

# SPECIFICATION

**Product Name:** DALI 2 Dimmable LED driver

**Model No.:** KL90VC-PDiiV&1; KL120VC-PDiiV1

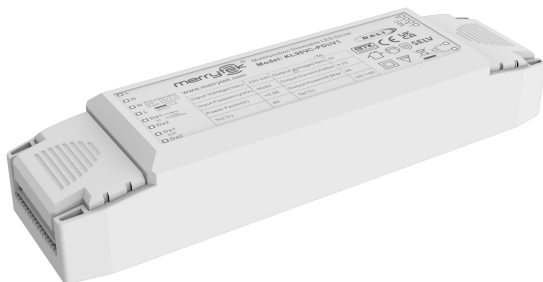
**Issue Date:** February 12, 2025

|                        |
|------------------------|
| CUSTOMER      APPROVED |
|                        |



| Version | Product Name /<br>Product Model              | Reason / content for<br>change      | Stage               | Date       |
|---------|----------------------------------------------|-------------------------------------|---------------------|------------|
| A0      | KL90VC-PDiV&1<br>KL120VC-PDiV1<br>LED driver |                                     | Design verification | 2024-07-22 |
| A1      | KL90VC-PDiV&1<br>KL120VC-PDiV1<br>LED driver | Update Automatic<br>circuit breaker |                     | 2025-01-06 |
| A2      | KL90VC-PDiV&1<br>KL120VC-PDiV1<br>LED driver | Correct the error                   |                     | 2025-02-12 |
|         |                                              |                                     |                     |            |
|         |                                              |                                     |                     |            |
|         |                                              |                                     |                     |            |
|         |                                              |                                     |                     |            |
|         |                                              |                                     |                     |            |
|         |                                              |                                     |                     |            |

## Specification for DALI 2 Dimmable LED Driver KL120VC-PDiV1 C.V.



- Flicker-free for whole dimming range
- Stand-by power below 0.5W
- Primary dimming with push button
- Secondary dimming with 0-10V dimmer and potentiometer
- Built-in DALI interface DT8
- Supports 10V PWM dimming (3KHz-8KHz)
- Protection: short circuit / over temperature/ over voltage
- Derating current for over high ambient temperature
- Push dim with memory function
- 5 year warranty

### 1. Parameters

| Series | Name                                                              | KL90VC-PDiiv                                             |     |     |     | KL90VC-PDiiv1   |     |     |     | KL120VC-PDiiv1  |     |     |    |
|--------|-------------------------------------------------------------------|----------------------------------------------------------|-----|-----|-----|-----------------|-----|-----|-----|-----------------|-----|-----|----|
| Input  | Voltage range                                                     | 198~264Vac 50Hz /60Hz                                    |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Rated supply voltage                                              | 220~240Vac 50Hz /60Hz                                    |     |     |     |                 |     |     |     |                 |     |     |    |
|        | DC voltage range                                                  | 200~240Vdc                                               |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Input current （@230Vac）                                           | 0.46A Max                                                |     |     |     | 0.45A Max       |     |     |     | 0.6A Max        |     |     |    |
|        | Inrush Current                                                    | 30A (Half current pulse width 100US) @230VAC             |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Power factor                                                      | ≥ 0.99 （@230Vac,100% load）                               |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Total harmonic distortion                                         | Typical: 6% （@230Vac, 100% load）                         |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Stand-by power                                                    | ≤0.3W                                                    |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Efficiency （230Vac,100% load）                                     | 91%Max                                                   |     |     |     | 92%Max          |     |     |     | 92%Max          |     |     |    |
|        | Wiring method                                                     | Push terminal, wire cross section:0.5-1.5mm <sup>2</sup> |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Loop-in&Loop-out quantity                                         | 16PCS （@230Vac）                                          |     |     |     | 16PCS （@230Vac） |     |     |     | 12PCS （@230Vac） |     |     |    |
|        | Automatic circuit breaker type<br>(Calculate current in the wire) | B10                                                      | 7   | C10 | 12  | B10             | 7   | C10 | 12  | B10             | 6   | C10 | 10 |
|        |                                                                   | B13                                                      | 9   | C13 | 16  | B13             | 9   | C13 | 16  | B13             | 7   | C13 | 13 |
| B16    |                                                                   | 11                                                       | C16 | 20  | B16 | 11              | C16 | 20  | B16 | 9               | C16 | 16  |    |
| B20    |                                                                   | 14                                                       | C20 | 25  | B20 | 14              | C20 | 25  | B20 | 11              | C20 | 20  |    |
| B25    |                                                                   | 17                                                       | C25 | 35  | B25 | 17              | C25 | 35  | B25 | 14              | C25 | 25  |    |
| /      |                                                                   | /                                                        | C32 | 35  | /   | /               | C32 | 35  | /   | /               | C32 | 30  |    |
| Output | Operating mode                                                    | Constant voltage                                         |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Load type                                                         | LED                                                      |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Flickering / Flickering-Free                                      | Flickering-Free                                          |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Start up time                                                     | <1s (@230Vac)                                            |     |     |     |                 |     |     |     |                 |     |     |    |
|        | Forward voltage                                                   | 12V                                                      |     |     |     | 24V             |     |     |     | 24V             |     |     |    |
|        | Output current                                                    | 7.5A                                                     |     |     |     | 3.75A           |     |     |     | 5A              |     |     |    |
|        | Max. output voltage (no-load )                                    | 20V                                                      |     |     |     | 30V             |     |     |     | 30V             |     |     |    |
|        | Full load output power                                            | 90W Max.                                                 |     |     |     | 90W Max.        |     |     |     | 120W Max.       |     |     |    |
|        | Minimum load                                                      | 9W                                                       |     |     |     | 9W              |     |     |     | 12W             |     |     |    |

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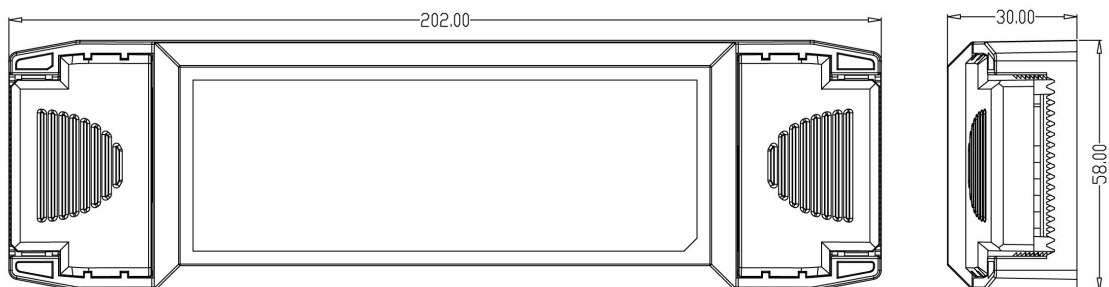
Fax: +86 (0)755-2786 3012

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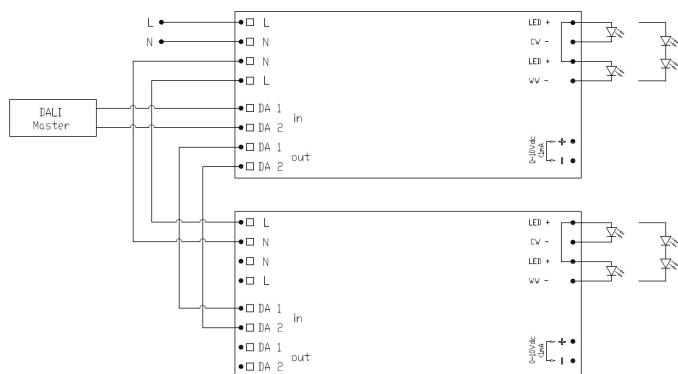
|                                          |                                    |                                                                   |         |         |
|------------------------------------------|------------------------------------|-------------------------------------------------------------------|---------|---------|
| <b>Output</b>                            | Output current/voltage tolerance   | ±5%                                                               |         |         |
|                                          | Wiring method                      | Screw terminal, wire cross section:2*0.5-2.5mm <sup>2</sup>       |         |         |
| <b>Control Method</b>                    | Primary PUSH Dimming               | Primary PUSH dimming (Max. lead wire length: 20m)                 |         |         |
|                                          | 1-10V (0-10V) Dimming              | 0-10V dimming (Port current<1mA),<br>(Max. lead wire length: 20m) |         |         |
|                                          | Dimming Range                      | 0%-100%                                                           |         |         |
|                                          | Secondary PWM dimming              | 0-10V port PWM dimming (3KHz-8KHz)                                |         |         |
|                                          | Potentiometer                      | Yes, 100kΩ                                                        |         |         |
|                                          | DALI function                      | DALI dimming (Max. lead wire length: 300m)                        |         |         |
| <b>Exception Protection Requirements</b> | Output over temperature protection | Yes, reset power on to recover                                    |         |         |
|                                          | Output short circuit protection    | Yes, reset power on to recover                                    |         |         |
| <b>Operating Environment</b>             | Storage temperature/ humidity      | -40℃~80℃, Humidity:10% - 95%                                      |         |         |
|                                          | Operating temperature/ humidity    | -25~50℃                                                           | -25~50℃ | -25~40℃ |
|                                          | Max. case temp (Tc)                | 85℃                                                               | 85℃     | 90℃     |
| <b>Safety &amp; EMC</b>                  | EMC standard                       | EN55015, EN61547, EN61000-3-2, EN61000-3-3                        |         |         |
|                                          | DALI standard                      | IEC62386-101 / 102 / 207 DT6 / 209 DT8                            |         |         |
|                                          | Safety standard                    | EN61347-1, EN61347-2-13                                           |         |         |
|                                          | Certification                      | CE                                                                |         |         |
|                                          | Withstand voltage                  | 3750Vac, 5mA, 60s (Input "L N"- Output "SEC")                     |         |         |
| <b>Others</b>                            | IP Rating                          | IP20                                                              |         |         |
|                                          | Type of protection                 | Class II                                                          |         |         |
|                                          | Installation type                  | Independent installation                                          |         |         |
|                                          | Installation dimension             | 202*58*30mm                                                       |         |         |
|                                          | Memory function                    | Yes, (PUSH with memory function)                                  |         |         |
|                                          | PUSH dimming synchronization       | 15 units Max.                                                     |         |         |
|                                          | Packaging requirements             | Instruction+clapboard+outer carton (K=A)                          |         |         |
|                                          | Weight                             | 400g                                                              |         |         |
|                                          | Life                               | 5 years @Ta 100% load                                             |         |         |

Note: All parameters are tested at the input voltage of 230Vac and 25 degree environment unless specified.

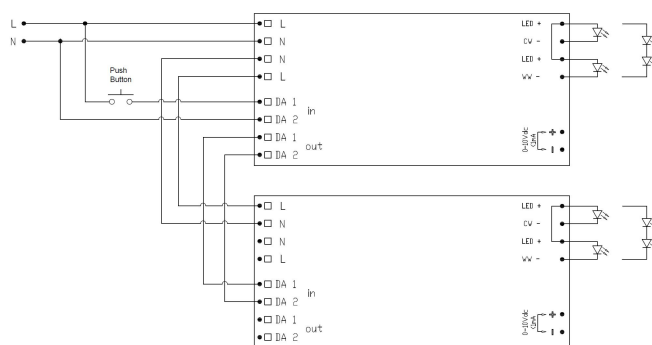
## 2. Dimension (Unit: mm)



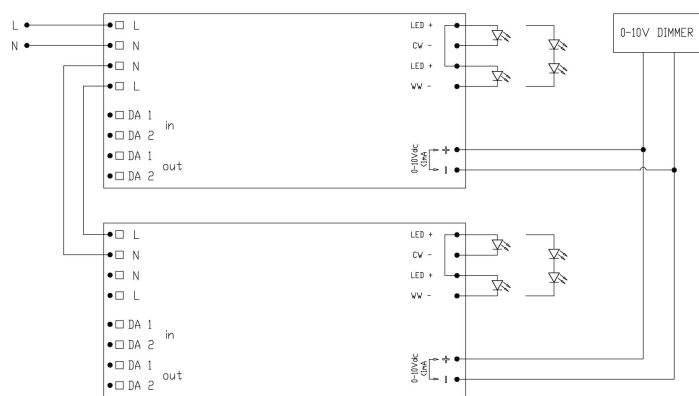
### 3. Wiring Diagram



**Fig. A DALI Dimming**

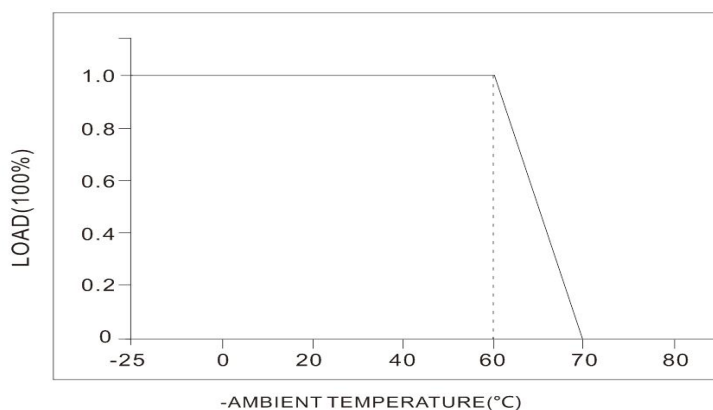


**Fig. B Push Dimming**

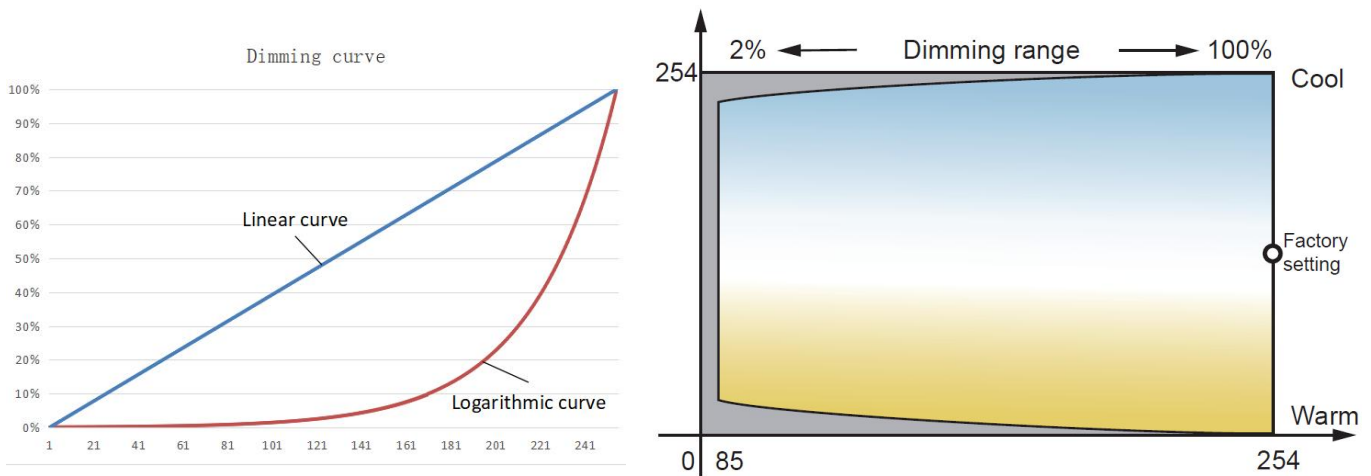


**Fig. C 0-10V Dimming**

### 4. Derating



## 5. Dimming curve



## 6. ON/OFF & Description of Dimming Operation

A. Short press the PUSH switch (short press time 0.1s-1s), the LED driver will turn on or off.

B. Dimming:

Press and hold the PUSH switch (1s-8s), the LED driver can achieve dimming, brightening or dimming, the dimming range is 2-100%.

C. Color temperature adj:

Step 1, PUSH turns off the lights; Step 2, press and hold PUSH to adjust the color temperature starting from the current brightness; Release PUSH, press and hold PUSH again, and adjust the color temperature in the opposite direction; No operation for 5 seconds, exit color adjustment mode.

D. Memory:

PUSH dimming has dimming memory function.

E. Dimming synchronization:

The power connected to the same PUSH switch can be synchronized by pressing and holding the PUSH switch for longer than 15s

F. DALI dimming mode:

Connect the power supply to the DALI system, and it can be dimmed by the DALI host. The dimming range is 0-100%.

G. Constant voltage dimming drivers cannot be used in lamps with constant current circuits.