

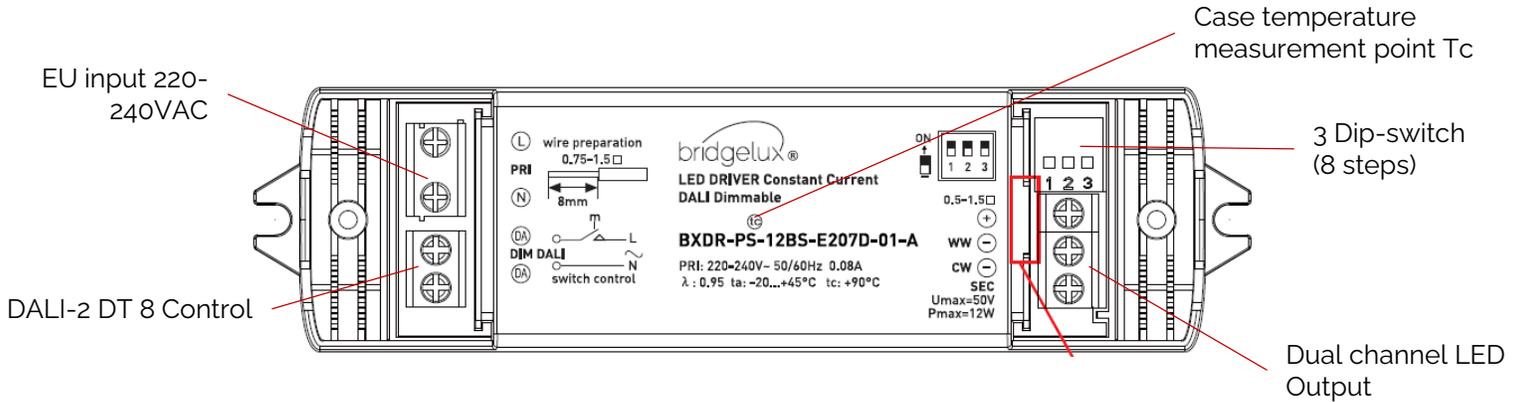


Bridgelux® Vesta-D Dual Channel 12W (DALI-2) Brick Driver

Product Data Sheet DS1228

Product Feature Map

Bridgelux Vesta-D (DALI) Dual Channel 12W Driver provides two dynamic constant current outputs for dual channel CCT tunable LED modules and arrays. This Driver interoperates with DALI Data features (251/252/253) enable LED drivers to provide a rich set of data for real-time performance monitoring, enhanced asset management, diagnostics, energy metering and other applications. The bi-directional nature of DALI enables data to be communicated with the lighting-control network. Please visit www.bridgelux.com for more information.



Product Nomenclature

The part number designation for Bridgelux Vesta-D (DALI) Dual Channel 12W Driver is explained as follows:

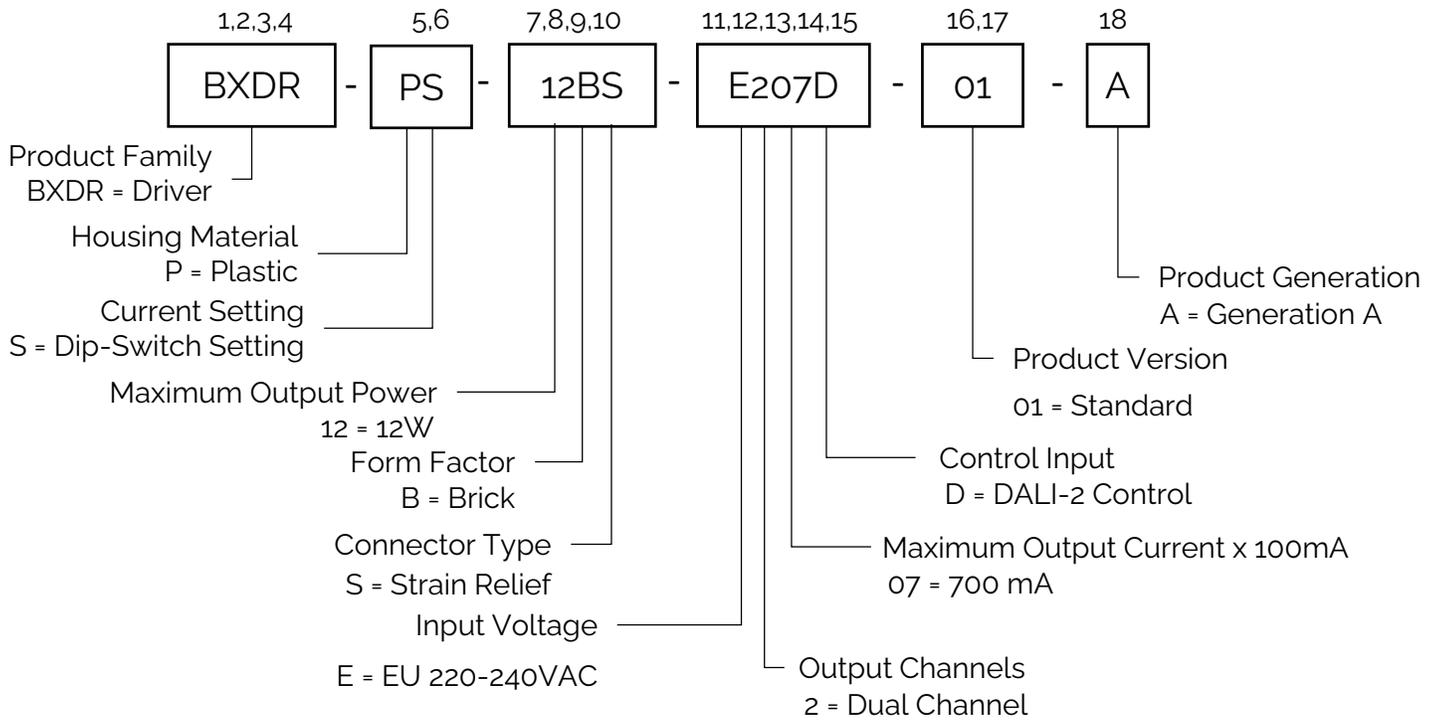


Table 1: Product Selection Guide

Part Number	Configuration
BXDR-PS-12BS-E207D-01-A	Brick with strain relief built-in

Electrical Characteristics

Table 2: Input Electrical Characteristics

Parameter	Unit	Specification
Nominal voltage	V	220 – 240
Nominal frequency	Hz	0 / 50 / 60
AC voltage range	V	198 – 264
DC voltage range	V	176-250
Nominal current	A	0.08
THD (Full load)	%	≤ 15
Power factor (Full load)	-	≥ 0.95
Efficiency (Full load)	%	84
NO load	W	≤ 0.5
Protection class	-	II
Inrush current(Cold start)	A pk	< 10 (th = 100 μs)
Max.units per circuit breaker	-	B10: 70 B13: 91 B16: 112 B20: 140 C10: 111 C13: 144 C16: 177 C20: 222

Table 3: Output Electrical Characteristics

Parameter	Unit	Specification							
Nominal voltage range	V	2-42	2-42	2-42	2-40	2-34	2-24	2-20	2-17
Maximum voltage(Open Circuit)	Vdc	≤ 59							
Nominal current	mA	150	200	250	300	350	500	600	700
Current accuracy	%	+/- 5							
Dimming		Yes DALI-2 & Push Dim							
Dimming range	%	0.1% - 100% PWM + Amplitude PWM Frequency = 20KHz							
Current ripple LF < 120Hz	%	≤ 20							
Pst LM	-	≤ 1							
SVM	-	≤ 0.4							
Maximum power	W	12							
Galvanic isolation	-	SELV							

Electrical Characteristics

Figure 1: Power Factor vs. Load

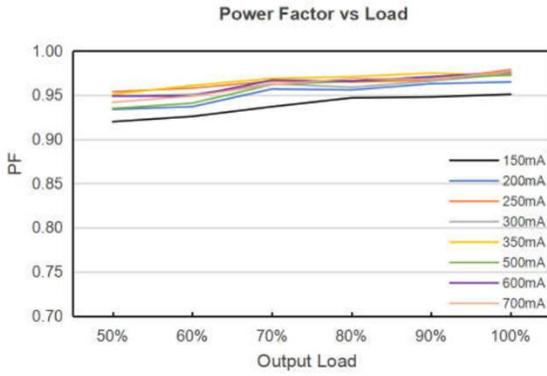


Figure 2: Total Harmonic Distortion vs. Load

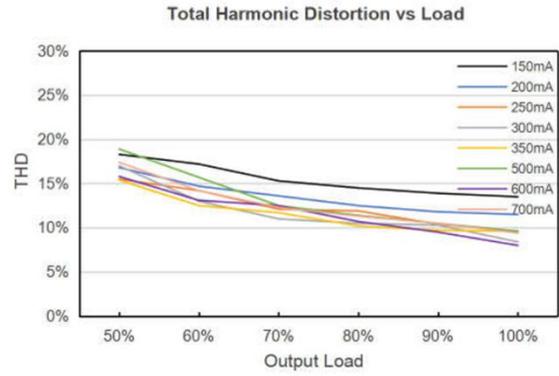


Figure 3: Efficiency vs. Load

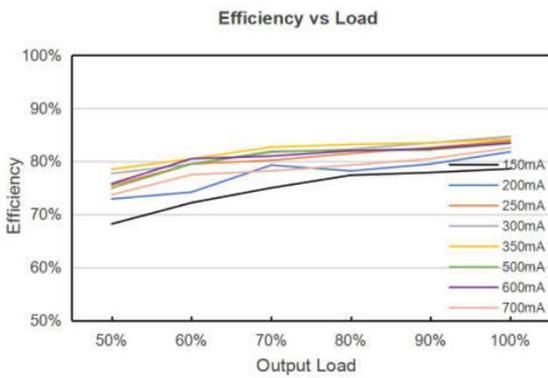
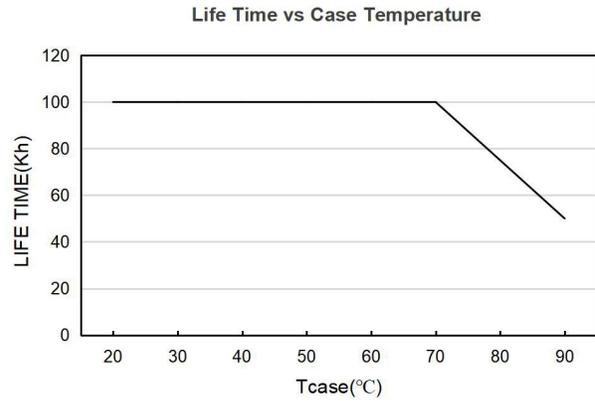


Figure 4: Expected Life Time

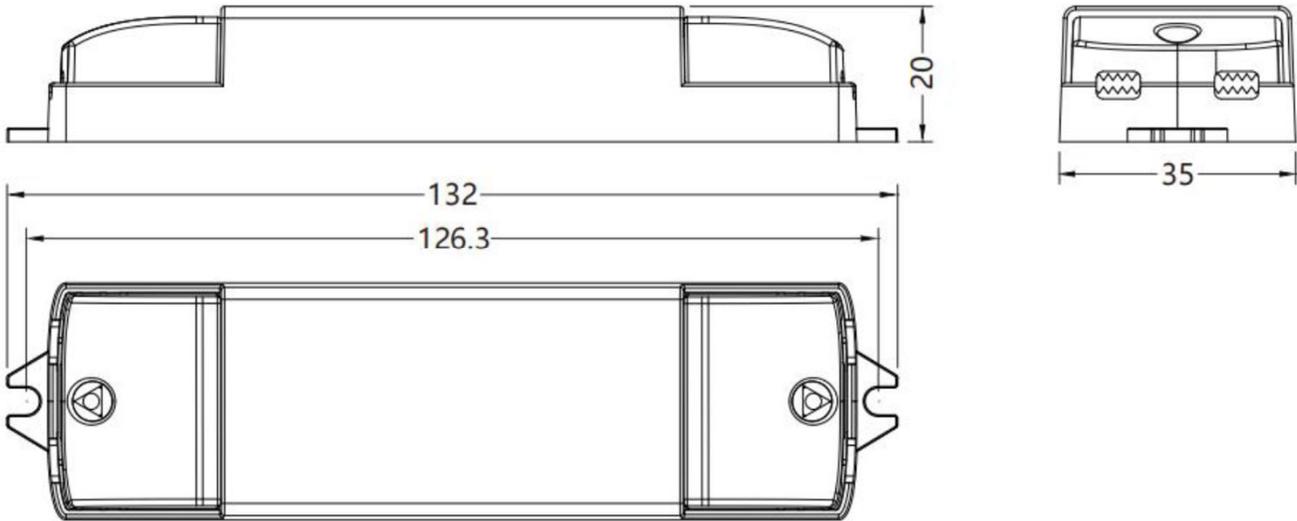


Mechanical Characteristics

Table 4: Product Selection Guide

Characteristics	Specification
Dimensions	132.0 mm (L) x 35.0 mm (W) x 20.0 mm (H)
Enclosure Materials	PC Plastic
Weight	60 g
Ingress Protection	IP20

Figure 5: Mechanical Drawing



Notes for Figure 5:

1. Drawing dimensions are in millimeters
2. Unless otherwise specified, all linear tolerances are +/-1.0mm

Wiring Diagram

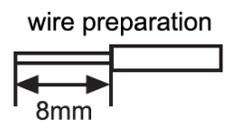
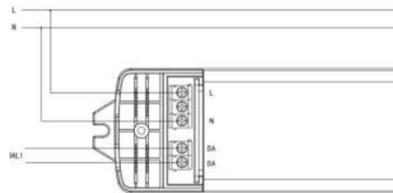
Table 6: **Wiring**

PRI		
PRI	Cable cross-section	0.75 – 1.0 mm ² / AWG 20 - 18
	Stripping	8 mm
SEC	Cable cross-section	0.5 – 1.0 mm ² / AWG 22 - 18
	Stripping	8 mm

Notes for Table 6:

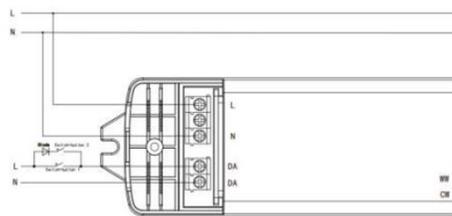
- Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.
- Unless otherwise specified, all linear tolerances are +/-1.0mm

DALI



In this operating mode the light level of the device is controlled via its DALI address.

Switch-Dim / ColorSwitch



Switch-button1: Setting of brightness
Switch-button2: Setting of light color

Diode: V_RRated≥280V_{rms} (1N4004 to 1N4007)
 To be connected with any polarity in series with the 2nd button

Switch-Dim

The device can be controlled using switch-inputs for mains voltage, the dim level is saved at power-down and restored at power-up.

- Short press(<1S): switches LED driver ON and OFF
- Long press: LED modules are dimmed. After repush the LED modules are dimmed in the opposite direction.

Synchronization

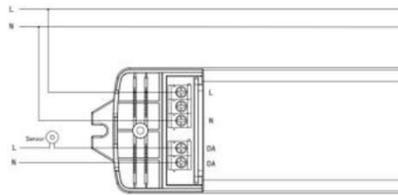
In installations with LED drivers with different dimming levels or opposite dimming directions, all LED drivers can be synchronized to 50% dimming level by a 15S push, switch off the light by short press one time, then long press. Up to 25 LED drivers can be controlled via direct switch-button use. The number of switch-button is limited by the sum of the overall cable length between switch(es) and the connected LED drivers, witch may not exceed 20m.

Wiring Diagram

ColourSwitch

- Short press(<1S): Tab one time: browse through 9 preset color temperatures in a cycle. Time between each tab should be longer than 1s.
- Long press: CT starts to change after the switch is pressed longer than 1s. The CT changing direction is from the current CT towards to the pre-set maximum CT. For the reverse direction of CT change, please release the pressing from the switch and press again, CT starts changing again in opposite direction after 1s.
- If the power to the LED driver is switched off, the CT value set to the driver would be memorized and set again when the power is switched on again to the driver.
- Extra long press (Press time is longer than 15s), all LED drivers connected to the system would change CT to 3000K.
- If all LED drivers are under DALI control, colourSWITCH does not work.

Corridor Function



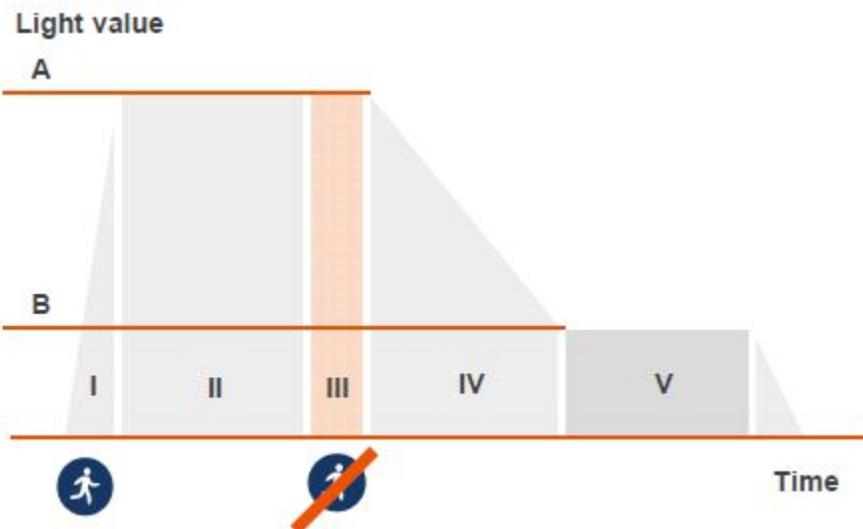
Activating the Corridor Function

- By supply voltage: Activate the Corridor Function by permanently applying the supply voltage (220-240V, 50/60Hz) to the DALI input of the driver for at least 5 minutes, the light up 100%(under the default setting).
- By sensor: Activate the Corridor Function by keeping the movement in the effective sensing area for at least 5 minutes, the light up 100%(under the default setting).

Changing from the Corridor Function to the Switch-DIM function

- -By briefly pressing a push-button 5 times (at the DALI input, 220-240V, 50/Hz) within 3 seconds.

Corridor Function Phasing



Factory-set parameters:

- A: Presence value=100%
- B: Absence value=10%
- I: Fade-in time=1s
- II: By sensor setting
- III: Run-on time=2min
- IV: Fade time=30s
- V: Unlimited

Notice

The compatibility with other devices must be tested in advance to the installation.

DALI application and switch-control application can not apply to the system at the same time.

Protection

Table 7: Protection

Parameters	Specification
Short Circuit Protection	Re-power on to Recover If Fault Is Removed
Over Voltage Protection	Re-power on to Recover If Fault Is Removed
Over Circuit Protection	Re-power on to Recover If Fault Is Removed

DIP-switch operation instructions & operating window

Table 8: Dip-switch operation instructions & operating window

Dip-switch setting			U_{out}	I_{out}
1	2	3		
OFF	OFF	OFF	2-42V	150 mA
ON	OFF	OFF	2-42V	200 mA
OFF	ON	OFF	2-42V	250 mA
ON	ON	OFF	2-40V	300 mA
OFF	OFF	ON	2-34V	350 mA
ON	OFF	ON	2-24V	500 mA
OFF	ON	ON	2-20V	600 mA
ON	ON	ON	2-17V	700 mA

Environmental and Regulatory Standards

Table 9: Environmental Conditions

Parameter	Specification
Ambient Operating Temperature	-20°C to + 45°C
Max. Case Temperature Tc	+90°C (max)
Max. Case Temperature (In fault condition)	+110°C
Humidity Rating	Maximum 85% Relative Humidity, non condensing
Storage Temperature	-20°C to + 70°C
Main Switching Cycles	> 100,000
Expected Lifetime	50,000 hours (Tc < 90°C)

Table 10: Regulatory Approvals and Compliance

Specification	Reference Standard	Condition
DC or AC supplied electronic controlgear for LED modules	EN 62384	electronic controlgear for use on DC or AC supplies up to 1 000 V (alternating current at 50 Hz or 60 Hz) and with an output frequency which can deviate from the supply frequency
Conducted and Radiated EMI	EN 55015:2019+A1:2020 (CISPR 15:2018)	
Harmonic Current Emissions	EN IEC 61000-3-2:2019	
Voltage Fluctuations & Flicker	IEC 61000-3-3:2013+A1:2019	
ESD (Electrostatic Discharge)	IEC 61547:2009 Section 5.2 Test des.: IEC 61000-4-2	4 kV contact discharge, 8 kV air discharge, level 3
Continuous Radiated Disturbance	IEC 61547:2009 Section 5.3 Test des.: IEC 61000-4-3	3 V/m, 80 - 1000 MHz, 80% modulated at distance of 3 meters
Electrical Fast Transient	IEC 61547:2009 Section 5.5 Test des.: IEC 61000-4-4	± 1 kV on AC power port for 1 minute,
Surge	IEC 61547 Section 5.7 Test des.: IEC 61000-4-5	± 1 kV (differential mode) ± 2 kV (common mode)
Continuous Conducted Disturbance	IEC 61547:2009 Section 5.6 Test des.: IEC 61000-4-6	3V, 0.15-80 MHz, 80% modulated, Level 2
Voltage Dips	IEC 61547 Section 5.8, 5.9 Test des.: IEC 61000-4-11	70% dip during 25 cycles @ 50Hz, 30 cycles @ 60Hz 0% dip during ½ cycles
Touch Current	EN60598-1	lower than 0.7 mA, according to EN 60598-1 annex. G and EN 61347-1 annex A

Regulatory Standards (continued)

Table 9: Safety Agency Approvals

Specification	Reference Standard	Condition
ENEC / CE / UKCA	EN 61347-1:2015, EN 61347-2-13:2014+A1	ENEC Certification pending
Glow wire test	EN 61347-1:2015	Passed with increased temperature at 850°C

Table 10: DALI-2 DT8 Standards

Specification	Reference Standard	Condition
System Components (Part 101)	EN62386-101	
Control Gear (Part 102)	EN62386-102	
LED Module (Part 207)	EN62386-207	
Color Control (Part 209)	EN62386-209	
Luminaire Data (Part 251)	EN62386-251	Memory Bank 1 Extension
Energy Data (Part 252)	EN62386-252	Energy Reporting
Diagnostics Data (part 253)	EN62386-253	Diagnostics & Maintenance



Packaging

Table 11: Packaging Box Configuration

Parameters	Specification
Driver quantity	TBD
Outer dimensions	TBD
Weight	TBD

Design Resources

Application Notes

Please contact your Bridgelux sales representative for assistance on obtaining application support when designing with the Bridgelux Vesta-D Dual Channel Driver. For a list of available resources, visit www.bridgelux.com.

Precautions

CAUTION: PRODUCT HANDLING

Handle the Vesta-D Dual Channel Driver with care to prevent any damage from mechanical shock. It is recommended to handle this driver in a static-free environment. Do not open or disassemble the product. To maintain product warranty, the installer is responsible for ensuring that the driver's operating conditions do not exceed the maximum conditions stated within this data sheet.

CAUTION: PRODUCT INSTALLATION

Incorrect installation of the Vesta-D Dual Channel Driver can cause irreparable damage to the driver, connected LEDs. Pay attention when connecting the LED load and observe the correct polarity of the output terminals as specified in this data sheet and on the driver label.

CAUTION: ELECTRIC SHOCK

Be aware of the possibility of an electric shock hazard which can result in serious injury or death. Disconnect power before servicing or installing this device.

Disclaimers

MINOR PRODUCT CHANGE POLICY

The rigorous qualification testing on products offered by Bridgelux provides performance assurance. Slight cosmetic changes that do not affect form, fit, or function may occur as Bridgelux continues product optimization.

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