



PC TC TOP, 18 – 42 W

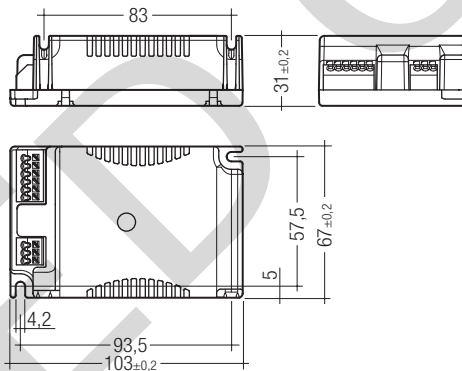
PC TOP compact

Product description

- CELMA Energy Efficiency Index A2
- Nominal life-time up to 50,000 h (at ta 50 °C with a failure rate max. 0.2 % per 1,000 h)
- Large temperature range (for values see table)
- Fixed frequency operation for constant lamp current
- Lamp preheating for min. 30,000 starts without replacement of lamps
- Constant luminous lux irrespective of fluctuations in mains voltage
- Designed for THD < 10 %
- For luminaires of protection class I and protection class II
- Automatic start after replacement of defective lamps (detects 1 lamp)
- Safety shutdown of defective lamps and at end of lamp life
- Push terminal for rapid automatic or manual wiring
- For emergency lighting systems as per EN 50172

Technical data

Mains voltage range	220 – 240 V
AC voltage range	198 – 264 V
DC voltage range	176 – 280 V (lamp start ≥ 198 V DC)
Mains frequency	0 / 50 / 60 Hz
Overvoltage protection	320 V AC, 1 h
Defined warm start	≤ 1.6 s
Operating frequency	≥ 40 kHz
Type of protection	IP20



Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
For luminaires with 1 lamp				
PC 1x18 TC TOP	28000073	15 pc(s).	750 pc(s).	0.105 kg
PC 1x26-42 TC TOP	28000075	15 pc(s).	750 pc(s).	0.105 kg
For luminaires with 2 lamps				
PC 2x18 TC TOP	28000074	15 pc(s).	750 pc(s).	0.106 kg
PC 2x26 TC TOP	28000076	15 pc(s).	750 pc(s).	0.111 kg

Standards, page 2

Wiring diagrams and installation examples, page 6

Specific technical data

Lamp wattage	Lamp type	Type	Article number	Dimensions L x W x H	Lamp power	Circuit power	EEL	Current at 50 Hz	λ at 50 Hz	tc point max.	Ambient temperature ta	tc/ta for ≥ 50,000 h
								220 V	240 V	220 V	240 V	
For luminaires with 1 lamp												
1 x 18 W	TC-DEL	PC 1x18 TC TOP	28000073	103 x 67 x 31 mm	16.5 W	18.2 W	A2	0.085 A	0.080 A	0.97	0.95	75 °C
1 x 18 W	TC-TEL	PC 1x18 TC TOP	28000073	103 x 67 x 31 mm	16.5 W	18.2 W	A2	0.085 A	0.080 A	0.97	0.95	75 °C
1 x 26 W	TC-DEL	PC 1x26-42 TC TOP	28000075	103 x 67 x 31 mm	24.0 W	26.8 W	A2	0.127 A	0.119 A	0.96	0.94	75 °C
1 x 26 W	TC-TEL	PC 1x26-42 TC TOP	28000075	103 x 67 x 31 mm	24.0 W	26.8 W	A2	0.127 A	0.119 A	0.96	0.94	75 °C
1 x 32 W	TC-TEL	PC 1x26-42 TC TOP	28000075	103 x 67 x 31 mm	32.0 W	35.1 W	A2	0.164 A	0.154 A	0.97	0.95	75 °C
1 x 42 W	TC-TEL	PC 1x26-42 TC TOP	28000075	103 x 67 x 31 mm	42.0 W	47.1 W	A2	0.218 A	0.204 A	0.98	0.96	75 °C
For luminaires with 2 lamps												
2 x 18 W	TC-DEL	PC 2x18 TC TOP	28000074	103 x 67 x 31 mm	33.0 W	34.7 W	A2	0.163 A	0.152 A	0.97	0.95	80 °C
2 x 18 W	TC-TEL	PC 2x18 TC TOP	28000074	103 x 67 x 31 mm	33.0 W	34.7 W	A2	0.163 A	0.152 A	0.97	0.95	80 °C
2 x 26 W	TC-DEL	PC 2x26 TC TOP	28000076	103 x 67 x 31 mm	48.5 W	53.1 W	A2	0.246 A	0.230 A	0.98	0.96	75 °C
2 x 26 W	TC-TEL	PC 2x26 TC TOP	28000076	103 x 67 x 31 mm	48.5 W	53.1 W	A2	0.246 A	0.230 A	0.98	0.96	75 °C

Standards

EN 55015
EN 60929
EN 61000-3-2
EN 61000-3-3
EN 61347-2-3
EN 61347-2-4
EN 61547
according to EN 50172

Lamp starting characteristics

Warm start
Starting time ≤ 1.6 s with AC and DC operation
Cathode heating will be reduced after preheat time

AC operation

Mains voltage:
220–240 V 50/60 Hz
198–264 V 50/60 Hz including safety
tolerance (± 10 %)
202–254 V 50/60 Hz including performance
tolerance (+6 % / -8 %)

DC operation

Mains voltage:
220–240 V 0 Hz
198–280 V 0 Hz certain lamp start
176–280 V 0 Hz operating range
Light output level in DC operation: 100 %

Emergency lighting

Use in emergency lighting installations according
to EN 50172 or for emergency luminaires
according to EN 61347-2-3 appendix J.

Instant start after mains interruption < 0.5 s
EBLF ≥ 0.5

Mains current for defective or missing lamps at DC
operation < 10 mA.

Mains current in DC operation

Type	Lamp type	Wattage	Mains current at $U_n = 220 V_{DC}$	Mains current at $U_n = 240 V_{DC}$
PC 1x18 TC TOP	TC-DEL	1x18 W	85 mA	80 mA
	TC-TEL	1x18 W	85 mA	80 mA
PC 1x26–42 TC TOP	TC-DEL	1x26 W	127 mA	119 mA
	TC-TEL	1x26 W	127 mA	119 mA
	TC-TEL	1x32 W	164 mA	154 mA
	TC-TEL	1x42 W	218 mA	204 mA
PC 2x18 TC TOP	TC-DEL	2x18 W	163 mA	152 mA
	TC-TEL	2x18 W	163 mA	152 mA
PC 2x26 TC TOP	TC-DEL	2x26 W	264 mA	230 mA
	TC-TEL	2x26 W	264 mA	230 mA

Harmonic distortion in the mains supply

Type	Lamp type	Wattage	THD at 230V/50Hz
PC 1x18 TC TOP	TC-DEL	1x18 W	< 10 %
	TC-TEL	1x18 W	< 10 %
PC 1x26–42 TC TOP	TC-DEL	1x26 W	< 10 %
	TC-TEL	1x26 W	< 10 %
	TC-TEL	1x32 W	< 10 %
	TC-TEL	1x42 W	< 10 %
PC 2x18 TC TOP	TC-DEL	2x18 W	< 10 %
	TC-TEL	2x18 W	< 10 %
PC 2x26 TC TOP	TC-DEL	2x26 W	< 10 %
	TC-TEL	2x26 W	< 10 %

Output voltage

Type	Lamp type	Wattage	U_{out}
PC 1x18 TC TOP	TC-DEL	1x18 W	250 V
	TC-TEL	1x18 W	250 V
PC 1x26–42 TC TOP	TC-DEL	1x26 W	250 V
	TC-TEL	1x26 W	250 V
	TC-TEL	1x32 W	250 V
	TC-TEL	1x42 W	250 V
PC 2x18 TC TOP	TC-DEL	2x18 W	250 V
	TC-TEL	2x18 W	250 V
PC 2x26 TC TOP	TC-DEL	2x26 W	250 V
	TC-TEL	2x26 W	250 V

Ballast lumen factor (EN 60929 8.1)

Type	Lamp type	Wattage	AC/DC-BLF at $U = 198–254$ V, 25 °C
PC 1x18 TC TOP	TC-DEL	1x18 W	1.00
	TC-TEL	1x18 W	1.00
PC 1x26–42 TC TOP	TC-DEL	1x26 W	1.00
	TC-TEL	1x26 W	1.00
	TC-TEL	1x32 W	1.00
	TC-TEL	1x42 W	1.00
PC 2x18 TC TOP	TC-DEL	2x18 W	1.00
	TC-TEL	2x18 W	1.00
PC 2x26 TC TOP	TC-DEL	2x26 W	1.00
	TC-TEL	2x26 W	1.00

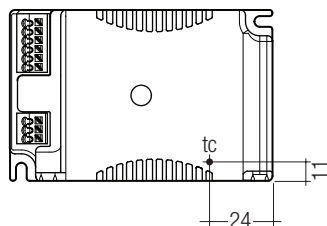
Energy class: CELMA EEI = A2¹⁾

Maximum energy efficiency:

Right from the early stages in the development of xitec technology the focus has always been on achieving maximum energy efficiency. In conjunction with Smart Heating Technology, PC TC TOP is rated in the best possible efficiency class of A2 that CELMA provides for ballasts with a constant luminous flux.

¹⁾ according to the EU directives on ecodesign requirements (EC) No. 245/2009 and (EC) No. 347/2010

Temperature range



PC TC TOP

The ballast life duration is related to the ambient temperature t_a . The relation of t_c to t_a temperature depends also on the luminaire design. If the measured t_c temperature is approx. 5 K below t_c max. or higher, t_a temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

PC TC TOP is designed for an average life-time of 50,000 (at t_a for ≥ 50.000 h) hours under reference conditions and with a failure probability of less than 10 %. This corresponds to an average failure rate of 0,2 % for every 1,000 hours of operation.

Humidity: 5 % up to max. 85 %, not condensed (max. 56 days/year at 85 %)

Storage temperature: -40 °C up to max. +80 °C

The devices have to be within the specified temperature range (t_a) before they can be operated.

Expected life-time

Type	Lamp type	Lamp power		$t_a = 40\text{ °C}$	$t_a = 50\text{ °C}$	$t_a = 55\text{ °C}$	$t_a = 60\text{ °C}$	$t_a = 65\text{ °C}$
PC 1x18 TC TOP	TC-DEL	1x18 W	t_c	50 °C	60 °C	65 °C	70 °C	75 °C
	TC-TEL	1x18 W	Life-time	> 100,000 h	> 100,000 h	70,000 h	50,000 h	40,000 h
PC 1x26–42 TC TOP	TC-DEL	1x26 W	t_c	50 °C	60 °C	65 °C	70 °C	75 °C
	TC-TEL	1x26 W	Life-time	> 100,000 h	85,000 h	60,000 h	45,000 h	30,000 h
	TC-TEL	1x32 W	t_c	50 °C	60 °C	65 °C	70 °C	75 °C
	TC-TEL	1x32 W	Life-time	> 100,000 h	75,000 h	50,000 h	40,000 h	30,000 h
PC 1x26–42 TC TOP	TC-TEL	1x42 W	t_c	55 °C	65 °C	70 °C	75 °C	x
	TC-TEL	1x42 W	Life-time	90,000 h	50,000 h	40,000 h	30,000 h	x
PC 2x18 TC TOP	TC-DEL	2x18 W	t_c	55 °C	65 °C	70 °C	75 °C	80 °C
	TC-TEL	2x18 W	Life-time	> 100,000 h	70,000 h	50,000 h	40,000 h	30,000 h
PC 2x26 TC TOP	TC-DEL	2x26 W	t_c	55 °C	65 °C	70 °C	75 °C	x
	TC-TEL	2x26 W	Life-time	90,000 h	50,000 h	35,000 h	25,000 h	x

x = nicht zulässig

Maximum loading of automatic circuit breakers

Automatic circuit	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation cross section	1.5 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	1.5 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	I _{max}	time
PC 1x18 TC TOP	48	72	153	160	24	36	80	80	14 A	200 μs
PC 1x26-42 TC TOP	24	38	62	66	12	19	31	33	17 A	210 μs
PC 2x18 TC TOP	36	54	76	88	18	27	38	44	17 A	200 μs
PC 2x26 TC TOP	24	38	52	66	12	19	31	33	21 A	160 μs

Wiring advice

The lead length is dependant on the capacitance of the cable.

With standard solid wire 0.5/0.75 mm² the capacitance of the lead is 30–80 pF/m. This value is influenced by the way the wiring is made. Lamp connection should be made with symmetrical wiring.

Ballast	Terminal	Maximum capacitance allowed			
		Cold		Hot	
PC 1xx TC TOP		4, 5		8, 9	
PC 2xx TC TOP		4, 5, 6, 7		8, 9	
			200 pF	200 pF	100 pF

To avoid the damage of the control gear, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.)

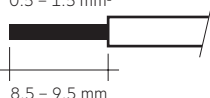
Installation instructions

Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5–1.5 mm².

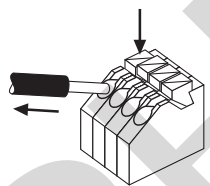
Strip 9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

wire preparation:
0.5 – 1.5 mm²



Release of the wiring

Press down the “push button” and remove the cable from front.



Mounting of device

Max. torque for fixing: 0.5 Nm/M4

RFI

Tridonic ballasts are RFI protected in accordance with EN 55015. To operate the luminaire correctly and to minimise RFI we recommend the following instructions:

- Connection to the lamps of the “hot leads” must be kept as short as possible
- Mains leads should be kept apart from lamp leads
- Do not run mains leads adjacent to the electronic ballast
- Twist the lamp leads
- Keep the distance of lamp leads from the metal work as large as possible
- Connect functional earth to the ballast
- Keep the mains leads inside the luminaire as short as possible

Defective lamp

If a lamp is defective, the ballast switches off and goes into standby. Switch off tested according to EN 61347-2-3 17.3 (Eol-Test 1). There is an automatic restart once the lamp has been changed.

Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V_{DC} for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.

The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V_{AC} (or 1.414 x 1500 V_{DC}). To avoid damage to the electronic devices this test must not be conducted.

Glow-wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

Additional information

Additional technical information at www.tridonic.com → Technical Data

Guarantee conditions at www.tridonic.com → Services

No warranty if device was opened.

Accessories

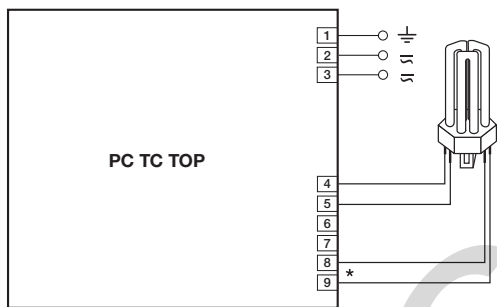
PC compact gear box for independant solutions



Ordering data

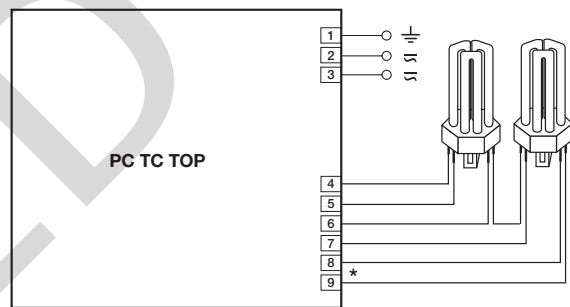
Dimensions LxWxH	Type	Article number
278 x 114 x 55 mm	PC Ballast box, upper section	24138824
278 x 114 x 55 mm	PC Ballast box, lower section	24138825

Wiring diagrams



* Leads 8, 9 max. 1.0 m (< 100 pF)
Leads 4, 5 max. 2.0 m (< 200 pF)
For luminaires of protection class 1: Earthing via earth terminal (to IEC 60598)
For luminaires of protection class 2: No earthing required

PC 1x18 TC TOP
PC 1x26-42 TC TOP



* Leads 8, 9 max. 1.0 m (< 100 pF)
Leads 4, 5, 6, 7 max. 2.0 m (< 200 pF)
For luminaires of protection class 1: Earthing via earth terminal (to IEC 60598)
For luminaires of protection class 2: No earthing required

PC 2x18 TC TOP
PC 2x26 TC TOP