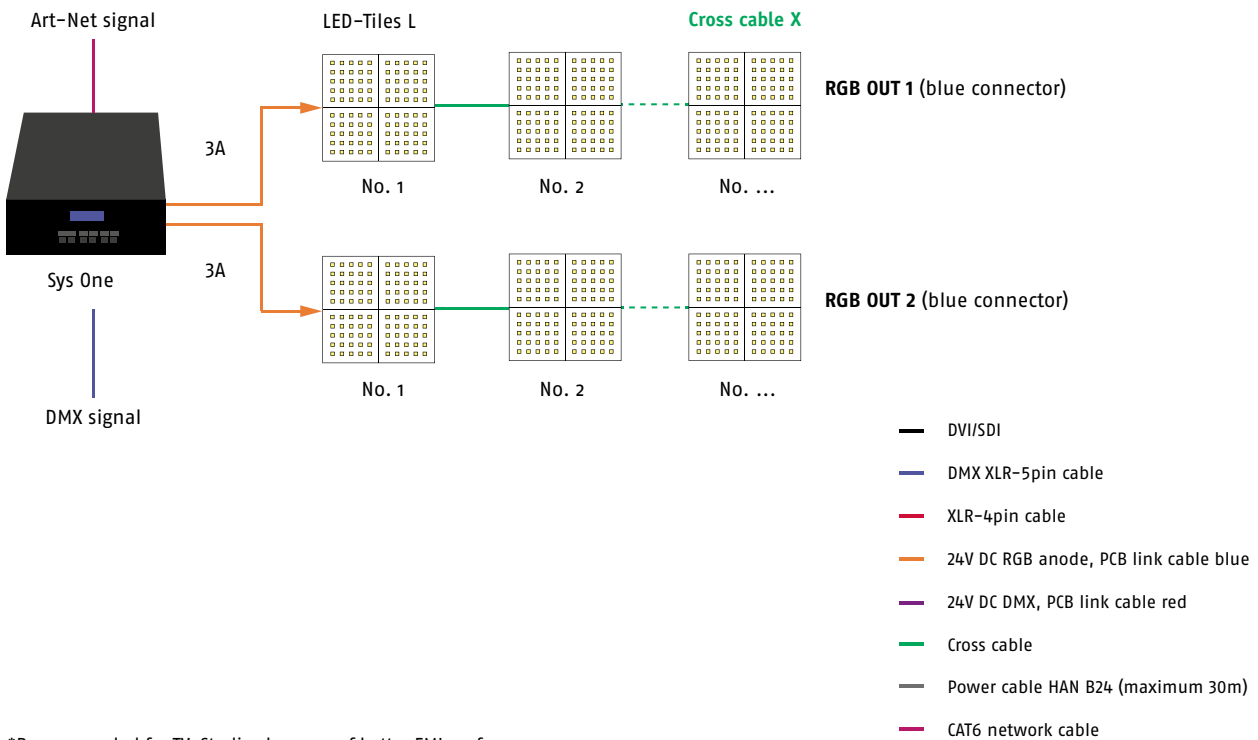
Power Data Out	Colour	LED-Tile L33-6-6	LED-Tile L33-3-3
Output XLR-4pin, one control channel per LED tile	White	maximum 30 LED-Tiles per controller maximum 15 LED-Tiles per output 1 LED-Tile per channel	maximum 90 LED-Tiles per controller maximum 45 LED-Tiles per output 1 LED-Tile per channel
	Blue and Green	maximum 18 LED-Tiles per controller maximum 9 LED-Tiles per output 1 LED-Tile per channel	maximum 66 LED-Tiles per controller maximum 33 LED-Tiles per output 1 LED-Tile per channel
	Red and Amber	maximum 36 LED-Tiles per controller maximum 18 LED-Tiles per output 1 LED-Tile per channel	maximum 102 LED-Tiles per controller maximum 51 LED-Tiles per output 1 LED-Tile per channel
Output system connector blue	White	maximum 30 LED-Tiles per controller maximum 15 LED-Tiles per output maximum 5 LED-Tiles per channel	maximum 132 LED-Tiles per controller maximum 66 LED-Tiles per output maximum 22 LED-Tiles per channel
	Blue and Green	maximum 18 LED-Tiles per controller maximum 9 LED-Tiles per output maximum 3 LED-Tiles per channel	maximum 84 LED-Tiles per controller maximum 42 LED-Tiles per output maximum 14 LED-Tiles per channel
	Red and Amber	maximum 42 LED-Tiles per controller maximum 21 LED-Tiles per output maximum 7 LED-Tiles per channel	maximum 168 LED-Tiles per controller maximum 84 LED-Tiles per output maximum 28 LED-Tiles per channel

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

Cabling example for Sys One (XLR-4pin connector) with Intelligence and LED-Tile L33*



Cabling example for Sys One (System connector blue) with LED-Tile L33*



*Recommended for TV-Studios because of better EMI performance.

System Power Supply 4E and System Power Supply 4**

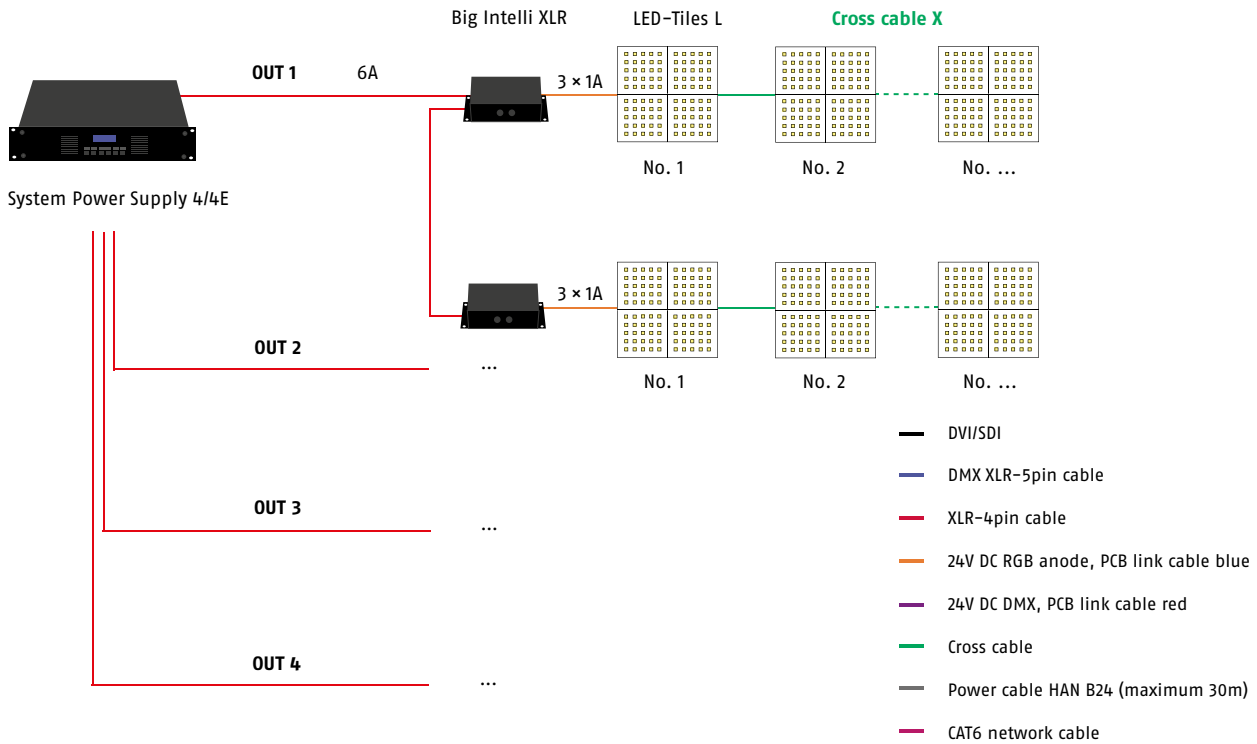


	Colour	LED-Tile L33-6-6	LED-Tile L33-3-3
with Big Intelli XLR*, two Big Intellis per output	White	maximum 120 LED-Tiles per controller maximum 30 LED-Tiles per output maximum 5 LED-Tiles per channel	maximum 504 LED-Tiles per controller maximum 126 LED-Tiles per output maximum 21 LED-Tiles per channel
	Blue and Green	maximum 72 LED-Tiles per controller maximum 18 LED-Tiles per output maximum 3 LED-Tiles per channel	maximum 321 LED-Tiles per controller maximum 78 LED-Tiles per output maximum 13 LED-Tiles per channel
	Red and Amber	maximum 144 LED-Tiles per controller maximum 36 LED-Tiles per output maximum 6 LED-Tiles per channel	maximum 648 LED-Tiles per controller maximum 162 LED-Tiles per output maximum 27 LED-Tiles per channel
with Intelligence*, one control channel per LED tile	White	maximum 120 LED-Tiles per controller maximum 30 LED-Tiles per output 1 LED-Tile per channel	maximum 360 LED-Tiles per controller maximum 90 LED-Tiles per output 1 LED-Tile per channel
	Blue and Green	maximum 72 LED-Tiles per controller maximum 18 LED-Tiles per output 1 LED-Tile per channel	maximum 264 LED-Tiles per controller maximum 66 LED-Tiles per output 1 LED-Tile per channel
	Red and Amber	maximum 144 LED-Tiles per controller maximum 36 LED-Tiles per output 1 LED-Tile per channel	maximum 408 LED-Tiles per controller maximum 102 LED-Tiles per output 1 LED-Tile per channel

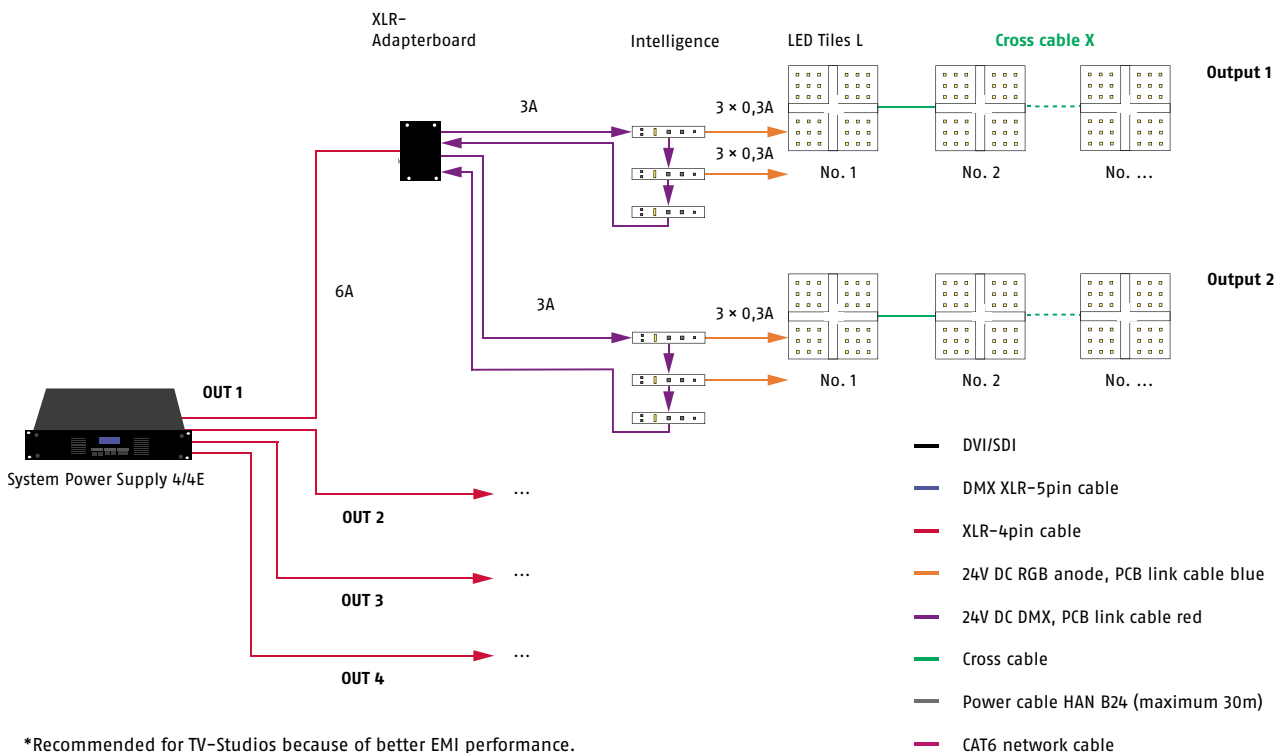
* The System Power Supplies 4 and 4E can only control the LED-Tiles L with an additional Intelligence.

** A System Power Supply 4 cannot control more than 60 channels per output.

Cabling example for System Power Supply 4 or 4E and Big Intelli XLR with LED-Tile L33*



Cabling example for System Power Supply 4 or 4E and Intelligence with LED-Tile L33*



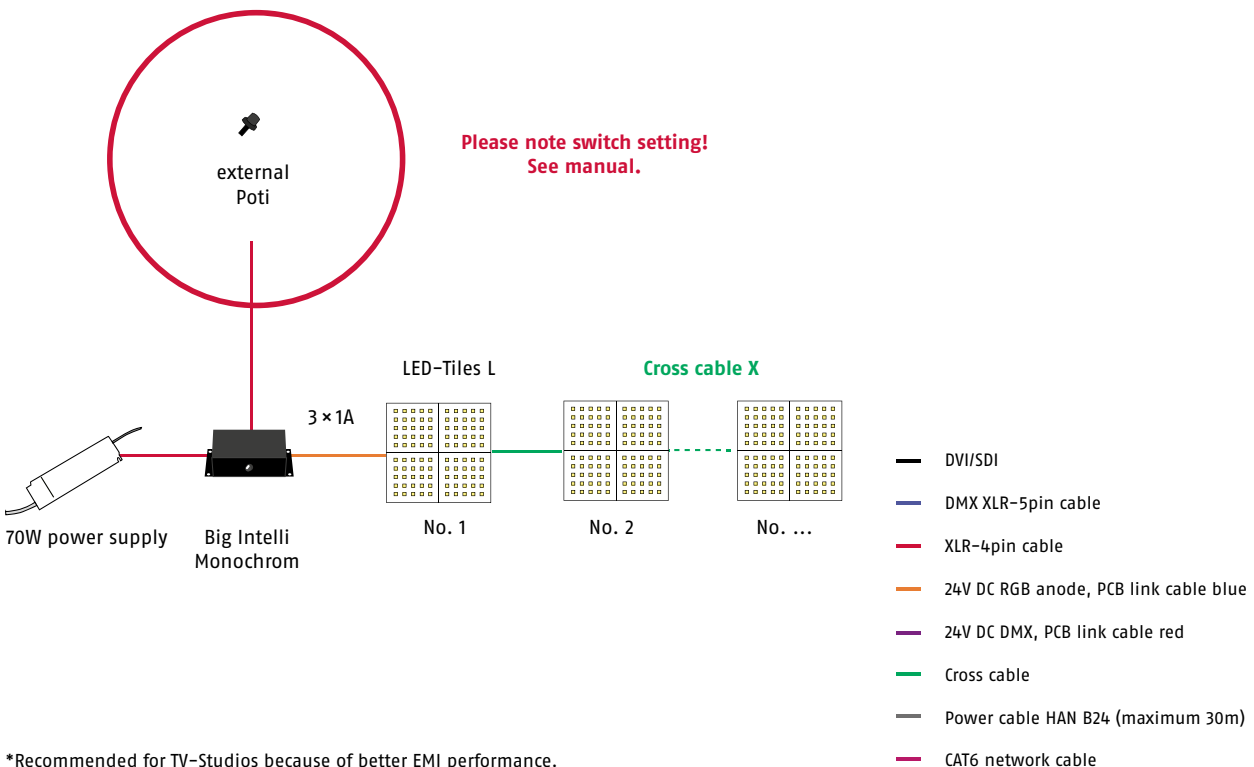
*Recommended for TV-Studios because of better EMI performance.

70W Power Supply and Big Intelli (dimmable)



	LED-Tile L33-6-6	LED-Tile L33-3-3
White	maximum 15 LED-Tiles per controller maximum 15 LED-Tiles per channel	maximum 63 LED-Tiles per controller maximum 63 LED-Tiles per channel
Blue and Green	maximum 9 LED-Tiles per controller maximum 9 LED-Tiles per channel	maximum 39 LED-Tiles per controller maximum 39 LED-Tiles per channel
Red and Amber	maximum 18 LED-Tiles per controller maximum 18 LED-Tiles per channel	maximum 81 LED-Tiles per controller maximum 81 LED-Tiles per channel

Cabling example for 70W Power Supply and Big Intelli with LED-Tile L33*



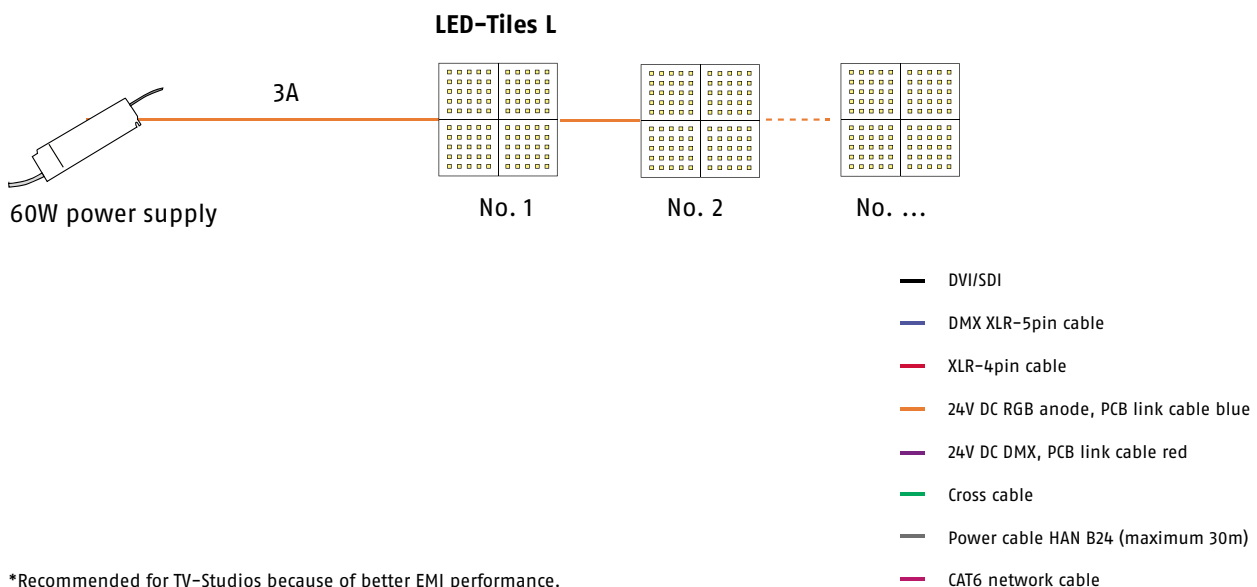
*Recommended for TV-Studios because of better EMI performance.

60W Power Supply (undimmed)



	LED-Tile L33-6-6	LED-Tile L33-3-3
White	maximum 16 LED-Tiles per Power Supply	maximum 64 LED-Tiles per Power Supply
Blue and Green	maximum 10 LED-Tiles per Power Supply	maximum 41 LED-Tiles per Power Supply
Red and Amber	maximum 20 LED-Tiles per Power Supply	maximum 82 LED-Tiles per Power Supply

Cabling example for 60W Power Supply with LED-Tile L33*



*Recommended for TV-Studios because of better EMI performance.

Calculation example for System Power Supply 4E with Intelligence and LED-Tile L33-6-6

1. requirement: One control channel per LED tile

One Intelligence can control $3 \times 0,3A$ (three control channels per Intelligence)

$3 \times 0,18A (I_{\max} \text{ L33-6-6}) =$	0,54A
Requirement for Intelligence	0,07A
Total	0,61A

3A per system plug / **0,61A** = **5 Intelligences, each with three LED tiles**

$2 \times 3A$ per Output $\triangleq 2 \times 15$ LED tiles = **30 LED tiles per output**

4 outputs per System Power Supply 4E $\triangleq 4 \times 30 =$ **120 LED tiles per System Power Supply 4E**

2. requirement: As few Intelligences as possible should be used.

One Intelligence can control $3 \times 0,3A$

0,3A per channel / 0,18A per LED tile = **1 LED tile per channel**
Corresponds to $3 \times 1 = 3$ LED tiles per Intelligence

$3 \times 0,18A (I_{\max} \text{ L33-6-6}) =$	0,54A
Requirement for Intelligence =	0,07A
Total	0,618A

3A per system plug $\triangleq 3A / 0,61 = 5$ Intelligences per system plug

$\triangleq 10$ Intelligences per output

$\triangleq 40$ Intelligences per System Power Supply 4(E)

$\triangleq 40 \times 3 =$ **LED tiles per System Power Supply 4E**

Order numbers

	LED-Pitch	Backlighted surface	Channels	Power (I_{max})	Colour	Item number				
LED-Tile L33-(-6/-6) S ² MK2	33mm	200mm × 200mm	0/1 ¹	0,18A	6500K	115.6552				
					3500K	115.3552				
					3000K	115.3052				
					5700K	115.5752				
					5000K	115.5052				
					4000K	115.4052				
					2700K	115.2752				
					0,14A	Red	115.0042			
				Amber		115.0052				
				0,28A	Green	115.0082				
					Blue	115.0092				
				LED-Tile L33-(-3/-3) S ² MK2	33mm	100mm × 100mm	0/1 ¹	0,045A	6500K	115.6554
									3500K	115.3554
									3000K	115.3054
5700K	115.5754									
5000K	115.5054									
4000K	115.4054									
2700K	115.2754									
0,035A	Red	115.0044								
	Amber	115.0054								
0,07A	Green	115.0084								
	Blue	115.0094								

	Operating voltage	Power (I_{max})	Power (auxiliary power)	Channels	Connection	Item number
LED-Intelligence	24V DC	3 × 0,3A	0,07A	3	System connector red/blue	302.0015
Big Intelli XLR (in case)	24V DC	3 × 1A	0,07A	3	System connector red/blue XLR-4pin	203.0030
Big Intelli Monochrome (in case)	24V DC	3 × 1A		1	System connector red/blue	203.0031

	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-5pin IN/Trough	4 × XLR-4pin	203.0003
System Power Supply 4	110-240V AC	4 × 6A	4 × 60	XLR-5pin IN/Trough	4 × XLR-4pin	203.0002
Sys One	110-240V AC	1 × 6A or 2 × 3A or 2 × (3 × 1A)	1 × 512** or 2 × 512**	XLR-5pin IN/Trough	1 × XLR-4pin 2 × System connector red 2 × System connector blue	203.0007
Long Distance Controller	110-240V AC	6 × (R: 0,9A + G: 1,1A + B: 1,1A)	18	XLR-5pin IN/Trough	Multicore-24pin	203.0001
70W-Power Supply (24V DC)	220-240V AC				System connector red	204.0151
60W-Power Supply (20V DC)	100-240V AC				System connector blue (L-Series)	204.0653

* 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.

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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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