bam	Technical Submission	Form: 365-04 Rev: 1

Project Title;- Fish & Coal – Kings Cross	Technical Submission no: BAMSE - TSE 016
Contract No:- LN 0217	
To:- Phil Summers	Company:- Hoare Lea

Approval of the following equipment is required:

Equipment: Type EX4 External LED Lighting Bollards

Manufacturers: Supplied via 4D Lighting Ltd--- specified by Hoare Lea as being the Sole provider

Description: as per the attached 4D lighting Ltd quotation and data sheets

i) Exterior LED IP54 rated lighting Bollard compatible with DALI control gear/driver unit –LED for use with Tridonic Talexx 3000K - 3000lumen IP54 module the bollard to be finished in "CORTEN"-- is to be supplied with a special non standard foot plate as per the attached sketch

Specification References;-
1 - Hoare Lea Kings Cross Central – Fish & Coal MEPH Engineering Systems (rev C Stage F1A) dated 19-05-2014 and in line with the following sections

i) SPEC- Section V21 ---0511447-V21-PS-20140203;- General Lighting
ii) SPEC- Section Y81 ---0511447-Y81-PS-20140203;- Testing & Commissioning of Electrical systems

Attached Detail Documents:	
Equipment specifying schedule.	Sections V21 General lighting + Y81 Testing & commissioning
Manufacturers quotation.	N/A
Manufacturers details.	As attached
Design check calculations.	N/A
Certified performance levels.	N/A
Builderswork requirements.	By BAM Construction
Assembly and installation details.	As attached
Operation and maintenance details.	To form part of O+M Manuals
List of recommended spares.	To form part of O+M Manuals

Electrical requirements for equipment: N/A

Planned site delivery: Bollard is on a 12 week delivery timescale upon receipt of order

Issued by: Stuart McFall -- BAM SE Ltd	Date 18th April 2016
Please return comments by:	26thapril 2016

To be completed and returned by Consultant Design Engineer

Technical submission is ** approved / approved with comments / not approved.
(**delete as appropriate)

Returned by:	Company:
Signature:	Date:

Quotation

Quote No. : AGC6524

Rev. No. : 4

Project : Fish and Cole - Exterior Lighting

Date : 15th April 2016

4D lighting
PROJECT SOLUTIONS
ILLUXTRON
leading electronic innovations

Item	Description	Quantity	Unit Cost	Disc.	Total
EX4	Exterior bollard luminaire for use with 1 x 3000 lumen. Asymmetric distribution.Corten Steel body /IP 67 Enclosure for driver. paint finish. Integral DALI control gear. IP54 rated./ Special foot plate **Part Number: 4D Lighting Topa/100/LED/DALI/RAL7024**				

PLEASE NOTE IT IS THE CONTRACTORS/WHOLESALERS RESPONSIBILITY TO ENSURE QUANTITIES ARE CORRECT AT TIME OF ORDER.

CARRIAGE CHARGE SUBJECT TO ORDER QUANTITY.

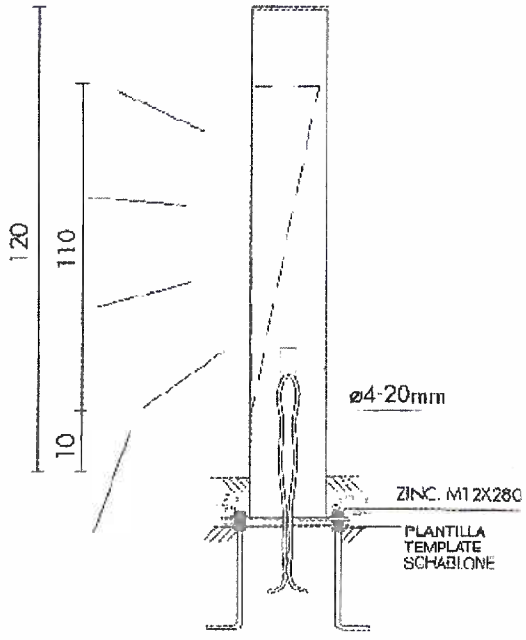
PRICES DO NOT INCLUDE FOR LAMPS UNLESS OTHERWISE STATED.

Total

All quoted prices are subject to our standard terms and conditions. A copy of which is available upon request. All prices exclude VAT. The above prices are valid for 30 days.

Unit 5B, Yeo-Bank Business Park, Kenn Road, Kenn, BS21 6UW
Telephone: 01275 349 383 Facsimilie: 01275 349 347 email:info@4dlighting.co.uk www.4dlighting.co.uk

Fish and Coal – External bollard

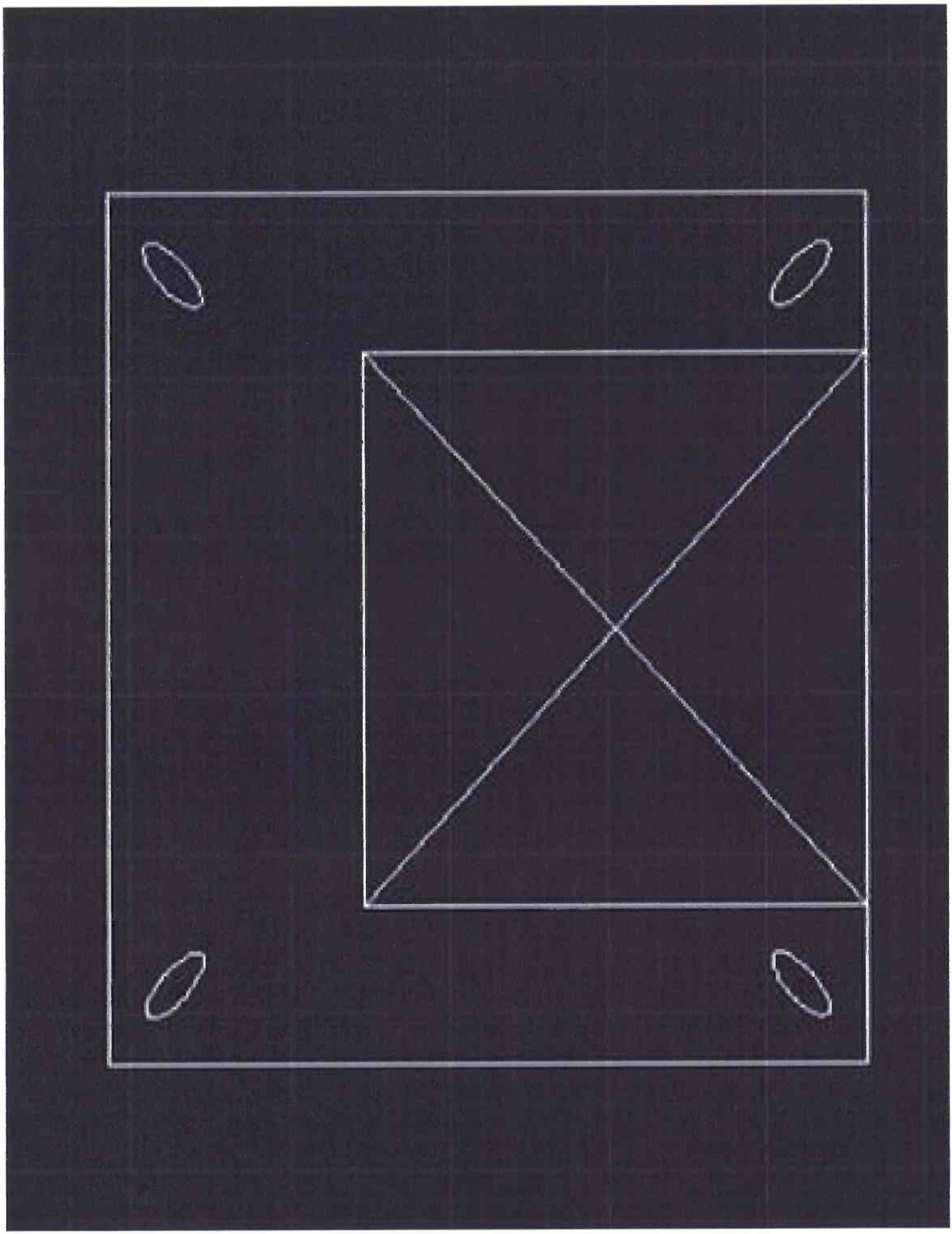


External bollard
Made from and finished in corten steel.
IP54 rated
3000Lm LED
3000K colour temperature
DALI
Asymmetric reflector made from aluminium
Recessed light source for complete glare control
Complete with root for mounting

Part Code: 4D Lighting Topa 100/LED

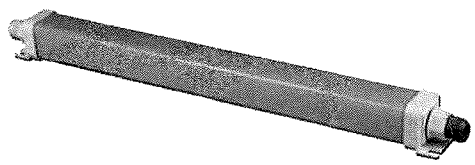
4D Lighting Ltd, Unit 5B, Yeo-Bank Business Park
Kenn Road, Kenn, Bristol, BS21 6UW
Tel: 01275 349 383 Fax: 01275 349 347
E mail info@4dlighting.co.uk

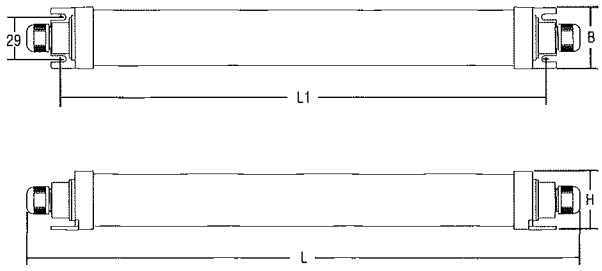
4D lighting
PROJECT SOLUTIONS



LINEAR BOX IP67

Contenitore IP67 per ballast elettronici
IP67 casing for linear electronic ballasts





Articolo Article	Codice Code	Dimensioni - Dimensions (mm)				Peso Weight gr.	Confezioni Box
		L	L1	B	H		
LINEAR BOX IP67	180066/390	460	415	41	40	135	1

Tipo di dado Nut type	
foro - hole Ø 6,5	foro - hole Ø 10
bianco - white	grigio - grey
	

Gommino Rubber			
foro - hole Ø 6,2	slot - asola 2,5x5,2	4 fori - 4 holes Ø 1,5	foro - hole Ø 9,8
bianco - white	trasparente transparent	giallo - yellow	nero - black
A 	**B** 	**C** 	**D** 

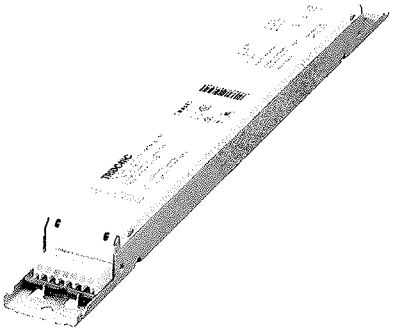
Cavo Cable	Tipo di dado Nut type	Gommino Rubber
Ø 9,6	2	D
Ø 8,0 Ø 7,6 Ø 7,4	2	D
Ø 6,6 Ø 6,2 Ø 5,2	1	A
4,1 x 6,3 4,3 x 6,6	1	B
Ø 2,05	1	C

- Contenitore per ballast elettronici lineari con grado di protezione IP67:
  - IP6X: involucro totalmente protetto contro la polvere.
  - IPX7: involucro protetto contro gli effetti dell'immersione.
- Protezione in classe I e II (dipendente dall'alimentatore utilizzato).
- Fissaggio tramite asole per viti.
- Il punto tc è indicato sull'alimentatore interno.

- IP67 protective casing for linear electronic ballast:
  - IP6X: totally protected against dust.
  - IPX7: protected against the effects of immersion.
- Class I and II protection (depending on electronic ballast, used inside).
- Mounting using slotted screw fitting.
- tc point is indicated on the inside electronic ballast.

TALEXconverter LCA 75W 350–1050mA one4all lp PRE

PREMIUM series



Product description

- Dimmable built-in constant current LED Driver
- Adjustable output current between 350 and 1,050 mA via ready2mains™ Programmer, I-select 2 plugs or DALI
- Max. output power 75 W
- Up to 92 % efficiency
- Power input on stand-by < 0.16 W
- Dimming range 1 – 100 %
- Nominal life-time up to 100,000 h
- 5-year guarantee

Housing properties

- Low profile metal casing with white cover
- Type of protection IP20

Interfaces

- one4all (DALI DT 6, DSI, switchDIM, corridorFUNCTION)
- ready2mains™ (configuration and dimming via mains)
- Terminal blocks: 0° push terminals

Functions

- Adjustable output current (DALI, ready2mains™, I-select 2)
- Constant light output function (CLO)
- Power-up fading at AC
- Configurable via ready2mains™
- Service monitor to log certain events
- Protective features (overtemperature, short-circuit, overload, no-load, input voltage range, reduced surge amplification)
- Suitable for emergency lighting acc. to EN 50172

Benefits

- Application-oriented operating window for maximum compatibility
- Best energy savings due to low stand-by losses and high efficiency
- Flexible configuration via DALI, ready2mains™ and I-select 2
- Reliability proven by life-time up to 100,000 h and 5-year guarantee

Typical applications

- For linear/area lighting in office applications

Standards, page 4

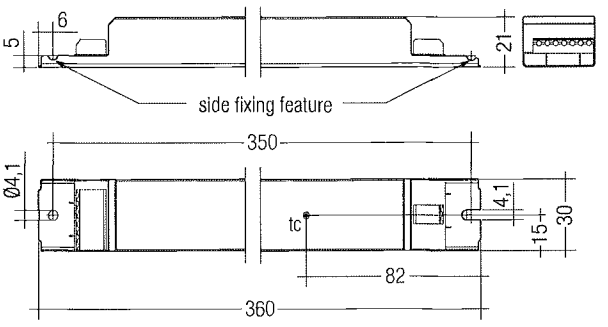
IP20 RoHS

TALEXconverter LCA 75W 350–1050mA one4all lp PRE

PREMIUM series

Technical data

Rated supply voltage	220 – 240 V
Input voltage, AC	198 – 264 V
Input voltage, DC	176 – 280 V
Mains frequency	0 / 50 / 60 Hz
Overvoltage protection	320 V AC, 48 h
Typ. current (at 230 V, 50 Hz, full load)[1] [2]	205 – 365 mA
Typ. current (220 V, 0 Hz, full load, 15 % dimming level)[2]	52 – 76 mA
Leakage current (at 230 V, 50 Hz, full load)[1] [2]	< 650 µA
Max. input power	82,5 W
Typ. efficiency (at 230 V / 50 Hz / full load)[2]	92 %
λ (at 230 V, 50 Hz, full load)[1]	0.98
Typ. power input on stand-by[3]	< 0.16 W
Typ. input current in no-load operation	36 mA
Typ. input power in no-load operation	0.42 W
In-rush current (peak / duration)	43.6 A / 188 µs
THD (at 230 V, 50 Hz, full load)[1]	< 5.6 %
Time to light (at 230 V, 50 Hz, full load)[1]	< 0.6 s
Time to light (DC mode)	< 0.3 s
Switchover time (AC/DC)	< 0.3 s
Turn off time (at 230 V, 50 Hz, full load)	< 20 ms
Output current tolerance[1]	± 3 %
Max. output current peak (non-repetitive)	≤ output current + 40 %
Output LF current ripple (< 120 Hz)	± 2.5 %
Max. output voltage (no-load voltage)	250 V
Dimming range	1 – 100 %
Mains surge capability (between L – N)	1 kV
Mains surge capability (between L/N – PE)	2 kV
Surge voltage at output side (against PE)	< 500 V
Dimensions L x W x H	360 x 30 x 21 mm



Ordering data

Type	Article number	Packaging carton	Packaging pallet	Weight per pc.
LCA 75W 350-1050mA one4all lp PRE	28000659	10 pc(s).	760 pc(s).	0.295 kg

Specific technical data

Type	Output current	Min. forward voltage	Max. forward voltage	Max. output power	Typ. power consumption (at 230 V, 50 Hz, full load)	Typ. current consumption (at 230 V, 50 Hz, full load)	Max. casing temperature tc	Ambient temperature ta max.	I-select 2 resistor value[4]
LCA 75W 350-1050mA one4all lp PRE	350 mA	40 V	110.0 V	38.5 W	44.8 W	205 mA	75 °C	-25 ... +50 °C	open
	400 mA	40 V	110.0 V	44.0 W	50.2 W	228 mA	80 °C	-25 ... +50 °C	12.40 kΩ
	450 mA	40 V	110.0 V	49.5 W	55.6 W	251 mA	80 °C	-25 ... +50 °C	11.00 kΩ
	500 mA	40 V	110.0 V	55.0 W	61.0 W	274 mA	80 °C	-25 ... +50 °C	10.00 kΩ
	550 mA	40 V	110.0 V	60.5 W	66.3 W	296 mA	80 °C	-25 ... +50 °C	9.09 kΩ
	600 mA	40 V	110.0 V	66.0 W	71.7 W	319 mA	80 °C	-25 ... +50 °C	8.25 kΩ
	650 mA	40 V	110.0 V	71.5 W	77.1 W	342 mA	80 °C	-25 ... +50 °C	7.68 kΩ
	700 mA	40 V	107.0 V	75.0 W	82.5 W	365 mA	80 °C	-25 ... +50 °C	7.15 kΩ
	750 mA	40 V	100.0 V	75.0 W	82.4 W	364 mA	80 °C	-25 ... +50 °C	6.65 kΩ
	800 mA	40 V	93.8 V	75.0 W	82.3 W	364 mA	80 °C	-25 ... +50 °C	6.19 kΩ
	850 mA	40 V	88.2 V	75.0 W	82.2 W	363 mA	75 °C	-25 ... +50 °C	5.90 kΩ
	900 mA	40 V	83.3 V	75.0 W	82.1 W	363 mA	75 °C	-25 ... +50 °C	5.62 kΩ
	950 mA	40 V	78.9 V	75.0 W	82.0 W	362 mA	75 °C	-25 ... +50 °C	5.23 kΩ
	1,000 mA	40 V	75.0 V	75.0 W	81.8 W	362 mA	75 °C	-25 ... +50 °C	4.99 kΩ
	1,050 mA	40 V	71.4 V	75.0 W	82.0 W	361 mA	75 °C	-25 ... +50 °C	short circuit (0 Ω)

[1] Valid at 100 % dimming level.

[2] Depending on the selected output current.

[3] Depending on the DALI traffic at the interface.

[4] Not compatible with I-select (generation 1).

ACCESSORIES

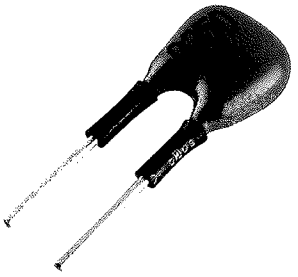
I-SELECT 2 PLUG PRE / EXC

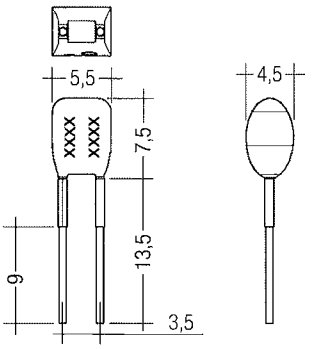
Product description

- Ready-for-use resistor to set output current value
- Compatible with LED Driver featuring I-select 2 interface; not compatible with I-select (generation 1)
- Resistor is base isolated
- Resistor power 0.25 W
- Current tolerance ± 2 % to nominal current value
- Compatible with LED Driver series PRE and EXC

Example of calculation for third party resistors

- R [kΩ] = 5 V / I_out [mA] x 1000
- Resistor value tolerance ≤ 1 %; resistor power ≥ 0.1 W; base isolation necessary
- When using a resistor value beyond the specified range, the output current will automatically be set to the minimum value (resistor value too big), respectively to the maximum value (resistor value too small)





Ordering data

Type	Article number	Colour	Marking	Current	Packaging bag	Weight per pc.
I-SELECT 2 PLUG 350MA BL	28001110	Blue	0350 mA	350 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 375MA BL	28001111	Blue	0375 mA	375 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 400MA BL	28001112	Blue	0400 mA	400 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 425MA BL	28001251	Blue	0425 mA	425 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 450MA BL	28001113	Blue	0450 mA	450 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 475MA BL	28001252	Blue	0475 mA	475 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 500MA BL	28001114	Blue	0500 mA	500 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 550MA BL	28001115	Blue	0550 mA	550 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 600MA BL	28001116	Blue	0600 mA	600 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 650MA BL	28001117	Blue	0650 mA	650 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 700MA BL	28001118	Blue	0700 mA	700 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 750MA BL	28001119	Blue	0750 mA	750 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 800MA BL	28001120	Blue	0800 mA	800 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 850MA BL	28001121	Blue	0850 mA	850 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 900MA BL	28001122	Blue	0900 mA	900 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 950MA BL	28001123	Blue	0950 mA	950 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 1000MA BL	28001124	Blue	1000 mA	1,000 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG 1050MA BL	28001125	Blue	1050 mA	1,050 mA	10 pc(s).	0.001 kg
I-SELECT 2 PLUG MAX BL	28001099	Blue	MAX	MAX	10 pc(s).	0.001 kg

1. Standards

EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 62384
EN 61547
EN 62386-101 (according to DALI standard V2)
EN 62386-102
EN 62386-207
According to EN 50172 for use in central battery systems
According to EN 60598-2-22 suitable for emergency lighting installations

2. Thermal details and life-time

4.1 Expected life-time

Expected life-time

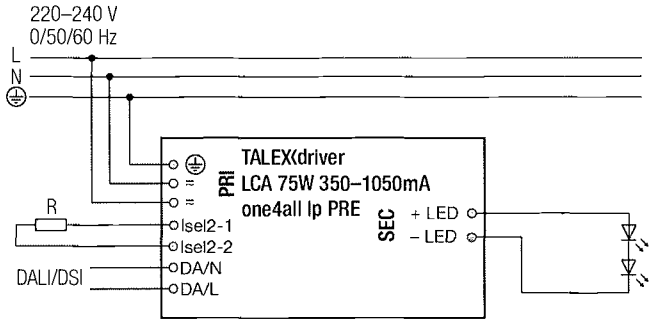
Type	Output current	ta	40 °C	45 °C	50 °C
LCA 75W 350-1050mA one4all lp PRE	350 mA	tc	68 °C	72 °C	75 °C
		Life-time	> 100,000 h	> 100,000 h	> 100,000 h
	>350 – 550 mA	tc	72 °C	76 °C	80 °C
		Life-time	> 100,000 h	> 100,000 h	> 100,000 h
	>550 – 800 mA	tc	73 °C	76 °C	80 °C
		Life-time	> 100,000 h	> 100,000 h	> 100,000 h
	>800 – 1.050 mA	tc	66 °C	70 °C	75 °C
		Life-time	> 100,000 h	> 100,000 h	> 100,000 h

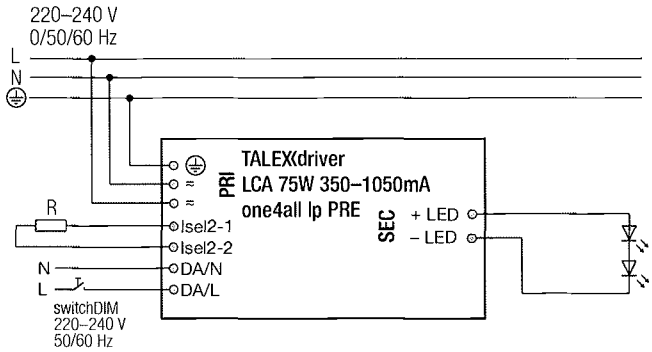
The LED Driver is designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %.

The relation of tc to ta temperature depends also on the luminaire design.
If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

3. Installation / wiring

3.1 Circuit diagram



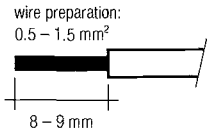


For wiring in dimming operation with ready2mains refer to the ready2mains Gateway datasheet.

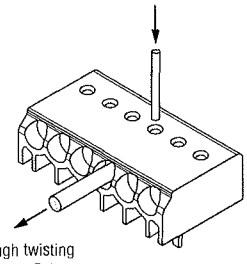
3.2 Wiring type and cross section

Solid wire with a cross section of 0.5 – 1.5 mm². Strip 8 – 9 mm of insulation from the cables to ensure perfect operation of terminals.

LED module/LED Driver/supply



3.3 Loose wiring



Loosen wire through twisting and pulling or using a Ø 1 mm release tool

3.4 Wiring guidelines

- The cables should be run separately from the mains connections and mains cables to ensure good EMC conditions.
- The LED wiring should be kept as short as possible to ensure good EMC. The max. secondary cable length is 2 m (4 m circuit), this applies for LED output as well as for I-select 2.
- Secondary switching is not permitted.
- The LED Driver has no inverse-polarity protection on the secondary side. Wrong polarity can damage LED modules with no inverse-polarity protection.
- Wrong wiring of the LED Driver can lead to malfunction or irreparable damage.

3.5 Hot plug-in

Hot plug-in is not supported due to residual output voltage of > 0 V.
If a LED load is connected the device has to be restarted before the output will be activated again.
This can be done via mains reset or via interface (DALI, DSI, switchDIM, ready2mains).

3.6 Earth connection

The earth connection is conducted as protection earth (PE). The LED Driver can be earthed via earth terminal or metal housing. If the LED Driver will be earthed, protection earth (PE) has to be used. There is no earth connection required for the functionality of the LED Driver. Earth connection is recommended to improve following behaviour:

- Electromagnetic interferences (EMI)
- LED glowing at stand-by
- Transmission of mains transients to the LED output

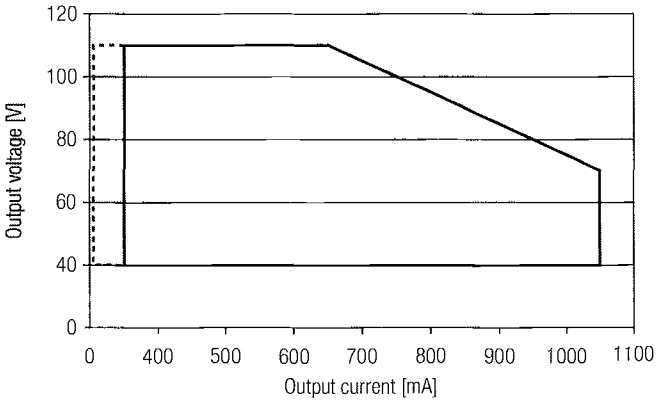
In general it is recommended to earth the LED Driver if the LED module is mounted on earthed luminaire parts respectively heat sinks and thereby representing a high capacity against earth.

3.7 External I-select 2 resistors on LED modules

LED modules with on-board I-select 2 resistors may cause irreparable damages, caused by surge / burst peaks.

4. Electrical values

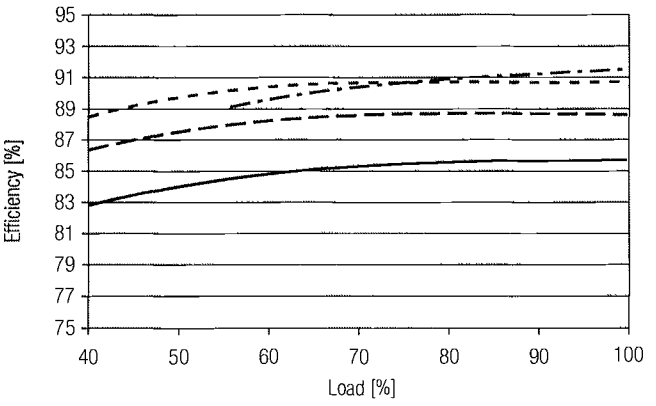
4.1 Operating window



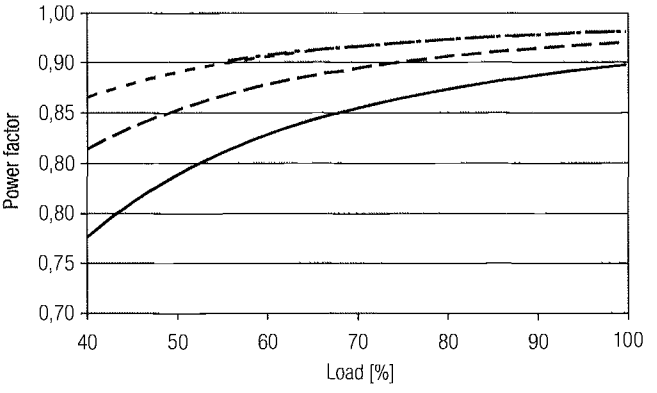
Operating window 100 %
Operating window dimmed

Make sure that the LED Driver is operated within the given window under all operating conditions, also in dimming operation. Otherwise certain limitations may occur. This is due to the nature of amplitude modulation dimming. The stated minimum output voltage shall not be undercut as this may cause the device to shut-down. In this respect, special attention needs to be paid to DC operation.

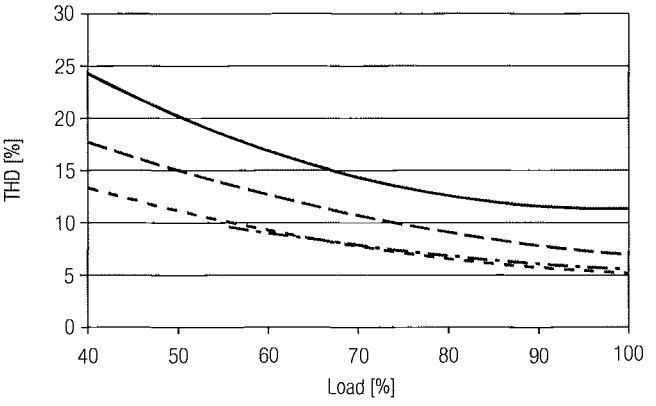
4.2 Efficiency vs load



4.3 Power factor vs load



4.4 THD vs load



350 mA
500 mA
700 mA
1050 mA

100 % load corresponds to the max. output power (full load) according to the table on page 2.

4.5 Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm²	1.5 mm²	2.5 mm²	4 mm²	1.5 mm²	1.5 mm²	2.5 mm²	4 mm²	I_{max}	time
LCA 75W 350-1050mA one4all lp PRE	10	14	16	20	5	7	8	10	43,6 A	188 µs

4.6 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

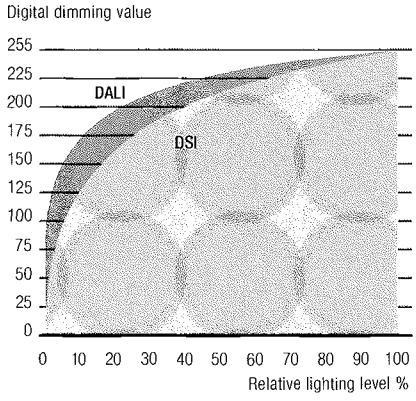
	THD	3.	5.	7.	9.	11.
LCA 75W 350-1050mA one4all lp PRE	< 5	< 4	< 2	< 1	< 1	< 1

4.7 Dimming

Dimming range 1 % to 100 %
Digital control with:
- DSI signal: 8 bit Manchester Code
  Speed 1 % to 100 % in 1.4 s
- DALI signal: 16 bit Manchester Code
  Speed 1 % to 100 % in 0.2 s
  Programmable parameter:
  Minimum dimming level
  Maximum dimming level
  Default minimum = 1 %
  Programmable range 1 % ≤ MIN ≤ 100 %
  Default maximum = 100 %
  Programmable range 100 % ≥ MAX ≥ 1 %

Dimming curve is adapted to the eye sensitiveness.
Dimming is realized by amplitude dimming.

4.8 Dimming characteristics



Dimming characteristics as seen by the human eye

5. Interfaces / communication

5.1 Control input (DA/N, DA/L)

Digital DALI signal or switchDIM can be wired on the same terminals (DA/N and DA/L).

The control input is non-polar for digital control signals (DALI, DSI). The control signal is not SELV. Control cable has to be installed in accordance to the requirements of low voltage installations.
Different functions depending on each module.

5.2 Control input ready2mains (L, N)

The digital ready2mains protocol is modulated onto the mains signal which is wired to the mains terminal (L and N).

5.3 switchDIM

Integrated switchDIM function allows a direct connection of a pushbutton for dimming and switching.
Brief push (< 0.6 s) switches LED Driver ON and OFF. The dimm level is saved at power-down and restored at power-up.
When the pushbutton is held, LED modules are dimmed. After repush the LED modules are dimmed in the opposite direction.
In installations with LED Drivers with different dimming levels or opposite dimming directions (e.g. after a system extension), all LED Drivers can be synchronized to 50 % dimming level by a 10 s push.
Use of pushbutton with indicator lamp is not permitted.

6. Functions

6.1 Function: adjustable current

The output current of the LED Driver can be adjusted in a certain range. For adjustment there are three options available.

Option 1: DALI
Adjustment is done by masterCONFIGURATOR (see masterCONFIGURATOR documentation).

Option 2: I-select 2
By inserting a suitable resistor into the I-select 2 interface, the current value can be adjusted. The relationship between output current and resistor value can be found in the chapter "Accessories I-SELECT 2 Plugs".
If the resistor is connected by wires a consistent base isolation must be ensured. Furthermore, a max. wire length of 2 m may not be exceeded and potential interferences have to be avoided.

Please note that the resistor values for I-select 2 are not compatible with I-select (generation 1). Installation of an incorrect resistor may cause irreparable damage to the LED module(s).

Resistors for the main output current values can be ordered from Tridonic (see accessories).

Option 3: ready2mains
Adjustment is done by the ready2mains programmer and the corresponding configuration software (see ready2mains documentation).

The priority for current adjustment methods is DALI (highest priority), I-select 2, ready2mains (lowest priority).

6.2 ready2mains – configuration

The ready2mains interface can be used to configure the main parameters of LED Drivers via the mains wiring, such as LED output current, CLO and DC level. These parameters can be adjusted either via ready2mains-capable configuration software or directly via the ready2mains programmer (output current only).

6.3 ready2mains – dimming

ready2mains allows for mains-based group dimming, controlled via the ready2mains protocol and appropriate dimming interfaces.

For details on the operation of ready2mains and its components see the relevant technical information.

6.4 Short-circuit behaviour

In case of a short-circuit at the LED output the LED output is switched off. After restart of the LED Driver the output will be activated again. The restart can either be done via mains reset or via interface (DALI, DSI, switchDIM, ready2mains).

6.5 No-load operation

The LED Driver will not be damaged in no-load operation. The output will be deactivated and is therefore free of voltage. If a LED load is connected the device has to be restarted before the output will be activated again.

6.6 Overload protection

If the output voltage range is exceeded the LED Driver turns off the LED output. After restart of the LED Driver the output will be activated again.
The restart can either be done via mains reset or via interface (DALI, DSI, switchDIM, ready2mains).

6.7 Overtemperature protection

The LED Driver is protected against temporary thermal overheating. If the temperature limit is exceeded the output current of the LED module(s) is reduced. The temperature protection is activated approx. +5 °C above tc max (see page 2). On DC operation this function is deactivated to fulfill emergency requirements.

6.8 corridorFUNCTION

The corridorFUNCTION can be programmed in two different ways.
To program the corridorFUNCTION by means of software a DALI-USB interface is needed in combination with a DALI PS. The software can be the masterCONFIGURATOR.
To activate the corridorFUNCTION without using software a voltage of 230 V has to be applied for five minutes at the switchDIM connection.
The unit will then switch automatically to the corridorFUNCTION.

Note:
If the corridorFUNCTION is wrongly activated in a switchDIM system (for example a switch is used instead of pushbutton), there is the option of installing a pushbutton and deactivating the corridorFUNCTION mode by five short pushes of the button within three seconds.

switchDIM and corridorFUNCTION are very simple tools for controlling gears with conventional pushbuttons or motion sensors.
To ensure correct operation a sinusoidal mains voltage with a frequency of 50 Hz or 60 Hz is required at the control input.
Special attention must be paid to achieving clear zero crossings. Serious mains faults may impair the operation of switchDIM and corridorFUNCTION.

6.9 Constant light output (CLO)

The luminous flux of an LED decreases constantly over the life-time. The CLO function ensures that the emitted luminous flux remains stable. For that purpose the LED current will increase continuously over the LED life-time.
In masterCONFIGURATOR it is possible to select a start value (in percent) and an expected life-time. The LED Driver adjusts the current afterwards automatically.

6.10 Power-up/-down fading

The power-up/-down function offers the opportunity to modify the on-/off behavior. The time for fading on or off can be adjusted in a range of 0.2 to 16 seconds. According to this value, the device dims either from 0 % up to the power-on level or from the current set dim level down to 0 %. This feature applies while operating via switchDIM, ready2mains and when switching the mains voltage on or off. By factory default no fading time is set (= 0 seconds).

6.11 Light level in DC operation

Programmable from 1 – 100 %
Programming by extended DSI or DALI signal (16 bit).
Default value is 15 %
In DC operation dimming mode can be activated.

6.12 Software / programming

With appropriate software and a interface different functions can be activated and various parameters can be configured in the LED Driver.
To do so, a DALI-USB or ready2mains programmer and the software (masterCONFIGURATOR) are required.

6.13 masterCONFIGURATOR

From version 2.8:
For programming functions (CLO, I-select 2, power-up fading, corridorFUNCTION) and device settings (fade time, ePowerOnLevel, DC level, etc.). For further information see masterCONFIGURATOR manual.

7. Miscellaneous

7.1 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.

7.2 Conditions of use and storage

Enviromental conditions:	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 acclimatised to the specified temperature range (ta) before they can be operated.

7.3 Additional information

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

Guarantee conditions at
www.tridonic.com → Services

Life-time declarations are informative and represent no warranty claim.
No warranty if device was opened.