

PI-LED® AREA SYSTEM PRO - All in One 9x9



Tunable White
1.800K - 16.000K



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



RGB/CIE-xy adjustable
Colour points and sequences



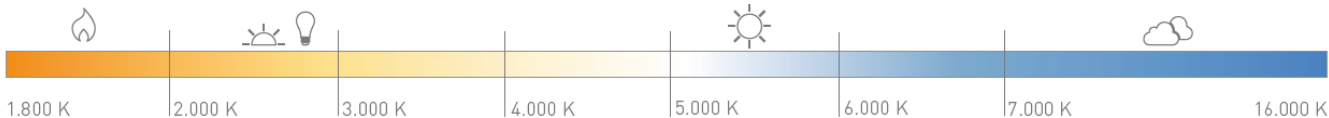
Biorhythmic light
Vitalisation and Recreation



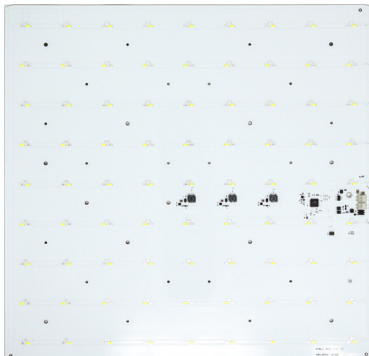
2 control modes
DALI DT8, NeoLink



Excellent CRI
CRI > 90



PI-LED® AREA SYSTEM PRO - All in One 9x9



DALI



NeoLink

PRODUCT DESCRIPTION

- SMD Mid Power LEDs
- High efficiency up to 100 lm/W
- High colour rendering index CRI>90
- Low tolerance for colour temperature MacAdam 1 (typisch / initial)
- 2 control modes: DALI DT8, NeoLink
- Integrated overtemperature protection
- Adjustable colour temperature 1,800K - 16,000K*
- Adjustable CIE-xy colour points and RGB colours
- Dimming: CCT/CIE-xy 5-100% | RGB 0-100%

*CCT values outside the range 2.500-7.000K can be set in the CIE-xy mode

TECHNICAL DATA

Luminous source	SMD LED Module
Supply voltage	48V DC
Power	typ. 54W
LED luminous flux	6,000lm
Control modes	DALI DT8, NeoLink
Dimmable	RGB: 0% - 100% CCT/CIE-xy: 5% - 100%
Ambient temperature	+10°C ... +45°C
Storage temperature	-20°C ... +80°C
t _{c,max} LED Module	+75°C



ORDERING DATA AND TECHNICAL DATA - ALL IN ONE 9X9

Type	Description	Control mode	Cable length [mm]	Luminous flux [lm]	Voltage [V DC]	Power [W]	Energy Efficiency Class
LTS-05000-05-AI	PI-LED Area System Pro All In One 9x9 5000LM, DALI DT8	DALI DT8	no cable	6,000	48	54	F
LTS-05000-06-AI	PI-LED Area System Pro All In One 9x9 5000LM, NeoLink	NeoLink	no cable	6,000	48	54	F

Notes:

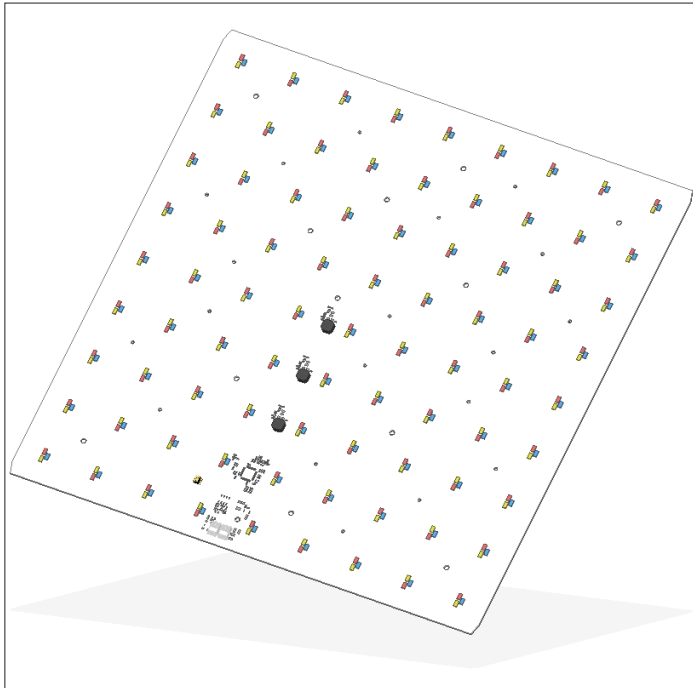
- All values apply at ta=25°C, tc=40°C and 3000K
- Tolerance ranges: illumination data +/-10% | electrical data +/-15% | supply voltage 48V DC +/- 5%
- Illumination specifications in accordance with CIE1931
- If the supply voltage exceeds the max. permitted operating voltage, the PI-LED system will be overstressed. This will result in a highly reduced service life.
- If the maximum temperature limits are exceeded, the lifetime of the PI-LED system will be greatly reduced or the system may be damaged. Temperature measurements of the LED modules have to be taken in the thermally stable state by means of a temperature sensor as per EN60598-1.
- The maximum power of one LED module is limited to 55W due to its software.
- According to colour temperature and temperature of the PI-LED system, the Mac Adam tolerance takes on values < 4.

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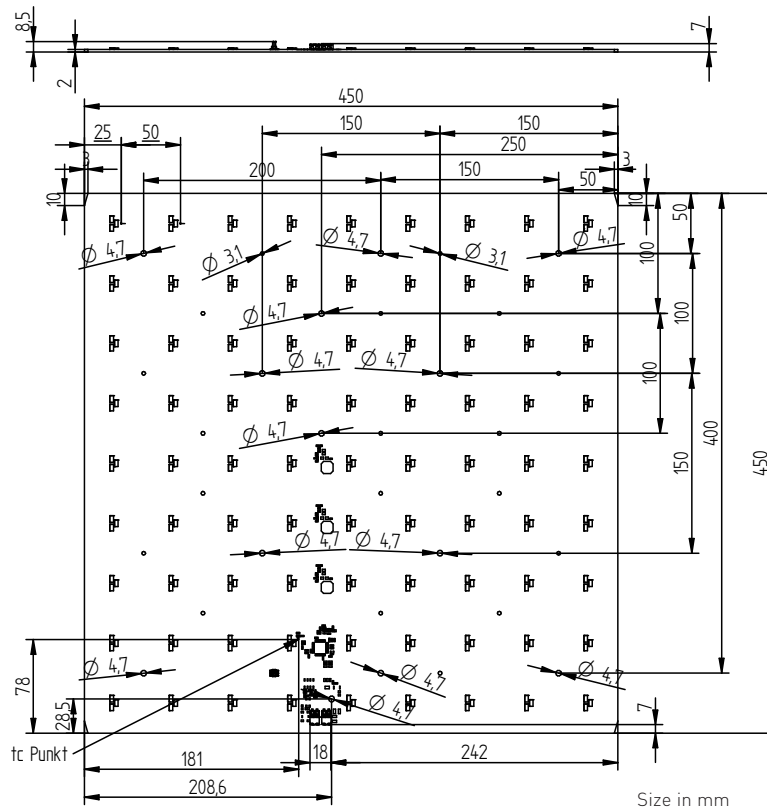
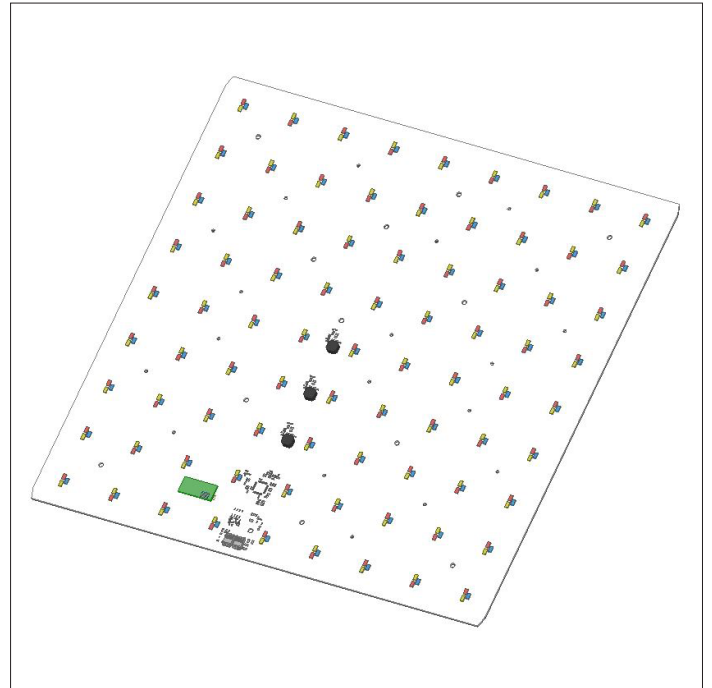
III TECHNICAL DRAWINGS AND DATA

L/W [mm]	Design type	Light spots P / B / R	Light spot distance [mm]
450 x 450	square	81/ 81 / 81	50

DALI DT8 version

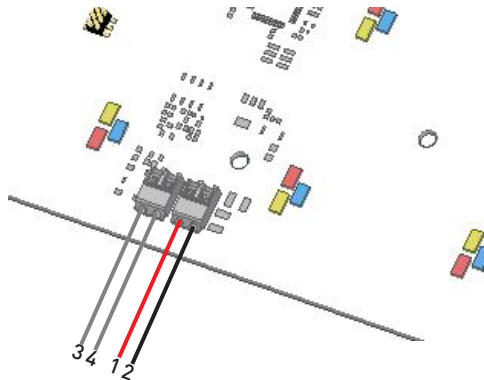


NeoLink version



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III CONNECTION - DALI DT8



No DALI polarity to be considered

III 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

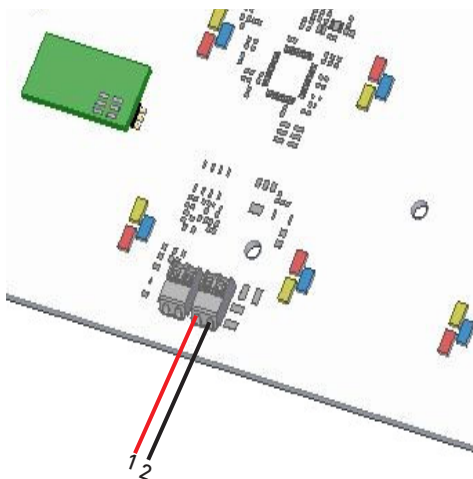
Recommended control units:

- LTP-1028 (DALI Touchpanel DT8)
- LTP-1029 (DALI Display 7" DT8)
- K-DALI-CDC (DALI control for daylight curves)
- K-DALI-SEQ (DALI control for colour sequences)

Terminal connection

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

III CONNECTION - NEOLINK



III 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%

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

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
- K-ZWALLY-x.2

Terminal connection

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

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NOTES

Cable type and cable cross-section	To connect the power supply to the terminal, a single-wire or fine-wire conductor with a cable cross section of 0.2 to max. 0.75mm ² can be used.
Installation and mounting	When installing the PI-LED AREA SYSTEM PRO All in One 9x9 in a luminaire, it does not have to be protected against accidental contact. The photometric parameters of the PI-LED AREA SYSTEM PRO All in One 9x9 may change when installed in a luminaire.
Electrical supply	When using a constant-voltage power supply, the following protective functions have to be ensured: <ul style="list-style-type: none"> • Short-circuit detection • Overload protection • Over-temperature shutdown • SELV output voltage <p>The PI-LED AREA SYSTEM PRO All in One 9x9 must be operated with a constant-voltage power supply recommended by Lumitech. Secondary switching of the applied power supply is not permitted. A list of recommended constant-voltage power supplies is available on the Lumitech website.</p>
Assembly / Operation	Use this type of assembly for metallic surfaces : <ul style="list-style-type: none"> • Inserting an electrically insulating thermally conductive foil / pad between the entire back side of the module and the metallic surface of the luminaire housing • Mounting the module including thermally conductive foil / pad with 8 pcs. of screws onto the metallic bottom surface of the luminaire housing. Alternatively, BJB-type „Push To Fix“ elements can be used. <p>Installation with spacers on to the metallic surface: <ul style="list-style-type: none"> • The PI-LED AREA SYSTEM PRO All in One 9x9 is mounted with plastic spacers. <p>Use this type of assembly for plastic surfaces: <ul style="list-style-type: none"> • The PI-LED Area System Pro All In One 9x9 is mounted with plastic spacers. • Mounting the LED module without thermally conductive foil / pad with 8 pcs. of screws or BJB-type „Push To Fix“-elements on to the non-metallic surface of the luminaire housing is possible. <p>More information can be found in section DETAILS FOR ASSEMBLY / ACCESSORY.</p> </p></p>
EOS/ESD security policy	The PI-LED AREA SYSTEM PRO All in One 9x9 contains components that are sensitive to electrostatic discharge and may only be installed if appropriate EOS / ESD protection in manufacturing and in application is applied.
CE - luminaire labeling	The PI-LED AREA SYSTEM PRO All in One 9x9 is tested according to the applicable standards (see Standards). Corresponding standard tests of the final product must be carried out separately.

LUMITECH PI-LED Systems must be supplied with **constant voltage DC!**

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

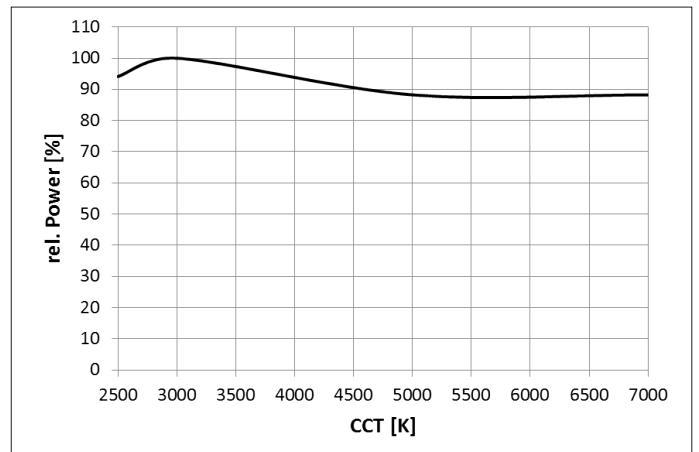
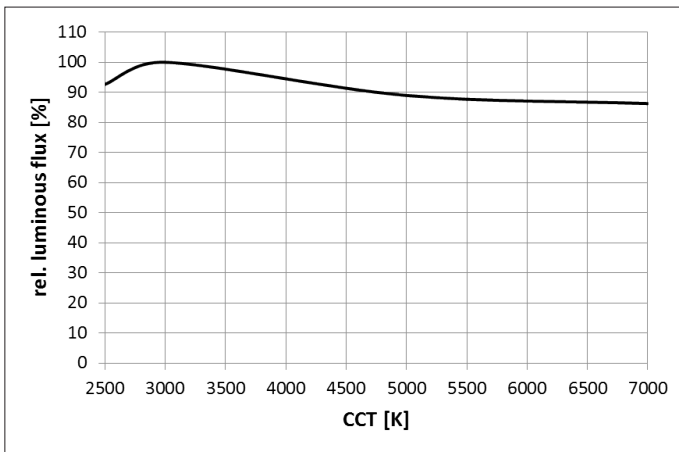
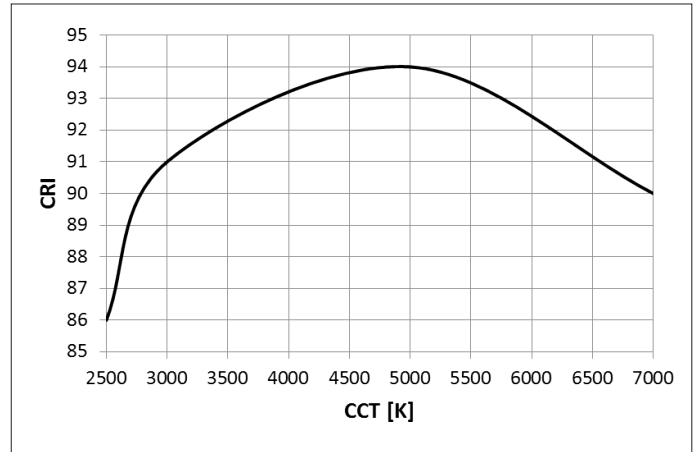
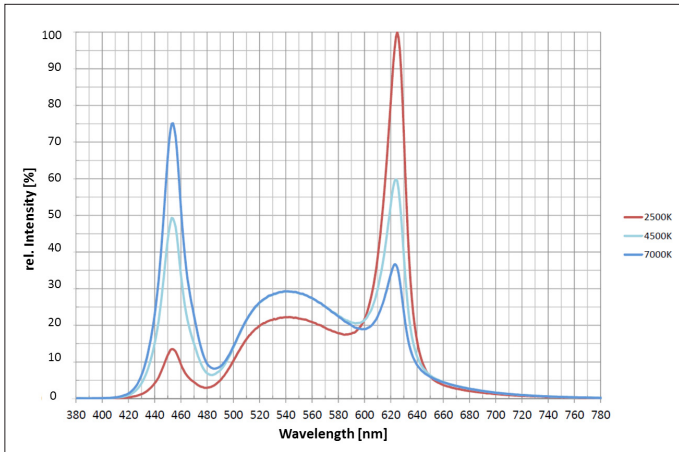
Connecting the supply line to the control terminals or connecting an improper power supply to the power terminals may result in irreversible damage of the PI-LED System.

STANDARDS

EN62031	LED modules for general lighting - Safety specifications
EN62471	Photobiological safety of lamps and lamp systems
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

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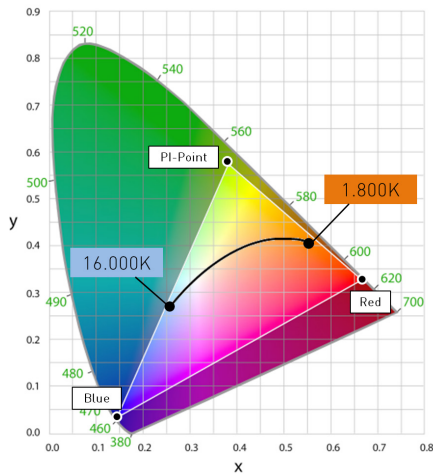
PHOTOMETRICAL PROPERTIES



- Notes:**
- The actual drop in the luminous flux can vary across the delivered LED modules.
 - The diagrams show typical curves and not the exact behaviour of the LED module or the PI-LED system.

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COORDINATES AND TOLERANCES ACCORDING TO CIE 1931



Representable PI-LED colour space in the CIE 1931 system

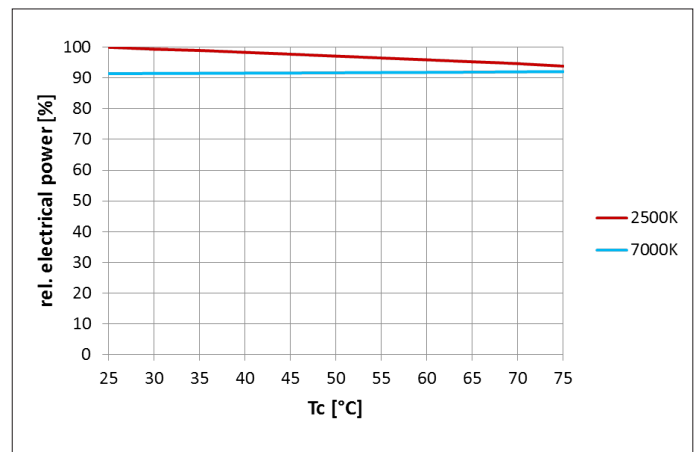
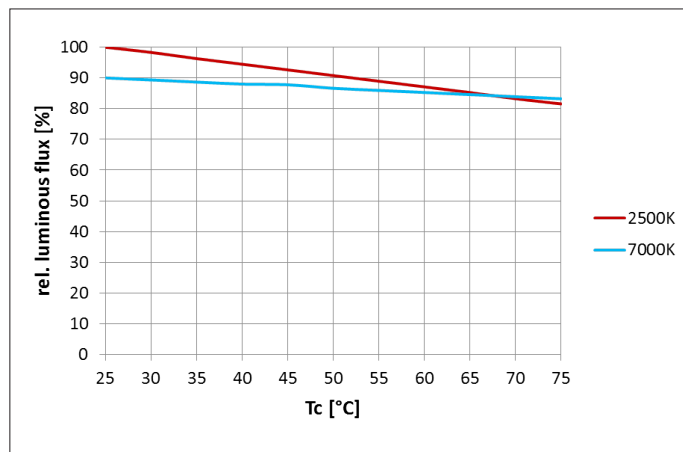
If a colour point outside of the triangle (PI-LED colour space) is set, the closest colour point within the triangle is referenced.

THERMAL CHARACTERISTICS

Ambient temperature	+10°C ... +45°C
Storage temperature	-20°C.. +80°C
$t_{c,max}$ LED module	+75°C

Lumitech PI-LED systems are equipped with integrated overtemperature protection that protects the LED module against thermal overloads.

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



LIFETIME

t_p [°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.
- t_p -position = t_c -position LED module

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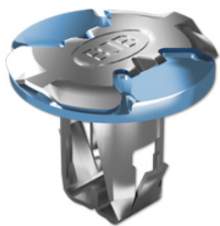
III DETAILS FOR ASSEMBLY / ACCESSORY

Recommended Assembly:

Technical data for the thermally conductive foil / pad

Parameter	Value
Electrically insulating:	Yes
Dimensions (combination of smaller parts possible):	450mm x 450mm
Thermal conductivity:	≥ 0.6W/mK
Thickness:	≥ 0.075mm
Continuous use temperature:	0°C - 150°C
Dielectric Strength:	≥ 0.6kV

Push to Fix - Elements




Parameter	Value
Type:	BJB-P2F
BJB Article No.:	depending on material thickness
Colour:	grey
Weight:	2g
PCB hole diameter:	4.7mm

URL:

<https://www.bjb.com/Produkte/Licht-Komponenten/LED-Licht-und-Verbindungstechnik/Komponente-fuer-LED-Platinen/P2F-Push-to-Fix-Befestigungselemente-fuer-Leiterplatten/>

III ACCESSORIES: RECOMMENDED LED DRIVERS

PI-LED system data			LED drivers
Type	typ. power [W]	max. power [W]	LTP-1116 100W 48V IP20 LT 350x30x18mm
			
LTS-05000-0x-AI	54	55	recommended