

IP68 

TALEXchain CRYSTAL CLASSIC
TALEXchain CRYSTAL

Product description

- LED chain for highlighting lines and edges and for backlighting complex contours, letters and symbols in signage applications
- Optimised for use in signage (lettering, surface backlighting)
- Beam characteristic: 155°
- LED module with plastic casing and strain relief with IP68 protection
- High-power LED in chip-on-board technology (COB)
- Integrated current source to stabilise luminous flux
- Flexible chain, can be split between any module
- Attached with M3 screw or premounted double-sided adhesive tape
- Connection: Cable 180 mm, both sides

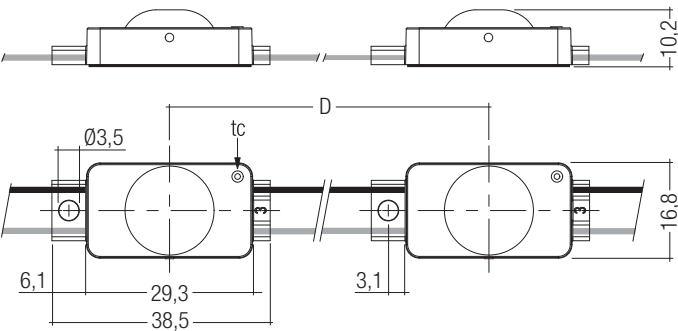
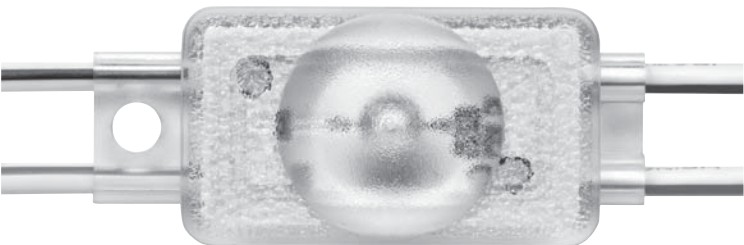
Technical data

Ambient temperature t_a	-30 ... +55 °C
Max. surface temperature on module $t_{c①}$	65 °C
Type of protection②	IP68



Standards, page 4

Colour temperatures and tolerances, page 6



Ordering data

Colour	Wavelength range	Colour temperature	Packing code	Type	Article number
1 light point per module					
Crystal white	—	7,500 K	1	LED P540-CLA CW 12V 150 10 68 1000	22176641
Crystal white	—	7,500 K	2	LED P540-CLA CW 12V 150 50 68 1000	22176647
Crystal white	—	7,500 K	1	LED P540-CLA CW 12V 100 10 68 1000	22176638
Crystal white	—	7,500 K	2	LED P540-CLA CW 12V 100 50 68 1000	22176644
Daylight white	—	6,500 K	1	LED P540-CLA DL 12V 150 10 68 1000	22176642
Daylight white	—	6,500 K	2	LED P540-CLA DL 12V 150 50 68 1000	22176648
Daylight white	—	6,500 K	1	LED P540-CLA DL 12V 100 10 68 1000	22176639
Daylight white	—	6,500 K	2	LED P540-CLA DL 12V 100 50 68 1000	22176645
Red	626 – 636 nm	—	1	LED P540-CLA R 12V 150 10 68 1000	22176643
Red	626 – 636 nm	—	2	LED P540-CLA R 12V 150 50 68 1000	22176649
Red	626 – 636 nm	—	1	LED P540-CLA R 12V 100 10 68 1000	22176640
Red	626 – 636 nm	—	2	LED P540-CLA R 12V 100 50 68 1000	22176646

Packaging code 1: 1 piece/bag, 100 pieces/carton, 600 pieces/pallet

Packaging code 2: 1 piece/bag, 45 pieces/carton, 270 pieces/pallet

Specific technical data

Type	Number of modules	Typ. luminous flux per module ^②	Supply voltage DC ^③	Typ. current per module	Typ. power per module ^②	Luminous efficacy	Module distance D	Total length
1 light point per module								
LED P540-CLA CW 12V 150 10 68 1000	10	24 lm	12 V	47 mA	0.56 W	43 lm/W	150 mm	1,750 mm
LED P540-CLA CW 12V 150 50 68 1000	50	24 lm	12 V	47 mA	0.56 W	43 lm/W	150 mm	7,750 mm
LED P540-CLA CW 12V 100 10 68 1000	10	24 lm	12 V	47 mA	0.56 W	43 lm/W	100 mm	1,300 mm
LED P540-CLA CW 12V 100 50 68 1000	50	24 lm	12 V	47 mA	0.56 W	43 lm/W	100 mm	5,300 mm
LED P540-CLA DL 12V 150 10 68 1000	10	24 lm	12 V	47 mA	0.56 W	43 lm/W	150 mm	1,750 mm
LED P540-CLA DL 12V 150 50 68 1000	50	24 lm	12 V	47 mA	0.56 W	43 lm/W	150 mm	7,750 mm
LED P540-CLA DL 12V 100 10 68 1000	10	24 lm	12 V	47 mA	0.56 W	43 lm/W	100 mm	1,300 mm
LED P540-CLA DL 12V 100 50 68 1000	50	24 lm	12 V	47 mA	0.56 W	43 lm/W	100 mm	5,300 mm
LED P540-CLA R 12V 150 10 68 1000	10	9 lm	12 V	35 mA	0.42 W	21 lm/W	150 mm	1,750 mm
LED P540-CLA R 12V 150 50 68 1000	50	9 lm	12 V	35 mA	0.42 W	21 lm/W	150 mm	7,750 mm
LED P540-CLA R 12V 100 10 68 1000	10	9 lm	12 V	35 mA	0.42 W	21 lm/W	100 mm	1,300 mm
LED P540-CLA R 12V 100 50 68 1000	50	9 lm	12 V	35 mA	0.42 W	21 lm/W	100 mm	5,300 mm

^① If the max. temperature limits are exceeded, the life of the module will be greatly reduced or the module may be damaged.

For the precise position of the tc point see the above diagram.

^② Tolerance range for optical and electrical data: ±15 %.

^③ Exceeding the max. operating voltage leads to an overload on the TALEXchain.

This may in turn result in a reduction in lifetime or even in destruction.

Tolerance range for the supply voltage: 12 V: +2 V / -0 V.

^④ Maximum submerge depth 1 m.

All values at ta = 25 °C.

Converter matrix – TALEXchain CRYSTAL CLASSIC

IN-BUILT LCU												REMOTE LCU									
Type	LCU 015/12 D010	LCU 035/12 D010	LCU 060/12 D010	LCU 100/12 D010	LCU 150/12 D010								LCU 035/12 E020	LCU 060/12 E020	LCU 100/12 E020	LCU 150/12 E020					
Article number	24166316	24166318	24166322	24166326	24166331								24166319	24166323	24166327	24166332					
Assignable converter												Assignable converter									
Type	Article number	Number of modules											Number of modules								Max. chaining
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.				
LED P540-CLA CW 12V 150 10 68 1000	22176641	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA CW 12V 150 50 68 1000	22176647	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA CW 12V 100 10 68 1000	22176638	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA CW 12V 100 50 68 1000	22176644	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA DL 12V 150 10 68 1000	22176642	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA DL 12V 150 50 68 1000	22176648	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA DL 12V 100 10 68 1000	22176639	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA DL 12V 100 50 68 1000	22176645	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA R 12V 150 10 68 1000	22176643	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA R 12V 150 50 68 1000	22176649	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA R 12V 100 10 68 1000	22176640	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	
LED P540-CLA R 12V 100 50 68 1000	22176646	3	23	9	54	12	93	24	155	47	232	7	54	12	93	24	155	47	232	50	

Standards

- EN 62031
- EN 62471

The product meets the “inbuilt LED module” classification according to EN 62031.
The product passed the glow-wire test with 650 °C according to EN 62031.

Certificates

- UL file: e313318

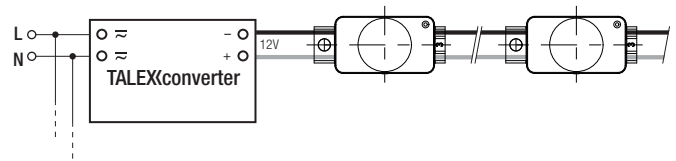
Thermal behaviour

operation temperature (operation, no defects)	ta	- 30 → + 55 °C
storage temperature	ts	- 30 → + 80 °C
max. temperature tc point	tc	- 30 → + 65 °C

The values apply to operation at 100 % output, natural convection.
If the maximum temperature limits are exceeded, the life of the module will be greatly reduced. The module can fail within a short time. The tc point temperature of the module has to be measured in the thermally stable state and under operating conditions. Measurement setup e.g. according to IEC/EN 60598-1.

tc temperature in °C	Luminous flux in %	Life time in h
15	80	28,000
	70	45,000
	50	80,000
35	80	25,000
	70	40,000
	50	75,000
65	80	20,000
	70	30,000
	50	60,000

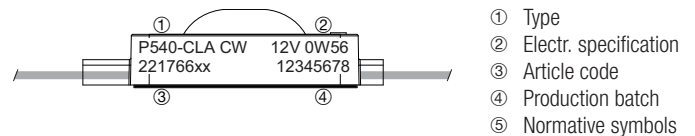
Wiring example TALEXchain CRYSTAL CLASSIC



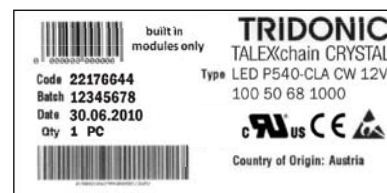
Empirical values for decrease of luminous flux over the chain

Module distance D	Chaining 50 modules
100 mm	0 %
150 mm	0 %

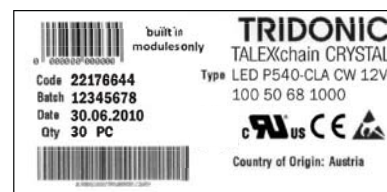
Label product



Label product packaging

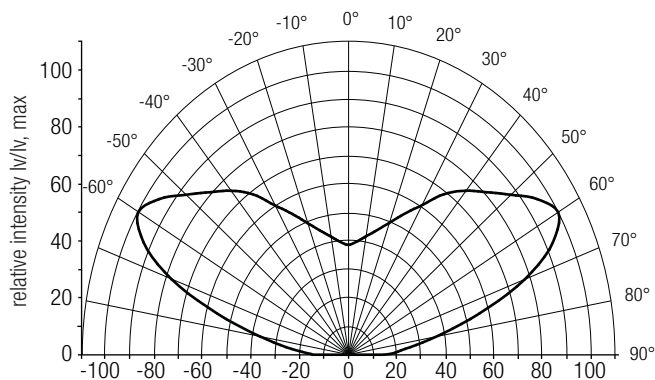


Label carton



Optical characteristics TALEXchain CRYSTAL CLASSIC

Light distribution $I_v/I_{v,max}$.



The evaluation to the eye safety is according to the EN 62471:2008
(Photobiological safety of lamps and lamp systems)

Type	Article number	Colour	Actinic UV	near UV	blue light	retinal thermal	IR radiation, eye
			E_s	E_{UVA}	L_B	L_R	E_{IR}
			200 – 400 nm	315 – 400 nm	300 – 700 nm	380 – 1,400 nm	780 – 3,000 nm
LED P540-CLA CW 12V 150 10 68 1000	22176641	Crystal white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA CW 12V 150 50 68 1000	22176647	Crystal white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA CW 12V 100 10 68 1000	22176638	Crystal white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA CW 12V 100 50 68 1000	22176644	Crystal white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA DL 12V 150 10 68 1000	22176642	Daylight white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA DL 12V 150 50 68 1000	22176628	Daylight white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA DL 12V 100 10 68 1000	22176639	Daylight white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA DL 12V 100 50 68 1000	22176645	Daylight white	exempt	exempt	exempt	exempt	exempt
LED P540-CLA R 12V 150 10 68 1000	22176643	Red	exempt	exempt	exempt	exempt	exempt
LED P540-CLA R 12V 150 50 68 1000	22176649	Red	exempt	exempt	exempt	exempt	exempt
LED P540-CLA R 12V 100 10 68 1000	22176640	Red	exempt	exempt	exempt	exempt	exempt
LED P540-CLA R 12V 150 50 68 1000	22176646	Red	exempt	exempt	exempt	exempt	exempt

Exempt:

The LED does not pose any photobiological hazard.

Low risk:

The LED does not pose a hazard due to normal behavioral limitations on exposure.

Moderate risk:

The LED does not pose a hazard due to the aversion response to very bright light sources or due to thermal discomfort.

High risk:

The LED may pose a hazard even for momentary or brief exposure.

Coordinates and tolerances according to CIE 1964

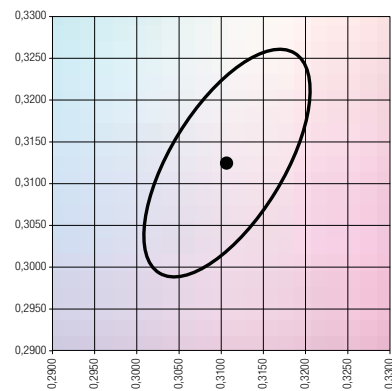
CIE coordinates

7,500 K

	x0	y0
Centre	0.3106	0.3124

MacAdam ellipse: 7SDCM

Crystal white



CIE coordinates:

6,500 K

	x0	y0
Centre	0.3230	0.3310

MacAdam ellipse: 7SDCM

Daylight white

