CC LINEAR

PrimeLine NFC L-R1 DALI2 B2L-ready

186738, 186739, 186740, 186741

Typical Applications
Built-in in linear luminaires for
- Office lighting
- Industrial lighting

NFC B2L ready DALI 2

PrimeLine NFC L-R1 DALI2 B2L-ready

- **SELECTABLE OUTPUT CURRENT VIA NFC**
- **DIMMABLE: DALI (ED. 2)**
- **ADJUSTABLE OUTPUT CURRENT, CLO, DC LEVEL VIA NFC**
- **B2L READY: WITH INTEGRATED DALI POWER SUPPLY**
- **VERY LOW RIPPLE CURRENT: < 1%**
- **SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172**
- **LONG SERVICE LIFE: UP TO 100,000 HRS.**
- **PRODUCT GUARANTEE: 5 YEARS**

5 YEARS GUARANTEE

LIGHTING SOLUTIONS
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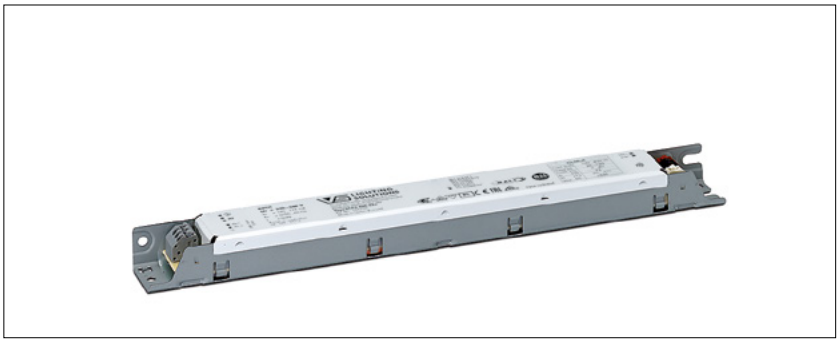
PrimeLine NFC L-R1 DALI2 B2L-ready



Product features
- Linear casing shape

Functions
- Programmable via NFC interface (contactless)
  - Selectable current output
  - Programmable CLO function
  - Adjustable DC level
- With integrated DALI power supply

Electrical features
- Mains voltage: 220–240 V ±10%
- Mains frequency: 50–60 Hz
- DC operation: 198–276 V, 0 Hz
- Push-in terminals: 0.2–1.5 mm²
- Power factor at full load: > 0.97
- Max. working voltage (U_{OUT}): 250 V
- Secondary side switching of LED modules is not allowed.

Dimming
- Dimming range: 1 to 100%

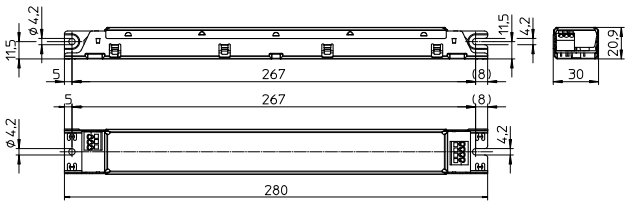
Safety features
- Protection against transient main peaks up to 1 kV (between L and N) and up to 2 kV (between L/N and PE)
- Electronic short-circuit protection
- Overload protection
- Overtemperature protection
- Protection against "no load" operation
- Degree of protection: IP00
- Protection class I

Packaging units

Ref. No.	Packaging unit		
	Pieces per box	Boxes per pallet	Weight g
186738	30	64	195
186739	30	64	205
186740	30	64	205
186741	30	64	205

Applied standards
- EN 60598-2-22
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 62386 DALI Ed. 2 Part 101,102,207
- EN 50172
- EN 55015

Dimensions
- Casing: M7.1
- Length: 280 mm
- Width: 30 mm
- Height: 21 mm



Dimming
Analogue

Current adjustment

Product guarantee
- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

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CC-PrimeLine-NFC-LR1-DALI2-B2L-ready_186738-186739-186740-186741_EN – 2/9 – 10/2020

Electrical characteristics

Max. output W	Type	**Ref. No.**	Voltage 50–60 Hz V	Mains current mA	Inrush current A / µs	Current output DC mA (± 5%)	Voltage output DC (V)	DALI bus power supply (mA) guaranteed	DALI bus power supply (mA) max.	THD at full load % (230 V)	Efficiency at full load % (230 V)	Ripple 100 Hz %
40	ECXd 400.289	**186738**	220–240	205–190	31 / 205	100–400	30–120	20	40	< 15	> 90	< 1
40	ECXd 800.290	**186739**	220–240	210–200	35 / 250	400–800	30–70	20	40	< 13	> 89	< 1
85	ECXd 400.291	**186740**	220–240	410–380	31 / 205	100–400	100–225	20	40	< 9	> 94	< 1
85	ECXd 800.292	**186741**	220–240	425–385	35 / 250	400–800	30–130	20	40	< 9	> 93	< 1

Maximum ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the drivers.

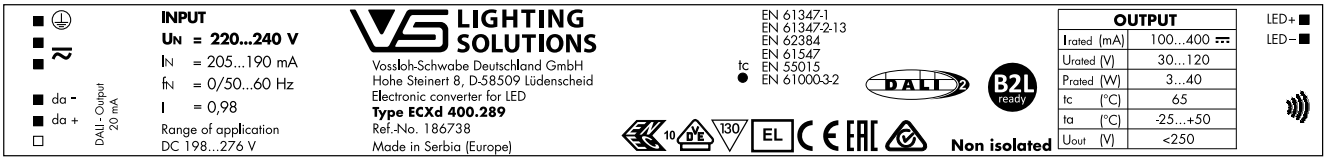
Ref. No.	Ambient temperature range °C min.	Ambient temperature range °C max.	Operation humidity range % min.	Operation humidity range % max.	Storage temperature range °C min.	Storage temperature range °C max.	Storage humidity range % min.	Storage humidity range % max.	Max. operation temperature at t_c point °C	Degree of protection
186738	–25	+50	5	60	–40	+85	5	95	+65	IP00
186739, 186740, 186741									+70	

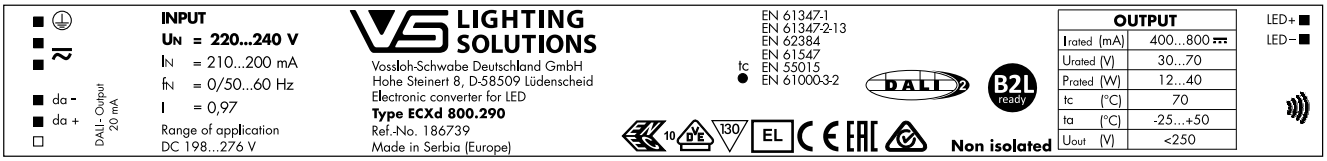
Expected service life time

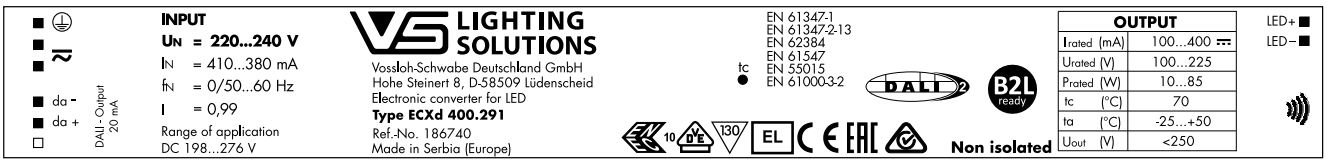
at operation temperatures at t_c point

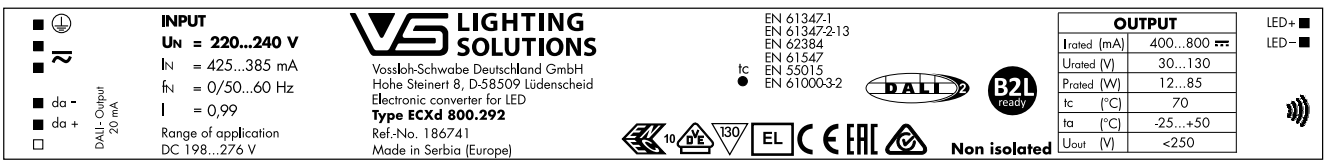
Operation current	Ref. No. 186738		186739, 186740, 186741	
All	55 °C	65 °C	60 °C	70 °C
hrs.	100,000	50,000	100,000	50,000

Product labels









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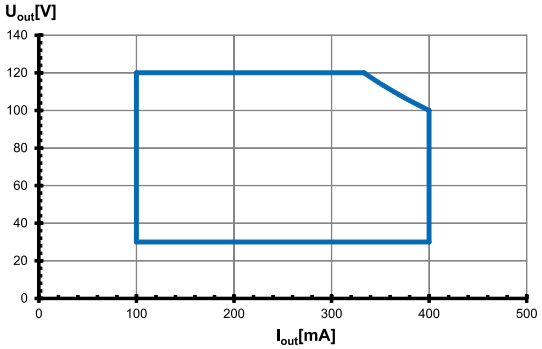
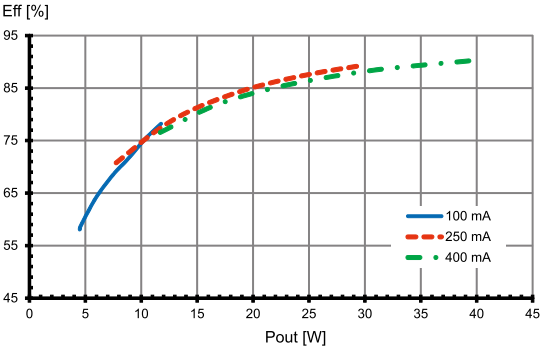
Typ. performance graphs for 186738 / Type ECXd 400.289

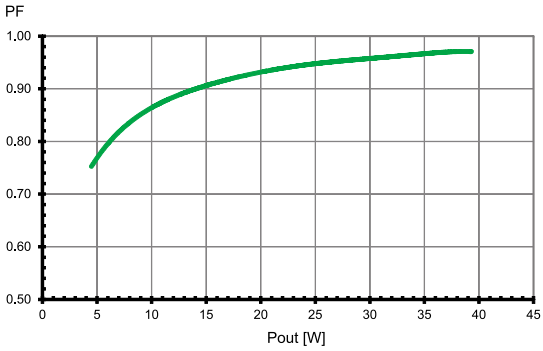
Working area



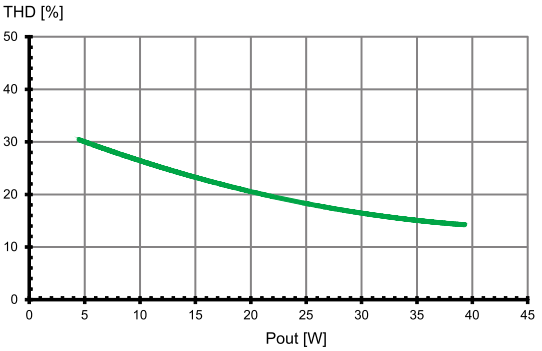
Efficiency



Power factor

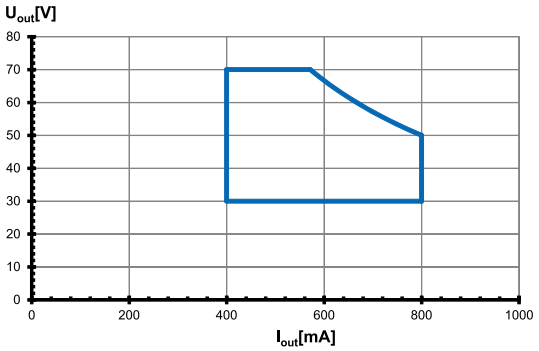


Total harmonic factor (THD)



Typ. performance graphs for 186739 / Type ECXd 800.290

Working area



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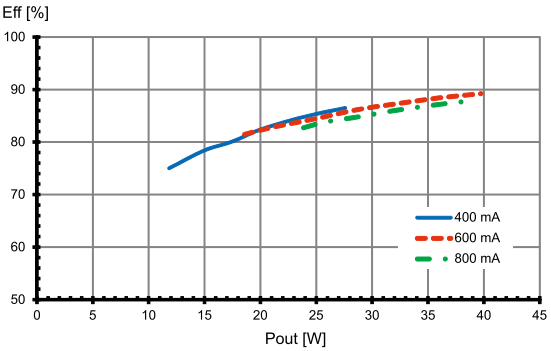
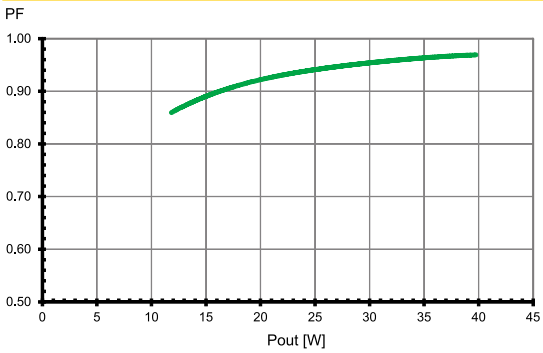
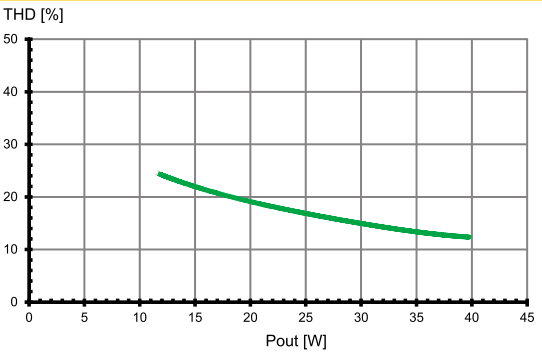


Power factor



Total harmonic factor (THD)



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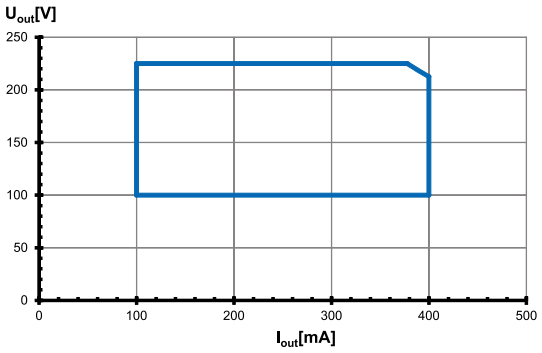
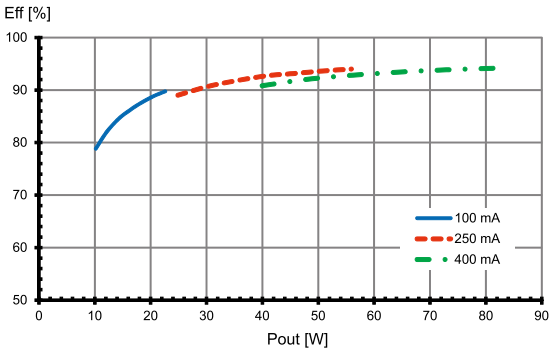
Typ. performance graphs for 186740 / Type ECXd 400.291

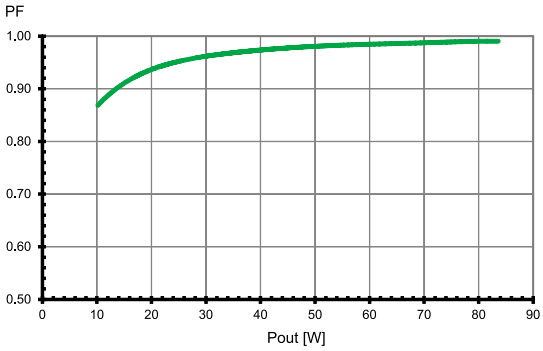
Working area



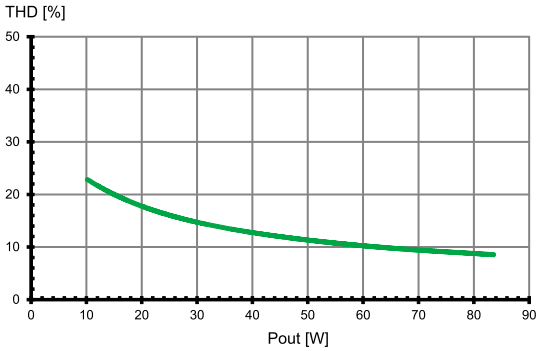
Efficiency



Power factor

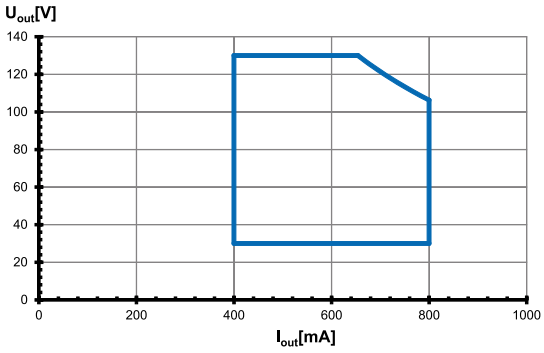


Total harmonic factor (THD)

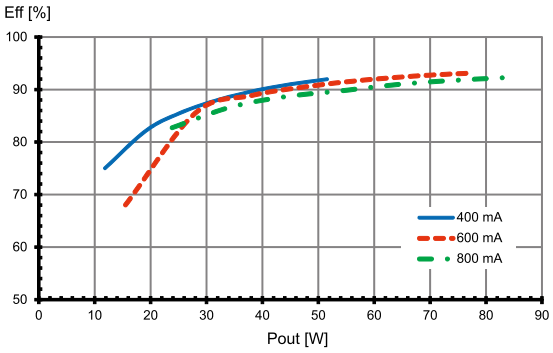


Typ. performance graphs for 186741 / Type ECXd 800.292

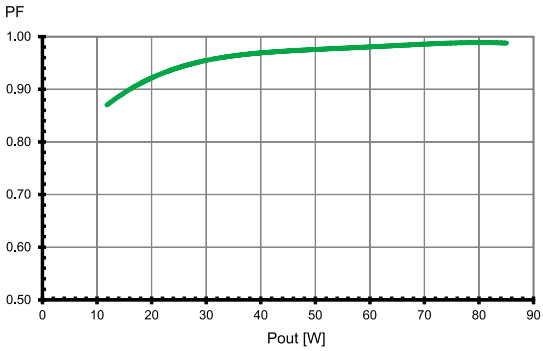
Working area



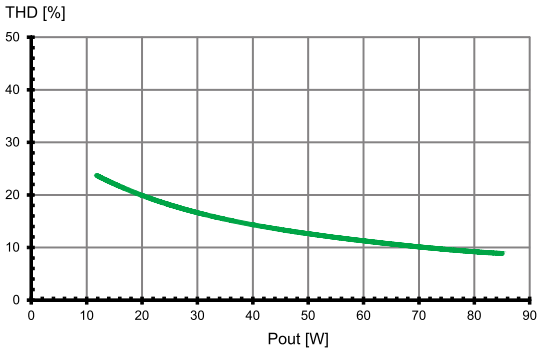
Efficiency



Power factor



Total harmonic factor (THD)



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Safety functions

- Transient mains peaks protection:
  Values are in compliance with EN 61547 (interference immunity).
  Surges between L–N: up to 1 kV
  Surges between L/N–PE: up to 2 kV
- Short-circuit protection: The control gear is protected against permanent short-circuit with automatic restart function.
- Overload protection: The control gear only works in range of rated output power and voltage problemfree. Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- Overheating: The control gear has overheating protection acc. to EN 61347-1 C 5e. In case of overheating the control gear will reduce the output power.
- No load operation: The control gear is protected against no load operation (open load).
- If any of the above mentioned safety functions will be triggered, disconnect the control gear from the power supply then find and eliminate the cause of the problem.

Output voltage (U_{OUT})

According to EN 61347-1, U_{OUT} indicates which voltage can occur at the output terminals directly or between the output terminals and the PE terminal of the LED driver. This value is given for non-insulated drivers. The used LED module must have an insulation voltage that is at least as high as the specified U_{OUT} voltage of the driver.

Leakage current

Leakage currents are present in all electronic converters or luminaires with PE connection and must be observed especially when using non-insulated LED drivers.
The PCB surfaces of LED modules form a capacitance with grounded LED aluminum circuit boards, heat sinks or mounting plates. This leads to capacitive leakage currents between the connection poles of the LED (+ and –) and the PE terminal. These capacitances should be kept as small as possible, since they are responsible for a possible glowing or flickering of the LEDs in standby mode. In extreme cases, the maximum permissible leakage current of the luminaire according to EN 60598 paragraph 10.3 may be exceeded. The leakage current is also relevant when using RCD circuit breakers.

Parametrization via NFC

- DC and emergency lighting operation
  - The control gears are suitable for direct voltage operation (DC). Reliable DC operation is guaranteed if the specified working area of LED driver is maintained.
  - DC range: 198–276 V
  - Reducing to 176 V: With reduced service life time possible
  - Light level at DC operation (EOF_I): 15% (adjustable)
  - DC level range: 0/1–100% (programmable via NFC)
  - DC operation: acc. to EN 60598-2-22 the LED current reduction at high temperature is limited to 50% to nominal current.
- Constant lumen output (CLO)
  - In the most cases the CLO function is used to reduce system performance over the life of an LED system.
  - The luminous flux of LED modules decreases in a step-wise manner up to the end of the modules' service life. To guarantee constant luminous flux, the output of the control gear must be gradually increased over its service life.
  - Defining the CLO function its needed to program the start, provisional and end value, respectively the LED lifetime via the NFC programmer.
- Current adjustment (mA)
  - Factory setting: minimum current
  - Programmable output current via NFC

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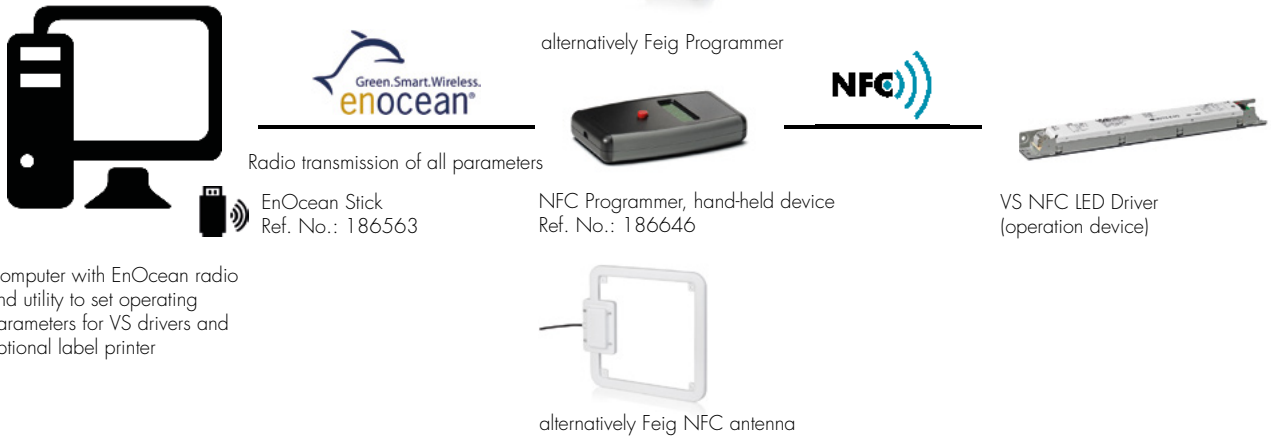
System architecture – NFC configuration

- With the NFC programmer (Ref. No. 186646) and the EnOcean USBStick (Ref. No. 186563) or alternatively with a Feig Programmer or the Feig NFC antenna, contactless programming of NFC LED drivers is possible.
- The LED driver is programmed via NFC in a de-energised state.
- The use of the NFC programmer is flexible in the production or already in the pre-assembly process. A complex commissioning is not required. The operation and parameterization is done in the simplest way. All operating parameters can be individually programmed and updated.
- The exact description of the programming can be found in the operation manual of the NFC programmer.



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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED drivers, fire and/or other hazards.

Mandatory regulations

- DIN VDE 0100
- EN 60598-1

Mechanical mounting

- Mounting position: Any position inside a luminaire is allowed. LED drivers are not allowed to use for independent applications.
- Mounting location: LED drivers are designed for integration into luminaires or comparable devices. Installation in outdoor luminaires: degree of protection for luminaire with water protection rate ≥ 4 (e.g. IP54 required).
- Degree of protection: IP00
- Clearance: Min. 0.10 m from walls. ceilings and insulation
- Surface: Solid and plane surface for optimum heat dissipation required.
- Heat transfer: If the driver is destined for installation in a luminaire. sufficient heat transfer must be ensured between the driver and the luminaire casing. LED drivers should be mounted with the greatest possible clearance to heat sources. During operation. the temperature measure at the driver's t_c point must not exceed the specified maximum value.
- Fastening: Using M4 screws in the designated holes
- Tightening torque: 0.2 Nm

Electrical installation

- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of 0.2–1.5 mm², AWG24-16
- Stripped length: 8.5–9.5 mm
- Wiring: The mains conductor within the luminaire must be kept short (to reduce the induction of interference). Mains and lamp conductors must be kept separate and if possible should not be laid in parallel to one another.
- DALI wiring – Blu2Light ready: As a standard DALI bus is not SELV-compliant, the DALI lead must be rated for mains voltage. The power supply and the DALI lead can be laid in a single cable provided the cable does not exceed a maximum length of 100 m, e.g. using 5x1.5 mm². Please observe the maximum lengths of the DALI lead during installation:

	≥ 1.5 mm²	1 mm²	0.75 mm²	0.5 mm²
6.2 Ω max.	300 m	180 m	130 m	80 m

- DALI power supply – Blu2Light ready: The DALI interface (da+ / da–) has an integrated DALI bus power supply and provides a guaranteed output current of 20 mA. Max. output current (da+/da–): 40 mA **Note**: Polarity has to be considered. The power supply is designed for use with Blu2Light devices. In addition to a Blu2Light device max. one further LED driver (without integrated power supply) can be connected in parallel. **Note**: Power consumption of the individual Blu2Light components can be taken from the respective data sheets.
- No. of Blu2Light ready LED drivers per DALI bus: In total, max. 6 LED drivers with integrated power supply can be connected to a DALI bus. In addition DALI drivers without integrated power supply and Blu2Light components can be connected to the DALI bus. The exact number of other components without integrated power supply depends on the single current consumption. **Note**: The power supply can not be switched. The Blu2Light ready LED drivers must not be integrated into an existing DALI network with an external DALI bus power supply!

No. of devices at one DALI bus			Power supply	
B2L ready LED drivers	Blu2Light devices	additional LED drivers without power supply	guaranteed mA	max. mA
1	1	1	20	40
2	1	8	40	80
3	1	17	60	120
4	1	26	80	160
5	1	35	100	200
6	1	44	120	240

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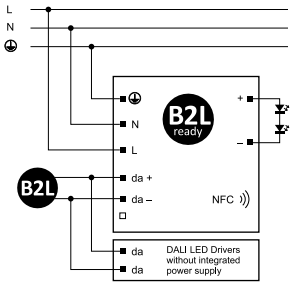
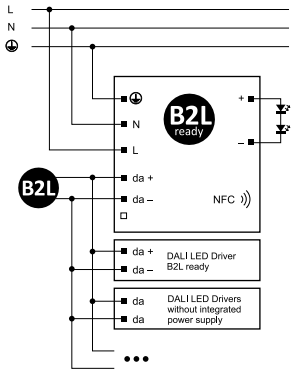
- Polarity: Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Through-wiring: Is not allowed.
- Secondary load: The sum of forward voltages of LED loads (incl. tolerances) has to be within the values which are mentioned in the table "Electrical Characteristics" in this data sheet.
- Wiring diagram:



B2L with one B2L ready LED driver



B2L with more than two B2L ready LED drivers

Selection of automatic cut-outs for VS LED drivers

- Dimensioning automatic cut-outs
  High transient currents occur when an LED driver is switched on because the capacitors have to load. Ignition of LED modules occurs almost simultaneously. This also causes a simultaneous high demand for power. These high currents when the system is switched on put a strain on the automatic conductor cut-outs. which must be selected and dimensioned to suit.
- Release reaction
  The release reaction of the automatic conductor cut-outs comply with VDE 0641. part 11. for B. C characteristics. The values shown in the following tables are for guidance purposes only and are subject to system-dependent change.
- No. of LED drivers
  The maximum number of VS LED drivers applies to cases where the devices are switched on simultaneously. Specifications apply to single-pole fuses. The number of permissible drivers must be reduced by 20% for multi-pole fuses. The considered circuit impedance equals 400 mΩ (approx. 20 m [2.5 mm²] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

Type	**Ref. No.**	Automatic cut-out type and possible no. of VS drivers pcs.		
Automatic cut-out type B		B 10 A	B 13 A	B 16 A
ECXd 400.289	**186738**	12	16	20
ECXd 800.290	**186739**	9	12	14
ECXd 400.291	**186740**	12	16	20
ECXd 800.292	**186741**	9	12	14
Automatic cut-out type C		C 10 A	C 13 A	C 16 A
ECXd 400.289	**186738**	21	27	34
ECXd 800.290	**186739**	15	20	24
ECXd 400.291	**186740**	21	27	34
ECXd 800.292	**186741**	15	20	24

– To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor of 2.5 with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

EU compliance information

Hereby, Vossloh-Schwabe Deutschland GmbH declares that the radio equipment type PrimeLine NFC L-R1 DALI2 B2L-ready is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: www.vossloh-schwabe.com.

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