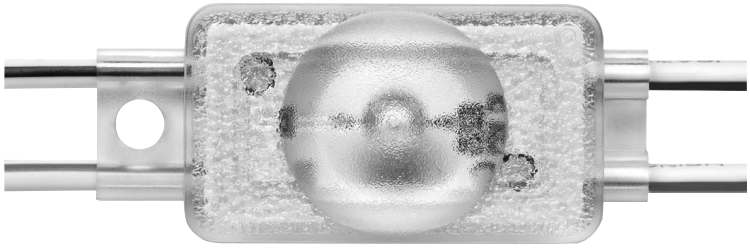
IP68 RoHS

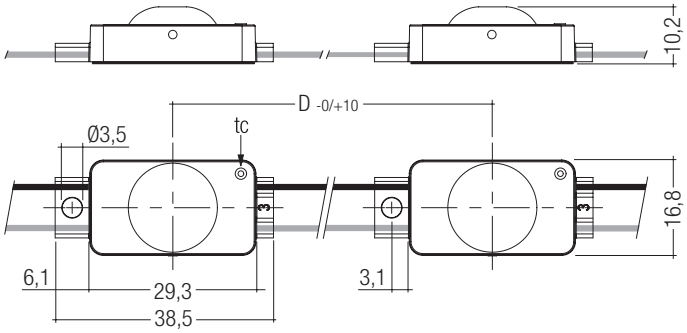
TALEX(chain CRYSTAL CLASSIC

TALEX(chain 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
- Nominal life-time up to 80,000 h (at ta 55 °C with a failure rate max. 0.2 % per 1,000 h)
- Connection: Cable 180 mm, both sides





Technical data

Ambient temperature ta	-30 ... +55 °C
Max. surface temperature on module tc①	65 °C
Storage temperature ts	-30 ... +80 °C
Type of protection④	IP68
Risk group (EN 62471:2008)	0

→

Standards, page 4

Colour temperatures and tolerances, page 5

Ordering data

Colour	Wavelength range	Colour temperature	Packing code	Type	Article number
1 light point per module					
Crystal white	–	7.500 K	2	**LEDV P540-CLA CW 12 150 50 68 B**	**22176647**
Crystal white	–	7.500 K	2	**LEDV P540-CLA CW 12 100 50 68 B**	**22176644**
Daylight white	–	6.500 K	2	**LEDV P540-CLA DL 12 150 50 68 B**	**22176648**
Daylight white	–	6.500 K	2	**LEDV P540-CLA DL 12 100 50 68 B**	**22176645**
Red	626 – 636 nm	–	2	**LEDV P540-CLA R 12 150 50 68 B**	**22176649**
Red	626 – 636 nm	–	2	**LEDV P540-CLA R 12 100 50 68 B**	**22176646**
Green	525 – 540 nm	–	2	**LEDV P540-CLA G 12 150 50 68 B**	**22176694**
Green	525 – 540 nm	–	2	**LEDV P540-CLA G 12 100 50 68 B**	**22176693**
Blue	455 – 460 nm	–	2	**LEDV P540-CLA B 12 150 50 68 B**	**22176699**
Blue	455 – 460 nm	–	2	**LEDV P540-CLA B 12 100 50 68 B**	**22176698**
Orange	600 – 610 nm	–	2	**LEDV P540-CLA O 12 150 50 68 B**	**22176704**
Orange	600 – 610 nm	–	2	**LEDV P540-CLA O 12 100 50 68 B**	**22176703**

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	Photometric code②	Wavelength range	Colour temperature	Typ. luminous flux per module②	Colour rendering index CRI②	Supply voltage DC③	Typ. current per module②	Typ. power per module	Luminous efficacy	Energy classification per module
1 light point per module										
LEDV P540-CLA CW	775/569	–	7,500 K	24 lm	73	12 V	23 mA	0.28 W	85 lm/W	–
LEDV P540-CLA DL	765/569	–	6,500 K	24 lm	73	12 V	23 mA	0.28 W	85 lm/W	–
LEDV P540-CLA R	–	626 – 636 nm	–	9 lm	–	12 V	30 mA	0.36 W	25 lm/W	–
LEDV P540-CLA G	–	525 – 540 nm	–	20 lm	–	12 V	20 mA	0.24 W	93 lm/W	–
LEDV P540-CLA B	–	455 – 460 nm	–	3 lm	–	12 V	18 mA	0.22 W	14 lm/W	–
LEDV P540-CLA O	–	600 – 610 nm	–	17 lm	–	12 V	34 mA	0.40 W	43 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 % (optical data for blue: ±30 %, green: +15 / -30 %; electrical data for red, orange: +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.

All values at ta = 25 °C.

Product configurator

The products listed on page 1 are a predefined selection of possible product configurations.
The product configurator also offers the option of configuring chains optimized for the particular application:
The light colour, module spacing, number of modules and beam characteristics can be selected.

Selection parameters

Colour	Crystal white CW Daylight white DL Red R Green G Blue B Orange O
Module distance D	90 – 300 mm in 10 mm steps
Number of modules	10 ① , 20 – 100 in 1 piece steps ②
Beam characteristic	140° (A), 155° (B)

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

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

Type code

Example: LEDV P540-CLA CW 12 150 10 68 B

LEDV P540-CLA	TALEXchain CRYSTAL CLASSIC
CW	Colour = crystal white
12	Supply voltage = 12 V
150	Module distance D = 150 mm
10	Number of modules = 10
68	Type of protection = IP68
B	Beam charcteristic = 155°

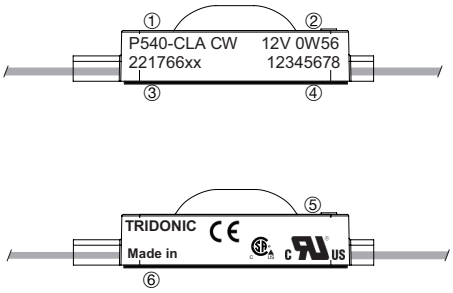
For more information please call or email your Tridonic contact.

Photometric code

Key for photometric code, e. g. 830 / 559

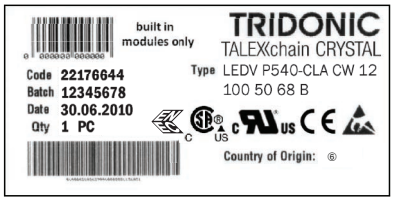
1st digit		2nd + 3rd digit	4th digit	5th digit	6th digit	
Code	CRI	Colour temperature in Kelvin x 100	McAdams initial	McAdams after 25% of the life-time (max.6000h)	Lumen maintanance after 25% of the life-time (max.6000h)	
					Code	Remaining lumen
7	67 – 76				7	≥ 70 %
8	77 – 86				8	≥ 80 %
9	87 – ≥90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

Label product

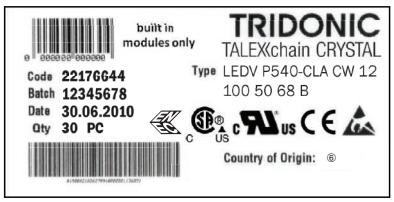


① Type
② Electr. specification
③ Article code
④ Production batch
⑤ Normative symbols
⑥ CZ: Check Republic, HU: Hungary

Label product packaging



Label carton



LED control gear matrix – TALEX(chain CRYSTAL CLASSIC

	IN-BUILT LCU①						REMOTE LCU②			
Type	LCU 015/12 D010	LCU 035/12 D010	LCU 035/12 D210	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	25000670	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.	
LEDV P540-CLA CW	5	46	17	108	17	108	24	186	47	310	93	465	14	108	24	186	47	310	93	465	50
LEDV P540-CLA DL	5	46	17	108	17	108	24	186	47	310	93	465	14	108	24	186	47	310	93	465	50
LEDV P540-CLA R	4	36	13	84	13	84	18	144	36	241	72	362	11	84	18	144	36	241	72	362	50
LEDV P540-CLA G	6	54	19	126	19	126	27	217	54	362	108	543	17	126	27	217	54	362	108	543	50
LEDV P540-CLA B	6	59	21	138	21	138	30	237	59	395	118	592	18	138	30	237	59	395	118	592	50
LEDV P540-CLA O	4	32	12	76	12	76	17	130	33	217	65	326	10	76	17	130	33	217	65	326	50

① Type of protection IP67

② 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 650 °C according to EN 62031.
The product passed the salt spray test (degree of severity: 6) according to EN 60068-2-52-1.

Certificates

- UL file: e313318
- CSA certificate: 249699
- ENEC for light colours CW, DL, GW only

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.

Lumen maintenance

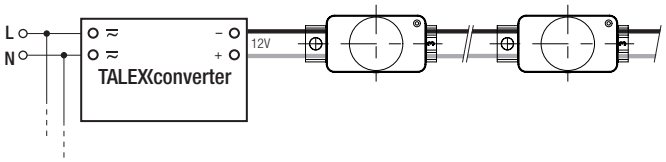
Lumen depreciation	tc temperature 65 °C
L70B10	72,000 h
L70B50	105,000 h
L80B10	45,000 h
L80B50	65,000 h
L90B10	21,000 h
L90B50	31,000 h

Remarks:
- Lumen depreciation – the decrease in lumen output that occurs as a lamp is operated.
- L70 or L_{70} – shorthand for lumen depreciation to 70 % of initial lumen output indicates 70 % lumen maintenance. L50 would be lumen depreciation of 50 %.
- B50 – another aspect of LED life projection, used in conjunction with the lumen depreciation.
  B50 indicates no more than 50% of a sample of LED devices would be expected to fail before a certain number of operating hours. Failure means light output drops below a target lumen maintenance level (such as L70 or L50). B10 would mean no more than 10% of the sample fails within the given time.

Wiring
Cable: AWG 18

Colour	red-white	black-white
Function	+	–

Wiring example



Empirical values for decrease of luminous flux over the chain

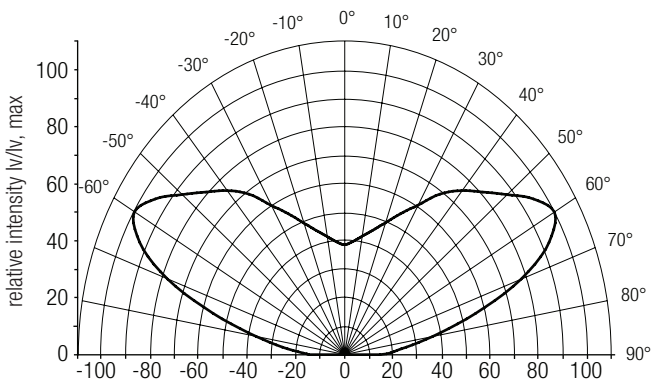
Colour	Module distance 100 mm	Module distance 150 mm	Module distance 200 mm	Module distance 300 mm	Number of modules
Crystal white	0 %	0 %	0 %	0 %	50
Daylight white	0 %	0 %	0 %	0 %	50
Red	0 %	0 %	0 %	0 %	50
Green	11 %	15 %	19 %	27 %	50
Blue	0 %	0 %	0 %	0 %	50
Orange	0 %	0 %	0 %	0 %	50

Heat value
0.23 MJ/module

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

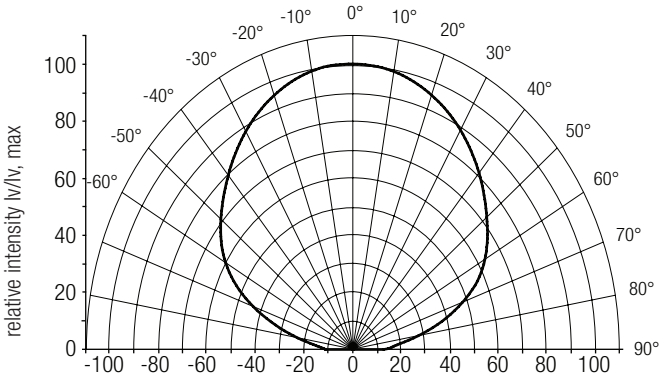
Beam characteristics 155°

Light distribution Iv/Ivmax.



Beam characteristics 140°

Light distribution Iv/Ivmax.

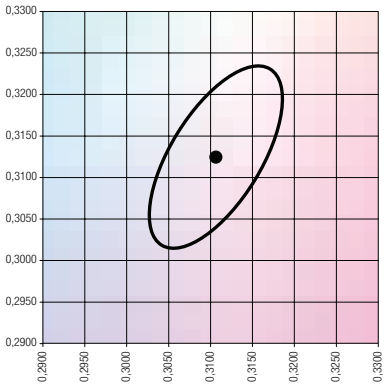


Coordinates and tolerances according to CIE 1964

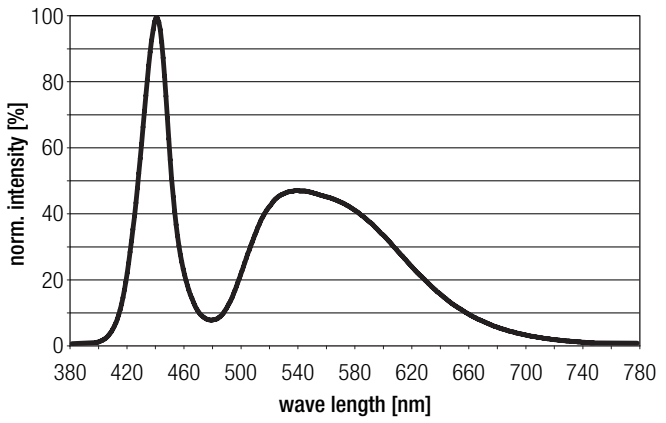
Crystal white

7,500 K

	x0	y0
Centre	0.3106	0.3124



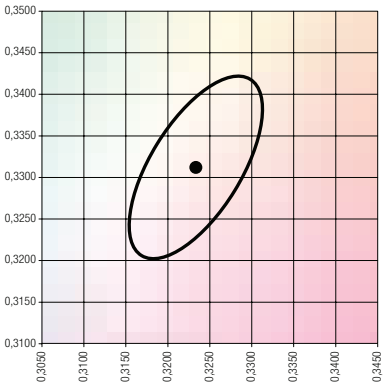
MacAdam ellipse: 5SDCM

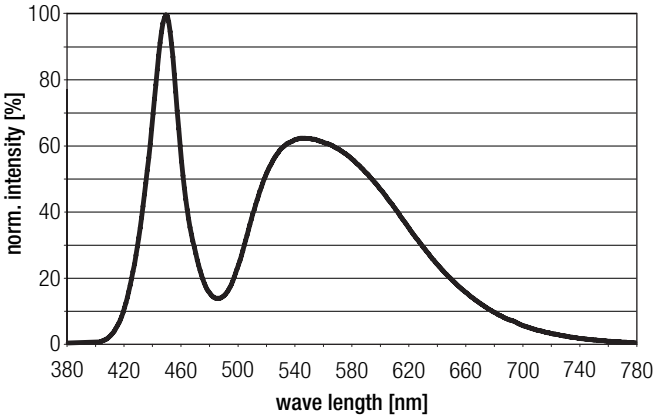


Daylight white

6,500 K

	x0	y0
Centre	0.3230	0.3310





MacAdam ellipse: 5SDCM