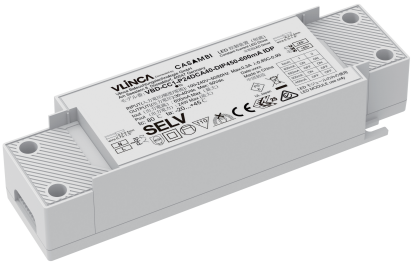
Vlinca Beleuchtungstechnologie GmbH
Ebene 6, Flügel 3, Am Seestern 8, Düsseldorf, 40547 Germany

VBD series LED Driver



Product description

- Can be integrated in Casambi systems (Casambi Ready)
- Dimmable independent constant current LED driver
- Selectable fixed output current between 450mA and 500mA, 550mA and 600mA via DIP switch
- For luminaires of protection class II
- Forms automatically a wireless communication network with up to 250 nodes
- Max. output power 24 W
- Terminal blocks: 45° push terminals

Advantage

- Stylish design
- Up to 89% efficiency
- Typ. power consumption on stand-by < 0.35 W
- Dimming range 1 to 100 %
- Life-time up to 50,000 hours
- 5-year guarantee

Housing properties

- Casing: polycarbonat, white
- Type of protection IP20

Features

- Overtemperature protection
- Overload protection
- Short-circuit protection
- No-load protection
- Burst protection voltage 1 kV
- Surge protection voltage 1 kV (L to N)

Typical applications

- For spot light and downlight in retail,residential and hospitality application

Specific Technical Data

Type	Input Voltage	Output Power	Output Voltage	Output Current	Ripple	TC	Ta	Dimension
VBD-CC1-P24DCA40 -DIP450-600mA IDP	100-240Vac	Max.24W	30-40V	450/500 550/600mA	±5%	80℃	-20...+45℃	144*43*30mm

Ordering data

Article number	Description	Dimension of product	Net Wt/pc	Package/ctn	Dimension of carton
1060800507	VBD-CC1-P24DCA40 -DIP450-600mA IDP	144*43*30mm	115g	50pcs	300*230*180mm

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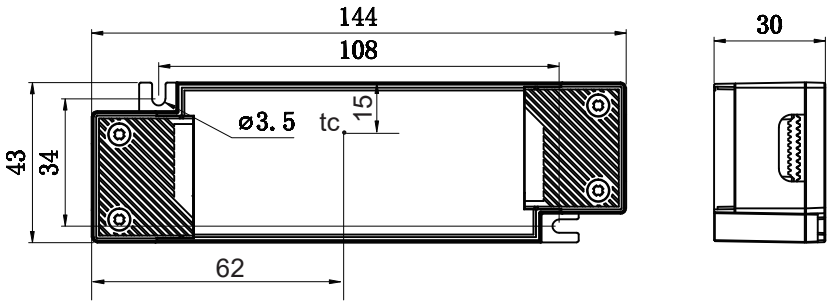
Technical data

Product type	24W	
Rated supply voltage=U-IN on label	100-240	V
Input voltage range, AC	90-264	V
Mains frequency	50/60	Hz
Overvoltage protection(input side)	320Vac, 1h	
Max input current (@220-240V, 50/60Hz)=I-IN on label	0.3	A
Max input power (@220-240V, 50/60Hz)=P-IN on label	28.4	W
Typ.power consumption (@230V, full load)	26.9	W
Max output power (@220-240V, 50/60Hz) P-OUT on label	24	W
Max output voltage (V) (no load)=U-OUT from label	50	V
Output current tolerance(+/-%), (at 230V 50 Hz, full load)	±7.5	%
Output current tolerance(+/-%), (at 230V 50 Hz, min load)	±7.5	%
Output LF Current Ripple (<120Hz)	<5	%
Max.output peak current (at 230 V, 50 Hz, full load)	677	mA
Leakage current (230ac/50Hz input, Output full load)	<450	μA
THD (at 230V, 50Hz, full load)	<13	%
Power factory (at 230, 50Hz, full load)	0.85C-0.99	
Typ. power consumption on stand-by	<0.35	W
Efficiency (at 230, 50Hz, full load)	89	%
Starting time (at 230, 50Hz, full load)	0.6	s
Turn off time (at 230, 50Hz, full load)	0.5	s
Hold-up time at power failure (output)	20	ms
Ambient temperature ta (℃)	-20-+45	℃
Ambient temperature ta (50000Hrs)	45	℃
Max.casing temperature tc	80	℃
Storage temperature ts	-20-80	℃

Tc Position (mm)



Adjust current

Output current can be adjusted by the DIP switch

Set the current by DIP switch after mains off.
Use of DIP switch only after mains off.

600mA: Switch 1=ON, Switch 2=ON

500mA: Switch 1=ON, Switch 2=OFF

550mA: Switch 1=OFF, Switch 2=ON

450mA: Switch 1=OFF, Switch 2=OFF

Product Nomenclature

The part number designation for VLINCA INDEPENDENT BLUETOOTH LED DRIVER Series is explained as follows

VBD-CC1-P24DCA40-DIP450-600mA IDP

- **Product Family** — VLINCA BLETOOTH DRIVER
- **Output current type.** — CC1-Dimmable
- **Output Power.** — P24-24W
- **Output Voltage MAX.** — DCA40-40V
- **Current Election Method** — DIP-DIP switch
- **Outpu Current Range** — 450-600mA
- **IDP-INDEPENDENT**

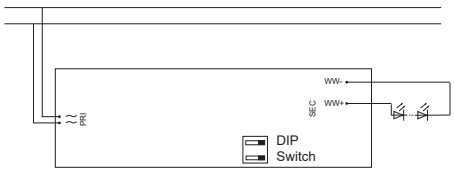
1. Standards

EN 62479,EN 50663
EN 55015, EN 61000-3-2, EN 61000-3-3, EN 61547
EN 61347-1, EN 61347-2-13,EN 62493
EN 62384, EN 61643-11
ETSI EN 301 489-1
ETSI EN 301 489-17
ETSI EN 300 328

2. Installation and wiring

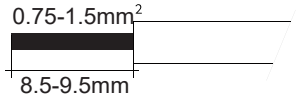
2.1 Circuit diagram

220V-240V
50/60Hz

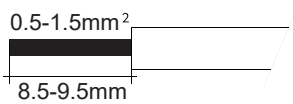


2.2 Wiring type and cross section

The wiring can be in stranded wires with ferrues or solid with a cross section of 0.75-1.5mm^2 for input and 0.5-1.5mm^2 for output.Strip 8.5-9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals



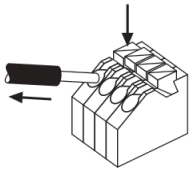
for input terminals



for output 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.
- 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	35℃	45℃
		tc	70℃	80℃
VBD-CC1-P24DCA40-DIP450-600mA IDP	Life-time		>100000h	>50000h

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.

Test result at max. output voltage.

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		
VBD-CC1-P24DCA40-DIP450-600mA IDP	9	12	15	19	5	6	8	10	26.6A	71.2μs

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
VBD-CC1-P24DCA40-DIP450-600mA IDP	<15%	<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.

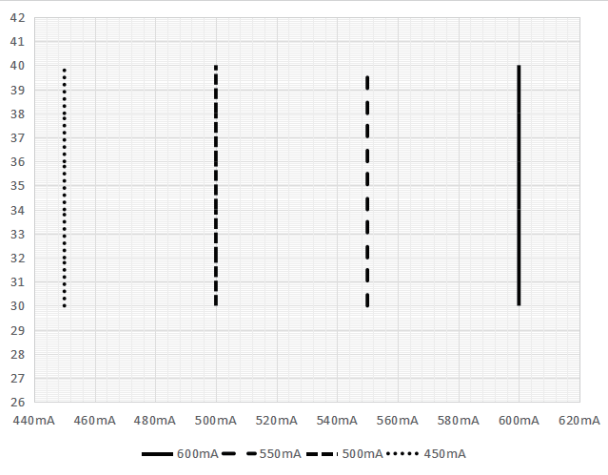
9.3 Maximum number of switching cycles

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

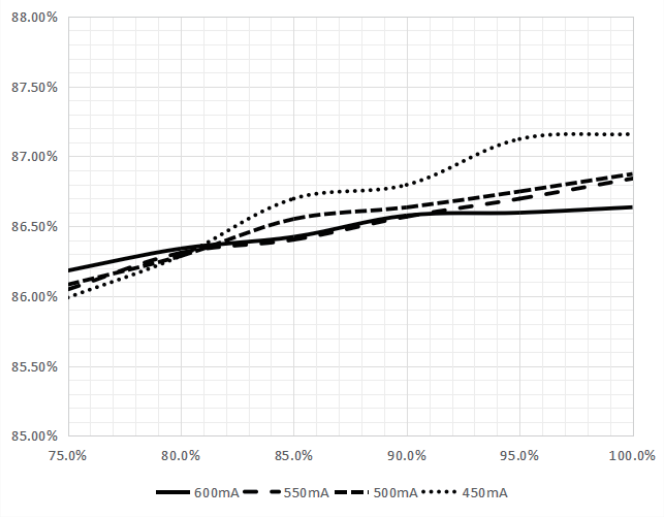
The actually achieved number of switching cycles is significantly higher.

10. Electrical values

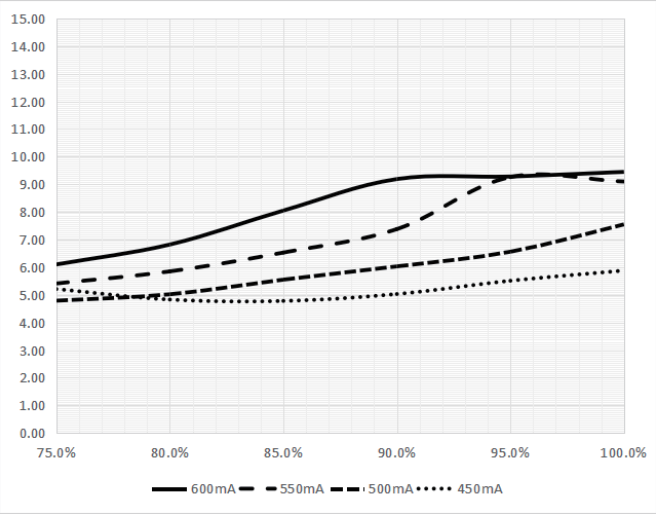
10.1 Operating window



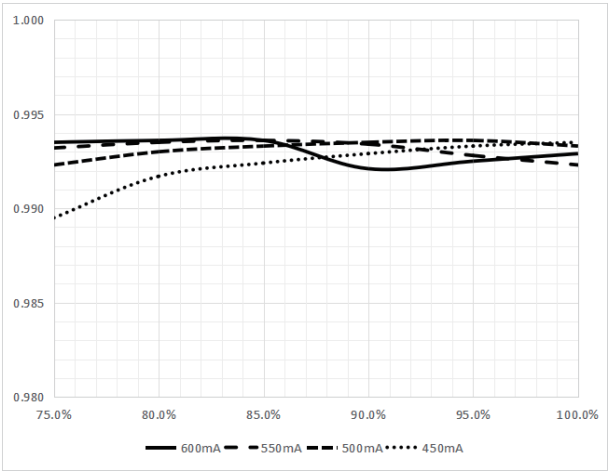
10.2 Efficiency vs load (@100VAC 50HZ)



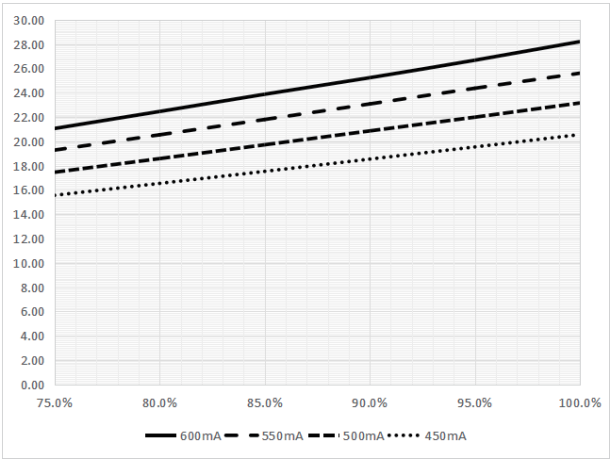
10.3 THD vs load (@100VAC 50HZ)



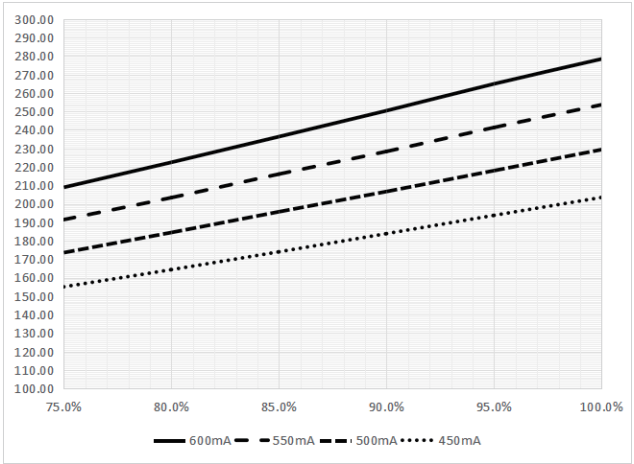
10.4 Power factor vs load (@100VAC 50HZ)



10.5 Input power vs load (@100VAC 50HZ)



10.6 Input current vs load (@100VAC 50HZ)



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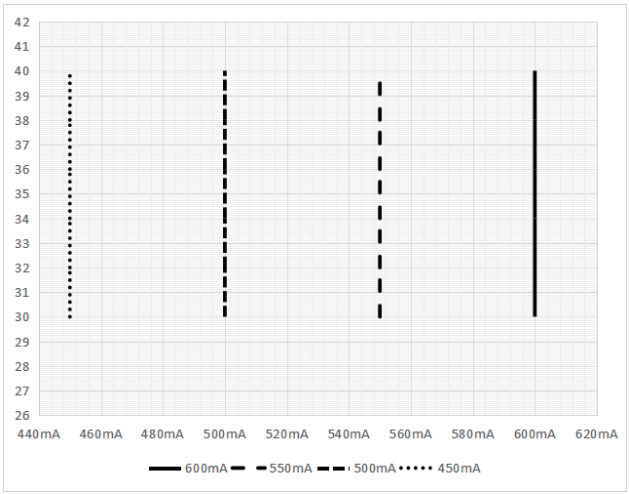
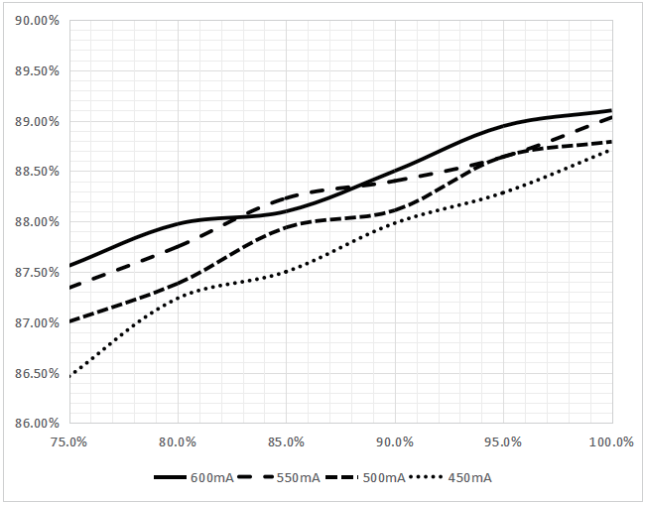
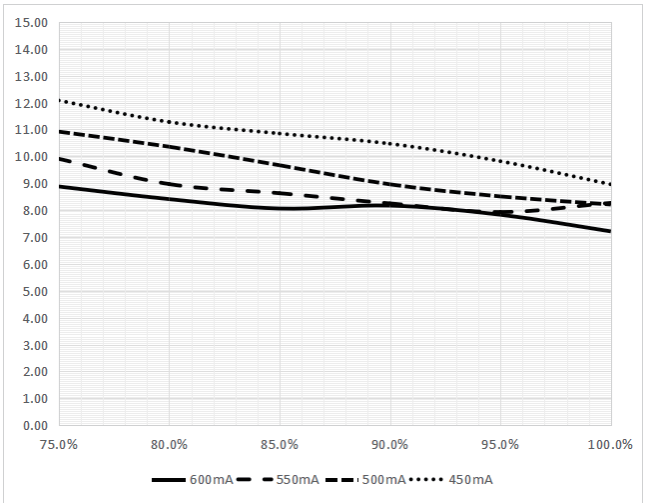


10.2 Efficiency vs load (@230VAC 50HZ)



10.3 THD vs load (@230VAC 50HZ)



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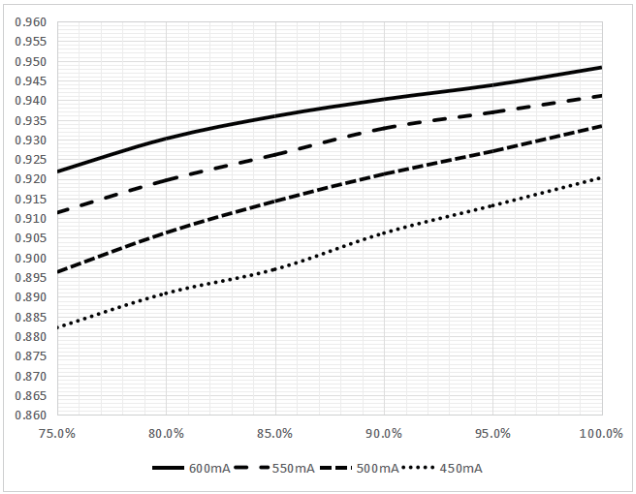

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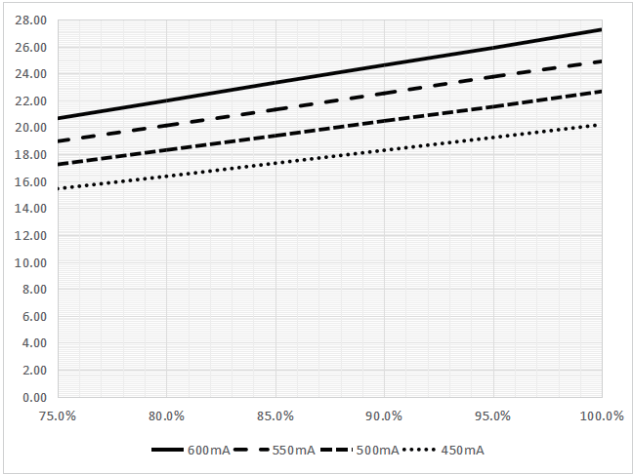

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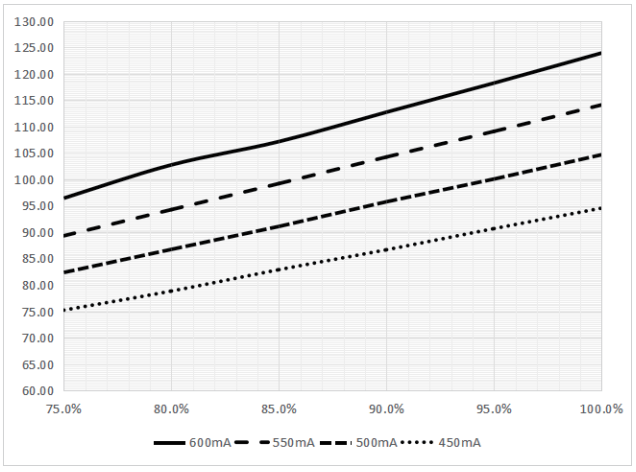

Version Record

Version	Remark	Issued Date
V1.0	Initial issued	Mar.28th,2025