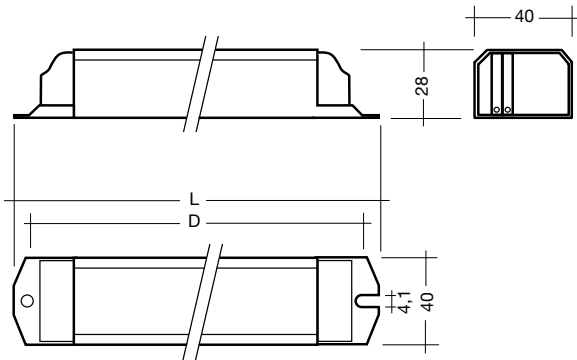



PC TCL PRO 36–55 W 220–240 V 50/60/0 Hz, single lamp and twin lamp


- defined lamp warm start < 1.5 s
- constant light output independent of fluctuations in mains voltage
- AC voltage range 198–254 V
- DC voltage range 176–280 V, (lamp start \geq 198 V)
- power factor \geq 0,97
- overvoltage protection 320 V AC, 1 h
- overvoltage indication starting at input voltage \geq 306 V AC
- undervoltage protection (shut down) below 150 V AC / 176 V DC
- operating frequency \geq 40 kHz

- suitable for automatic and manual wiring with insulation displacement connector (IDC)
- wide operating temperature (see table)
- suitable for use in emergency lighting installations in accordance with EN 50172
- safe switch off of defective lamps
- automatic re-start after lamp change
- for luminaires with ∇ or ∇ and ∇ / ∇ in acc. with EN 60598/VDE 0710 and VDE 0711
- suitable for luminaires with protection class SK I and SK II
- Ingress protection IP 20
- thermal protection according to EN 61347-2-3 C5e EN 61347-2-3 C5e ∇ (∇ at PC 1/40 TCL PRO, ∇ bei PC 2/40 TCL PRO)

Packaging L=234:
 10 pieces/carton
 63 cartons/pallet
 630 pieces/pallet

Approvals:
 EN 55015: 2006 +
 A1: 2007
 EN 61347-2-4
 EN 60925
 EN 61347-2-3
 EN 60929
 EN 61000-3-2
 EN 61547
 in accordance
 with EN 50172
 IEC 68-2-64 Fh
 IEC 68-2-29 Eb
 IEC 68-2-30

Lamp		Ballast	article number	length L mm	fixing centres D mm	weight kg	lamp power W	circuit-power W ①	Celma-class EEI	current at 50 Hz		λ at 50 Hz		tc point °C	temperature range ta °C
watt-age W	type	type								220V A	240V A	220V	240V		
1x36	TC-L	PC 1/36 TCL PRO 220-240V 50/60/0Hz	22176141	234	220	0.18	32.0	33.8	A2	0.16	0.14	0.99	0.98	70	-25 → +60
2x36	TC-L	PC 2/36 TCL PRO 220-240V 50/60/0Hz	22176170	234	220	0.22	64.0	72.8	A2	0.34	0.31	0.98	0.98	75	-25 → +50
1x38	T8	PC 1/36 TCL PRO 220-240V 50/60/0Hz	22176141	234	220	0.18	32.0	34.2	A2	0.16	0.15	0.99	0.98	70	-25 → +60
2x38	T8	PC 2/36 TCL PRO 220-240V 50/60/0Hz	22176170	234	220	0.22	64.0	72.6	A2	0.34	0.31	0.98	0.98	75	-25 → +50
1x40	TC-L	PC 1/40 TCL PRO 220-240V 50/60/0Hz	22176142	234	220	0.18	40.0	44.1	A2	0.20	0.19	0.99	0.98	70	-25 → +60
2x40	TC-L	PC 2/40 TCL PRO 220-240V 50/60/0Hz	22176143	234	220	0.22	80.0	89.6	A2	0.42	0.38	0.99	0.98	75	-25 → +55
1x55	TC-L	PC 1/55 TCL PRO 220-240V 50/60/0Hz	22176169	234	220	0.20	55.0	61.1	A2	0.28	0.26	0.98	0.98	75	-25 → +55

① measured according to EN 50294



Lamp starting characteristics

Warm start

Starting time < 1.5 secs 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 ($\pm 10\%$)

202–254 V 50/60 Hz including performance

tolerance (+6 % / -8 %)

DC operation

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



Intelligent Voltage Guard

Intelligent Voltage Guard is the name of the new electronic monitor from TridonicAtco. This innovative feature of the PC PRO family of control gear from TridonicAtco immediately shows if the mains voltage rises above or falls below certain thresholds. Measures can then be taken quickly to prevent damage to the control gear.

- If the mains voltage rises above approx. 306 V (voltage depends on the ballast type), the lamp starts flashing on and off.
- This signal “demands” disconnection of the power supply to the lighting system.
- If the mains voltage falls below 150 V the control gear automatically disconnects the lamp circuit to protect the control gear from being irreparably damaged.



Smart Heating

Innovative heating circuit. Reduced filament heating after lamp ignition.

Mains currents in DC operation

Type	lamp type	wattage W	Mains current at $U_n = 220\text{ VDC}$	Mains current at $U_n = 240\text{ VDC}$	
PC 1/36 TCL PRO	220-240V 50/60/0Hz	TCL	1x36	155 mA	142 mA
PC 2/36 TCL PRO	220-240V 50/60/0Hz	TCL	2x36	333 mA	305 mA
PC 1/36 TCL PRO	220-240V 50/60/0Hz	T8	1x38	157 mA	143 mA
PC 2/36 TCL PRO	220-240V 50/60/0Hz	T8	2x38	333 mA	304 mA
PC 1/40 TCL PRO	220-240V 50/60/0Hz	TCL	1x40	202 mA	185 mA
PC 2/40 TCL PRO	220-240V 50/60/0Hz	TCL	2x40	412 mA	377 mA
PC 1/55 TCL PRO	220-240V 50/60/0Hz	TCL	1x55	280 mA	256 mA

Harmonic distortion in the mains supply

Type	lamp type	wattage W	THD bei 230 V / 50 Hz	
PC 1/36 TCL PRO	220-240V 50/60/0Hz	TCL	1x36	< 10 %
PC 2/36 TCL PRO	220-240V 50/60/0Hz	TCL	2x36	< 10 %
PC 1/36 TCL PRO	220-240V 50/60/0Hz	T8	1x38	< 10 %
PC 2/36 TCL PRO	220-240V 50/60/0Hz	T8	2x38	< 10 %
PC 1/40 TCL PRO	220-240V 50/60/0Hz	TCL	1x40	< 10 %
PC 2/40 TCL PRO	220-240V 50/60/0Hz	TCL	2x40	< 10 %
PC 1/55 TCL PRO	220-240V 50/60/0Hz	TCL	1x55	< 10 %

Working voltage

Type	lamp type	wattage W	U_{out}	
PC 1/36 TCL PRO	220-240V 50/60/0Hz	TCL	1x36	250 V
PC 2/36 TCL PRO	220-240V 50/60/0Hz	TCL	2x36	250 V
PC 1/36 TCL PRO	220-240V 50/60/0Hz	T8	1x38	250 V
PC 2/36 TCL PRO	220-240V 50/60/0Hz	T8	2x38	250 V
PC 1/40 TCL PRO	220-240V 50/60/0Hz	TCL	1x40	250 V
PC 2/40 TCL PRO	220-240V 50/60/0Hz	TCL	2x40	300 V
PC 1/55 TCL PRO	220-240V 50/60/0Hz	TCL	1x55	250 V

Ballast lumen factor

EN 60929 8.1

Type	lamp type	wattage W	AC/DC-BLF bei $U = 198\text{--}254\text{ V}, 25\text{ }^\circ\text{C}$	
PC 1/36 TCL PRO	220-240V 50/60/0Hz	TCL	1x36	$\geq 1,00$
PC 2/36 TCL PRO	220-240V 50/60/0Hz	T8	2x36	$\geq 1,00$
PC 1/36 TCL PRO	220-240V 50/60/0Hz	T8	1x38	$\geq 1,00$
PC 2/36 TCL PRO	220-240V 50/60/0Hz	T8	2x38	$\geq 1,00$
PC 1/40 TCL PRO	220-240V 50/60/0Hz	TCL	1x40	$\geq 1,00$
PC 2/40 TCL PRO	220-240V 50/60/0Hz	TCL	2x40	$\geq 1,00$
PC 1/55 TCL PRO	220-240V 50/60/0Hz	TCL	1x55	$\geq 1,00$

All data are typical values



PC PRO with xitec processor

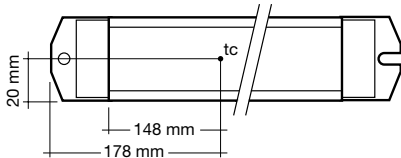
Is the very latest in lighting management design technology. The lamp friendly warm start is delivering maximum lamp life and enables high switching frequency applications. Smallest power loss and new freedom in the lamp design thanks to convincing thermal management.



Energy class CELMA

PC TCL PRO ignition technology (smart heating) optimises lamp start and ensures no energy is wasted. After the lamp has struck the filament heating is reduced automatically to a defined minimum value. This reduction in filament heating, saves energy, yet maintains the proper operating conditions for the lamp. The lamp is always operated within specification.

Ambient Temperature



PC 1/36 TCL PRO
PC 1/40 TCL PRO
PC 2/40 TCL PRO

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

PC TCL PRO is designed for an average service life of 50,000 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.

Maximum loading of automatic circuit breakers

Automatic circuit	C10	C13	C16	C20	B10	B13	B16	B20
Installation \varnothing	1,5 mm ²	1,5 mm ²	2,5 mm ²	4,0 mm ²	1,5 mm ²	1,5 mm ²	2,5 mm ²	4,0 mm ²
PC 1/36 TCL PRO	34	48	54	68	17	24	27	34
PC 2/36 TCL PRO	24	34	44	50	12	17	22	25
PC 1/40 TCL PRO	32	46	52	62	16	23	26	31
PC 2/40 TCL PRO	16	24	28	32	8	12	14	16
PC 1/55 TCL PRO	28	38	50	60	14	19	25	30

Wiring advice

The lead length is dependant on the capacitance of the cable.
For safety reasons, the PC TCL PRO must only be earthed in the case of a safety class 1 luminaire.
Earthing is not required for the device to operate. Connection to earth reduces radio interference.

Ballast Type	Terminal		Maximum capacitance allowed	
	Cold	Hot	Cold	Hot
PC 1/xx TCL PRO	11, 12	9, 10	200 pF	100 pF
PC 2/xx TCL PRO	11, 12, 13, 14	9, 10	200 pF	100 pF

With standard solid wire 0.5/0.75 mm² the capacitance of the lead is approx. 30–80 pF/m. This value is influenced by the way the wiring is made. In borderline cases the capacitance must be measured inside the luminaire.
Keep lamp wires short. Lamp connection with twin ballast should be made with symmetrical wiring.
Hot leads (9.10) and cold leads (11.12.13.14) should be separated as much as possible.

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.).



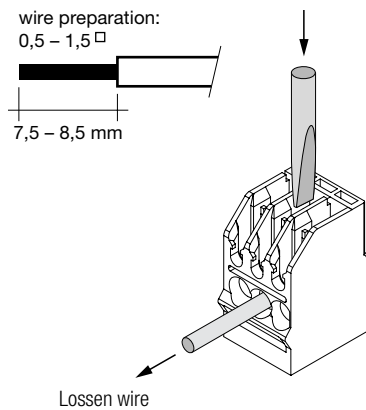
Installation instructions

IDC interface

- solid wire with a cross section of 0.5 mm² according to the specification from WAGO

Horizontal interface

- solid wire with a cross section of 0.5–1.5 mm² according to the specification from WAGO
- strip 7.5–8.5 mm of insulation from the cables to ensure perfect operation of the screw terminals



RFI

TridonicAtco ballasts are RFI protected in accordance with EN 55015: 2006 + A1: 2007. To operate the luminaire correctly and to minimise RFI we recommend the following instructions:

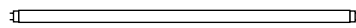
- Connection to the lamps of the "hot leads" must be kept as short as possible
- Mains leads should be kept apart from lamp leads (ideally 5–10 cm distance)
- Do not run mains leads adjacent to the electronic ballast
- Twist the lamp leads

- Keep the distance of lamp leads from the metal work as large as possible
- Ballast must be earthed, either over the terminal or over the mounting screw of the ballast
- Mains wiring to be twisted when through wiring
- 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. There is an automatic restart once the lamp has been changed.

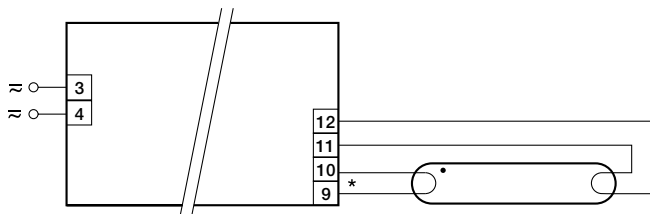
T8 lamp-information



wattage	length
38 W	1050 mm

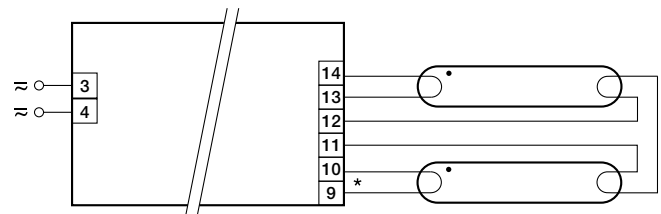
TC-L lamp-information

	wattage	length
	36 W	415 mm
	40 W	535 mm
	55 W	535 mm



* leads 9, 10 max. 1.0 m (< 100 pF)
leads 11, 12 max. 2.0 m (< 200 pF)
SK I - luminaires: earth of ballast housing required (according to IEC 598)
SK II - luminaires: no earth required

PC 1x36–55 W TCL PRO



* leads 9, 10 max. 1.0 m (< 100 pF)
leads 11, 12, 13, 14 max. 2.0 m (< 200 pF)
SK I - luminaires: earth of ballast housing required (according to IEC 598)
SK II - luminaires: no earth required

PC 2x36-40 W TCL PRO