

Features

- DALI-2 & D4i certified
- Output current adjustable via DIP switch and programmer
- High AUX capability: 24Vdc, 125mA, built-in 16Vdc DALI-2 bus power supply (DALI Part 250)
- Supports DALI Part 251, 252, 253 and CLO function
- Driver temperature guard via internal OTP protection
- High efficiency up to 95%, THD <10%
- Stand-by power consumption ≤0.5W
- Dims to off without afterglow, beam angle/CCT adjustable via DIP switch
- Surge protection: L-N: 6kV & L/N-PE: 6kV
- Lifetime: 50,000H (tc 90℃)
- Flicker free and non-isolated
- All-round protections: OVP/UVP/overload/OTP/open circuit/short circuit protection
- IP65, suitable for Class I light fixtures



Application

- Highbay light

Descriptions

LF-H8-120U300DX is a constant current DALI/D4i LED driver featuring high efficiency, high PF and low THD. There is a 3-shift DIP switch on the side of LED driver used for adjusting the output current (power), beam angle, and CCT. It can be connected to the external NTC resistor to monitor the temperature of the luminaire.

Product Model

LF - H8 - 120 U 300 D X

- X: (blank: programmable+3-shift power; W: without afterglow; T: CCT adjustable; F: power+CCT+angle+without afterglow)
- D: DALI/D4i dimming
- 300: max. output voltage: 300Vdc
- U: input voltage: 120-277Vac
- 120: max. output power: 120W
- H8: non-isolated UFO series

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■ Electrical Characteristics

Model			LF-H8-120U300DX				
Output	Output Current (TYP@240Vdc)	Adjustable via DIP switch and programmer (300-500mA; default setting: 500mA±5%)					
		300mA	LOW	400mA	MID	500mA	HIGH
	Flicker	According to IEEE Std 1789 at 20-100% load					
	Changeable Angle (one LED-)	Adjustable via DIP switch (optional)					
		SA		MA		BA	
	Changeable CCT (one LED+)	Adjustable via DIP switch (optional)					
		Channel A		Channel A+B		Channel B	
	Output Voltage	180-300Vdc (LED)					
	Output Power	120W max. @120-277Vac					
	Ripple Current	<3% @≤120Hz					
	Start-up Time	120Vac-277Vac <1.5S @full load					
	Linear Adjustment Rate	±5% @full load					
	Load Adjustment Rate	±3%					
	Temperature Drift	±1000PPM/ °C @Tc: 25~90°C					
	AUX 24V	Voltage: 22-26V, max. output current: 125mA, power: 3W					
D4i Dimming Interface	Voltage range: 13-17V, guaranteed current: 50mA (50mA≤ bus power supply current ≤60mA)						
Input	AC Input Voltage		90-305Vac (rated: 120-277Vac)				
	DC Input Voltage		180-305Vdc (only for emergency)				
	Input Frequency		50/60Hz				
	Input Current		1.3A max.				
	PF		≥0.9 @277Vac/60Hz 70% load				
	THD		≤10% @full load;				
	Efficiency	MIN	92%/120Vac @300Vdc/400mA; 94%/230Vac@300Vdc/400mA 94.5%/277Vac @300Vdc/400mA				
		TYP	92.5%/120Vac @300Vdc/400mA; 94.5%/230Vac@300Vdc/400mA 95%/277Vac @300Vdc/400mA				
		MAX	/				
	In-rush Current		<60A/200us@120Vac, <100A/200us@230Vac, <120A/200us@277Vac @cold start				
	Loading Quantity on Circuit Breaker (230Vac)	Model	B10	C10	B16	C16	
Qty (PCS)		9	15	15	25		
Standby Power Consumption		≤0.5W @230Vac (when DALI OFF effective)					

■ Electrical Characteristics

Function	Dimming Method	DALI
	Dimming Range	10%-100%
	CLO	Yes
	DALI Part 251 252 253	Yes
Protection	Surge	L-N: 6KV (2Ω), L/N-PE: 6KV (12Ω), LED+/LED- -PE residual voltage ≤2KVac
	Open Circuit	Open-circuit voltage ≤350Vdc
	Overtemperature	When the tc reaches 97°C±5°C, the power drops by 50% (for details, please refer to the protective characteristics table below)
	Undervoltage	Input 80Vac±10Vac @full load
	Overvoltage	Input 320Vac±10Vac @full load
	Short Circuit	The LED driver will recover by itself and will not be damaged even in the state of short circuit for a long time. (Auto-recovery)
Environment Description	Operating Temperature	Tc: -40°C~+90°C (If it exceeds 50°C, it should be controlled according to the test temperature.)
	Operating Humidity	0~95%RH (no condensation)
	Storage Temperature/ Humidity	-40°C~+80°C (6 months in Class I environment); 0~95%RH (no condensation)
	Atmospheric Pressure	86~106kPa

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■ Electrical Characteristics

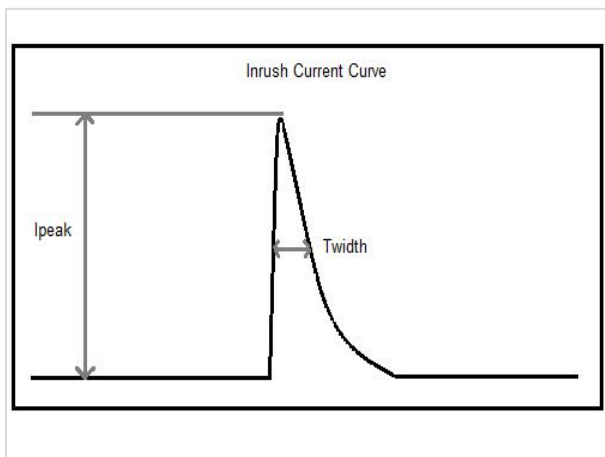
Safety & EMC	Certifications	CE/CB/ENEC/RCM (CB certified at 120-277Vac)
	Withstanding Voltage	L/N-PE: 1.7KVac, <5mA, 60S; L/N-DIM: 3.4KVac, <5mA, 60S; DIM-PE: 1.7KVac, <5mA, 60S
	Grounding Resistance	≤0.1Ω @25A/60S
	Insulation Resistance	L/N-PE, L/N-DIM, DIM-PE: ≥100MΩ@500Vdc/60S
	Safety Standards	IEC/EN 61347-2-13, IEC/EN 61347-1, IEC/EN 62493 IEC/EN 62384 AS 61347.1, AS 61347.2.13
	EMI	EN 55015, EN 61547, EN 61000-3-2,3
	EMS	According to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12 CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11
	ESD	Air 8kV, touch 4kV
Other Parameters	IP Rating	IP65
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	50,000H (Tc≤90℃)
	MTBF	>1000Khours@Telcordia SR-332 Issue4
Test Equipment	AC power source: CHROMA6530, digital power meter: CHROMA66205, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber, lightning surge generator: Everfine EMS61000-5B, rapid group pulse generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test) Everfine LFA-3000, etc.	
DALI Compatibility	Yuanhao Master, Philips Master DDBC120-DALI, OSRAM Master, Helvar Master 905 Router, Tridonic Master, HDL MC64-DALI431 Master	
Test Remark	If there are no special remarks, the above parameters are tested at the ambient temperature of 25℃, humidity of 50%, full load and input voltage of 230Vac.	

■ Electrical Characteristics

Additional Remarks	1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety. 2. The PC cover, casing and end cap for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above. 3. The LED driver used in combination with the end device is one of the accessories of the whole light fixture, and the EMC of the whole light fixture is not only susceptible to the driver itself, but to the LED light fixture and the whole light fixture's wiring. Thus, the manufacturer of LED light fixture should re-confirm the EMC of the whole light fixture before the whole light fixture is finished. 4. When using the LED driver, please pay attention that the total output power should not exceed the maximum rated output power, otherwise the warranty service of LED driver will fail. 5. Because there is parasitic capacitance between LEDs and the PCBA, there will be a slight flicker when the PCBA (the light fixture) is grounded and AC is powered on. It's normal for non-isolated products. To avoid this phenomenon, please choose a light board with lower parasitic capacitance. 6. When conducting withstanding voltage test on LED driver, please short-circuit the input wire L and N; the positive electrode and negative electrode of the output wire; the positive electrode and negative electrode of the dimming wire and AUX power supply. 7. To measure standby power, use the programmer to disable the driver's internal bus power first. Then, connect the external bus power supply and press the DALI dimmer knob to dim it to off. 8. When using the programmer, the driver must be powered on with AC for normal reading and writing. 9. Please fully inspect the withstanding voltage ability of LEDs and aluminum substrates and the value shall be >2.5kVac. 10. The output current cannot be changed via the DIP switch while the driver is operating. The DIP switch settings for current are only detected once upon startup. To change the output current, switch to the corresponding current range when the power is off and then turn on the driver.
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■ Product Characteristics Curves (Typical)

Input Inrush Current



Vin	Ipeak	Twidth
120Vac	60A	200uS
230Vac	100A	200uS
277Vac	120A	200uS

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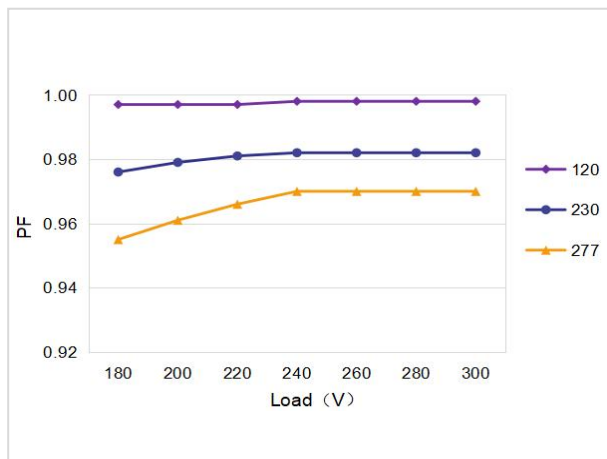
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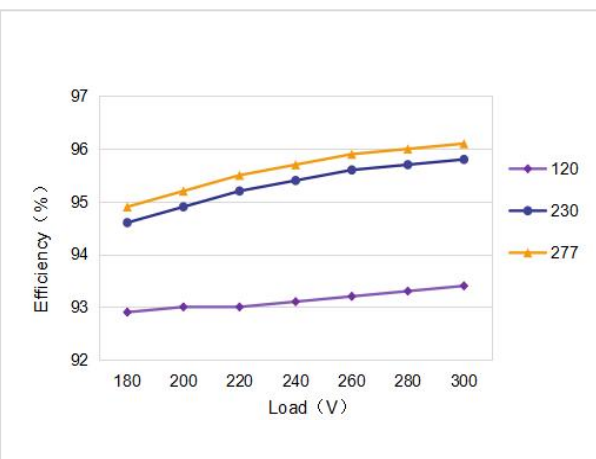
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■ Product Characteristic Curves

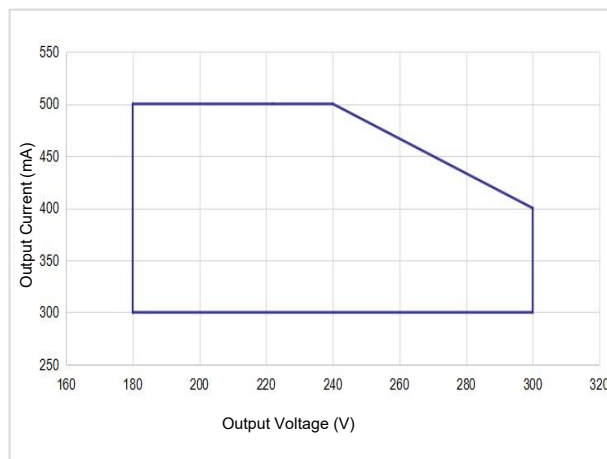
PF Curve



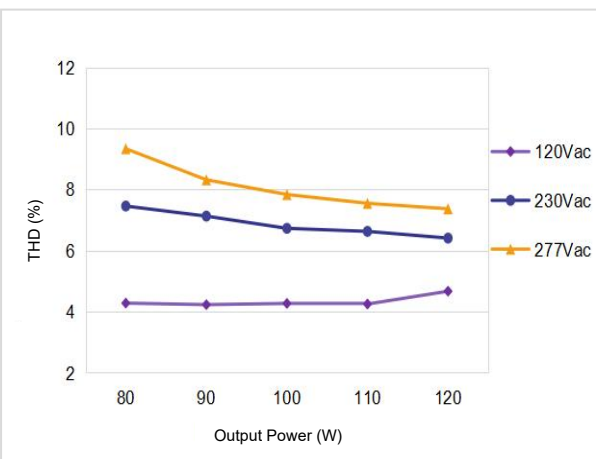
Efficiency Curve



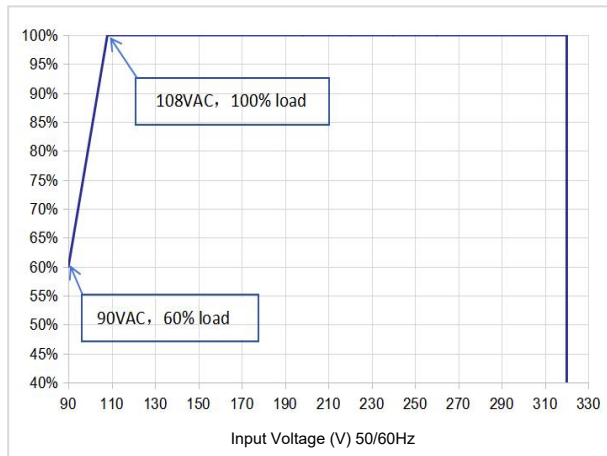
Power Curve



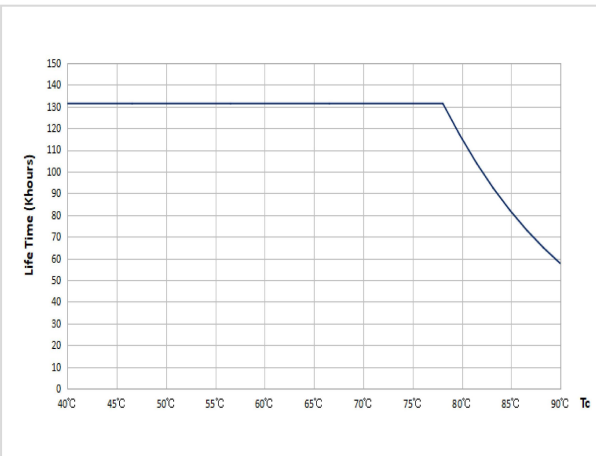
THD



Load Derating Curve



Lifetime Curve



Input: 120Vac/60Hz; output: 240Vdc/500mA
(the chart is for reference only)

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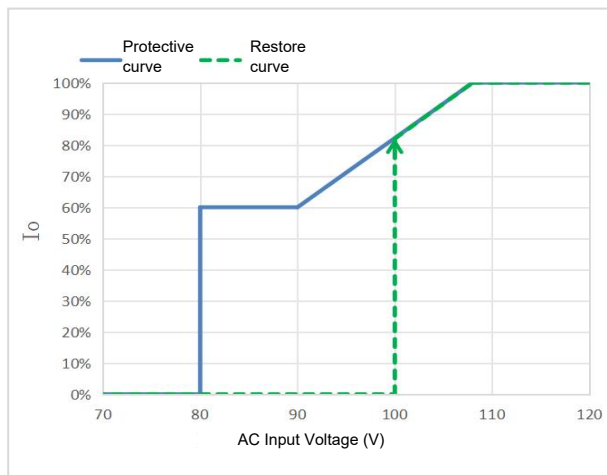
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Protective Characteristics

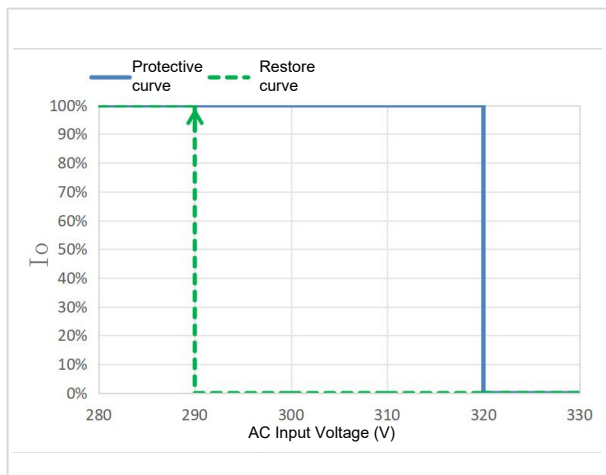
Protective Type				Min.	Typ.	Max.	Introduction
Internal over-temperature protection (Mode 2 by default, the temp is based on TC point)	Mode 1	If the temperature is too high, the current will drop first and then the light will be off.	T1 (Start to decrease the current)	89°C	94°C	99°C	When the internal temperature rises to T1, the internal thermal protection will be triggered and the output current will gradually decrease.
			T2 (Stop decreasing the current)	92°C	97°C	102°C	When the internal temperature rises to T2, the output current will decrease to the programmed protection current value (default is 50%Io)
			T3 (Turn off the light)	95°C	100°C	105°C	When the internal temperature rises above T3, the light will be off, and when the temperature drops below T1, the light can be automatically turned on.
	Mode 2	If the temperature is too high, the light will be off.	T3 (Turn off the light)	95°C	100°C	105°C	When the internal temperature rises above T3, the light will be off, and the AC needs to be restarted to restore the light.
Undervoltage protection (OFF by default)		Protective Voltage		70Vac	80Vac	90Vac	When the input voltage is lower than the protective voltage, the light will be off.
		Restore Voltage		90Vac	100Vac	110Vac	When the input voltage is higher than the restore voltage, the light can be automatically turned on.
Overvoltage protection (OFF by default)		Protective Voltage		310Vac	320Vac	330Vac	When the input voltage is higher than the protective voltage, the light will be off.
		Restore Voltage		280Vac	290Vac	300Vac	When the input voltage is lower than the restore voltage, the light can be automatically turned on.

■ Protective Characteristics Schematic

Schematic Diagram of Input Undervoltage Protection



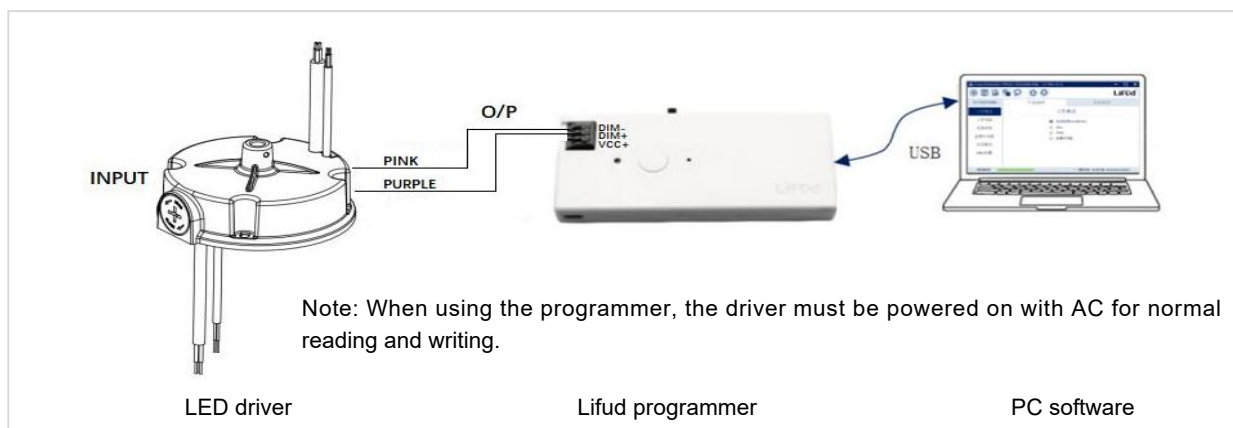
Schematic Diagram of Input Overvoltage Protection



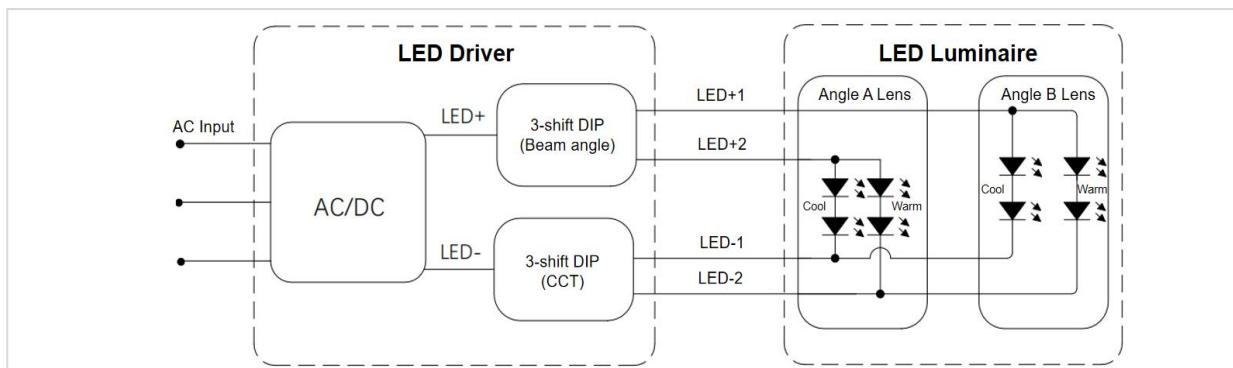
■ Programmer tool and software

Product	Name	Brand	Model	Software
	Lifud programmer	LIFUD	LF-SCS080C	LF-SmartSet

■ Programming Connection Diagram



■ CCT & Beam Angle Adjustment Wiring Instructions

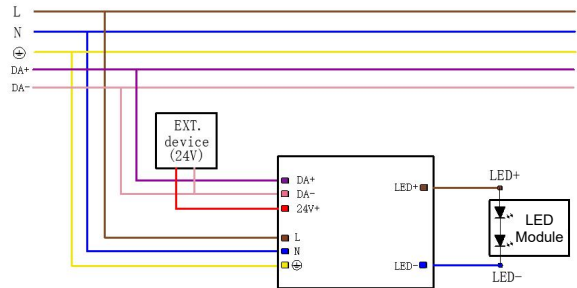


■ Dimming Operation Instructions

D4i Dimming Function

- Default setting brightness is 100%.
- Connect DALI signal to DA+ and DA- terminals.
- DALI protocol includes Max.16 scene groups.
- Maximum number of LED drivers connected in parallel in DALI dimming mode: 64 pcs.
- DALI dimming depth: 10% (typical value); the maximum is <12%

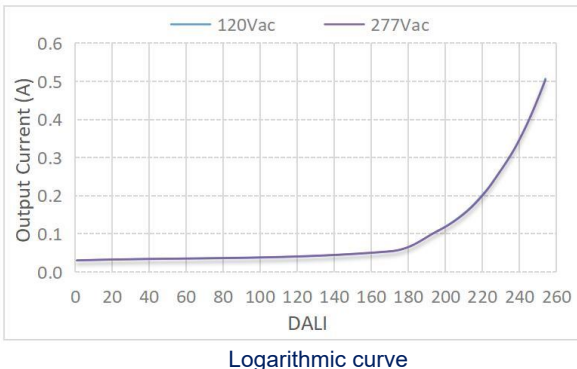
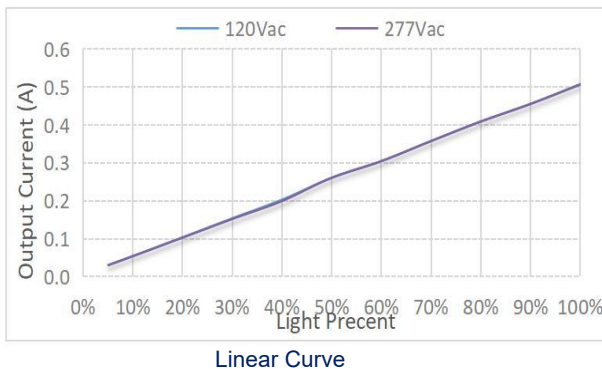
Wiring Diagram of D4i Control



Instruction of D4i Control

- Connect DALI rotary dimmer to the DA+ and DA- terminals.
 - Press the dimmer to turn on/off the light.
 - Rotate to dim up/down. Rotate it clockwise to dim up, and rotate it counterclockwise to dim down.
 - By default, the factory default is D4i mode, and the bus power function is enabled.
 - When D4i is turned on, the two wires of the DALI terminal need to be distinguished as positive and negative.
 - When D4i is turned off, the two wires of the DALI terminal do not need to be distinguished as positive and negative.
- ⚠ Do NOT connect to the PUSH switch under the DALI-2 mode and D4i mode or it may cause damage to the driver.**

Dimming Curve

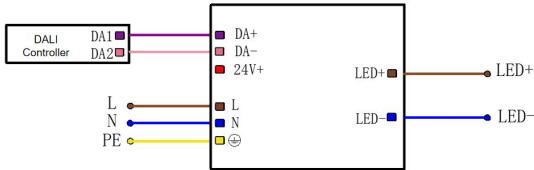


- **⚠ No PUSH dimming function.**

■ Operations of D4i control

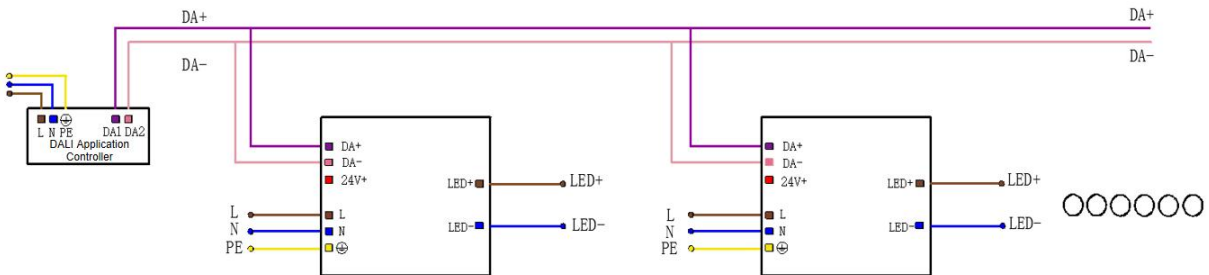
Application 1 of D4i Control

Remarks



- The D4i controller is powered by the D4i driver and must comply with the DALI Part 351 protocol specification. If you use a controller that does not comply with the DALI Part 351 protocol specification, although you can control the driver, you cannot get the data information related to DALI part 251, 252, 253.
- The bus power function of the D4i driver must be on. It is turned on by factory default, which can be set by DALI programming software.

Application 2 of D4i Control



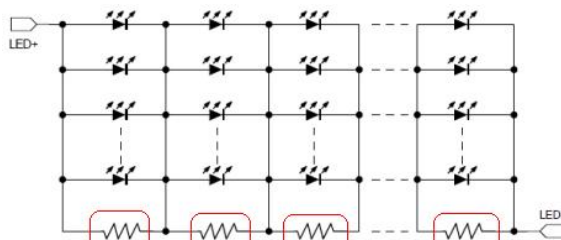
- The application controller can obtain related DALI Part 250, 251, 252, 253 data of the D4i driver through the D4i protocol, such as asset management, energy reports, diagnosis and maintenance, etc.
- When the D4i driver is connected to the DALI bus, as shown above:
If the bus is already powered by bus power, the bus power inside all D4i drivers needs to be turned off.
If no bus power is on the bus, the internal bus power of up to 4 D4i drivers can be turned on.
- The bus power inside the D4i driver can be turned on or off through the DALI programming software.



The bus power inside the D4i driver is on by default. Please refer to the above instructions to use the bus power correctly, otherwise the system will not work.

■ Dimming Operation Instructions

When the dimming signal is 0V, the LED driver has no output, but there exists junction capacitance between the aluminum substrate's copper foil and the grounding wire, which will make the LED beads glow slightly. Thus, it is necessary to respectively attach a resistor to every node of LED beads in parallel, and their resistance should match according to the parameters of aluminum substrate and LED beads. (reference resistance: 3-5K Ω /size: 1206)



■ Structure & Dimensions (unit: mm)

Wire Specifications

Type	Spec	Color	Length	Peeled	Tinned
Input Wire	3*1.0HO5RN-F $\Phi 7.2 \pm 0.25\text{mm}$	AC-L Brown; AC-N Blue; PE Yellow & Green	$300 \pm 10\text{mm}$ (L1)	$40 \pm 4\text{mm}$ (X1)	$10 \pm 1.5\text{mm}$ (Y1)
Output Wire 1	2*1.0 HO5RN-F $\Phi 6.8 \pm 0.25\text{mm}$	LED+ Brown; LED- Blue	$200 \pm 10\text{mm}$ (L2)	$35 \pm 4\text{mm}$ (X2)	$10 \pm 1.5\text{mm}$ (Y2)
Output Wire 2 (Optional; CCT adjustable via DIP)	3*1.0 HO5RN-F $\Phi 7.2 \pm 0.25\text{mm}$	LED+ Brown; LED-1 Blue; LED-2 Black	$200 \pm 10\text{mm}$ (L2)	$35 \pm 4\text{mm}$ (X2)	$10 \pm 1.5\text{mm}$ (Y2)
Output Wire 3 (Optional; CCT&angle adjustable via DIP)	4*1.0 HO5RN-F $\Phi 8.0 \pm 0.20\text{mm}$	LED+1 Brown; LED-1 Blue; LED-2 Black; LED+2 Grey	$200 \pm 10\text{mm}$ (L2)	$35 \pm 4\text{mm}$ (X2)	$10 \pm 1.5\text{mm}$ (Y2)
Dimming Wire & AUX Output Wire	2*22AWG $\Phi 4.5 \pm 1\text{mm}$ 3*22AWG $\Phi 5.0 \pm 1\text{mm}$	DA+ Purple; DA- Pink (L3) DA+ Purple; DA- Pink; 24V+ Black & White (L4)	$280 \pm 10\text{mm}$ (L3) $200 \pm 10\text{mm}$ (L4)	$40 \pm 4\text{mm}$ (X3) $35 \pm 4\text{mm}$ (X4)	$10 \pm 1.5\text{mm}$ (Y3/Y4)

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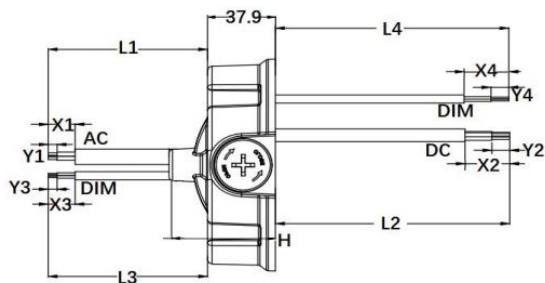
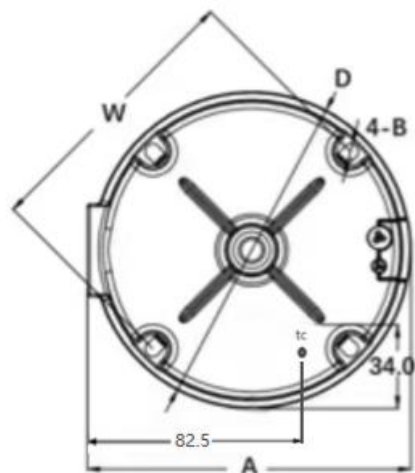
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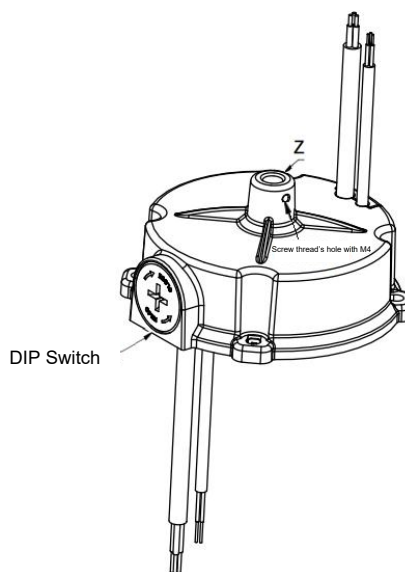
■ Structure & Dimensions (unit: mm)

Product Dimensions & Structure Diagrams

Description	Symbol	Unit (mm)
Casing Size	A	129.39 ± 0.2
Diameter of Casing	D	$\Phi 128.4 \pm 0.2$
Diameter of Fixed Screw Hole	4-B	$\Phi 6.5 \pm 0.2$
Diameter of Assembly Hole	W	113 ± 0.2
Ring's Hole	Z	M10*1.5
Casing Height	H	59.4 ± 0.2



Dimming wire on the top&bottom casing



■ Packaging Specifications

Model	LF-H8-120U300DX
Carton Size	570*380*160 mm (L*W*H)
Quantity	15 pcs/layer; 1 layer/ctn; 15 pcs/ctn
Weight	0.8±0.1 kg/pc; 13.4±1.0 kg/ctn

■ Transportation and Storage

1. Transportation

- Suitable transportation means: vehicles, boats and aeroplanes.
- In transit, it is necessary to prepare awnings for rain or sun protection. Moreover, please keep civilized loading and unloading to prevent the vibration or impact on LED driver as much as possible.

2. Storage

- The storage of LED driver shall conform to the standard of Class I environment. When using LED drivers which have been stored for more than 6 months, please re-test them firstly. Do not use them unless they are tested to be qualified.

Cautions

- Please use Lifud LED driver according to its parameters in the specification, otherwise the LED driver may malfunction.
- Using any incompatible light fixtures or those that have not been certified may cause fire, explosion or other risks.
- Man-made damage is beyond the scope of Lifud warranty service.

Remark: Lifud Tecnology Co., Ltd. reserves the right to interpret any content of this specification.