

POWERTRONIC OUTDOOR PTo

ECG for HID lamps, for outdoor lighting



Areas of application

- Suitable for luminaires of protection classes I and II
- Suitable for outdoor applications in luminaires with IP > 54

Product benefits

- Energy savings up to 30 % (compared to CCG operation) thanks to 3DIM (except PTo 35)
- High surge protection: up to 3 kV (L-N) / 4 kV (L/N-PE)
- Automatic safety shutdown of lamps in the event of a defect or at end of life (EoL)
- Excellent thermal behavior for very high limit temperatures t_c and t_a

Product features

- 3DIM functionality (StepDIM/AstroDIM/DALI)
- Energy Efficiency Index EEI: A2
- Lightning protection: up to 10 kV
- Supply voltage: 220...240 V
- Line frequency: 50...60 Hz
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- RI suppression: to EN 55015
- Safety: to EN 61347-2-12
- Luminous flux factor 1 compared with CCG operation
- Not suitable for DC operation

Product family datasheet

Technical data

Electrical data

Product description	Lamp wattage	Line current	Ignition voltage	Operating frequency	System wattage	ECG efficiency
PTo 35/220...240	39 W	0.20 A ¹⁾	4.5 kVp	0.165 kHz	43.00 W	90 % ²⁾
PTo 50/220...240 3DIM	50 W	0.26 A ¹⁾	4.5 kVp	0.165 kHz	55.00 W	91 % ²⁾
PTo 70/220...240 3DIM	73 W	0.35 A ¹⁾	4.5 kVp	0.165 kHz	80.00 W	91 % ²⁾
PTo 100/220...240 3DIM	97 W	0.48 A ¹⁾	4.5 kVp	0.165 kHz	106.00 W	91 %
PTo 150/220...240 3DIM	147 W	0.71 A ¹⁾	4.5 kVp	0.165 kHz	160.00 W	91 %
PTo 250/220...240 3DIM	250 W	1.17 A ¹⁾	4.5 kVp	0.200...0.240 kHz	270.00 W	93 %

Product description	Input voltage AC	Nominal voltage	Mains frequency	Power factor λ	Inrush current	Max. ECG no. on circuit breaker 10 A (B)
PTo 35/220...240	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	35 A ⁴⁾	7 ⁵⁾
PTo 50/220...240 3DIM	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	35 A ⁴⁾	7 ⁵⁾
PTo 70/220...240 3DIM	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	35 A ⁴⁾	7 ⁵⁾
PTo 100/220...240 3DIM	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	60 A ⁷⁾	4 ⁵⁾
PTo 150/220...240 3DIM	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	70 A ⁷⁾	4 ⁵⁾
PTo 250/220...240 3DIM	198...264 V	220...240 V	50...60 Hz	0.95 ³⁾	4 A ⁹⁾	7 ¹⁰⁾

Product description	Max. ECG no. on circuit breaker 16 A (B)	U-OUT (working voltage)	Max. working voltage between LH and LL	Max. working voltage between LL/LH & earth	Max. capacitance of wire ECG/lamp
PTo 35/220...240	13 ⁵⁾	250 V	250 V	250 V	120 pF
PTo 50/220...240 3DIM	13 ⁵⁾	250 V	250 V	250 V	120 pF
PTo 70/220...240 3DIM	13 ⁵⁾	250 V	250 V	250 V	120 pF
PTo 100/220...240 3DIM	7 ⁵⁾	250 V	250 V	250 V	120 pF
PTo 150/220...240 3DIM	7 ⁵⁾	250 V	250 V	250 V	120 pF
PTo 250/220...240 3DIM	11 ¹⁰⁾	250 V	250 V	250 V	200 pF

Product description	Nominal input voltage (SD port)
PTo 35/220...240	
PTo 50/220...240 3DIM	220...240 V ⁶⁾
PTo 70/220...240 3DIM	220...240 V ⁶⁾
PTo 100/220...240 3DIM	220...240 V ⁶⁾
PTo 150/220...240 3DIM	220...240 V ⁶⁾
PTo 250/220...240 3DIM	220...240 V ⁸⁾

¹⁾ At 230 V_{AC}

²⁾ Approximately

³⁾ Minimum

⁴⁾ $t_{width} = 350 \mu s$ (measured at 50 % I_{peak})

Product family datasheet

5) Type B

6) In relation to L/N

7) $t_{\text{width}} = 250 \mu\text{s}$ (measured at 50 % I_{peak})

8) In relation to N

9) $t_{\text{width}} = 6 \text{ ms}$ (measured at 50 % I_{peak})

10) Type C

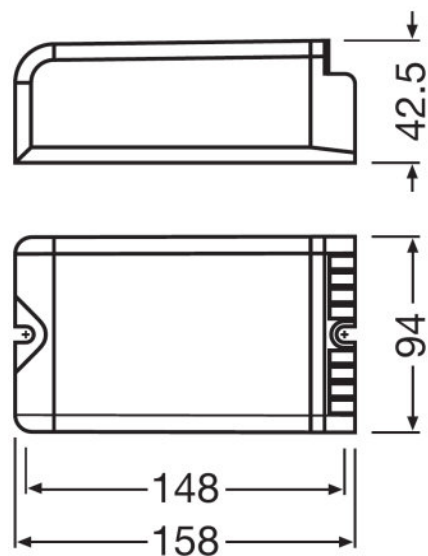
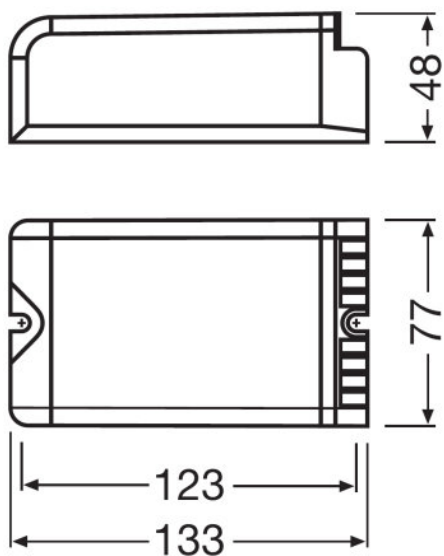
Dimensions & weight

Product description	Length	Width	Height	Mounting hole spacing, length	Cable cross-section, input side	Cable cross-section, output side
PTo 35/220...240	133.0 mm	77.0 mm	48.0 mm	123.0 mm	0.5...2.5 mm ²	0.5...2.5 mm ²
PTo 50/220...240 3DIM	133.0 mm	77.0 mm	48.0 mm	123.0 mm	0.5...2.5 mm ²	0.5...2.5 mm ²
PTo 70/220...240 3DIM	133.0 mm	77.0 mm	48.0 mm	123.0 mm	0.5...2.5 mm ²	0.5...2.5 mm ²
PTo 100/220...240 3DIM	158.0 mm	94.0 mm	42.5 mm	148.0 mm	0.5...2.5 mm ²	0.5...2.5 mm ²
PTo 150/220...240 3DIM	158.0 mm	94.0 mm	42.5 mm	148.0 mm	0.5...2.5 mm ²	0.5...2.5 mm ²
PTo 250/220...240 3DIM	170.0 mm	90.0 mm	60.0 mm	160.0 mm	1.0...2.5 mm ²	1.0...2.5 mm ²

Product description	Wire preparation length, input side	Wire preparation length, output side	Product weight
PTo 35/220...240	10...11 mm	10...11 mm	730.00 g
PTo 50/220...240 3DIM	10...11 mm	10...11 mm	730.00 g
PTo 70/220...240 3DIM	10...11 mm	10...11 mm	730.00 g
PTo 100/220...240 3DIM	10...11 mm	10...11 mm	900.00 g
PTo 150/220...240 3DIM	10...11 mm	10...11 mm	900.00 g
PTo 250/220...240 3DIM	10...11 mm	10...11 mm	1375.00 g

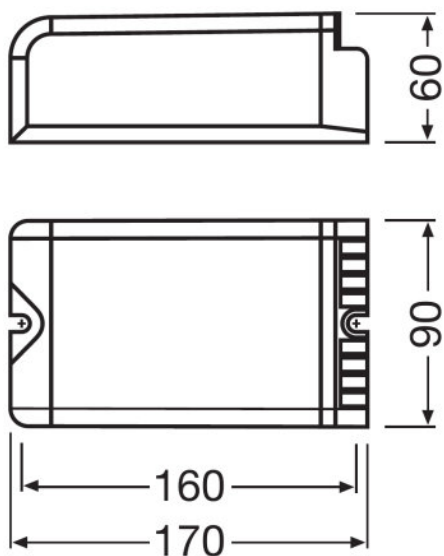
Product family datasheet

Product line drawing



PTo 35/220...240, PTo 50/220...240 3DIM, PTo 70/220...240 3DIM

PTo 100/220...240 3DIM, PTo 150/220...240 3DIM



PTo 250/220...240 3DIM

Product family datasheet

Colors & materials

Product description	Casing material
PTo 35/220...240	Plastic
PTo 50/220...240 3DIM	Plastic
PTo 70/220...240 3DIM	Plastic
PTo 100/220...240 3DIM	Plastic
PTo 150/220...240 3DIM	Plastic
PTo 250/220...240 3DIM	Plastic

Temperatures & operating conditions

Product description	Ambient temperature range	Maximum temperature at tc test point
PTo 35/220...240	-25...+60 °C	75 °C
PTo 50/220...240 3DIM	-25...+55 °C	75 °C
PTo 70/220...240 3DIM	-25...+55 °C	75 °C
PTo 100/220...240 3DIM	-25...+55 °C	75 °C
PTo 150/220...240 3DIM	-25...+55 °C	85 °C
PTo 250/220...240 3DIM	-25...+55 °C	85 °C

Lifespan

Product description	ECG lifetime
PTo 35/220...240	60000 h ¹⁾
PTo 50/220...240 3DIM	60000 h ²⁾
PTo 70/220...240 3DIM	60000 h ²⁾
PTo 100/220...240 3DIM	60000 h ²⁾
PTo 150/220...240 3DIM	60000 h ³⁾
PTo 250/220...240 3DIM	60000 h ³⁾

¹⁾ At maximum T_c / 10% failure rate

²⁾ At maximum T_c / 8% failure rate

³⁾ At $T_{case} = 80^\circ\text{C}$ at T_c point / 10% failure rate

Expected Lifetime

Product name				
PTo 150/220...240 3DIM	ECG ambient temperature [ta]	50	55	-
	Temperature at tc-point [°C]	80	85	-
	Lifetime [h]	60000	40000	-
PTo 250/220...240 3DIM	ECG ambient temperature [ta]	50	55	-
	Temperature at tc-point [°C]	80	85	-
	Lifetime [h]	60000	40000	-

Product family datasheet

Additional product data

Product description	Design / version	Encapsulated
PTo 35/220...240	ECG outdoor	Yes ¹⁾
PTo 50/220...240 3DIM	ECG outdoor	Yes ¹⁾
PTo 70/220...240 3DIM	ECG outdoor	Yes ¹⁾
PTo 100/220...240 3DIM	ECG outdoor	Yes ¹⁾
PTo 150/220...240 3DIM	ECG outdoor	Yes ¹⁾
PTo 250/220...240 3DIM	ECG outdoor	Yes ¹⁾

¹⁾ PCB fully encapsulated + dust proof plastic housing

Capabilities

Product description	Max. cable length to lamp/LED module	Overheating protection	ECG reset time	Dimmable	Restriction on ignition time
PTo 35/220...240	1.5 m	Power reduction and switch off at T > 75 °C at the tc point	> 0.5 s	No	20 min
PTo 50/220...240 3DIM	1.5 m	Power reduction and switch off at T > 75 °C at the tc point	> 0.5 s	Yes ¹⁾	20 min
PTo 70/220...240 3DIM	1.5 m	Power reduction and switch off at T > 75 °C at the tc point	> 0.5 s	Yes ¹⁾	20 min
PTo 100/220...240 3DIM	1.5 m	Power reduction and switch off at T > 75 °C at the tc point	> 0.5 s	Yes ¹⁾	20 min
PTo 150/220...240 3DIM	1.5 m	Power reduction and switch off at T > 85 °C at the tc point	> 0.5 s	Yes ¹⁾	20 min
PTo 250/220...240 3DIM	1.5 m	Power reduction and switch off at T > 85 °C at the tc point	> 0.5 s	Yes ¹⁾	20 min

Product description	Suitable for fixtures with prot. class	Lightning stroke protection	Dimming interface
PTo 35/220...240	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	
PTo 50/220...240 3DIM	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	DALI / StepDIM / AstroDIM
PTo 70/220...240 3DIM	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	DALI / StepDIM / AstroDIM

Product family datasheet

Product description	Suitable for fixtures with prot. class	Lightning stroke protection	Dimming interface
PTo 100/220...240 3DIM	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	DALI / StepDIM / AstroDIM
PTo 150/220...240 3DIM	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	DALI / StepDIM / AstroDIM
PTo 250/220...240 3DIM	I / II	With connected equipotentiality-terminal 10 surges with 10 kV acc. to IEC 61000-4-5	DALI / StepDIM / AstroDIM

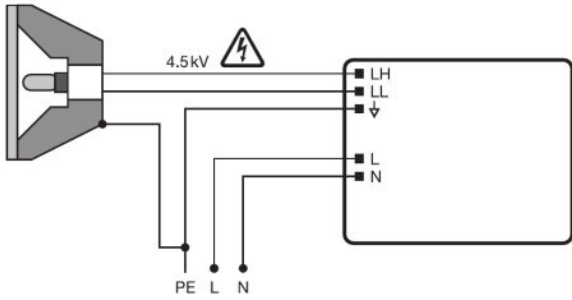
¹⁾ HQI lamps excluded from dimming

Certificates & standards

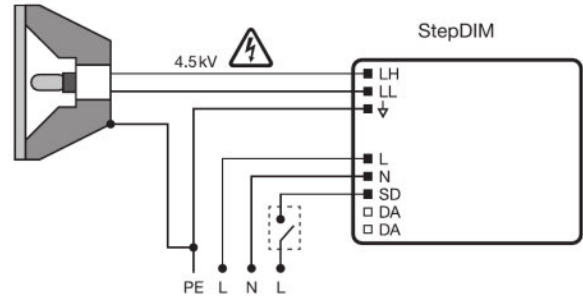
Product description	Approval marks – approval	Type of protection	EEI – Energy Label
PTo 35/220...240	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2
PTo 50/220...240 3DIM	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2
PTo 70/220...240 3DIM	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2
PTo 100/220...240 3DIM	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2
PTo 150/220...240 3DIM	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2
PTo 250/220...240 3DIM	ENEC 10 / VDE / VDE-EMC / EAC / C-Tick	IP20	A2

Product description	Standards
PTo 35/220...240	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547
PTo 50/220...240 3DIM	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547/Acc. to EN 62386-101/Acc. to EN 62386-102/Acc. to EN 62386-103
PTo 70/220...240 3DIM	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547/Acc. to EN 62386-101/Acc. to EN 62386-102/Acc. to EN 62386-103
PTo 100/220...240 3DIM	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547/Acc. to EN 62386-101/Acc. to EN 62386-102/Acc. to EN 62386-103
PTo 150/220...240 3DIM	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547/Acc. to EN 62386-101/Acc. to EN 62386-102/Acc. to EN 62386-103
PTo 250/220...240 3DIM	Acc. to EN 61347-2-12/Acc. to EN 55015/Acc. to EN 61000-3-2/Acc. to EN 61547/Acc. to EN 62386-101/Acc. to EN 62386-102/Acc. to EN 62386-103

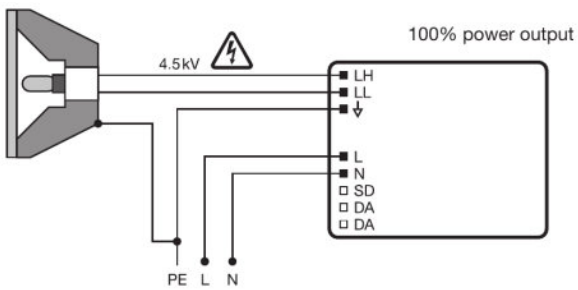
Wiring Diagram



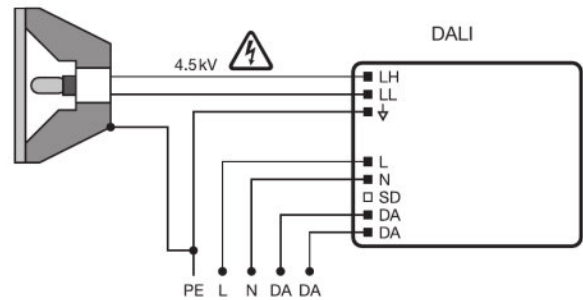
PTo 35/220...240



PTo 50/220...240 3DIM, PTo 70/220...240 3DIM

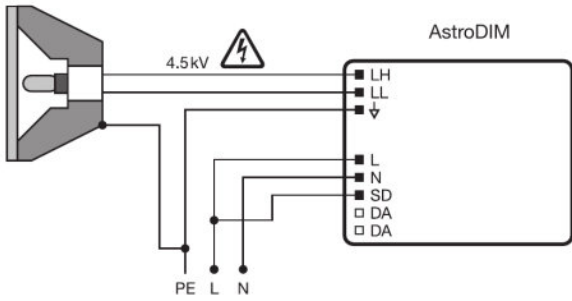


PTo 50/220...240 3DIM, PTo 70/220...240 3DIM

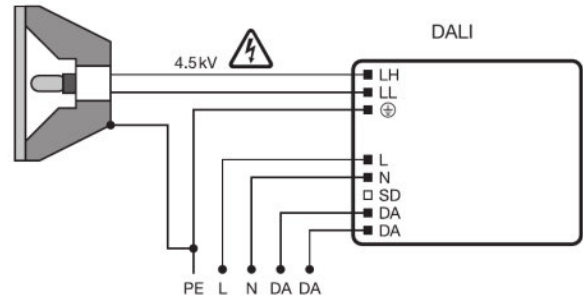


PTo 50/220...240 3DIM, PTo 70/220...240 3DIM

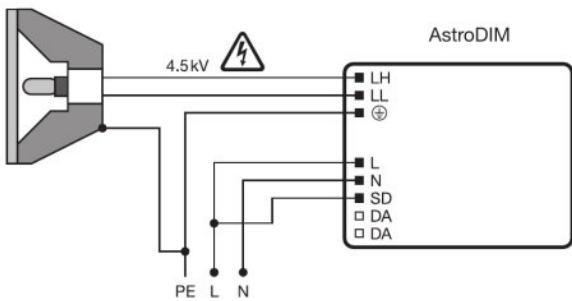
Product family datasheet



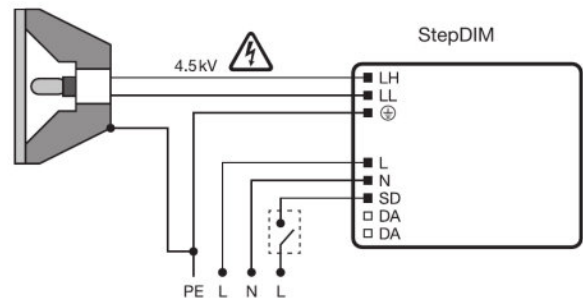
PTo 50/220...240 3DIM, PTo 70/220...240 3DIM



PTo 100/220...240 3DIM, PTo 150/220...240 3DIM

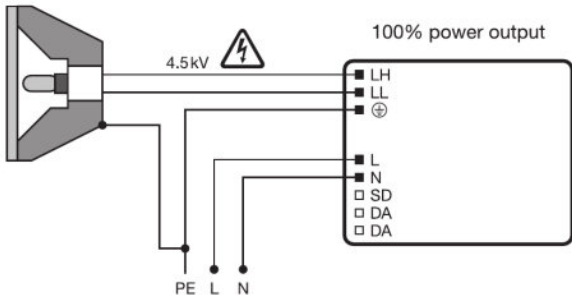


PTo 100/220...240 3DIM, PTo 150/220...240 3DIM

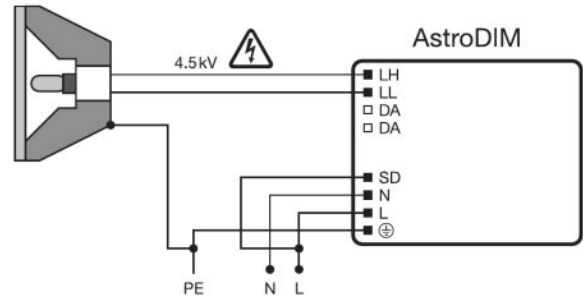


PTo 100/220...240 3DIM, PTo 150/220...240 3DIM

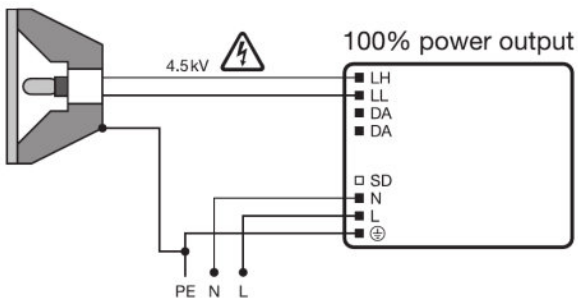
Product family datasheet



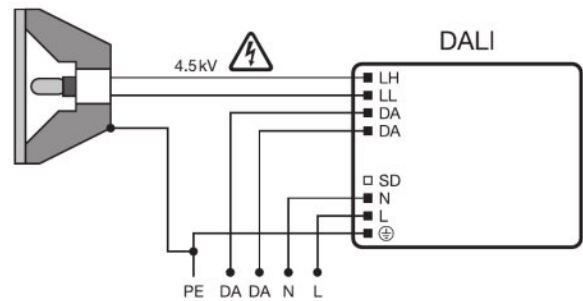
PTo 100/220...240 3DIM, PTo 150/220...240 3DIM



PTo 250/220...240 3DIM

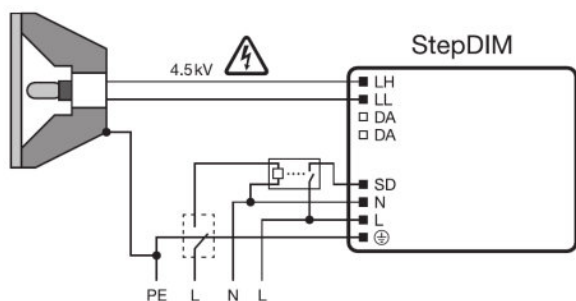


PTo 250/220...240 3DIM



PTo 250/220...240 3DIM

Product family datasheet



PTo 250/220...240 3DIM

Safety advice

Ballast losses and lamp heat radiation can lead to heat accumulation in a completely closed case. Therefore it is necessary to ensure that the temperature at the measuring point t of the ECG does not exceed the maximum value.

Attention!

For safety reasons disconnect the device before replacing the lamp!

Application advice

For more detailed application information and graphics please see product datasheet.

Additional product information

- An external relay connected in front of the SD port is necessary in StepDIM installations. The relay needs to be selected in a way that it is not switched or hold by the occurring leakage currents in the installation.

Sales and Technical Support

Sales and Technical Support www.osram.com

Download Data

Product family datasheet

File	
	Tender documents 339884_Tender Document for POWERTRONIC EVG.eng
	Certificates 554891_EAC PT family
	Certificates VDE ENEC Certificate 40035813
	Declarations of conformity EU Declaration of Conformity 3363432
	Declarations of conformity VD EMC Certificate 40025469
	Installation/Operation notice 334206_Technical guide - POWERTRONIC for HID-lamps (GB)
	Operating instructions 590728_EAC-PTO
	CAD data 3-dim 325148_PTo35
	CAD data 3-dim 325149_PTo35
	CAD data 3-dim 325150_PTo35
	Brochures 336599_LMS 3 DIM Flyer (GB)
	Brochures 339643_3DIM Application Guide (GB)
	CAD data 3-dim 325151_PTo70 3DIM PTo50 3DIM
	CAD data 3-dim 325152_PTo70 3DIM PTo50 3DIM
	CAD data 3-dim 325153_PTo70 3DIM PTo50 3DIM
	CAD data 3-dim 341253_CAD data 3-dim – PTo100_150 IGS
	CAD data 3-dim 341254_CAD data 3-dim – PTo100_150.STEP
	CAD data 3-dim 490514_PTo 250.STEP
	CAD data 3-dim 490515_PTo 250.IGS
	CAD data PDF 490066_PTo 250 3DIM

Logistical Data

Product family datasheet

Product code	Product description	Packaging unit (Pieces/Unit)	Dimensions (length x width x height)	Volume	Gross weight
4008321956323	PTo 35/220...240	Shipping carton box 20	483 mm x 167 mm x 285 mm	22.99 dm ³	15471.00 g
4008321956347	PTo 50/220...240 3DIM	Shipping carton box 20	483 mm x 285 mm x 167 mm	22.99 dm ³	15571.00 g
4008321959355	PTo 70/220...240 3DIM	Shipping carton box 20	483 mm x 167 mm x 285 mm	22.99 dm ³	15571.00 g
4008321956361	PTo 100/220...240 3DIM	Shipping carton box 10	313 mm x 193 mm x 273 mm	16.49 dm ³	9756.00 g
4008321956385	PTo 150/220...240 3DIM	Shipping carton box 10	313 mm x 193 mm x 273 mm	16.49 dm ³	9756.00 g
4008321863669	PTo 250/220...240 3DIM	Shipping carton box 10	403 mm x 265 mm x 205 mm	21.89 dm ³	14455.00 g

The mentioned product code describes the smallest quantity unit which can be ordered. One shipping unit can contain one or more single products. When placing an order, for the quantity please enter single or multiples of a shipping unit.

Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.