

IP68 

## TALEXchain CRYSTAL CLASSIC E G1 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)
- High colour consistency (MacAdam 5)
- Beam characteristic: 155°
- LED module with plastic casing and strain relief with IP68 protection
- Integrated current source to stabilise luminous flux
- Flexible chain, can be split between any module
- Mounting with screw or premounted double-sided adhesive tape possible
- Nominal life-time up to 50,000 h (at ta 60 °C with a failure rate max. 0.2 % per 1,000 h)

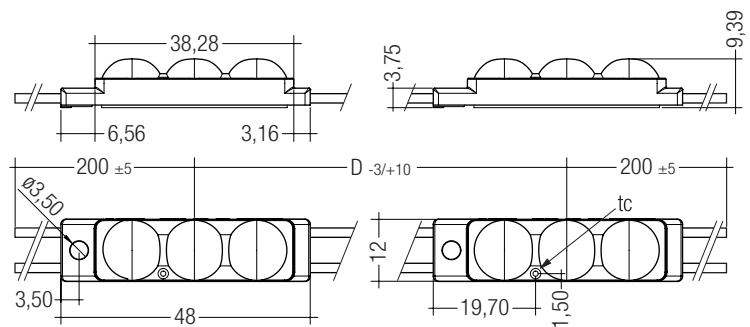
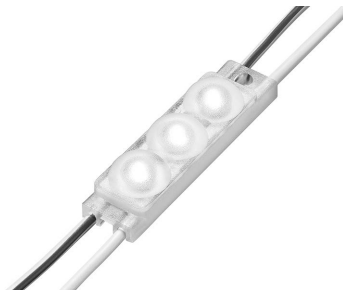
### Technical data

Ambient temperature ta	-40 ... +60 °C
Max. surface temperature on module tc <sup>①</sup>	65 °C
Storage temperature ts	-40 ... +85 °C
Type of protection <sup>④</sup>	IP68
Risk group (EN 62471:2008)	0



Standards, page 3

Colour temperatures and tolerances, page 5, 6



### Ordering data

Type	Article number	Colour	Wavelength range	Colour temperature <sup>⑤</sup>
<b>3 light points per module</b>				
LED P541E-C CW 12 150 100 68 B G1	28000715	Crystal white	–	7,500 K
LED P541E-C CW 12 200 100 68 B G1 X	28000716	Crystal white	–	7,500 K
LED P541E-C DL 12 100 100 68 B G1	28000361	Daylight white	–	6,500 K
LED P541E-C DL 12 150 100 68 B G1	28000362	Daylight white	–	6,500 K
LED P541E-C DL 12 150 100 68 B G1 X	28000363	Daylight white	–	6,500 K
LED P541E-C DL 12 200 100 68 B G1 X	28000364	Daylight white	–	6,500 K
LED P541E-C R 12 150 100 68 B G1	28000468	Red	620 – 630 nm	–
LED P541E-C G 12 150 100 68 B G1	28000471	Green	520 – 537 nm	–
LED P541E-C B 12 150 100 68 B G1	28000472	Blue	465 – 470 nm	–
LED P541E-C O 12 150 100 68 B G1	28000469	Orange	600 – 609 nm	–
LED P541E-C A 12 150 100 68 B G1	28000470	Amber	583 – 592 nm	–

Packaging: 1 piece/roll, 30 pieces/carton, 180 pieces/pallet

**Specific technical data**

Type	Photometric code <sup>②</sup> ⑥	Wavelength range	Colour temperature <sup>⑤</sup>	Typ. luminous flux per module <sup>②</sup>	Colour rendering index CRI <sup>②</sup>	Supply voltage DC <sup>③</sup>	Typ. current per module <sup>②</sup>	Typ. power per module	Luminous efficacy	Energy classification per module
<b>3 light points per module</b>										
LED P541E-C CW	775/5xx	–	7,500 K	31 lm	> 63	12 V	28 mA	0.34 W	92 lm/W	A++
LED P541E-C CW ... X	775/5xx	–	7,500 K	45 lm	> 63	12 V	42 mA	0.50 W	88 lm/W	A++
LED P541E-C DL	765/5xx	–	6,500 K	31 lm	> 70	12 V	28 mA	0.34 W	92 lm/W	A++
LED P541E-C DL ... X	765/5xx	–	6,500 K	45 lm	> 70	12 V	42 mA	0.50 W	88 lm/W	A++
LED P541E-C R	–	620 – 630 nm	–	12 lm	–	12 V	45 mA	0.54 W	22 lm/W	–
LED P541E-C G	–	520 – 537 nm	–	35 lm	–	12 V	37 mA	0.44 W	79 lm/W	A++
LED P541E-C B	–	465 – 470 nm	–	11 lm	–	12 V	54 mA	0.65 W	17 lm/W	–
LED P541E-C O	–	600 – 609 nm	–	16 lm	–	12 V	37 mA	0.44 W	36 lm/W	–
LED P541E-C A	–	583 – 592 nm	–	12 lm	–	12 V	37 mA	0.44 W	27 lm/W	–

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 % (electrical data for red and blue: +15 / -30 %).

③ Exceeding the max. operating voltage leads to an overload on the TALEXchain.  
This may in turn result in a reduction in life-time or even in destruction.  
Tolerance range for the supply voltage: 12 V: +2 V / -0 V.

④ Maximum submerge depth 1 m / 60 min.

⑤ Colour temperature for information only. Valid colour see 'Coordinates and tolerances according to CIE 1931'.

⑥ Photometric code in evaluation.

All values at ta = 25 °C.

**Type code**

Example: LED P541E-C DL 12 200 100 68 B G1 X

LED P541E-C	TALEXchain CRYSTAL CLASSIC
DL	Colour = Daylight white
12	Supply voltage = 12 V
200	Module distance D = 200 mm
100	Number of modules = 100
68	Type of protection = IP68
B	Beam characteristic = 155°
G1	Generation = 1
X	Increased luminous flux

For more information please call or email your Tridonic contact.

**Photometric code**

Key for photometric code, e. g. 861/449

1 <sup>st</sup> digit	2 <sup>nd</sup> + 3 <sup>rd</sup> digit	4 <sup>th</sup> digit	5 <sup>th</sup> digit	6 <sup>th</sup> digit	
Code	CRI	Colour temperature in Kelvin x 100	McAdams after 25% of the life-time (max.6000h)	Lumen maintenance after 25% of the life-time (max.6000h)	
				Code	Remaining lumen
7	67 – 76			7	≥ 70 %
8	77 – 86			8	≥ 80 %
9	87 – ≥90			9	≥ 90 %

**LED control gear matrix – TALEXchain CRYSTAL CLASSIC**

Type	IN-BUILT LCU <sup>①</sup>					REMOTE LCU <sup>②</sup>			
	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

Type	Assignable LED control gear										Assignable LED control gear								Max. chaining
	Number of modules										Number of modules								
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
LED P541-C CW	4	38	14	89	20	153	39	255	77	383	12	89	20	153	39	255	77	383	100
LED P541-C CW ... X	3	26	10	60	13	104	26	173	52	260	8	60	13	104	26	173	52	260	100
LED P541-C DL	4	38	14	89	20	153	39	255	77	383	12	89	20	153	39	255	77	383	100
LED P541-C DL ... X	3	26	10	60	13	104	26	173	52	260	8	60	13	104	26	173	52	260	100
LED P541E-C R	3	24	11	56	15	96	30	161	59	241	9	56	15	96	30	161	59	241	100
LED P541E-C G	3	29	11	69	15	118	30	197	59	296	9	69	15	118	30	197	59	296	100
LED P541E-C B	3	20	9	46	13	80	25	133	49	200	8	46	13	80	25	133	49	200	100
LED P541E-C O	3	29	11	69	15	118	30	197	59	296	9	69	15	118	30	197	59	296	100
LED P541E-C A	3	29	11	69	15	118	30	197	59	296	9	69	15	118	30	197	59	296	100

<sup>①</sup> Type of protection IP67.

<sup>②</sup> Type of protection IP20.

### 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 850 °C according to EN 62031.

### Certificates

- UL file: E313318
- CSA file: 249699
- ENEC

### Thermal behaviour

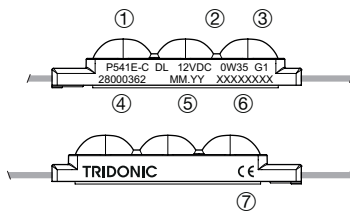
operation temperature (operation, no defects)	ta	- 40 → + 60 °C
storage temperature	ts	- 40 → + 85 °C
max. temperature tc point	tc	- 20 → + 80 °C

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.

### Maintenance note

The product is maintenance free. If cleaning during application only clear water without the addition of cleaning agents should be used.

### Label product



- ① Type
- ② Electr. specification
- ③ Generation
- ④ Article code
- ⑤ Production date
- ⑥ Production batch
- ⑦ Normative symbols

### Label product packaging



- ① Type
- ② Packaging quantity
- ③ Article code
- ④ Production date
- ⑤ Barcode EAN13 for packaging unit
- ⑥ Barcode EAN128 (includes EAN13 and batch number)

### Label carton



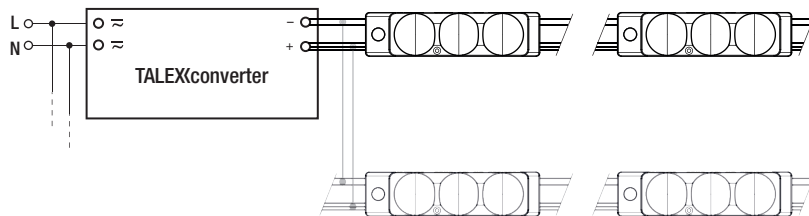
- ① Type
- ② Packaging quantity
- ③ Article code
- ④ Production date
- ⑤ Barcode EAN13 for packaging unit
- ⑥ Barcode EAN128 (includes EAN13 and batch number)

**Wiring**

Cable: AWG 18

Colour	red-white	white
Function	+	-

**Wiring example**

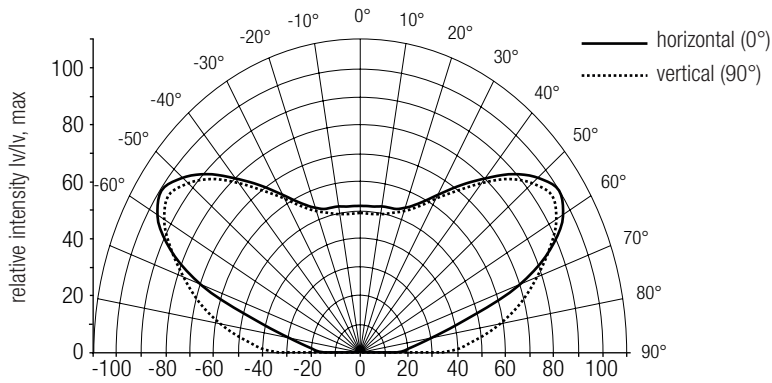


**Empirical values for decrease of luminous flux over the chain**

Type	Colour	Module distance	Module distance	Module distance	Number of modules
		100 mm	150 mm	200 mm	
LED P541E-C CW	Crystal white	0%	0%	-	100
LED P541E-C CW ... X	Crystal white	-	0%	0%	100
LED P541E-C DL	Daylight white	0%	0%	-	100
LED P541E-C DL ... X	Daylight white	-	0%	0%	100
LED P541E-C R	Red	-	0%	-	100
LED P541E-C G	Green	-	42%	-	100
LED P541E-C B	Blue	-	16%	-	100
LED P541E-C O	Orange	-	0%	-	100
LED P541E-C A	Amber	-	0%	-	100

Beam characteristics 155°

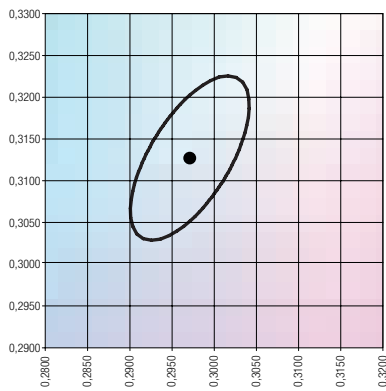
Light distribution  $I_v/I_{vmax}$ .



Coordinates and tolerances according to CIE 1931

Crystal white (CL)

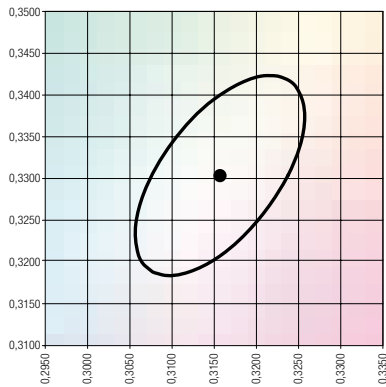
	x0	y0
Centre	0.2970	0.3132



MacAdam ellipse: 5SDCM

Daylight white (DL)

	x0	y0
Centre	0.3154	0.3305



MacAdam ellipse: 5SDCM

