LF-GBD150-6250-24

AC220-240V DALI & DMX Dimmable RGBW Constant Voltage LED Driver

Product family features

— DALI&PUSH dimmable

— DMX512&RDM dimmable

— Built-in active PFC function

— Emergency function available

— Standby power consumption<0.5W

— Suitable for Class II light fixtures

— 5 years guarantee

Product family benefits

— DALI-2 part ext. 251, 252 and 253

— Isolated; flicker free

— Dims to off without afterglow

— Dimming depth: 0.1%

— All-round protections: overload, over-temperature, and short circuit protection (self-recovery)

— Surge level: PUSH: 1kV, L-N: 2kV

Typical applications

— For indoor LED strips, advertising light boxes, and decorative lighting

Product parameters

— Output current 0-6.25A

— Output power 0-150W

— Input voltage 198-264Vac

— Output voltage 24Vdc

— Efficiency 91%

Electrical data

Input data

Rated input voltage	220 ... 240Vac
AC voltage range	198 ... 264Vac
AC current	1.0A Max
Mains frequency	0/50/60Hz
DC voltage	180 ... 264V
DC current	0.1...0.2A
Power factor	>0.95
Efficiency in max. power	91%
THD	<10%
Inrush current	≤80A[1)]
Loading number on circuit breaker 10 A (B)	6
Loading number on circuit breaker 10 A (C)	8
Loading number on circuit breaker 16 A (B)	8
Loading number on circuit breaker 16 A (C)	12
Protective conductor current	≤0.7mA
Stand-by power consumption	<0.5W (when DALI OFF)

Output data

Nominal output voltage	24Vdc
Nominal output current	0 ... 6.25A
Maximum output power	150W
Output power range	0 ... 150W
Output voltage ripple	<2%
PWM dimming frequency	4000Hz
Flicker	According to IEEE Std 1789-2015
CIE SVM	≤0.4
IEC-Pst	≤1
Voltage tolerance	±2%
Temperature tolerance	±10%
Start-up time	≤1.5S@230V

Safety

Withstanding voltage	I/P-O/P: 3.75kV&5mA&60S; I/P-DA1/DA2, O/P-DA1/DA2: 1.5kV&5mA&60S
Surge capability (L-N)	2kV
PUSH	1kV[2)]
Insulation resistance	I/P-O/P, I/P-DA1/DA2, O/P-DA1/DA2: >100MΩ@500VDC
Lifetime	Up to 100,000 hours (For details, please refer to the service life table)
Guarantee	5 years[3)]

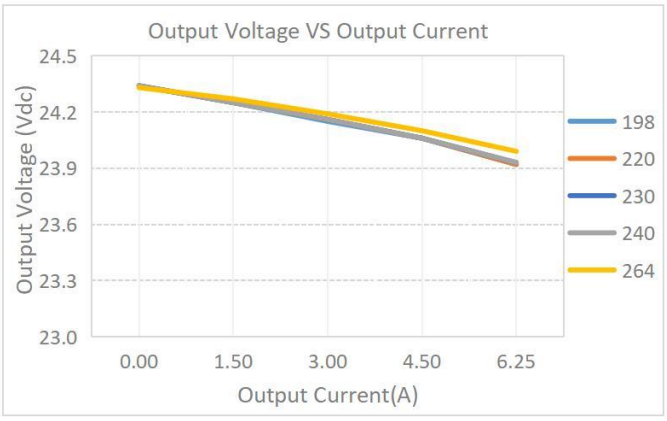
1) t =300μs

2) Surge test at the PUSH terminal: DA1-DA2 is connected in parallel with L-N

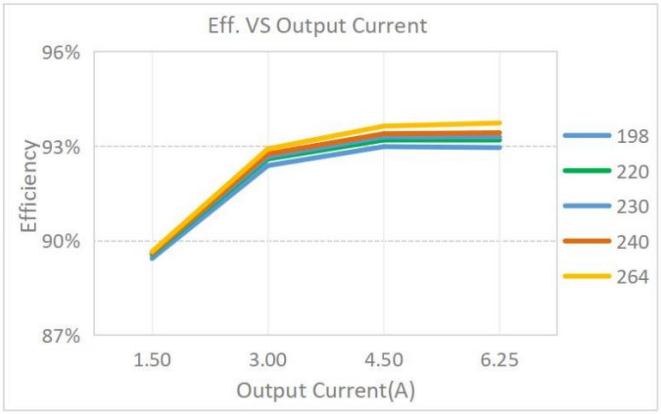
3) 5 years @Tc≤90℃

Characteristic diagrams

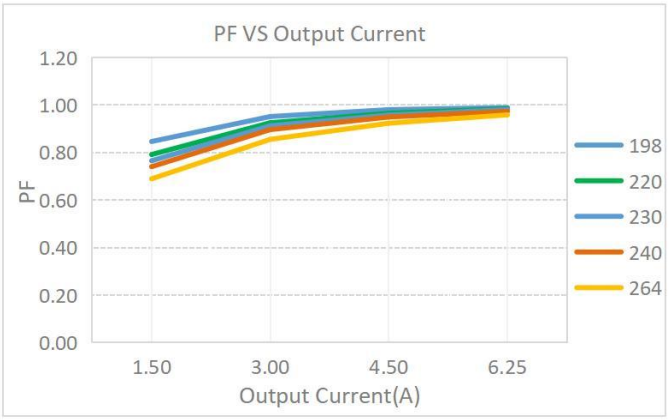
Operating Window



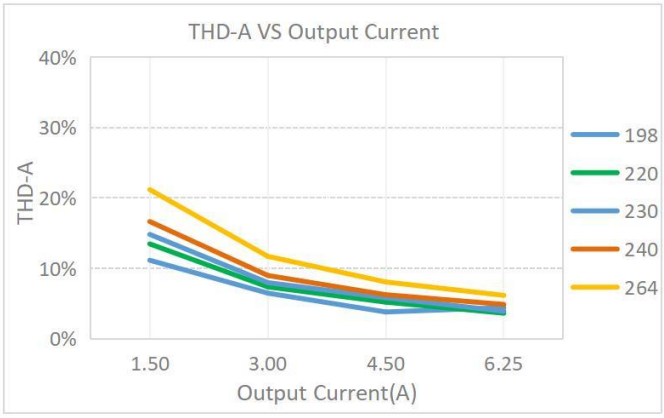
Typical Efficiency vs Load



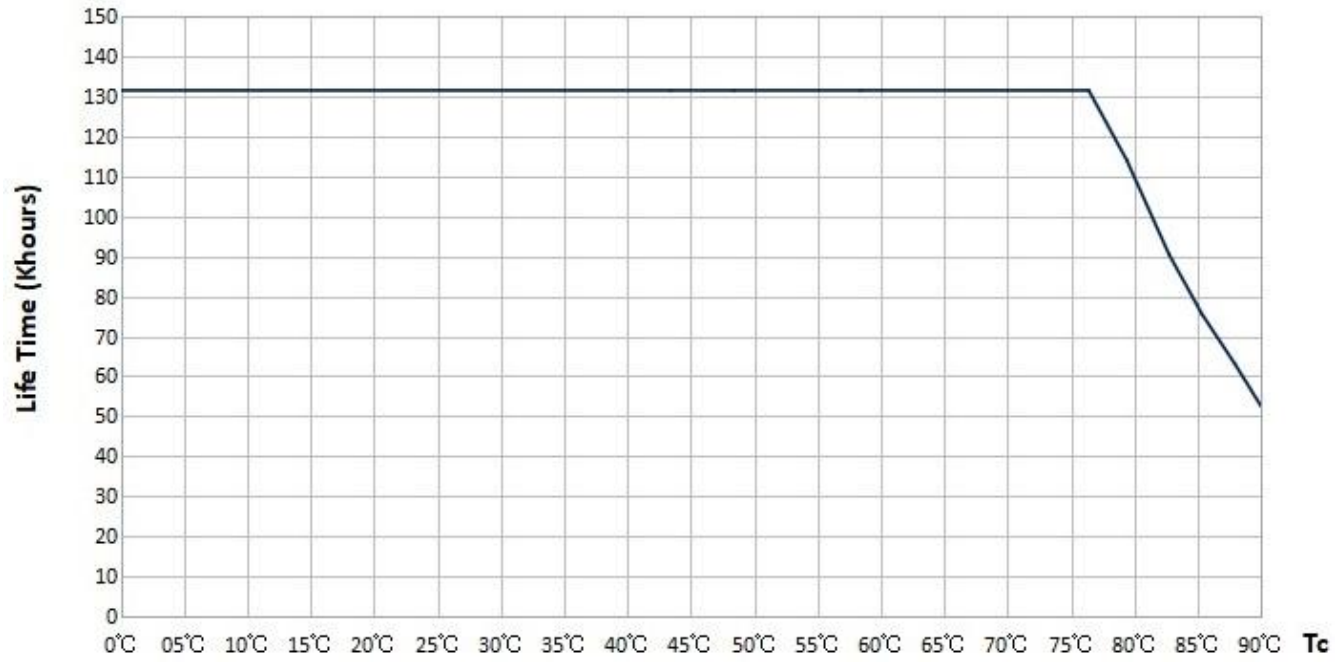
Typical Power Factor vs Load



Typical THD vs Load



Lifespan



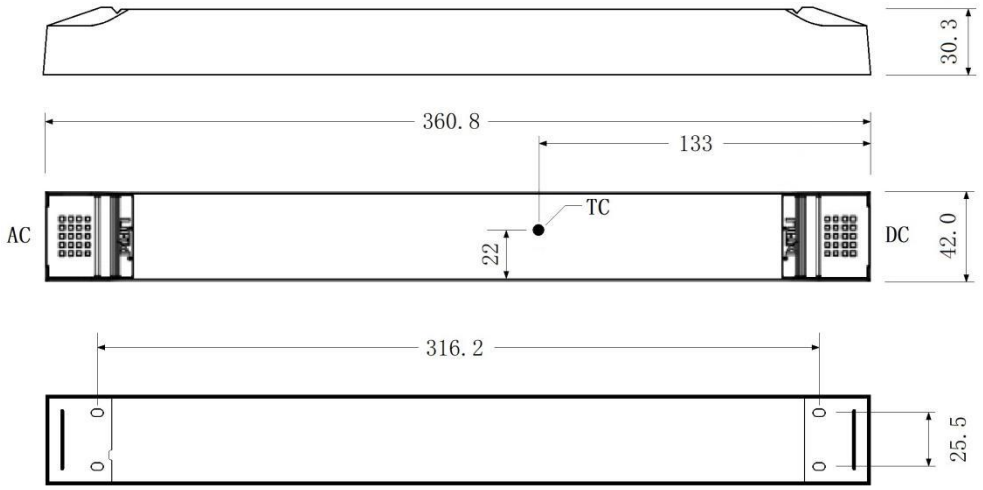
Service life

Model	Iout	Pout	Ta	40°C	45°C	50°C
LF-GBD150-6250-24	6250mA	150W	Tc	68°C	73°C	78°C
			Lifetime	>100,000h	>50,000h	>50,000h

Note: The design life of the LED driver is as described above under reference conditions. The failure probability is less than 10%.

The relationship between Tc and Ta also depends on the design of the luminaire.

Dimensions (tolerance: ±0.2mm)



Mounting hole spacing length	316.2±0.2mm
Product weight	390±20g
Cable cross-section, input side	0.75 ... 1.5 mm²
Cable cross-section, output side	0.75 ... 2.5 mm²
Wire preparation length, input side	5mm
Wire preparation length, output side	5mm
Length	360.8±0.2mm
Width	42.0±0.2mm
Height	30.3±0.2mm

Colors & materials

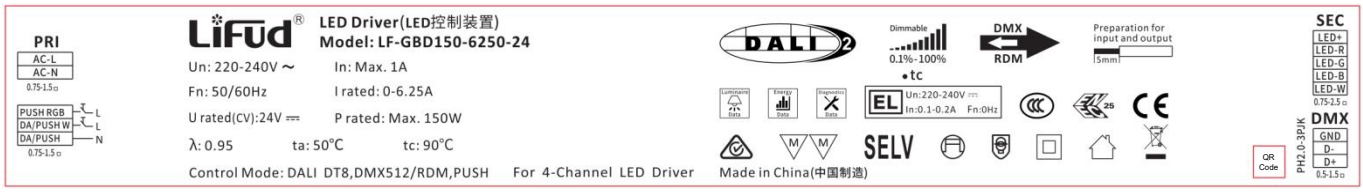
Casing material	Plastic shell
Casing color	White

Temperature & operating conditions

Ambient temperature range	-20℃ - +50℃
Maximum temperature at tc test point	90℃
Temperature range at storage	-20℃ - +80℃ (6 months in Class I environment)
Humidity range at storage	20-75%RH (no condensation)

Humidity during operation	20-95%RH (no condensation)
Atmospheric pressure	86-106KPa
RoHS	RoHS 2.0 (EU) 2015/863

Label



Product terminal

Input		Output	
AC-L (Green)	AC live wire input	**LED+ (Green)**	Positive terminal output of LED driver
AC-N (Green)	AC neutral wire input	**LED- R (Green)**	R- terminal output of LED driver
/	/	**LED- G (Green)**	G- terminal output of LED driver
PUSH RGB (Blue)	PUSH RGB dimming input	**LED- B (Green)**	B- terminal output of LED driver
DA/PUSH W (Blue)	DALI/PUSH W dimming input	**LED- W (Green)**	W- terminal output of LED driver
DA/PUSH (Blue)	DALI/PUSH dimming input	**/**	/
/	/	**GND (White)**	DMX earth wire
/	/	**D- (White)**	DMX dimming negative terminal
/	/	**D+ (White)**	DMX dimming positive terminal

⚠The DMX terminal is used in conjunction with a PH2.0-3PJK male connector with wiring, as shown in the figure.

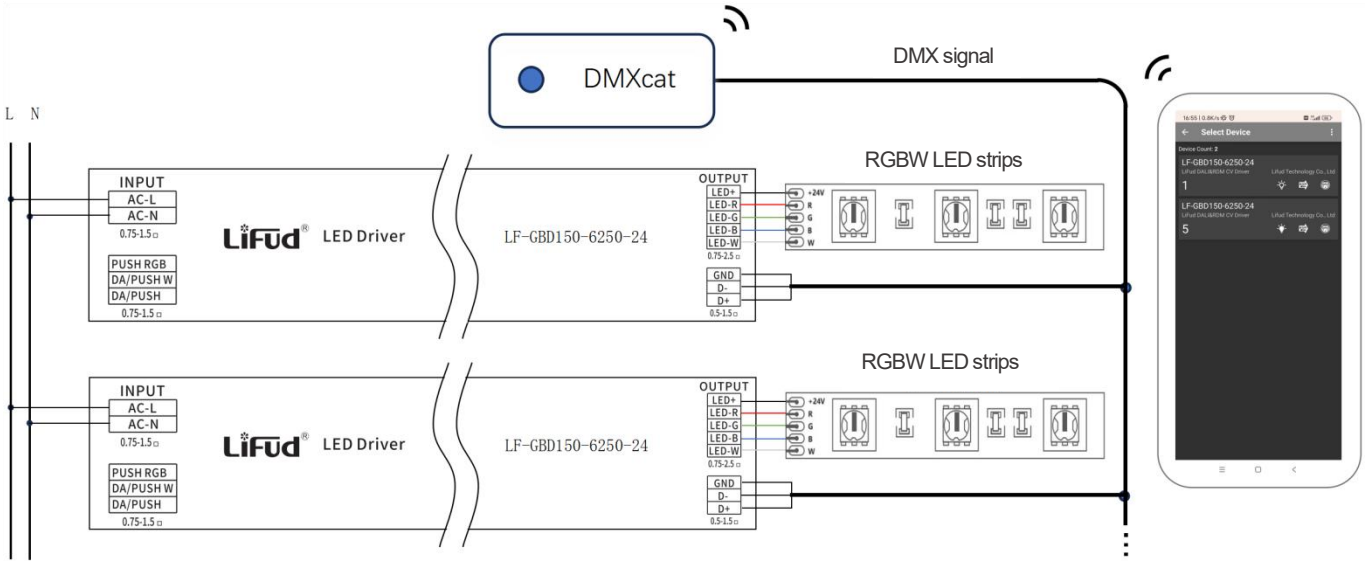
Capabilities

Dimmable	DALI/PUSH/DMX512&RDM
Dimming range	0.1...100%
Over-temperature protection	Yes
Overload protection	Hiccup mode (self-recovery)
Short circuit protection	Hiccup mode (self-recovery)
Suitable for fixtures with prot. class	II
Programming interface	DALI/DMX512&RDM
Control interface	DALI/PUSH/DMX512&RDM
Number of channels	4 channels
EL	Yes

DALI Part 251 252 253	Yes

Dimming function instructions

- **DMX512&RDM dimming function**

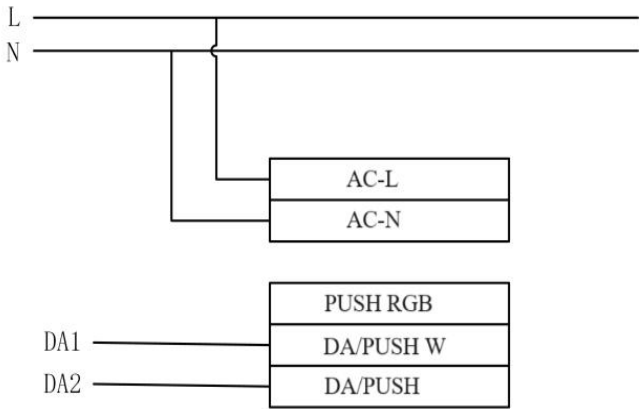


Wiring diagram of DMX512&RDM dimming

① This LED driver can be used in conjunction with an address editor or DMX main control complying with the standard RDM protocol.

② It can realize remote browsing, parameter settings, dimming, turning on/off lights, etc. via mobile phone.

- **DALI dimming function**



Wiring diagram of DALI dimming

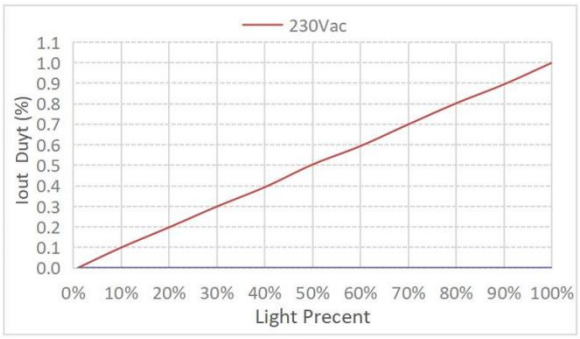
① Default setting brightness is 100%.

② DALI signals DA1 and DA2 are connected to DA/PUSH W and DA/PUSH respectively.

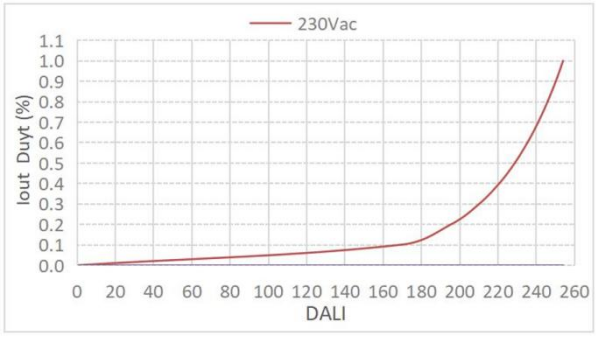
③ DALI protocol includes Max.16 scene groups.

④ Maximum number of LED drivers connected in parallel in DALI dimming mode: 64 pcs.

⑤ Minimum dimming depth of DALI dimming: 0.1% (@ maximum output current; dimming depth of different masters will be different.).



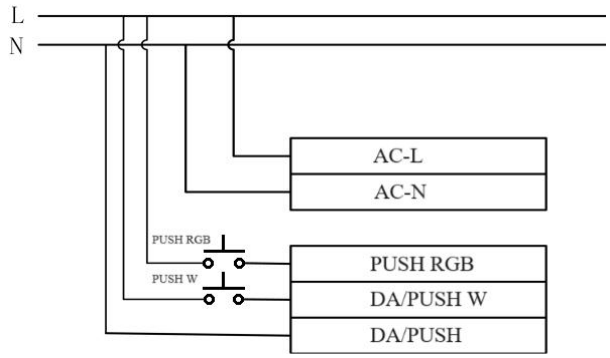
Linear dimming



Logarithmic dimming

⚠ The DALI and PUSH dimming functions cannot be used simultaneously; otherwise, the DALI dimmer will be damaged.

• PUSH dimming function



Wiring diagram of PUSH dimming

Switch from DALI or DMX mode to PUSH mode: long press the PUSH W switch for 1 to 2s to switch to the PUSH function.

① Connect PUSH switch between AC-L and PUSH RGB, DA/PUSH W in series and connect DA/N to AC-N.

② Make sure that AC-L is NOT directly connected to PUSH RGB and DA/PUSH W terminals.

③ Make sure that PUSH switch is off before the AC is powered on; operate PUSH after the AC is powered on.

④ Make sure the PUSH switch is off before disconnecting the AC.

⑤ If you have any questions about the wiring and operation, please confirm with Lifud FAE.

⚠ Wrong wiring or operation may cause damage to the driver.

PUSH switch	Operation	Duration	Function
PUSH W	Long Push	0.6-11S	Adjust W or RGB brightness
	Long Push	> 11S	Reset W or RGB brightness to 50%
	Instant Push	0.1-0.5S	Turn on/off W or RGB
PUSH RGB	Instant Push	0.1-0.5S	Switch RGB color（Red-Green-Blue-White-Red）
	Long Push	0.6-11S	Adjust RGB color
	Long Push	> 11S	Reset to red
	Double Click	0.1-0.5S (interval)	Switch the two adjustment modes of PUSH W (Only one brightness can be adjusted at a time). Mode 1: adjust W； Mode 2: adjust RGB

① The PUSH operation won't cause any variations on LED driver if it's less than 0.1S.

② Minimum dimming depth of PUSH dimming: 0.1%.

③ The PUSH dimming mode has the memory function in case of any power failure. When the LED driver is powered on again, the light will return to the previous state before power failure.

④ The present dimming direction of PUSH dimming is opposite to the former one.

Emergency function instructions

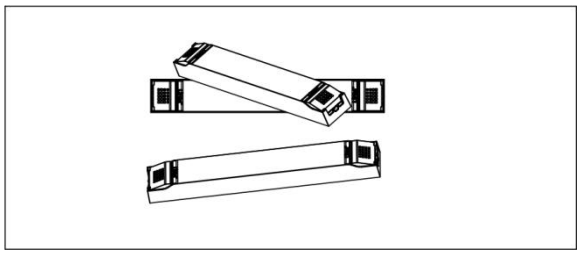
Emergency input DC voltage: 180-264Vdc

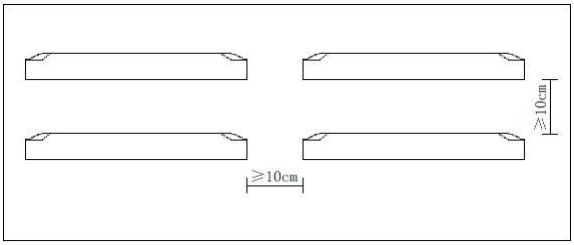
⚠ 1. The emergency output current cannot be changed and turned off. The default value is 15% of the current output current.

2. In the case of mains input, the brightness is random when using PUSH dimming. When the driver enters the emergency escape lighting system and then reconnects AC, the light brightness will remain the one set via PUSH switch when mains is connected.

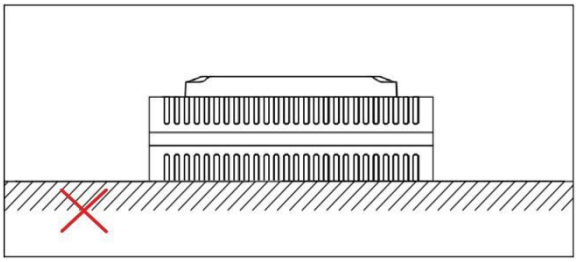
3. In the case of mains input, the brightness is random when using DALI dimming. When the driver enters the emergency escape lighting system and then reconnects AC, the light brightness will return to the brightness when DALI is powered on.

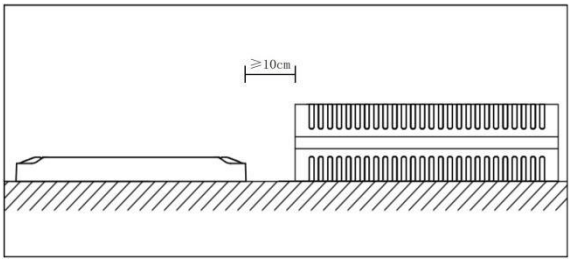
Installation notes





⚠ Do not stack LED drivers during installation. Keep a distance of at least 10cm between them to avoid affecting their heat dissipation and service life.





⚠ Don't directly contact the load with the LED driver during use. Keep a distance of at least 10cm between them to avoid affecting the heat dissipation and service life of the LED driver.

Certificates & standards

Approval marks – approval	ENEC, CE, CB, CCC, RCM, EL, DALI-2
Standards	EN 61347-2-13; EN 61347-1; EN 62384; EN 62493; EN 55015; EN 61547; EN 61000-3-2; EN 61000-3-3; IEC61347-1; IEC61347-2-13; EN IEC 61347-2-13; AS 61347.2.13 & AS/NZS 61347.1NZS 61347.1; DALI-2 certified (Part 101, 102, 207, 251, 252, 253); GB19510.1; GB19510.14
Type of protection	IP20

Logistical data

Product	Packaging unit (Pieces/Unit)	Dimensions (L*W*H)	Volume	Gross weight
LF-GBD150-6250-24	30	385mm*285mm*210mm	23.04dm³	13kg±5%

Test equipment & condition

Test equipment	AC power source: CHROMA6530, digital power meter: CHROMA66202, 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., DMXcat.
Compatibility of DALI dimming	Yuanhao Master, Simon Master, Philips Master DDBC120-DALI, OSRAM Master, Helvar Master 905 Router, Tridonic Master and HDL MC64-DALI431 Master

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/50Hz.

Additional information

1. It is recommended that user install the over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.

2. 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.

3. The number of LED drivers that can be connected to a circuit breaker and the inrush current are tested under the same conditions.

4. 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.

5. DC input is only for emergency.

6. In no-load condition, it is recommended that user not directly connect the LED driver to the light fixture in case that the light fixture is damaged.

7. The total output power during the use of the LED driver cannot exceed the rated maximum power of 150W; otherwise it cannot be guaranteed.

8. When using other DALI masters, please test their compatibilities with Lifud LED driver in advance.

9. The final interpretation of the above parameters belongs to Lifud.

Transportation & storage

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.

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.

Disclaimer

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

Lifud Technology Co., Ltd. reserves the right to interpret any content of this specification.