Constant Voltage Driver

Model:CV(120-250)W24CG DALI

Model	Product Code	Output Current	Output Power Range	PF	Efficiency (*Typical)	Output Voltage	No load Voltage
CV120W24CG DALI	129901	1.25-5.0A	30-120W	≥0.95	92%	24V	23.5-24.5V
CV180W24CG DALI	130111	2.25-7.5A	54-180W	≥0.95	92%	24V	23.5-24.5V
CV250W24CG DALI	130211	3.12-10.42A	75-250W	≥0.95	93%	24V	23.5-24.5V

*** Test result @230V, 50Hz, Full Load.**

1. Parameters

Category	Item	Technical Norm		
Features	Output Type	Constant Voltage		
	Dimming Type	PWM(DALI-2)		
	Output Features	Isolation SELV		
	IP Grade	IP20		
	Insulation Class	Class II		
Input	Rated Input Voltage	220-240VAC		
	Range of AC Input Voltage	198-264VAC		
	Range of DC Input Voltage	180-280VDC（EMI not evaluated）		
	Frequency	Rate:50/60Hz, Range:47~63Hz		
	Input Current	120W ≤0.75A (230VAC，full load)		
		180W ≤1.2A (230VAC，full load)		
		250W ≤1.5A (230VAC，full load)		
	Input Power	120W ≤135W (230VAC，full load)		
		180W ≤200W (230VAC，full load)		
		250W ≤275W (230VAC，full load)		
	Power Factor	≥0.95, 220-240VAC, Rated Load, see graphs		
	THD	120W/180W/250W	≤7%	230VAC，Rated Load, see graphs
	Standby Power Consumption	≤0.5W, @230VAC,Dim to OFF		
	Inrush Current	120W ≤50A/16us (230VAC，full load)		
		180W ≤60A/16us (230VAC，full load)		
		250W ≤70A/16us (230VAC，full load)		
Output	Output Voltage	24VDC+5%		
	No load Voltage	24VDC+5%		
	Output Current	120W 1.25A -5.0A (Max. output)		
		180W 2.25A -7.5A (Max. output)		
		250W 3.12A -10.42A (Max. output)		
	Max. Output Power	120W	180W	250W

KGP Electronics GmbH
Hueckstraße 19
DE-58511 Lüdenscheid

	Efficiency	≥92% (230VAC，full load)	≥92% (230VAC，full load)	≥93% (230VAC，full load)
	Current Ripple(< 120 Hz)	±5% (Imax-Imin)/(Imax+Imin)		
	Output Voltage Ripple	<480mVPK-PK (1%)		
	Line Regulation	±1%		
	Load Regulation	±2%		
	PstLM	≤1		
	SVM	≤0.4		
	Overshoot	<105%Vo		
	Current Accuracy	±5%		
	Start-up Time	≤1S(230VAC，full load)		
Control Method	PUSH dimming	PUSH dimming (Max. lead wire length：20m,same port of DALI）		
	PUSH-button	Max parallel connnections qty for Push-dim 64PCS		
	DALI function	DALI dimming (Max. lead wire length： 300m ） logarithm or linear dimming curve selectable DALI-2 certified incl. Parts 251, 252, 253, CLO		
	Dimming range	DALI dimming: 1%-100%, Dim to off		
	Dimming frequency	8KHz		
Protection	Short Circuit Protection	Auto Recovery		
	Over Current Protection	Auto Recovery		
	No-load Protection	Auto Recovery		
	Over Voltage Protection	110%-150%Vo, Auto Recovery		
	Over Temperature Protection	90<Tc<110℃, Auto Recovery		
	Insulation voltage	3000V 5mA 60S between P-S		
	Insulation resistance	>100M ohm @ 500VDC		
	Leakage current	I/P to O/P <0.7mA		
Environment	Ta/Operation Temperature	-25….+50℃		
	Ts/Storage Temperature	-25….+85℃		
	Tc/Enclosure Temperature	90℃		
	Humidity	10%....90%RH		
	Atmosphere	86-108KPa		
Construction	Connection Method	Push-in Terminal		
	Installation	Independent		
	PRI Wire preparation	0.75-2.0□/ 8-9mm		
	SEC Wire preparation	0.75-2.0□/ 8-9mm		
	DALI Wire preparation	0.5-2.0□ /8-9mm		
	Dimension	120W/180W	253*42.5*31mm (L*W*H)	
		250W	270*50*31mm (L*W*H)	
Standards	Certification	CE,ENEC, EAC, SAA,UKCA		
	Safety Standards	EN 61347-1:2015/A1:2021 EN 61347-2-13:2014/A1:2017 EN IEC 62384:2020 EN 62493:2015 AS61347.2.13:2018 AS/NZS61347.1:2016 Inc A1 BS EN 61347-1:2015/A1:2021 BS EN 61347-2-13:2014/A1:2017 BS EN 62493:2015 BS EN IEC 62384:2020		

	EMC Standards	EN IEC 55015:2019 EN IEC 55015:2019/A11:2020 EN IEC 61000-3-2:2019/A1:2021 EN 61000-3-3:2013/A2:2021 EN 61547:2009
	Performance	EN62384:2020
	Surge	L-N/2KV
Others	RoHS	complied to 2011/65/EU
	REACH	EU Regulation (EC) No 1907/2006
	Life Time	50000h @Ta/ Tc
	Warranty	5years ,F.R. < 10000ppm
	Noise	≤ 24dB @Background noise ≤18dB ,Interval≥15cm

Remark:

1. All Parameters, if not specified, are measured at 230VAC/50Hz and 25℃ ambient temperature.
2. LED Driver is a component of the luminaires, Luminaires and wire layout will affect the EMC, please check the EMC with end products again.
3. During the PUSH DIM test, the number of parallel connections must be less than 64 PCS
4. Do not install upside down.

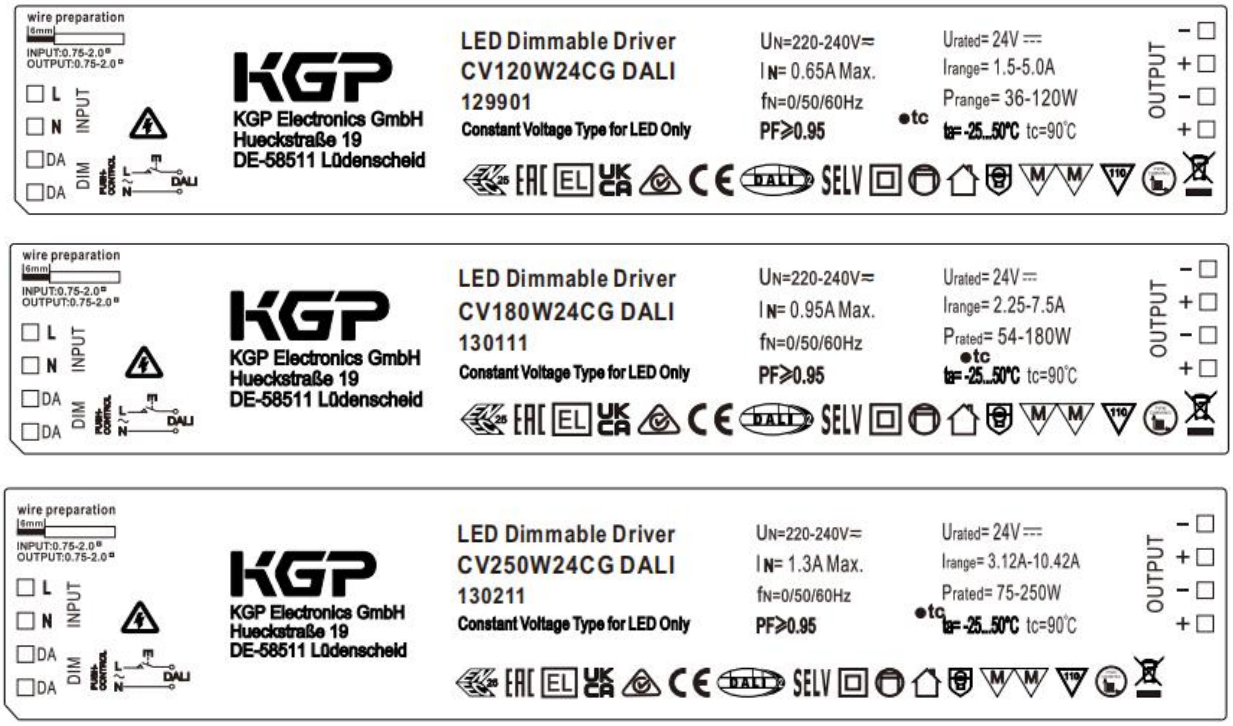
2. Connected quantities of different current Breaker

TYPE	CV120W24CG DALI Connected quantities of different current Breaker						Input Voltage	Inrush Current ＜50A	Time
	current（A）	10	13	16	20	25			
	Installation wire diameter	1.5mm²	2.5mm²	2.5mm²	4mm²	4mm²			
TYPE B		14	18	22	27	34	@230VAC	44	200μs
TYPE C		22	28	35	44	55			
TYPE D		35	45	56	70	87			

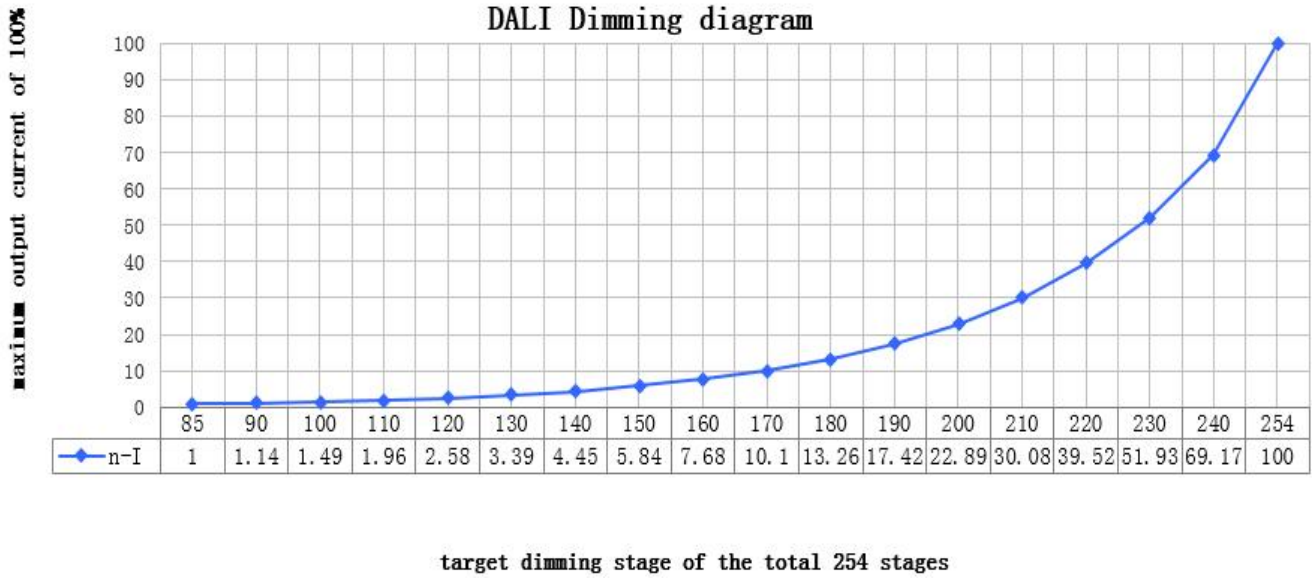
TYPE	CV180W24CG DALI Connected quantities of different current Breaker						Input Voltage	Inrush Current ＜60A	Time
	current（A）	10	13	16	20	25			
	Installation wire diameter	1.5mm²	2.5mm²	2.5mm²	4mm²	4mm²			
TYPE B		11	14	17	21	27	@230VAC	56	250μs
TYPE C		17	22	27	34	43			
TYPE D		27	36	44	55	69			

TYPE	LV250W24CG DALI Connected quantities of different current Breaker						Input Voltage	Inrush Current ＜70A	Time
	current（A）	10	13	16	20	25			
	Installation wire diameter	1.5mm²	2.5mm²	2.5mm²	4mm²	4mm²			
TYPE B		9	12	14	18	22	@230VAC	67	250μs
TYPE C		14	19	23	29	36			
TYPE D		23	30	37	46	57			

3. Label



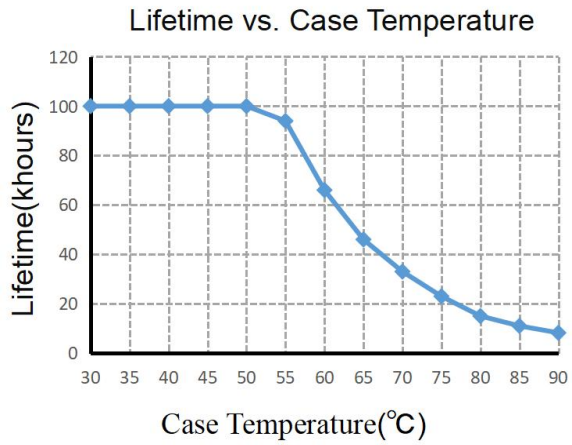
4. DALI dimming curve



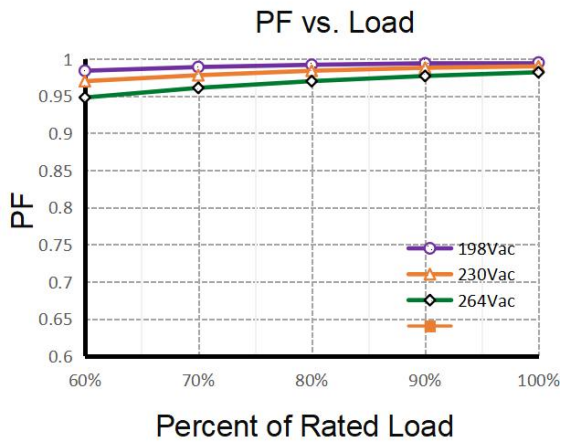
5. Electrical values

CV120W24CG DALI

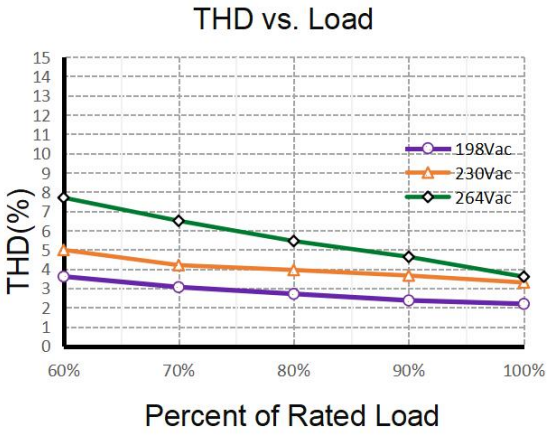
Lifetime vs. Case Temperature



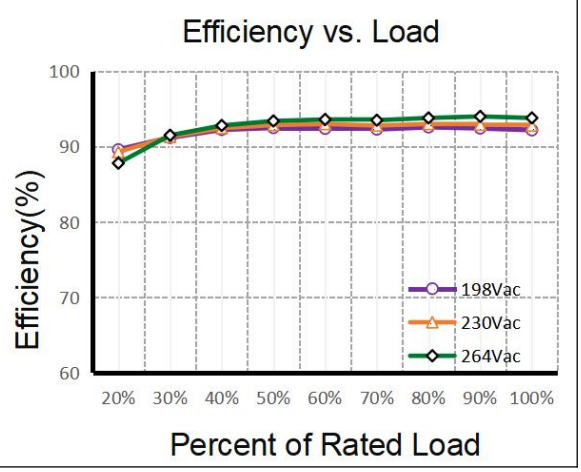
PF vs. Load



THD vs. Load

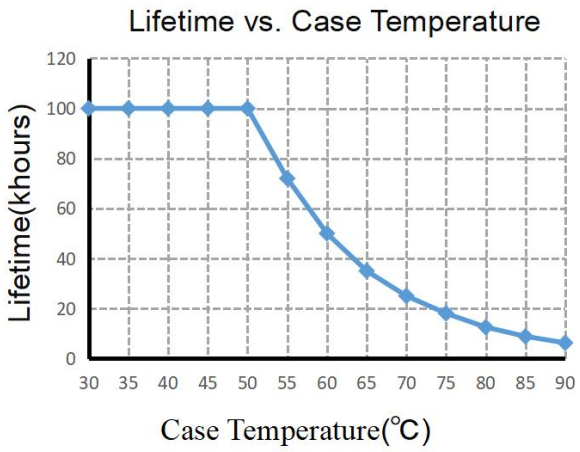


Efficiency vs. Load

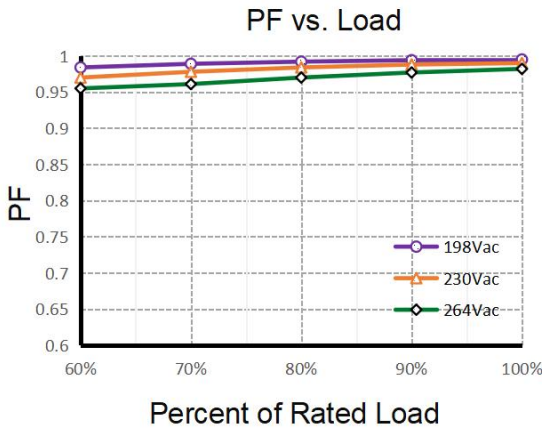


CV180W24CG DALI

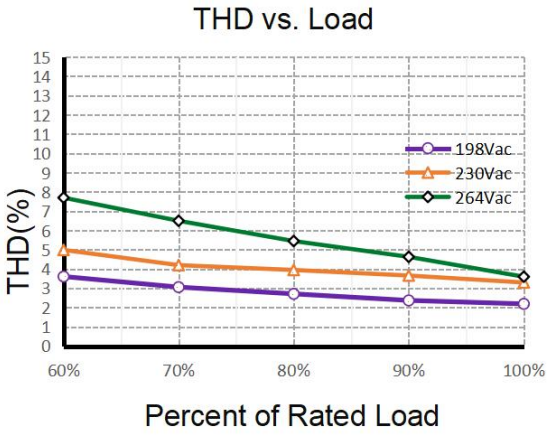
Lifetime vs. Case Temperature



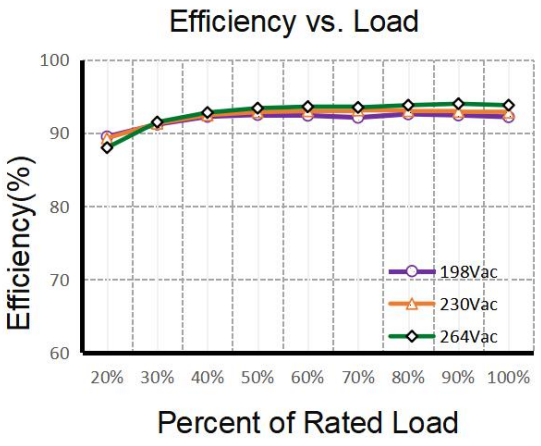
PF vs. Load



THD vs. Load



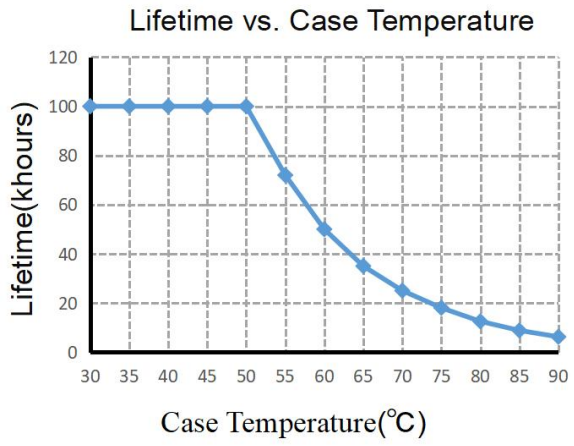
Efficiency vs. Load



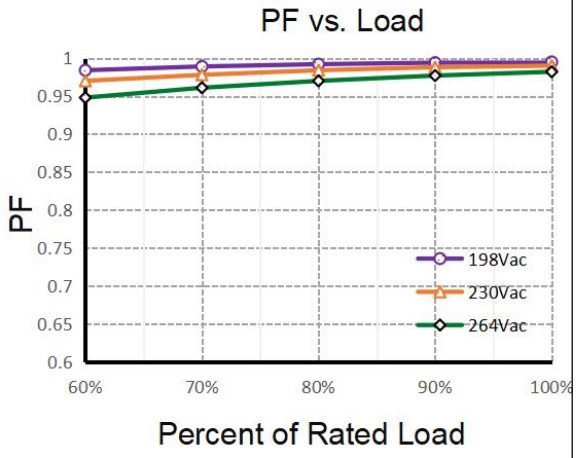
KGP Electronics GmbH
Hueckstraße 19
DE-58511 Lüdenscheid

CV250W24CG DALI

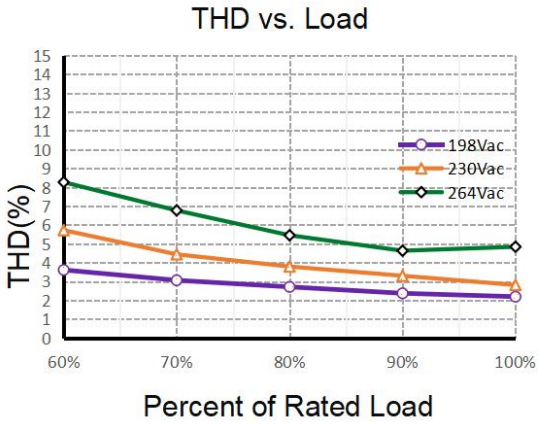
Lifetime vs. Case Temperature



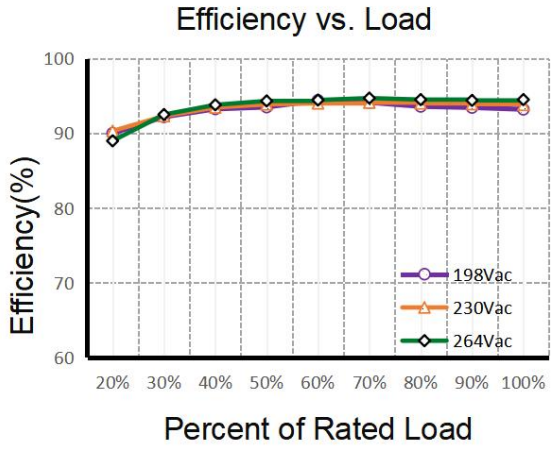
PF vs. Load



THD vs. Load



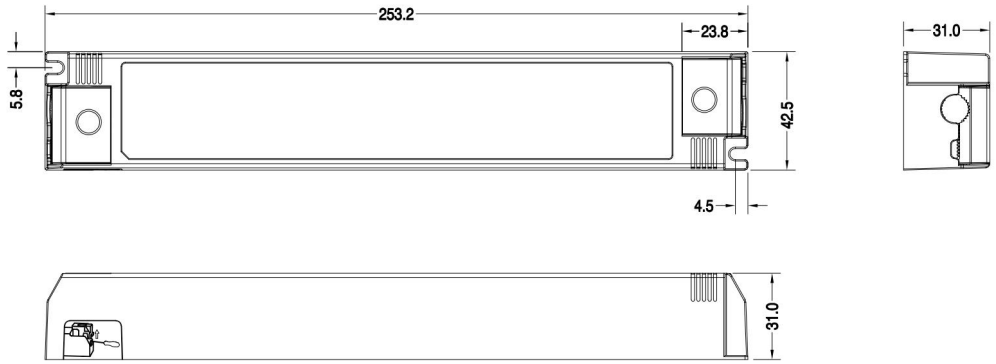
Efficiency vs. Load



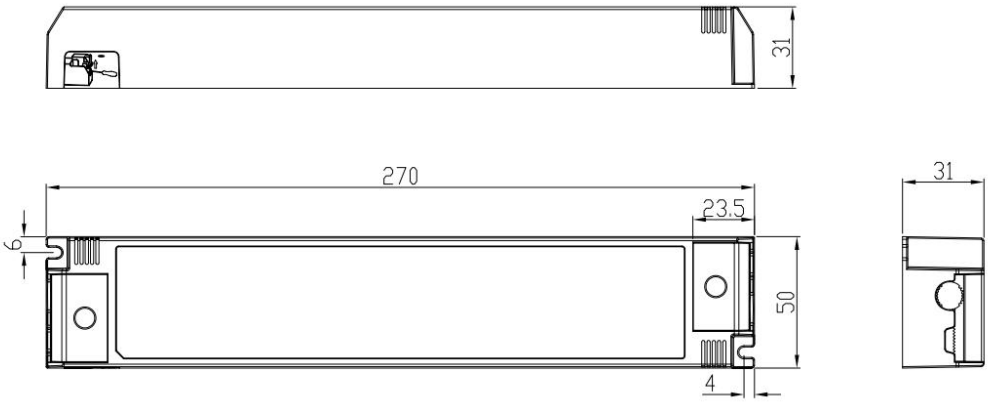
KGP Electronics GmbH
Hueckstraße 19
DE-58511 Lüdenscheid

6. Dimension （Unit：mm）

CV120W24CG DALI&CV180W24CG DALI



CV250W24CG DALI



7. Wiring Diagram

Fig. A: DALI Dimming

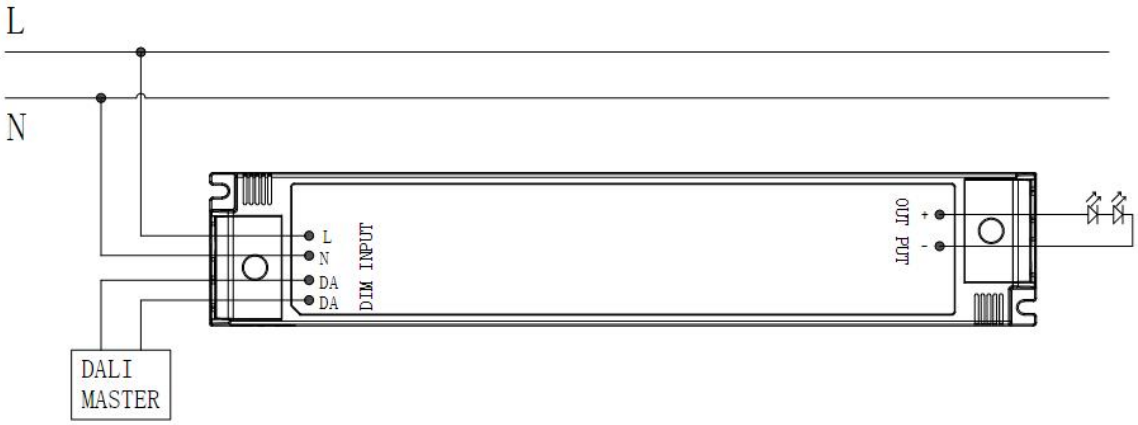
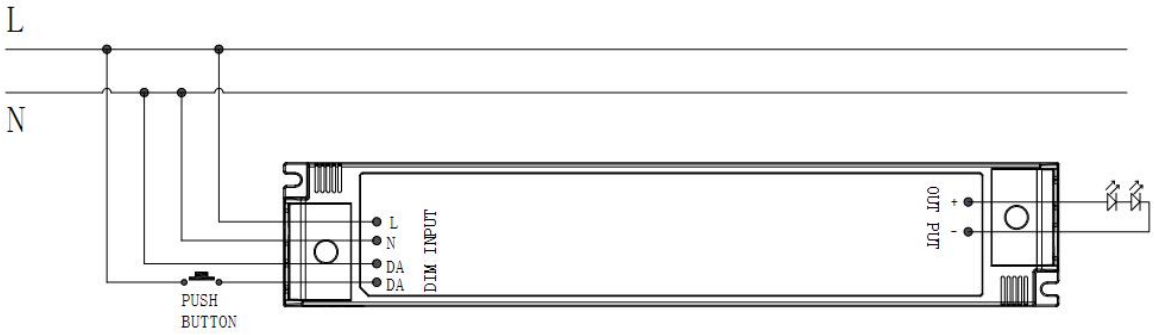


Fig. B: Push Dimming



1.The factory default brightness is at 100%

2.Up to 64 drivers can perform the PUSH dimming at the same time when utilizing one common push button

3.The maximum length of the cable from the push button to the last driver is 200 meters

8. Packing information

Packing way	Model	Carton L*W*H(mm)	Pcs/ Carton	Net weight/ Pcs(kg)	Net weight/ Carton(kg)	Gross weight/ Carton(kg)
With white box and manual	CV120W24CG DALI	410*270*190	45	0.416	18.72	19.22
	CV180W24CG DALI		45	0.446	20.07	20.57
	CV250W24CG DALI	275*270*225	24	0.612	15.55	14.66

9. Wiring instructions

- All connections must be kept as short as possible to ensure good EMI behaviour
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Advice the maximum length of output wires is 0.5 m
- Secondary switching is not permitted（Except for constant voltage）
- Incorrect wiring can damage LED modules.
- The wiring must be protected against short circuits to earth (sharp edged metals parts, metal cable clips, louver, etc.)
- Hot plug-in is not supported due to residual output voltage of > 0 V up to mains voltage. Danger to life.
- When connecting an LED load, restart the device to activate the LED output.
- This can be done via mains reset or via interface (DALI, DSI, switch DIM).

10. Replace LED module

- Remove LED module
- Wait for 30 seconds
- Connect LED module again
- Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs

11. Functions

11.1 OEM Identification
The OEM (Original Equipment Manufacturer) can set his own identification number.
DALI Part 251: Memory bank 1 extension.

11.2 OEM GTIN
The Original Equipment Manufacturer (OEM) can set his own Global Trade Item Number (GTIN).
DALI Part 251: Memory bank 1 extension.

11.3 Luminaire data
This function provides the asset management with accurate data about the luminaire.
DALI Part 251: Memory bank 1 extension.
DALI Part 253: Luminaire maintenance data.

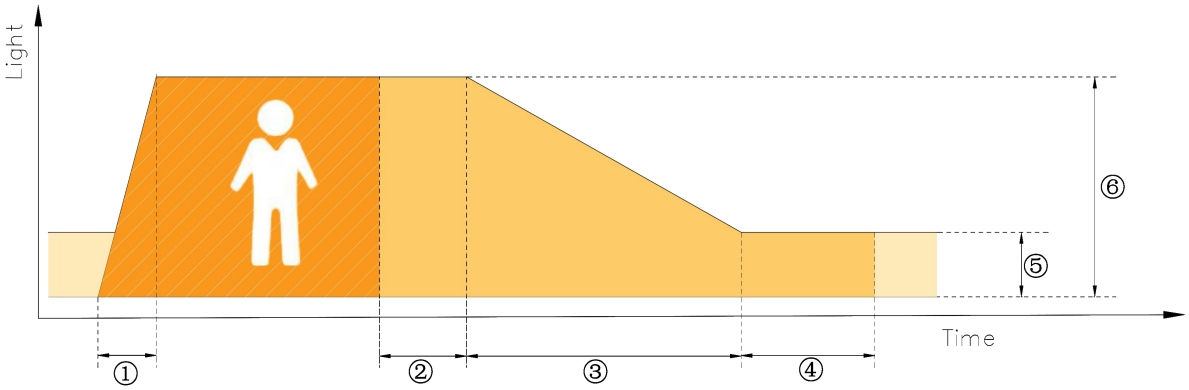
11.4 LED current
The LED output current must be adapted to the connected LED module.
The value is limited by the current range of the respective device.
The output current of the LED driver can be adjusted in a certain range.

More functions：

Action	Action duration	Function
Short push	<0.6s	Turn on/off
Short push five Times	<3s	Quit Corridor mode
Long push	0.6-3s	Dimming up or down
Long push	10s	Sync all LEDs to be 50% brightness，and the dimming rate is changed to 3S
Long push	20s	Dimming rate is changed to 6S
Long push	>2mins	Enter Corridor mode - LED keep 100% brightness for 2mins.

11.5 Switch DIM
Integrated Switch DIM function allows a direct connection of a push button for dimming and switching.
Brief push (< 0.6 s) switches LED driver ON and OFF. The dim level is saved at power-down and restored at power-up. When the push button 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 push button with indicator lamp is not permitted.

11.6 Corridor FUNCTION
With the Corridor FUNCTION and a commercially available motion detector, it is easy to adapt the lighting in one area to its use. That is, when the area is entered by a person, the lighting dims instantly to the desired brightness and is available in full strength. After the area is left by the person, the brightness dims slowly to a smaller value or switches off completely.
The individual parameters of the desired profile, such as brightness values or delay times, can be adjusted flexibly and individually.



- ①Fade-in time(1s): the time that starts as soon as the presence of a person is detected. During the fade-in time the luminous intensity is faded up to the presence value.
- ②Run-on time(120s): the time that starts as soon as the presence of a person is no longer detected. If the presence of a person is detected again during the run-on time the run-on time is restarted from zero. If no presence is detected during the run-on time the fade time is started as soon as the run-on time expires.
- ③Fade time(32s): the time during which the luminous intensity is faded from the presence value to the absence value.
- ④Switch-off delay（Never Off): the time during which the absence value is held before the lighting is switched off. Depending on the profile selected the switch-off delay may have different values or may not be defined.
- ⑤Absence value(default: 10 %): the luminous intensity when there is no person present.
- ⑥Presence value (default: 100 %): the luminous intensity when persons are present.

11.7 Constant Light Output (CLO)

With this function the light output of the LED module can be kept equal over the lifetime.

The light output of an LED module reduces over the course of its lifetime.

The Constant Light Output (CLO) function compensates for this natural decline by constantly increasing the output current of the LED driver throughout its lifetime.

CLO shall be achieved by limitation of the LED current at the commissioning of the LED driver and providing a linear interpolation of the current over the time, depending on the data points given by the user.

The user has to insert up to eight pairs of data (time, level).

The output curve is the result of connecting the user data points linear.

Detailed description for CLO see product manual.

The minimal CLO starting point is limited by the smallest output current of the LED driver.

11.8 Dimming curve

DALI:The desired dimming behaviour is selected via two different dimming curves (logarithmic or linear).

The default setting of the dimming behaviour is logarithmic.

12. REVISION HISTORY

DATE	REV	Modification details
2024-12-12	V1.0	Initial release.
2025-05-10	V1.1	Update label