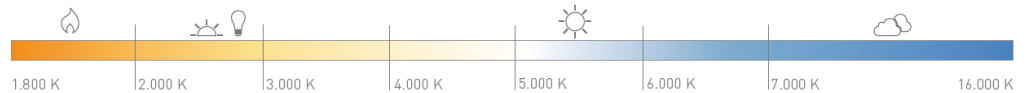




## PI-LED® Line



**Tunable white**  
1.800K - 16.000K



**Brightness dimmable**  
CCT/CIE-xy: 5-100% | RGB: 0-100%



**RGB/CIE-xy adjustable**  
Colour points and sequences



**Biorhythmic lighting**  
Vitalisation and recreation



**2 Control modes**  
DALI DT8, NeoLink



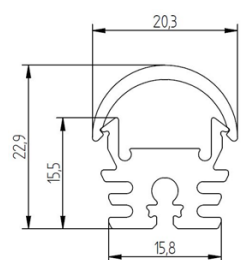
**Excellent CRI**  
CRI > 90

### TECHNICAL DATA

	590mm / 1 Module	1,150mm / 2 Modules	1,710mm / 3 Modules
Luminous source	SMD LED Modules		
Supply voltage	48V DC		
Typ. power	20W	40W	60W
Luminous flux	1,615lm	3,230lm	4,845lm
Efficiency	typ. 81lm/W	typ. 81lm/W	typ. 81lm/W
Control mode	NeoLink, DALI DT8		
Dimmable	RGB: 0% - 100% / CCT and CIE-xy: 5% - 100%		
CCT and colour control	1,800 - 16,000K* / adjustable CIE-xy-colours and RGB colours		
Ambient / storage temperature	10°C ... +35°C / -10°C ... +40°C		
t <sub>c,max</sub> LED Module / t <sub>c,max</sub> LMU	+75°C / +65°C		
Lifetime	50,000h L70B10		
Additional features	Low tolerance for colour temperature MacAdam 1 (typical/initial) Integrated overtemperature protection		

### MORE DETAILS

- Heat sink profile made of anodised, extruded aluminium
- Endcaps made of aluminium
- Cover White made of PMMA
- Radiation characteristic 120°
- Excellent product illumination thanks to the combination of SMD LEDs and innovative optics
- Protection class III / protection type IP20



\*CCT values outside the range 2,500-7,000K can be set in the CIE-xy mode

1 © LUMITECH Produktion und Entwicklung GmbH Technologiepark A-8380 Jennersdorf | Tel +43 (0)3329 90900 0 Fax +43 (0)3329 90900 10 office@lumitech.com www.lumitech.com  
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Last change: 19.10.2018

PI-LED\_Line\_en

### ORDERING DATA AND TECHNICAL DATA - PI-LED LINE

Type	Description	Length [mm]	Cable* [mm]	Lum. flux [lm]	Voltage [V DC]	typ. power [W]	max. power [W]	CG**
93000101	PI-LED Line DALI white 590mm incl. CG	590	700	1,615	48	20	22	1
93000102	PI-LED Line DALI white 1150mm incl. CG	1,150	700	3,230	48	40	44	1
93000103	PI-LED Line DALI white 1710mm incl. CG	1,710	700	4,845	48	60	66	2
93000104	PI-LED Line NeoLink white 590mm incl. CG	590	700	1,615	48	20	22	1
93000105	PI-LED Line NeoLink white 1150mm incl. CG	1,150	700	3,230	48	40	44	1
93000106	PI-LED Line NeoLink white 1710mm incl. CG	1,710	700	4,845	48	60	66	2

\*The cable builds the connection between luminaire and PI-LED electronic (LMU).

\*\*Each PI-LED LINE article is delivered including an appropriate control gear. Dimensions can be found in the next section.

Energy

A++

A+

A

B

C

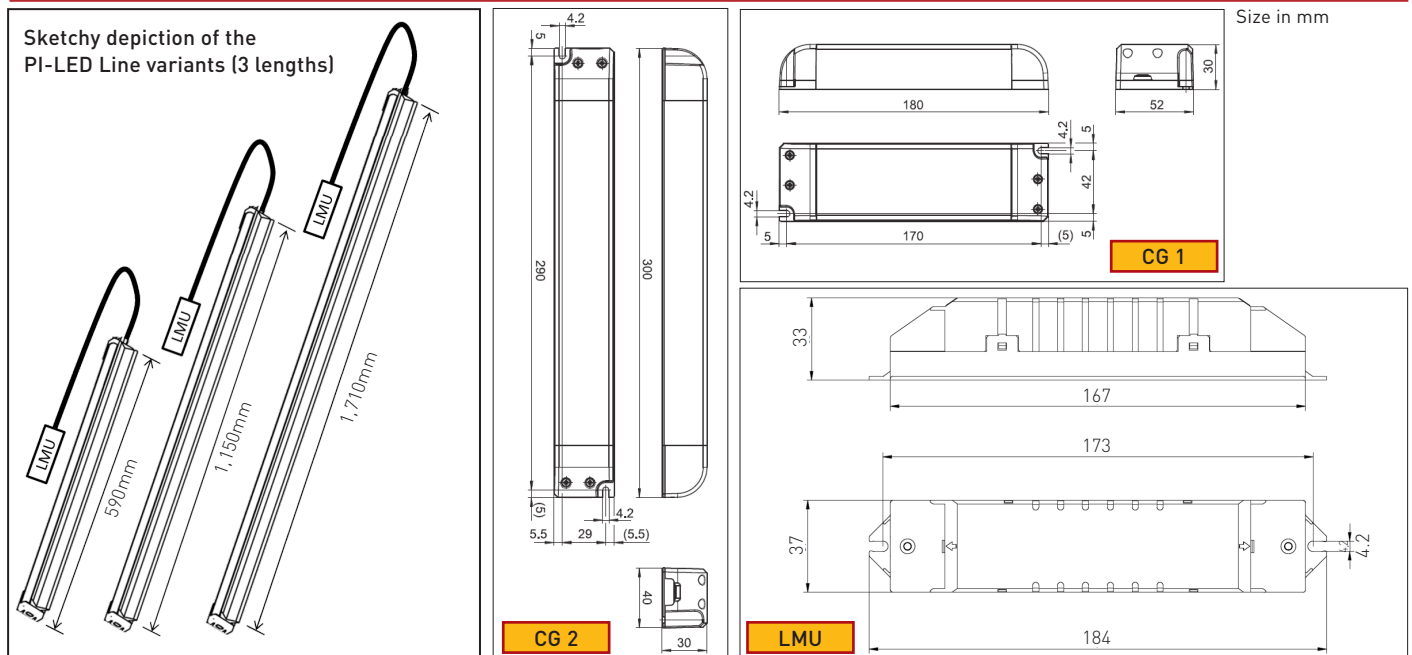
D

E

}

LED

### TECHNICAL DRAWINGS AND DIMENSIONS



### ACCESSORIES: MOUNTING PLATES (not included in delivery)

Type	ECS 0°	ECS 15°	ECS 30°	ECS 45°	ECS 60°	Shelf holders - left and right part
Article number	88166859	88167372	88167373	88167374	88167375	88167377

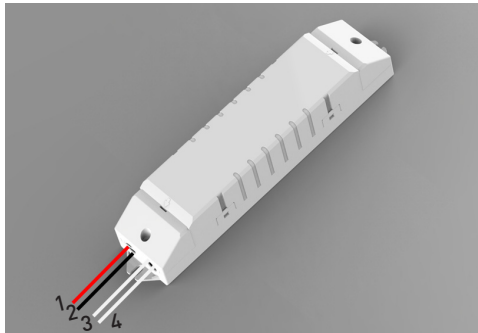
Type	METAL 0°	METAL 0° magnetic	METAL 30°	METAL 45°	METAL adjustable	METAL adjustable magnetic
Article number	88167376	88167382	88167378	88167379	88167384	88167385

#### Notes:

- All values apply at  $t_a=25^{\circ}\text{C}$ ,  $t_c=45^{\circ}\text{C}$  and 3000K
- Tolerance ranges: illumination data +/-15% | electrical data +/-15% | supply voltage 48V DC +/- 5% | mechanical dimensions +/- 1mm
- Illumination specifications in accordance with CIE1931
- If the supply voltage exceeds the max. permitted operating voltage, the PI-LED LINE will be overstressed. This will result in a highly reduced service life.
- If the maximum temperature limits are exceeded, the lifetime of the PI-LED LINE will be greatly reduced or the product may be damaged. Temperature measurements of the LED modules or the LMU have to be taken in the thermally stable state by means of a temperature sensor as per EN60598-1.
- The maximum system power of the PI-LED LINE is limited to the associated value above in column "max. Power [W]" due to its software.
- According to colour temperature and temperature of the PI-LED LINE, the Mac Adam tolerance takes on values < 4.

## PI-LED® LINE

### CONNECTION - DALI DT8



Terminal connection

Terminal No.	Function
1	+ 48V DC
2	- 0V DC
3	DALI
4	DALI

- No DALI polarity to be considered
- The two spare terminals can be used for looping the DALI signal

### FUNCTIONAL DESCRIPTION - DALI DT8

Mode	CCT	RGB	CIE
Colour	1.800K – 16.000K	Channels separately controllable	PI-LED colour space
Brightness	5 -100%	0 -100%	5 -100%

**Information:**

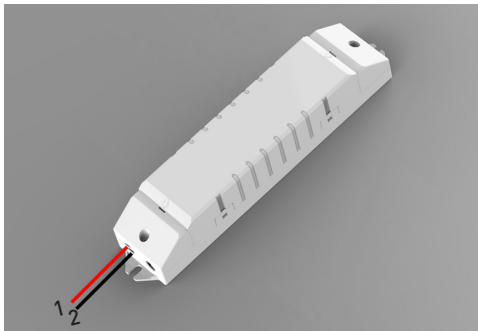
Colour accuracy in the colour mode is given only for CIE-xy points.

Possible assignment to a maximum of 16 groups and 16 light scenes

Recommended control units:

- LTP-1028 (DALI Touchpanel DT8)
- LTP-1029 (DALI Display 7" DT8)
- K-WDALI-USB (DALI USB Stick), together with the PC-App myPI-LED
- K-DALI-CDC (DALI control for daylight curves)
- K-DALI-SEQ (DALI control for colour sequences)

### CONNECTION - NEOLINK



Terminal connection

Terminal No.	Function
1	+ 48V DC
2	- 0V DC

### FUNCTIONAL DESCRIPTION - NEOLINK

Mode	CCT	RGB	CIE
Colour	1.800K – 16.000K	Channels separately controllable	PI-LED colour space
Brightness	5 -100%	0 -100%	5 -100%

Possible assignment to groups and light scenes depending on control unit

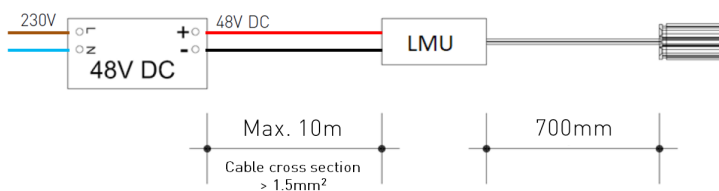
Possible control units:

- LTP-1026 (NeoLink Box) together with the myPI-LED App for Android/iOS
- LT-WALLY-1.1/2.1/3.1/4.1
- K-Z1001014 (ZigBee USB Stick), together with the PC-App myPI-LED

**Information:**

Depending on the assembly situation of the LMU, the range of the NeoLink module can vary. Mounting the LMU inside of a sealed metal case can dramatically reduce the NeoLink range!

### APPLICATION OF THE CONTROL GEAR (included with delivery)



**PI-LED LINE products must be supplied with constant voltage DC!**  
The usage of the provided control gear for a PI-LED LINE product is mandatory!

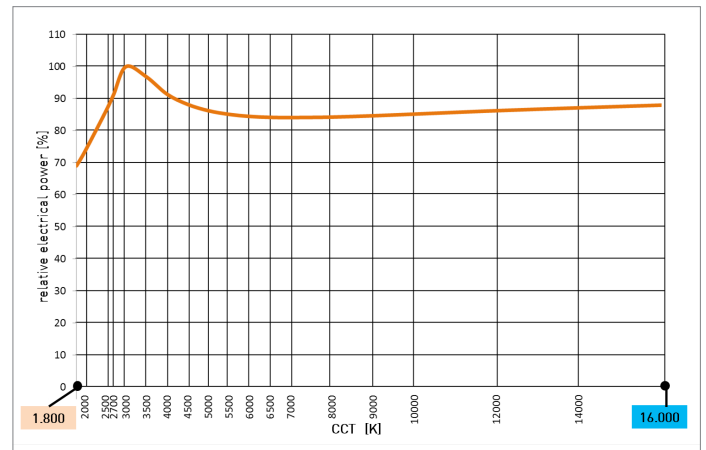
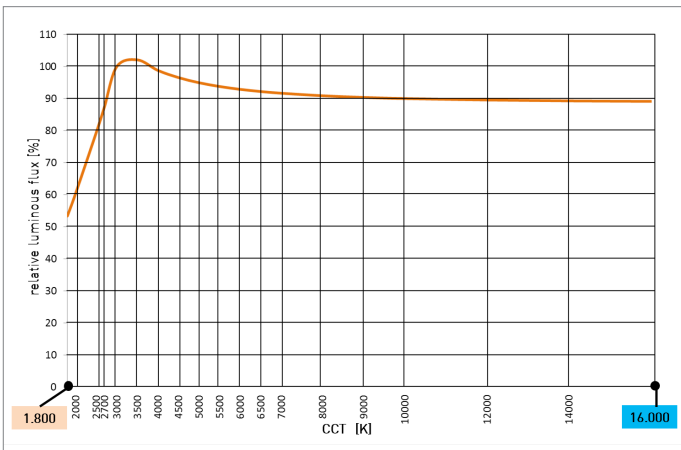
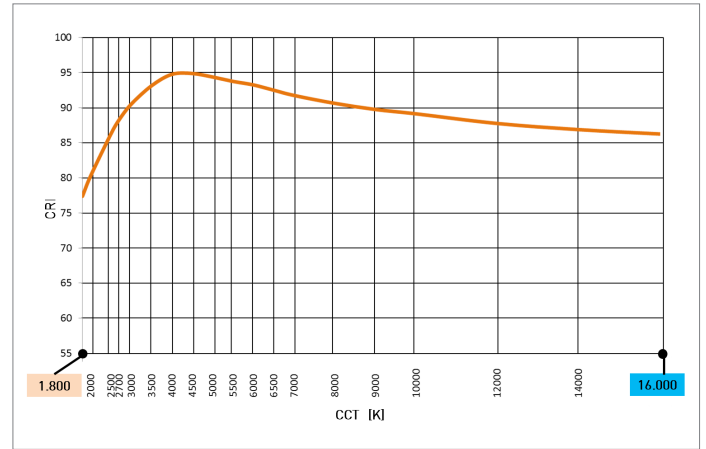
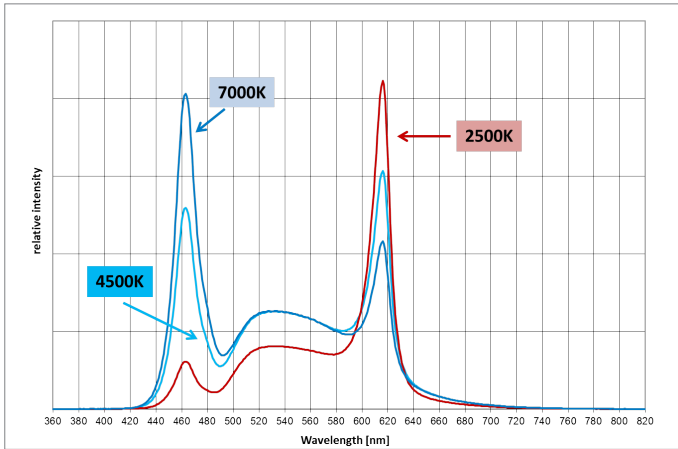
Operation with a constant current converter will lead to an irreversible damage of the PI-LED LINE!

Connecting the supply line to the control terminals or connecting an improper power supply to the power terminals may result in irreversible damage of the PI-LED LINE!

### STANDARDS

Fulfilled standards	EN 60598-1	Low-voltage directive
	EN 60598-2-1	Low-voltage directive
	EN 62471	Low-voltage directive
	ETSI EN 300 328 V2.1.1	Wideband transmission systems - Data transmission equipment operating in the 2,4 GHz ISM band
	EN 301 489-3	Electromagnetic compatibility and Radio spectrum Matters (ERM)

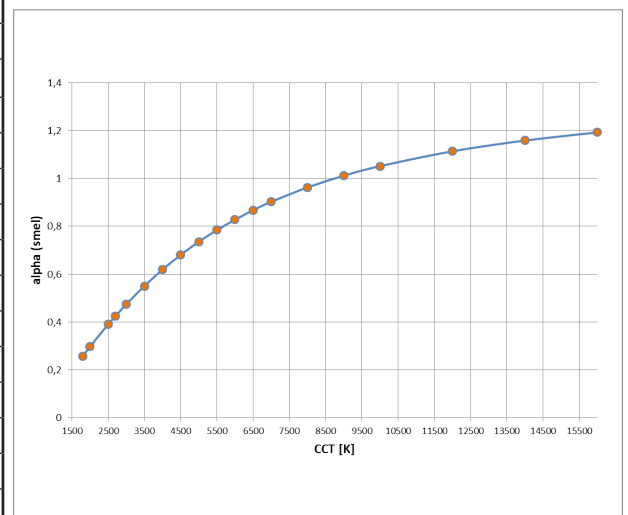
### PHOTOMETRICAL PROPERTIES



CCT [K]	general data			visual data by length of product			alpha [smel]
	CRI	CIE-x	CIE-y	Luminous flux [lm]			
				590mm	1,150mm	1,710mm	
1,800	77.4	0.5492	0.4082	875	1,750	2,625	0.257
2,000	80.3	0.5268	0.4133	990	1,980	2,970	0.297
2,500	86.3	0.4770	0.4137	1,295	2,590	3,885	0.390
2,700	88.3	0.4599	0.4106	1,420	2,840	4,260	0.424
3,000	90.5	0.4369	0.4041	1,615	3,230	4,845	0.474
3,500	93.1	0.4053	0.3907	1,630	3,260	4,890	0.550
4,000	94.8	0.3804	0.3767	1,580	3,160	4,740	0.619
4,500	94.9	0.3608	0.3635	1,545	3,090	4,635	0.680
5,000	94.4	0.3451	0.3516	1,520	3,040	4,560	0.735
5,500	93.8	0.3324	0.3410	1,500	3,000	4,500	0.784
6,000	93.3	0.3221	0.3318	1,490	2,980	4,470	0.827
6,500	92.5	0.3135	0.3236	1,480	2,960	4,440	0.867
7,000	91.8	0.3064	0.3165	1,475	2,950	4,425	0.902
8,000	90.6	0.2952	0.3048	1,465	2,930	4,395	0.962
9,000	89.8	0.2869	0.2956	1,460	2,920	4,380	1.011
10,000	89.1	0.2806	0.2883	1,455	2,910	4,365	1.051
12,000	87.8	0.2718	0.2776	1,455	2,910	4,365	1.113
14,000	86.9	0.2659	0.2702	1,455	2,910	4,365	1.158
16,000	86.3	0.2618	0.2648	1,455	2,910	4,365	1.192

**Remark:**

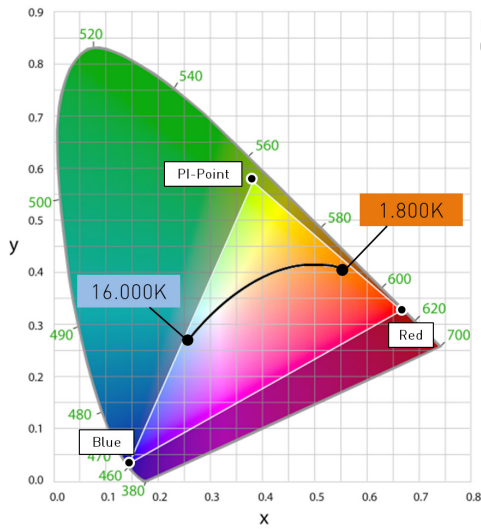
The coefficient alpha[smel] describes the melanopic effectiveness of the light source on humans and their circadian rhythm. To give the natural human biorhythm the best possible support, the melatonin production can be minimized by higher values of alpha[smel] throughout the day and stimulated by lower values in the evening. PI-LED enables the implementation of an illumination that is not only visual but also biological/melanopic effective. For a standard-conforming lighting design, Lumitech recommends the document DIN SPEC 5031-100 to be taken as a basis.



**Remark:**

The diagrams show typical curves and not the exact behaviour of single LED modules.

### COORDINATES AND TOLERANCES ACCORDING TO CIE 1931



Representable PI-LED colour space in the CIE 1931 system  
If a colour point outside of the triangle (PI-LED colour space) is set, the closest colour point within the triangle is referenced.

### LIFETIME LED MODULES

tp [°C]	L80B10 [h]
75°C	50,000

#### Notes:

- Value L is a statistical value, the actual drop in the luminous flux can vary across the delivered LED modules.
- tp-position = tc-position LED Module

### THERMAL CHARACTERISTICS

Ambient temperature	10°C ... +35°C
Storage temperature	-10°C.. +40°C
t <sub>c, max</sub> LED Module	+75°C
t <sub>c, max</sub> LMU	+65°C

Lumitech PI-LED products are equipped with integrated overtemperature protection that protects the LED module(s) against thermal overloads.

If the temperature tc at the LED module(s) reaches 85°C, power is reduced by lowering the brightness. If the temperature remains at that level or reaches 90°C, the LEDs are totally switched off. The LED module(s) is/are switched on again when the temperature tc drops to below 65°C again.

