



## HANDRAIL LIGHTING | Sense Line PI-LED

**! INNOVATION !**  
All needed light colours  
out of one luminaire:  
simply adjustable by  
switch or push button



Refrigeration and Freezer  
equipment



Handrail lighting



High efficiency



Excellent CRI  
CRI > 90 und CRI9 > 90



Dimmable



Various lengths



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### III PRODUCT DESCRIPTION

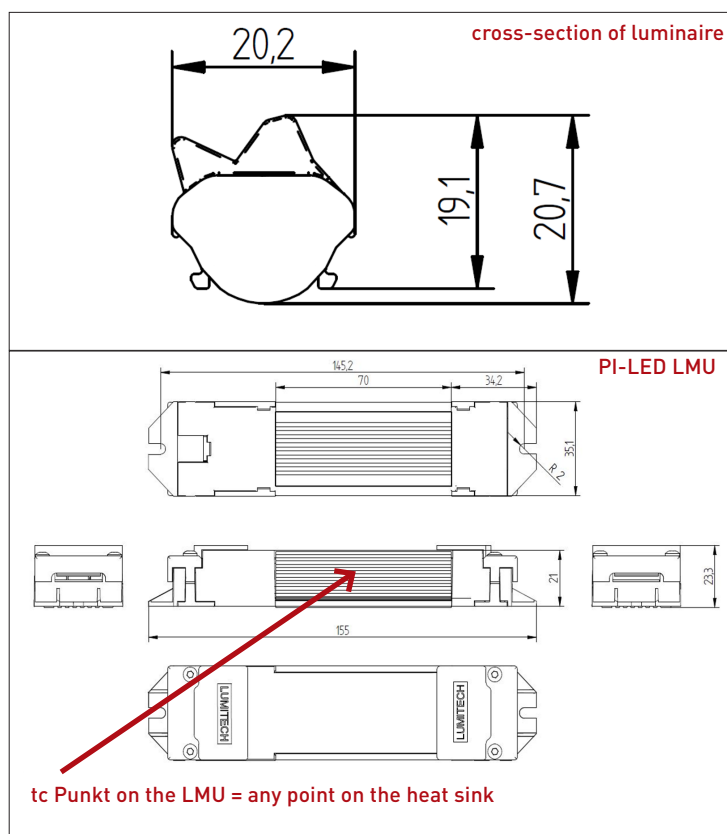
- High efficient lighting of handrails for cooling and freezer equipment
- Additional "LUMITECH SHADE" to avoid glare is recommended
- Single luminaires or luminaire kits available
- High operational performance due to directional lighting, integrated heat dissipation and highly efficient LEDs
- Very high CRI and CRI9 due to patented PI-LED technology including Phosphor Converted Red Chips
- Excellent product illumination thanks to the combination of SMD LEDs and innovative optics
- Safe-use operation due to safety extra-low voltage (SELV)
- Simple installation with application of FIXING Plates or by using the "LUMITECH SHADE"
- Heat sink profile made of anodised, extruded aluminium
- LED modules protected against moisture & dust by conformal coating
- End caps made of plastic
- Linear lenses made of Polycarbonate (GWT up to 850°C)
- Dimmable: 1%-100% Modular Dimming / Camera Ready
- All light colours needed for the cooling or freezer equipment can be realized with only one luminaire (kit)
- Low tolerance for all light colours (max. SDCM2)
- One article consists of 1-3 luminaires and one PI-LED LMU (driver electronics)

### III TECHNICAL DATA

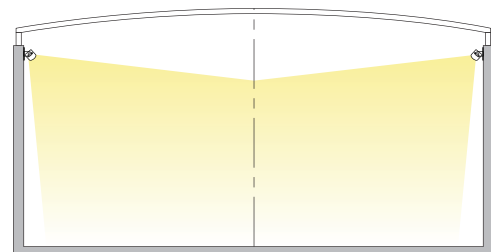
Supply voltage	48 V DC (constant voltage drivers available as accessory)
Ambient temperature $t_a$	-30 ... +30 °C
Max. surface temperature on profile $t_c$	60 °C
Type of protection	IP54 (luminaire) / IP20 (PI-LED LMU)
Protection class	III
Risk group (EN 62471:2008)	0



### III SKETCHES AND DIMENSIONS - size in mm



### III APPLICATION



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### TECHNICAL DATA | ORDER DATA

Art. No.	Type	Length	Modules	Light colour	Efficiency	Luminous flux	Power
93000400	Sense Line PI-LED 1200mm Handrail 4 / Z208 / 4000	1,200mm	4	Neutral White	118lm/W	1800lm	15.2W
				Warm White	114lm/W	1800lm	15.8W
				Meat & Deli	115lm/W	1800lm	15.6W
				Cool White	120lm/W	1800lm	15.0W
93000401	Sense Line PI-LED 1760mm Handrail 6 / Z208 / 4000	1,760mm	6	Neutral White	119lm/W	2700lm	22.7W
				Warm White	114lm/W	2700lm	23.7W
				Meat & Deli	115lm/W	2700lm	23.5W
				Cool White	120lm/W	2700lm	22.5W
93000402	Sense Line PI-LED 2x1200mm Handrail 8 / Z208 / 4000	2 x 1,200mm	8	Neutral White	118lm/W	2 x 1800lm	2 x 15.2W
				Warm White	114lm/W	2 x 1800lm	2 x 15.8W
				Meat & Deli	115lm/W	2 x 1800lm	2 x 15.6W
				Cool White	120lm/W	2 x 1800lm	2 x 15.0W
93000403	Sense Line PI-LED 3x1200mm Handrail 12 / Z208 / 4000	3 x 1,200mm	12	Neutral White	118lm/W	3 x 1800lm	3 x 15.2W
				Warm White	114lm/W	3 x 1800lm	3 x 15.8W
				Meat & Deli	115lm/W	3 x 1800lm	3 x 15.6W
				Cool White	120lm/W	3 x 1800lm	3 x 15.0W

- All typical values for Ta = 25°C +/- 2°C
- Tolerance range for illumination data +/- 15%
- Tolerance range for mechanical dimensions +/- 1mm
- Tolerance range for supply voltage 48V DC +/- 5%
- Tolerance range for electrical data +/- 15%



Alternative luminaire lengths (adapted to a particular freezer/cooler equipment) and light output can be configured on request.

### ACCESSORIES: DRIVER | ORDERING DATA

Art. No.	Type	Power
LTP-1067	CONVERTER 60W 48V IP20 LT 123x80x23,5mm	60W
LTP-1060	CONVERTER 75W 48V 180x52x30mm	75W
LTP-1061	CONVERTER 120W 48V 300x40x30mm	120W

### OVERVIEW: LUMINAIRES AND DRIVERS

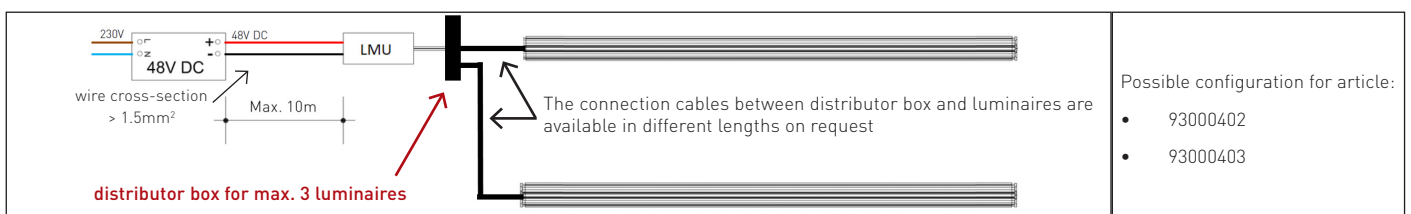
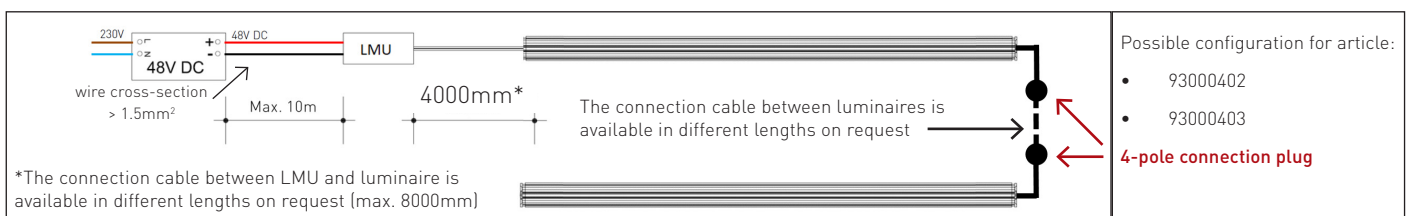
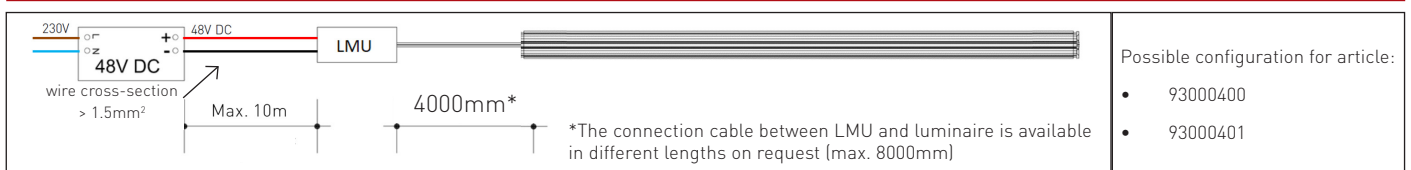
Driver	Number of luminaires per 1 pc. driver			
	93000400	93000401	93000402	93000403
LTP-1067	1-2	1-2	1	0
LTP-1060	1-3	1-2	1	1
LTP-1061	1-5	1-3	1-2	1

**Sense Line PI-LED products must be supplied with constant voltage DC! The usage of the provided driver for a Sense Line PI-LED product is mandatory!**

Operation with a constant current driver will lead to an irreversible damage of the Sense Line PI-LED.

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

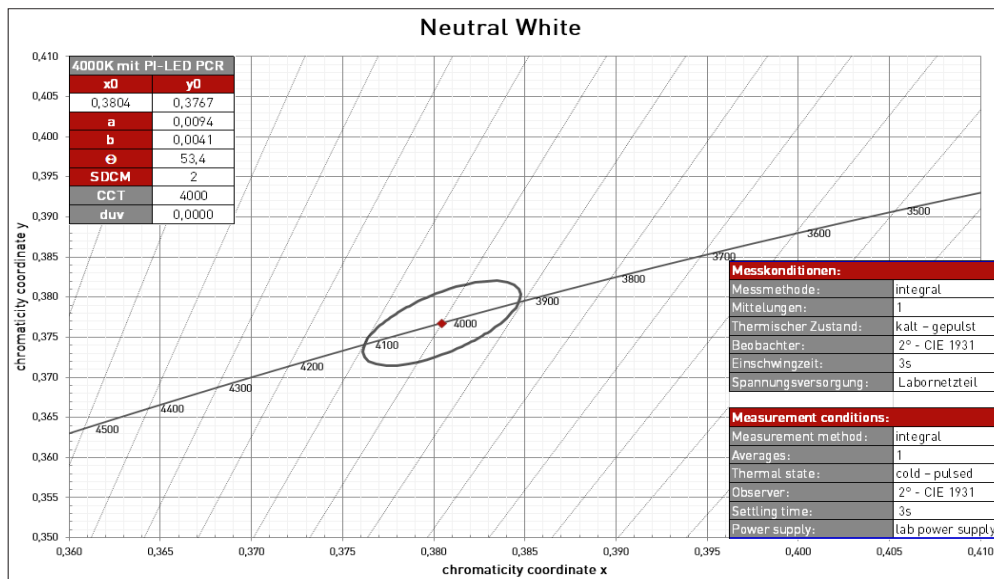
### CONFIGURATION POSSIBILITIES



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COORDINATES AND TOLERANCES

given information refers to the measurement of LED modules

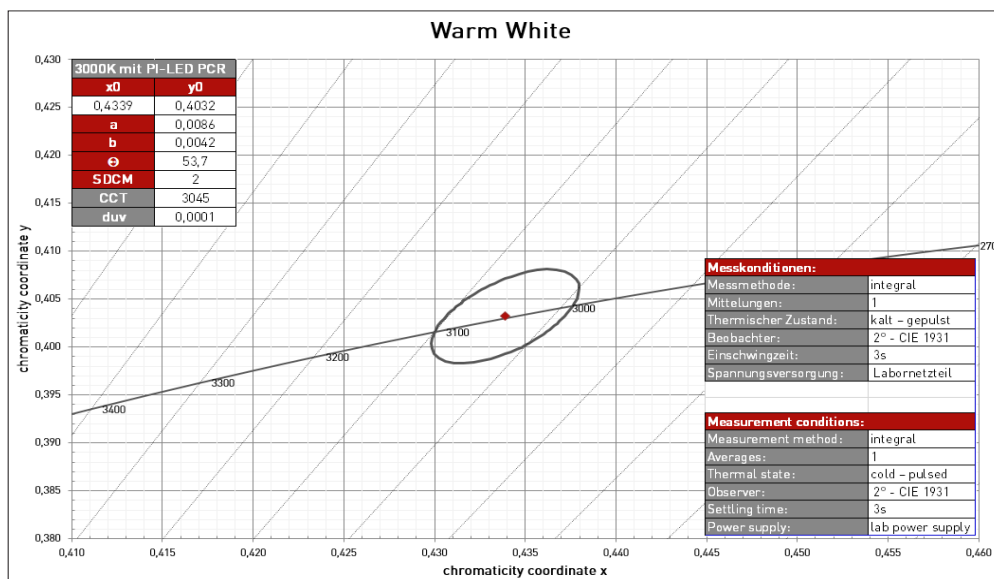


COLOUR KEY

Colour	Neutral White
CCT	4000K

up to  
**CRI 97**

up to  
**CRi9 95**

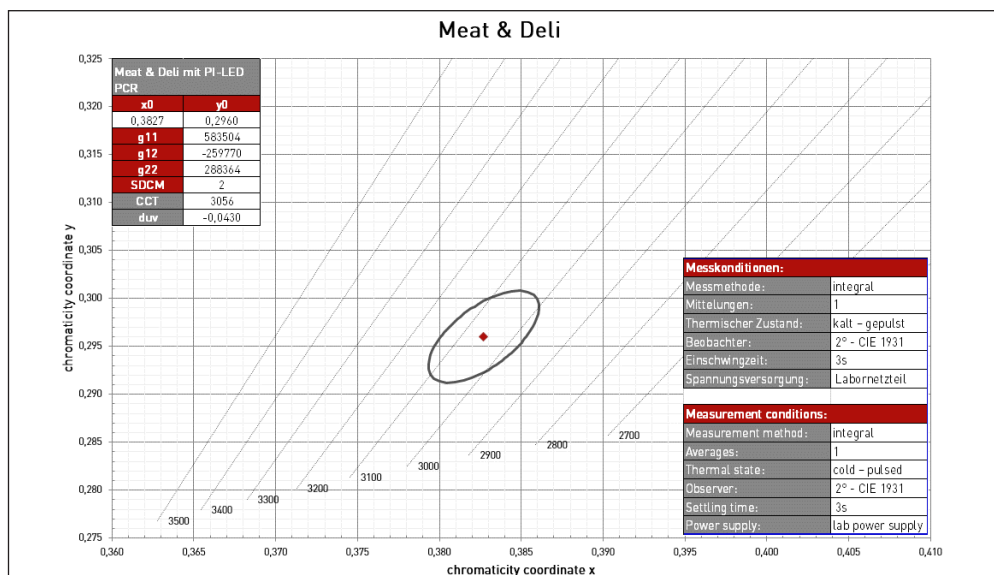


COLOUR KEY

Colour	Warm White
CCT	3000K

up to  
**CRI 95**

up to  
**CRi9 95**



COLOUR KEY

Colour	Meat & Deli
CCT	special colour

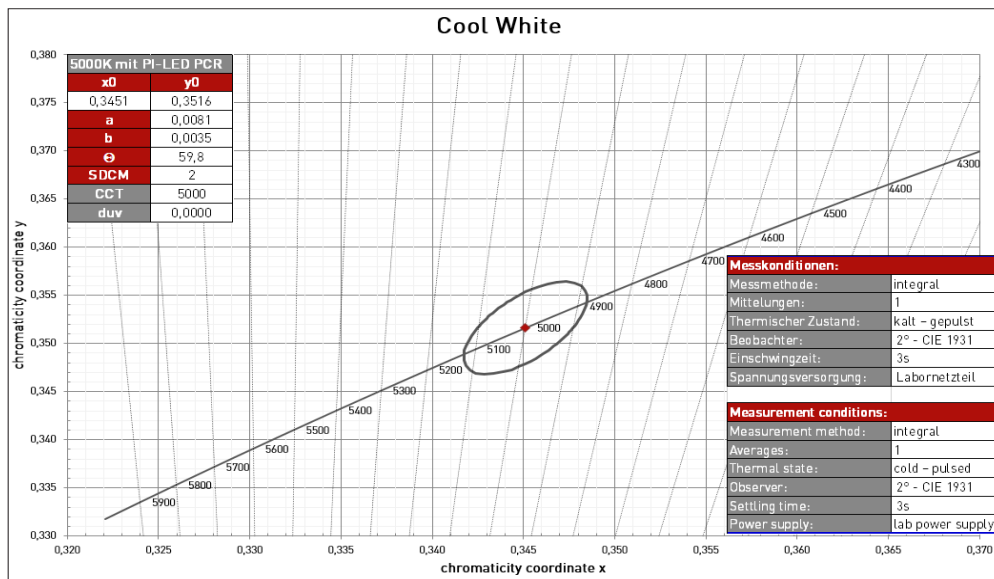
up to  
**CRI 95**

up to  
**CRi9 95**

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### COORDINATES AND TOLERANCES

given information refers to the measurement of LED modules

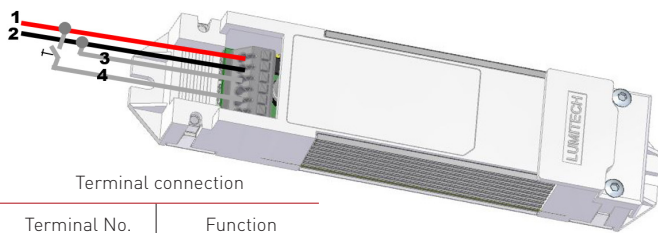


### COLOUR KEY

Colour	Cool White
CCT	5000K



### CONNECTION - SWITCH OR PUSH-BUTTON



Terminal connection

Terminal No.	Function
1	+ 48V DC
2	- 0V DC
3	push-button IN
4	push-button IN

**! SPECIAL NOTE !**

Each Sense Line PI-LED luminaire is programmed with initial light colour 4,000K Neutral White. By using the switch or push-button, the following light colour are cyclically set:

- 1) 3,000K Warm White
- 2) Meat & Deli
- 3) 5,000K Cool White
- 4) 4,000K Neutral White (initial light colour)
- 5) Blue (detection of end of one cycle)



Symbolic image

Per PI-LED LMU, one switch or push-button must be connected.

Number and type of **light colours** can be **individually specified**. Each Sense Line PI-LED luminaire can be set to **colour temperatures from 1,800K to 16,000K** and to **all special colours within the PI-LED triangle**.

### LIFETIME

50,000h (L70B10)

### THERMAL BEHAVIOUR

Operating temperature (operation, no defects)	ta	-30 ... +30 °C
Storage temperature	ts	-10 ... +40 °C
Temperature cooling profile <sup>12</sup>	tc	-30 ... +60 °C

<sup>1</sup> Values apply to operation at 100% output, natural convection.

<sup>2</sup> If the maximum temperature limits are exceeded, the lifetime of the LED modules in the luminaire will be greatly reduced or the modules may be destroyed. The tc point temperature at the profile of the luminaire should be measured in the thermally stable state and under operating conditions by means of a temperature sensor or temperature-sensitive sticker (available for example from conrad.com or rs-components.com) in accordance with EN60598-1. The entire profile can be used as the tc point.

### STANDARDS

- EN 60598-1
- EN 60598-2-1
- EN 62471



#### Note

- Installation should only be conducted by a licensed electrician.
- Make sure that the 48V DC driver is switched off before connecting the luminaire. If this is not observed, the luminaire may be damaged!
- Connection or operation is only permitted when using the specified drivers. Higher voltages result in damage to or failure of the luminaire.
- The user is responsible for correct selection of illumination intensity. Excessive illumination intensity may lead to greying or colour changes of displayed products.