

# LUMAWISE DRIVE LED HOLDER TYPE Z50

## DEVELOPMENT KIT

TE Connectivity (TE)'s LUMAWISE Drive LED Holder Type Z50 Development Kit allows luminaire designers to purchase a single unit to do desktop testing, product evaluation and luminaire prototyping. These development kits contain a Drive LED holder, cable assembly and a thermal interface material. LUMAWISE Drive LED holder Type Z50 brings integrated functionality to TE's already successful, Zhaga inspired, Z50 range of LED holders. Incorporating a DC/DC driver into the holder itself provides a low profile constant current driver for CoBs, spot and track lighting. Designed for 48VDC input, it works with a wide range of readily available constant voltage power supplies meaning powering multiple fixtures off a single power supply is now possible. This also allows designers to remove driver boxes from spot and track lighting, creating a more aesthetically pleasing solution and removing cost from the system. A 0-10V dimming option adds dimmability to the holder for added functionality.

### Applications

- Track lighting
- Spot lighting
- Downlights

### Mechanical

- **Dimensions:** Ø50mm, 7mm height
- **Electrical connection:** 4-pin Mini CT connector 292228-4
- **Mechanical connection:** Mounting screws M3 or #4-40, 12mm length
- **Torque:** 0.4 - 0.6 Nm
- **LED Outline and LES size** 24x24, Ø21.5mm  
20x24, Ø18.0mm  
19x19, Ø17.7mm  
16x19, Ø14.0mm
- **Form Factor** Zhaga Book 12 Inspired
- **CoB thickness:** Nominal 1mm
- **CoB types:** Both ceramic or aluminium types
- **IP rating:** IP20
- **Mating connector flush with housing:** Yes
- **Mating Cable Assembly:** **On/Off version:** 1-2058943-8  
**0-10V version:** 1-2058943-7

### Specifications

- **Standards:** EN60838-2-2  
EN61347-2-13  
UL8754  
UL8750
- **Application Specification:** [114-133082](#)
- **Environmental:** RoHS and Reach compliant



### Benefits

- Achieve an elegant luminaire design through a 'Driver on Board' solution
- Designed to meet the requirements of Zhaga book 12
- Provide thermal and electrical connection to four different CoB sizes:
  - 16x19mm - 20x24mm
  - 19x19mm - 24x24mm
- Achieve design flexibility with an LED holder available with four different current outputs:
  - 350mA - 700mA
  - 500mA - 1050mA
- Obtain added functionality with 0-10V dimming versions available

### Materials

- Halogen free glass filled PBT housing
- FR4 circuit board
- Copper alloy electrical contacts

### Electrical

- **Input voltage:** 48VDC (European class I & II, SELV and US NEC class 2. Both with isolated output)
- **Maximum input voltage:** 60V (not recommended, contact TE)
- **Output current:** 350mA  
500mA  
700mA  
1050mA
- **Output current tolerance:** ±5%
- **Forward voltage (Vf):** 36VDC typical
- **Forward voltage (Vf) range:** **Min:** 25VDC  
**Max:** 38VDC with 48VDC ±10% input  
40VDC with 48VDC ±5% input  
41VDC with 48VDC ±1% input
- **Dimming (dimming versions only):** **Source:** 0-10V  
**Sink:** EN60929 annex E compatible dimmers  
**Potentiometer:** At 10VDC the external resistor value is 100kΩ. At 1VDC the external resistor value is 3.6kΩ
- **Dimming controller type:** European class I & II or US NEC class 1&2. Both with basic isolation
- **Dim to off:** No
- **Minimum dim level:** 3% of maximum output current
- **Flicker percentage:** 0% (<2% at minimum dim level)
- **Flicker index:** 0
- **Dimming curve:** Linear (see Figure 1)
- **Efficiency:** Up to 94% at maximum output (see Figure 2)
- **Reverse polarity protected:** Yes
- **Under voltage lock out protection:** **Yes:** 42VDC - 37VDC
- **Input safety:** Fused. Product fails safe when 230V applied
- **Noise:** 30dB average
- **Open/short circuit protection:** Yes
- **Soft startup:** 8ms (on/off), 90ms (dimming)
- **Soft shutdown:** 30ms (on/off), 31ms (dimming)
- **Sink current manifested:** Between 100µA - 300µA
- **Hot pluggable:** Yes

### Thermal

- **Maximum operating temperature:** 125 °C (measured at equivalent Tc point)
- **Max Tc point temperature:** 110 °C (must not be exceeded)
- **Thermal protection mode:** **Yes:** Output reduces to 20% regardless of dimming level
- **Over temperature reset (dimming versions):** After power cycle
- **Over temperature reset (on/off versions):** After cooling down
- **Thermal interface material:** **Recommended:** Use Laird PLC AS004444-25
- **Storage temperature:** -20 °C to 60 °C

### Optical

- **Optics:** Compatible with TE's Z50 optic clip type 1 and type 2 (part numbers: 2213194-1 and 2213349-1)
- **Allowable beam angle:** 135°

### Other

- **Diagnostic information:** **Yes:** Dimmable version will collect limited diagnostics. Including, firmware version, current output, initial temperature, over temperature event count, time to event and dimming level. This information is only accessible by TE
- **EMC:** IEC 61547, FCC title 47 (part 15 subpart B), CISPR15, EN55015
- **Vibration:** EIA 364-28, IEC 60512-6-4, IEC 60512-6-5
- **Mechanical shock:** EIA 364-27 (test condition H), IEC 60512-6-3
- **Thermal shock:** EIA-364-32 (test condition VIII), IEC 60512-11-4
- **Damp heat cycling:** EIA-364-31 (method III), IEC 60512-11-3, IEC 60512-11-12
- **Contact normal force:** 500 hours at 125 °C

Figure 1: Dimming curve

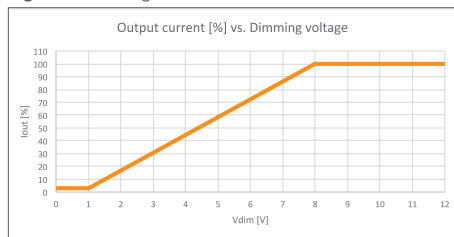
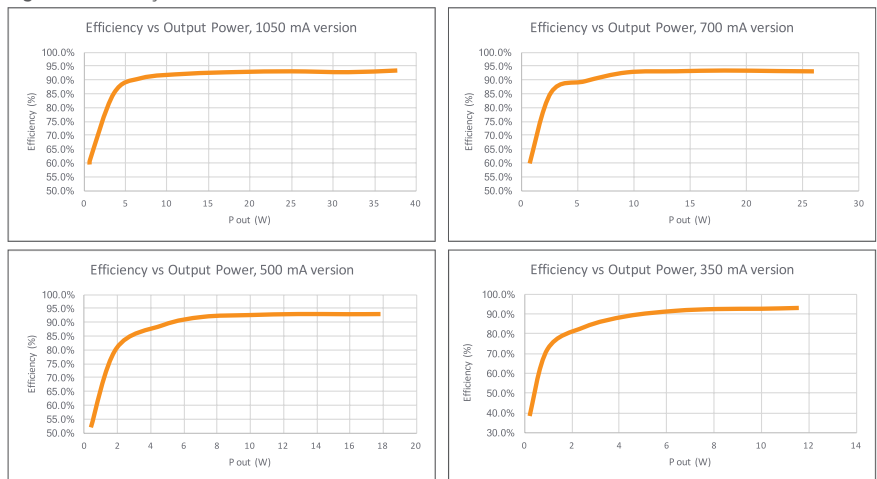


Figure 2: Efficiency



Product Selection Information - On/Off series

Series	Output Current (mA)	LED Size	Part Number
On / Off	350	19x19	<a href="#">5-2323859-1</a>
		16x19	<a href="#">5-2323859-2</a>
	500	20x24	<a href="#">6-2323859-1</a>
		19x19	<a href="#">6-2323859-2</a>
		16x19	<a href="#">6-2323859-3</a>
	700	24x24	<a href="#">7-2323859-1</a>
		20x24	<a href="#">7-2323859-2</a>
		19x19	<a href="#">7-2323859-3</a>
		16x19	<a href="#">7-2323859-4</a>
	1050	24x24	<a href="#">8-2323859-1</a>
		20x24	<a href="#">8-2323859-2</a>
		19x19	<a href="#">8-2323859-3</a>

LUMAWISE drive Development Kit



**Cable Assembly**  
 Part Number: 1-2058943-7  
 Part Number: 1-2058943-8

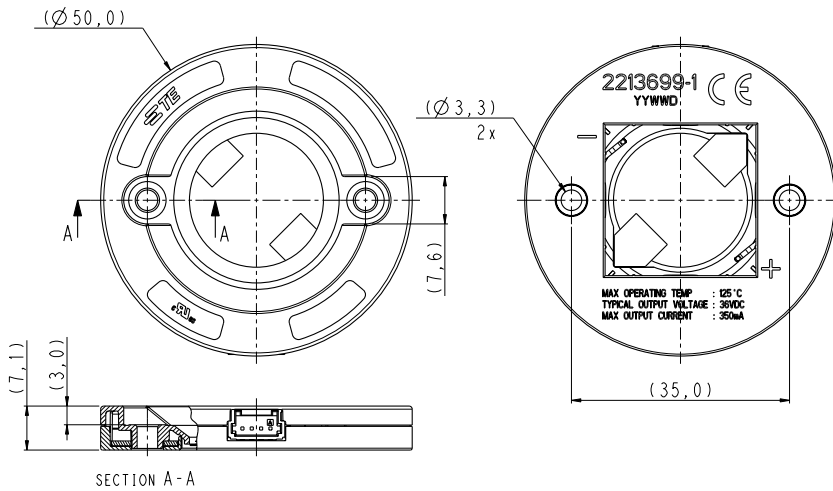
**LED Holder Type Z50**  
 Part Number: 2316510-1  
 Part Number: 2213699-1

**Thermal Interface Material (TIM)**  
 Part Number:  
 Laird AS004444-27  
 Part Number:  
 Laird AS004444-25

Product Selection Information - Dimmable series

Series	Output Current (mA)	LED Size	Part Number
0-10V	350	19x19	<a href="#">2323859-1</a>
		16x19	<a href="#">2323859-2</a>
	500	20x24	<a href="#">1-2323859-1</a>
		19x19	<a href="#">1-2323859-2</a>
		16x19	<a href="#">1-2323859-3</a>
	700	24x24	<a href="#">2-2323859-1</a>
		20x24	<a href="#">2-2323859-2</a>
		19x19	<a href="#">2-2323859-3</a>
		16x19	<a href="#">2-2323859-4</a>
	1050	24x24	<a href="#">3-2323859-1</a>
		20x24	<a href="#">3-2323859-2</a>
		19x19	<a href="#">3-2323859-3</a>

Product Dimensions

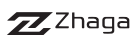


On/Off Series

P1	DO NOT USE
P2	GROUND
P3	48Vin (+)
P4	48Vin (-) GND

Dimmable Series

P1	DIM (+)
P2	DIM (-)
P3	48Vin (+)
P4	48Vin (-) GND



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