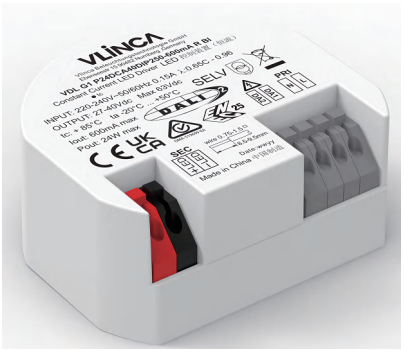
Vlinca Beleuchtungstechnologie GmbH
Ebene 6, Flügel 3, Am Seestern 8, Düsseldorf, 40547 Germany

# In-track series DALI LED driver

SELV RoHS IP20



## Product description

- Intellidex (DALI-2 part ext. 251, 252 and 253)
- Dimmable constant / Built-in LED driver
- For ambient temperatures up to 50 °C
- Dimming range 1 to 100 % (min.3.5mA)
- Output current adjustable between 400-600mA via DIP
- Max. output power 24 W
- Up to 87% efficiency
- Power input on stand-by < 0.5 W
- Nominal lifetime up to 50,000 h
- 5-year guarantee

## Housing properties

- Casing: polycarbonat, white.
- Type of protection IP20

## Interfaces

- DALI-2 DT 6, switchDIM, EL, corridorFUNCTION
- Terminal blocks: 45° push terminals

## Functions

- Adjustable output current(DIP), SwitchDIM function
- Fulfills DALI-2 parts: 105 (DALI firmware update), 251 (Luminaire data), 252 (Energy reporting) and 253 (Diagnostics & Maintenance)
- Protective features (overtemperature, short-circuit, overload, no load)
- Surge protection voltage 1 KV(L-N)
- For cable cross-sections up to 1.5mm²

The lamp controlgear relies upon the luminaire enclosure for protection against accidental contact with live parts.

## Benefits

- Compact dimension that is beneficial to the miniaturization design of track luminaire
- Best energy savings due to low stand-by losses and high efficiency

## Typical applications

- For spot light and pendant luminaire for retail store and hospitality lighting applications

## Specific Technical Data

| Type | Input Voltage | Output Power | Output Voltage | Output Curren | Ripple | TC | Ta | Dimension |
|---|---|---|---|---|---|---|---|---|
| VDL G1 P24DCA40DIP250-600mA R BI PRO | 220-240Vac | Max.24W | 27-40Vdc | 200-600mA | ±5% | 85℃ | -20...+50℃ | ₵63x26mm |

## Ordering data

| Article number | Description | Dimension of product | Net Wt/pc | Package/ctn | Dimension of carton |
|---|---|---|---|---|---|
| 1060800394 | VDL G1 P24DCA40DIP250-600mA R BI PRO | ₵63x26mm | 80g | 100pcs | 318*154.5*233mm |

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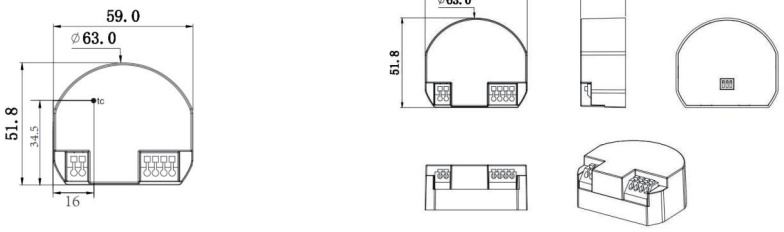
## Dimension&Tc position

Unit:mm



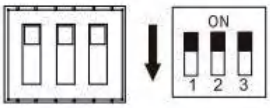

## Technical data

| Product type | 24W | |
|---|---|---|
| Rated supply voltage=U-IN on label | 220-240 | V |
| Input voltage range, AC, performance/safety | 202-254/198-264 | V |
| Mains frequency, performance/safety | 47-63/50-60 | Hz |
| Overvoltage protection(Input side) | 320Vac,48h | |
| Typ. input current (@230, 50Hz full load) | 0.126 | A |
| Typ. input current (@230, 50Hz full load, dimming) | 0-126 | A |
| Leakage current (@230V, 50Hz, full load) | <150 | μA |
| Max input power | 27.6 | W |
| Typ. efficiency (@230V, 50Hz, full load) | 87 | % |
| Power factory(@230V, 50Hz, full load) | 0.95 | |
| Typ. power consumption on stand-by | <0.5 | W |
| Typ. input current in no-load operation | 17.3 | mA |
| Output P_ST_LM (in entire operating range) | <1 | |
| Output SVM (in entire operating range) | <0.4 | |
| Max output peak current (non-repetitive) | ≤output current +20% | |
| Output LF current ripple (<120 Hz) | ±5 | % |
| THD(at 230V, 50Hz, full load) | <15 | % |
| Typ. input power in no-load operation | 0.43 | W |
| Output current tolerance | ±5 | % |
| Starting time (at 230V, 50Hz, any load) | <1 | S |
| Turn off time (at 230V, 50Hz, full load ) | <20 | mS |
| Output voltage (U-OUT) | 27-40 | V |
| Output current (I-OUT) | 250/300/350/400/450/500/550/600 | mA |
| Dimming range/abs.min.output current | 1-100%/2.5mA | |
| Mains surge capability (between L-N) | 1 | KV |
| Lifetime up to@Tc_Max=85℃ | 50,000 | h |
| Guarantee | 5 | Year(s) |
| Dimensions DxH | Ø63X26 | mm |
| Ambient temperature | -20...+50 | ℃ |
| Tcase max | 85 | ℃ |
| Storage temperature ts | -20...+80 | ℃ |

## Adjust current

Output current can be adjusted by DIP

| Iout | 600mA | 550mA | 500mA | 450mA | 400mA | 350mA | 300mA | 250mA |
|---|---|---|---|---|---|---|---|---|
| 1 | ON | ON | ON | ON | — | — | — | — |
| 2 | ON | ON | — | — | ON | ON | — | — |
| 3 | ON | — | ON | — | ON | — | ON | — |



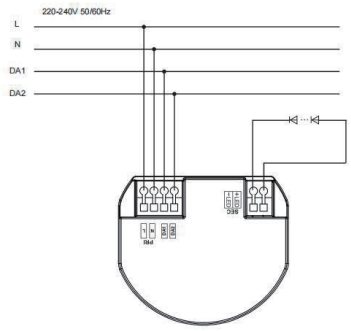

## 1. Standards

EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 62384
EN 61643-11

EN 62386-101
EN 62386-102
EN 62386-207

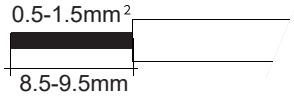
## 2. Installation and wiring

### 2.1 Circuit diagram



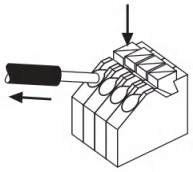

### 2.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5–1.5 mm². Strip 8.5–9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.




### 2.3 Release of the wiring

Press down the " push button" and remove the cable from front.



### 2.4 Wiring guidelines

- 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).
- The secondary wires (LED module) should be routed in parallel to ensure good EMC performance
- Incorrect wiring can damage LED modules.
- **Secondary switching is not permitted.**
- **Max length of output wires is 80cm**
- To avoid the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver,etc.).

### 2.5 Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 10 seconds
4. Connect LED module again

## 3. Thermal details and life-time

Expected life-time

| Type | | ta 45℃ | 50℃ |
|---|---|---|---|
| | | tc 80℃ | 85℃ |
| VDL G1 P24DCA40DIP 250-600mA R BI PRO | Life-time | >50000h | >50000h |

Test result at max. output voltage.

The LED drivers are designed for a life-time based on left reference conditions and with a failure probability of less than 10%.

Life-time declarations are informative and represent no warranty claim.

## 4. Maximum loading of automatic circuit breakers in relation to inrush current

| Maximum loading of automatic circuit breakers | | | | | | | | | Inrush current | |
|---|---|---|---|---|---|---|---|---|---|---|
| Automatic circuit | C10 | C13 | C16 | C20 | B10 | B13 | B16 | B20 | Imax | Time |
| Installation Ø | 1.5mm² | 1.5mm² | 1.5mm² | 1.5mm² | 2.5mm² | 1.5mm² | 1.5mm² | 2.5mm² | | |
| VDL G1 P24DCA40DIP 250-600mA R BI PRO | 46 | 60 | 74 | 93 | 30 | 39 | 48 | 60 | 16.8A | 140.8μs |

This is Max.values calculated out of inrush current! Please consider not to exceed the maximum rated continuous current of the circuit breaker, Calculation used typical values from ABB series S200 as a reference.

Actual values may differ due to used circuit breaker types and installation environment.

### 4.1 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

| Type | THD | 3 | 5 | 7 | 9 | 11 |
|---|---|---|---|---|---|---|
| VDL G1 P24DCA40DIP 250-600mA R BI PRO | <10% | <12% | <10% | <7% | <5% | <3% |

Acc. to EN61000-3-2. Harmonics < 5 mA or < 0.6 % (whatever is greater) of the input current are not considered for calculation of THD.

## 5. Functions

### 5.1 Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED Driver switches off. After elimination of the short circuit the nominal operation is restored automatically.

### 5.2 No-load operation

The LED Driver works in burst working mode to provide a constant output voltage regulation which allows the application to be able to work safely when LED string opens due to a failure.

### 5.3 Overload protection

If the output voltage range is exceeded the LED Driver will protect itself by reducing the LED output current.

After elimination of the overload, the nominal operation is restored automatically.

**6.For LED module use only.**

**7.Installation shall be done by qualified technician.**

**8.Do not dispose of electrical appliances as unsorted municipal waste,use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical apploances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain,damaging your health and well-being.**

## 9. Miscellaneous

### 9.1 Insulation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) ,each luminaire should be submitted to an insulation test with 500V DC for1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.

The insulation resistance must be at least 2MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500V AC (or 1.414 x 1500V DC).

To avoid damage to the electronic devices this test must not be conducted."

### 9.2 Conditions of use and storage

Humidity: 5 % up to max. 85 %, not condensed ( 40 days/year at 85 %)

Storage temperature: -20 °C up to max. +80 °C

The devices have to be within the specified temperature range (ta) before they can be operated.

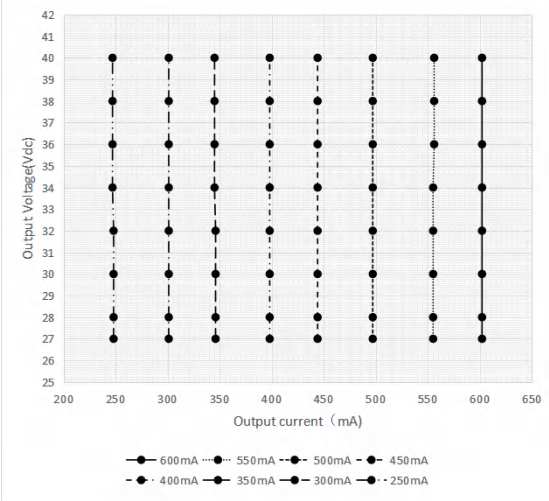
### 9.3 Maximum number of switching cycles

All LED Driver are tested with 50,000 switching cycles.

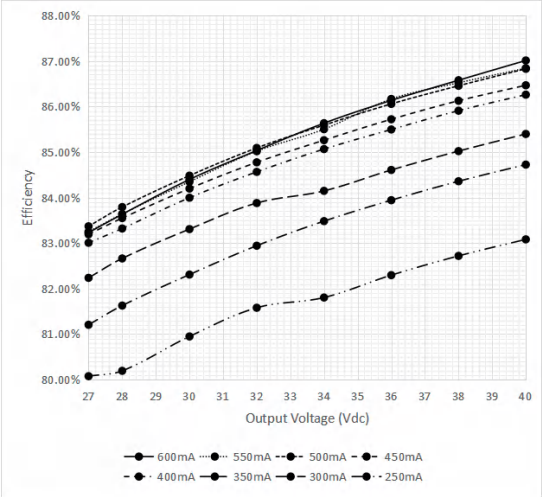
The actually achieved number of switching cycles is significantly higher.

## 10. Electrical values

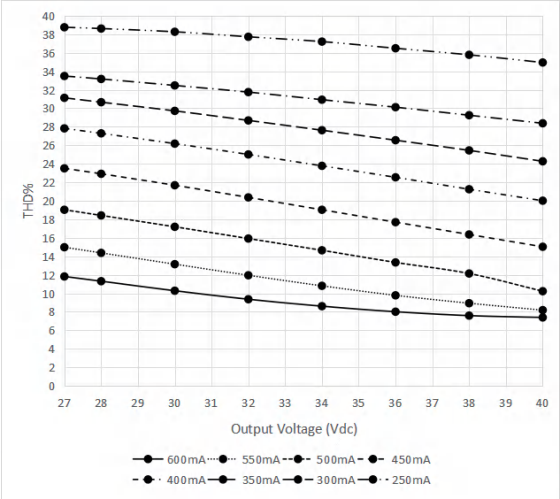
### 10.1 Operating window



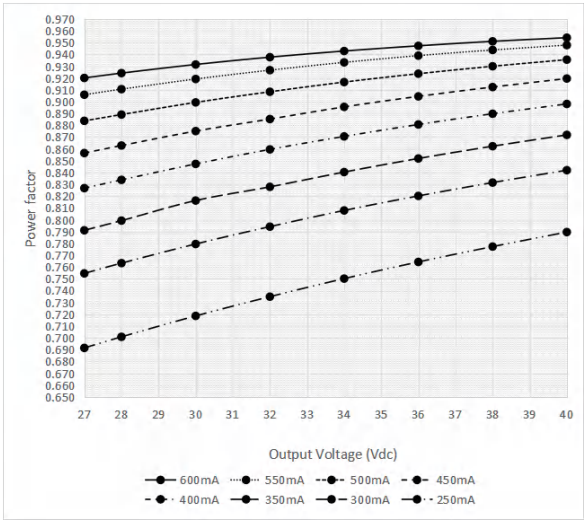

### 10.2 Efficiency vs load (@230VAC 50HZ)



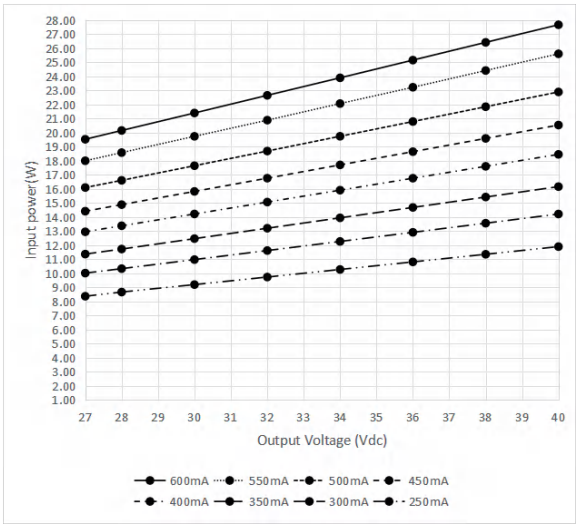

### 10.3 THD vs load (@230VAC 50HZ)



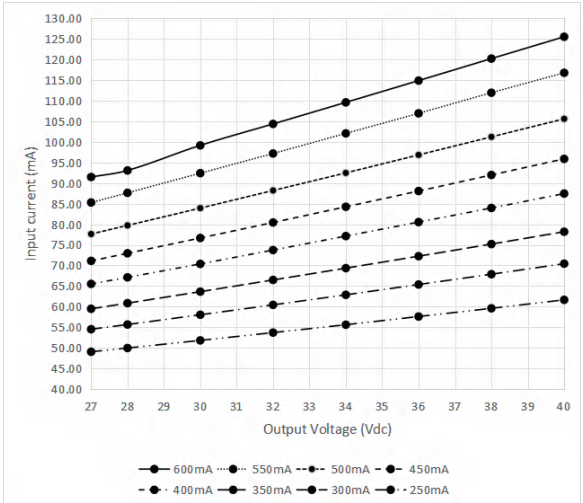

### 10.4 Power factor vs load (@230VAC 50HZ)




### 10.5 Input power vs load (@230VAC 50HZ)




### 10.6 Input current vs load (@230VAC 50HZ)



**Version Record**

| Version | Remark | Issued Date |
|---|---|---|
| V1.0 | Initial issued | Aug.1st,2025 |
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