

Case study

Spectacular LED light ceiling design at the Rostocker Hof creates a welcoming retail environment with homogeneous illumination

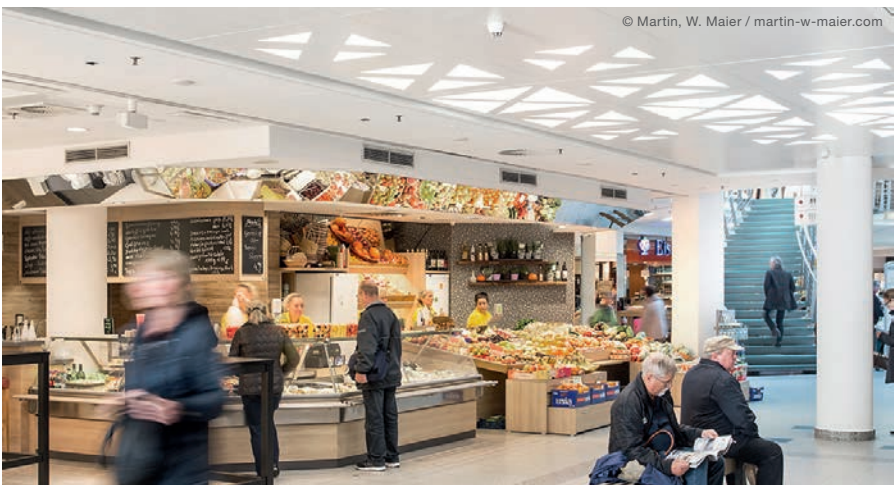
To mark its 20th anniversary, the Rostocker Hof shopping mall was redesigned by Mark Bendow Interior Environments, to enhance the entrance area and create a friendly atmosphere. The lighting design studio Konzeptlicht developed a spectacular 250-square-meter light ceiling system from specially designed panel luminaires, the difference was comparable to night and day. The BackLED® strip lighting and OPTOTRONIC® LED drivers were chosen to add the perfect light sources and control gears.

The light ceiling system from Konzeptlicht Lighting Solutions has a modular design and consists of light fields in four different sizes, a dummy cover, an equipment panel and a frame structure.

The innovative LED backlighting system with BackLED® lighting strips is characterized by particularly homogeneous illumination and uniform color effects while ensuring high module efficiency and economy. Another decisive factor for backlighting is the flexible adjustment of LED strips to objects with different shapes, sizes and materials. To adapt perfectly to the specified shape, the LEDs in the BackLED® family are attached on movable chains at equal intervals.

The constant-voltage OPTOTRONIC® LED drivers for 24 V LED modules for indoor and outdoor use are perfectly matched to the BackLED® family to achieve maximum efficiency, reliability and economy. Thanks to their robust design, they are also extremely durable, making them ideal for use in rooms with very high ceilings or open spaces such as the Rostocker Hof shopping mall.

www.osram.com/rostocker-hof



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中庭酒吧
ATRIUM BAR



LED drivers

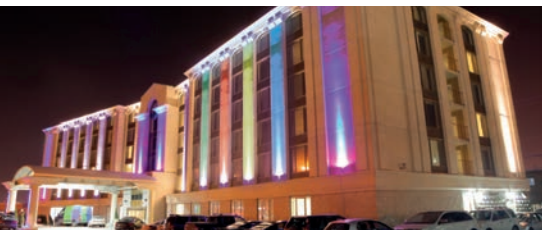
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OPTOTRONIC® LED drivers from OSRAM – reliable and interoperable systems for energy-efficient lighting design

Versatile LED drivers for different project needs

With a wide range of LED drivers, OSRAM provides you with individual LED solutions for your multifaceted professional and semiprofessional projects. All OSRAM LED drivers are known for their high performance and efficiency, giving you tremendous flexibility for the design of LED luminaires. No matter whether the job involves indoor or outdoor settings, round or linear luminaires, general or accent lighting – we can help you find the right OSRAM LED driver. The following chapter informs you about:

- Perfect combinations – systems with matching LED drivers and LED modules
- High quality and guarantee (please visit www.osram.com/system-guarantee for more details) – any LED driver that has failed because of a material or manufacturer's fault will be refunded
- OSRAM DALI technology (DALI-2, Constant Light Output (CLO), soft switch-off, Emergency Lighting (EL), Tunable White, Monitoring Data etc.), software and programming
- Design freedom and innovative housing designs
- Product families
 - Features and segmentation of OSRAM LED driver families
 - Constant current, linear shape, indoor application
 - Constant current, compact shape, indoor application
 - Constant current, outdoor application
 - Constant voltage, indoor and outdoor application
- Useful installation and operating instructions (number of ECGs per circuit breaker, permitted number of switching cycles, lifetime of LED drivers and permitted temperatures etc.)





A perfect combination

Expect more than just components. Expect a perfectly matched system. As one of the world's leading suppliers in the lighting sector, OSRAM provides you with perfectly matched components: innovative LED drivers and LED modules.

Your benefits

- LED drivers and modules from a single source
- Maximum reliability in system operation
- Only one point of contact in all matters relating to lighting

Research and development

Providing today what tomorrow needs. Continuous research and development on all OSRAM products promises innovative and open systems with additional user benefits to fulfill the needs of future lighting systems.

Your benefits

- Compliance with current regulations and, in certain cases, conformity with planned regulations
- High energy efficiency in lighting solutions
- The use of standard protocols enhanced by globally unique features

- DALI-2 logo: High interoperability with DALI control devices and sensors from various manufacturers
- OSRAM's proven quality, technology and guarantee
- High quality of light (low light modulation, CLO)

Excellent experience with 1 billion installed ECGs

Only those supplying maximum quality earn your trust. With up to 100,000 hours at a maximum failure rate of 10 %, OSRAM offers an excellent lifetime performance in the market. Thanks to this excellent level of reliability, OSRAM ECGs are not only the choice of leading luminaire manufacturers but also of well-known major users across the world.

Due to their high performance, an increasing number of OPTOTRONIC® LED drivers are also being used in extreme temperature ranges and harsh environments.



Guarantee for up to 5 years*

Hundreds of thousands of customers place their trust in us, year after year. In return, we provide guarantees lasting many years. OSRAM LED drivers deliver maximum quality, enabling us to provide a full 3-year or 5-year guarantee depending on the respective LED driver family or LED modules and LMS components.

OSRAM's guarantees give you the level of safety you expect over a long period of time. And this is something you can rely on.

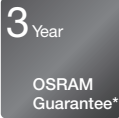
OSRAM's guarantees

System quality from a single source – the OSRAM service concept. You, as our customer, benefit from this passion. You can rely on our system guarantees for LED drivers, LED light sources (light engines and LED modules) and LMS components.

This means you only have a single contact person for your servicing needs. In the event of a defect, OSRAM will replace an item, free of charge, or issue a credit note for every product that demonstrably fails because of a material or manufacturing defect within the relevant guarantee period.

* For conditions and details, go to www.osram.com/system-guarantee; see also page 3.05





LED drivers and LED light sources
(light engines and LED modules)

Guarantee Level 1

OSRAM guarantee

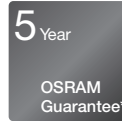
OSRAM offers a full 3-year guarantee on products from the series:

Light engines and LED modules

VALUE Flex®

OPTOTRONIC® Semiprofessional

OTe ...PC, ELEMENT, OT 9/200-240/350 DIM, OT 9/220-240/350,
OT 18/220-240/700DIM, OT 90/220-240/4X400, OTe 120



LED drivers and LED light sources
(light engines and LED modules)

Guarantee Level 2

OSRAM guarantee

OSRAM offers a full 5-year guarantee on products from the series:

Light engines and LED modules

LINEARight FLEX®

PrevaLED® COIN

BoxLED®, BackLED®

PrevaLED® Linear, PrevaLED® Area, PrevaLED® Bar, PrevaLED®
Core, PrevaLED® Cube, PrevaLED® Flat

OPTOTRONIC® Professional

OTi DALI ..., OTi, OT FIT..., OT ...P., (except OT ... PC),

OT ...4DIMLT2 E, OT .../120-277/... 2DIMLT P, OT .../220-277/...P5,

OT 15/220-240/12, OT 18/220-240/450, OT 20/220-240/24, OT

50/220-240/24, OT 75/220-240/24, OT 75/220-240/24 E,

OTi DALI 50/24, OTi DALI 80/24, OTi DALI 160/24

The guarantee starts with commissioning of the corresponding OSRAM LED drivers and/or OSRAM LED light sources and ends no later than 42 months after the OSRAM product was manufactured.

Registration is not required.

For each product from the above-specified series that fails due to a material or manufacturing defect, a replacement or credit note will be provided as part of the guarantee service.

The full conditions and details of guarantee level 1 can be found on the Internet at www.osram.com/system-guarantee

The guarantee starts with commissioning of the corresponding OSRAM LED drivers and/or OSRAM LED light sources as well as OSRAM LMS components and ends no later than 66 months after the OSRAM product was manufactured.

Registration is not required.

For each product from the above-specified series that fails due to a material or manufacturing defect, a replacement or credit note will be provided as part of the guarantee service.

The full conditions and details of guarantee level 2 can be found on the Internet at www.osram.com/system-guarantee



Your benefits

Registration is not required. For each product from the above-specified series that fails due to a material or manufacturing defect, a replacement or credit note will be provided as part of the guarantee service*.

*For conditions and details, go to www.osram.com/system-guarantee

Intelligent DALI LED drivers from OSRAM

OSRAM has been developing DALI drivers for many years and was one of the first manufacturers to achieve the new DALI-2 certificate granted for DALI LED drivers. In numerous major DALI installations with over 10,000 devices, our DALI components are operating reliably. DALI is a well-established light control interface in the lighting industry, which covers all important light control functions and ensures high reliability.



Variety of DALI control options

Intelligent DALI drivers from OSRAM support different light control functions, from dimming of single luminaires to grouping of several luminaires to lighting scene setting. In addition, status information of the light source and the driver can be queried by the controller and transmitted to a light control system or to a building management system. Besides drivers and controllers, OSRAM also provides also a DALI analysis tool (DALI Wizard software plus

DALI magic) to ensure easy commissioning in the field. In addition, OSRAM offers the DALI programming tool Tuner4TRONIC® for simple configuration of drivers in the production line.

OSRAM offers a complete set of DALI products, starting with drivers, followed by input devices (e.g. DALI dimmers) and sensors, up to control units, which underlines the high DALI system competence of OSRAM.



DALI Version-1

Prior to the introduction of the DALI-2 certification process by the Digital Illumination Interface Alliance (DiiA), DALI conformity was based on a self-declaration by the manufacturer, based on the DALI standards IEC 62386-101: Ed1 and IEC 62386-102: Ed1 (DALI Version-1). Due to the extensive experience of OSRAM regarding DALI-based light control systems, the device itself shows a high interoperability and reliability. This has been confirmed by many major projects.

DALI drivers, which are compatible with DALI Version-1, support stepless dimming, scene setting, grouping, status queries and addressing of each single luminaire. Up to 64 drivers can be connected to this bidirectional interface. Some sensors can be directly powered by the bus line, which simplifies the installation and cuts costs.



DALI-2

Together with the new DALI standard according to IEC 62386 (Edition 2), a manufacturer-independent certification process has been established by the Digital Illumination Interface Alliance (DiiA). The product certification by the DiiA ensures a significantly improved interoperability between the different manufacturers. With DALI-2, additional functionalities have been introduced compared to the existing

DALI system (Version-1) in the market. Moreover, the backwards compatibility to existing systems has been factored in. Only certified DALI-2 products are allowed to carry the DALI-2 certification mark issued by the DiiA.

With DALI-2, the following additional functionalities have been introduced (e.g.):

- Extended fade times (Fade-Time, Fade-Rate)
- Longer serial number and HW identification for improved device recognition
- Queries to identify which DALI functionalities are supported
- Sensors now have a separate address area, therefore all 64 addresses can be used for drivers. In addition, they can also send commands and, therefore, do not need to be queried continuously by the application control. This improves the payload of the DALI bus.

DALI-2-compatible drivers also support light control functions defined in DALI Version-1.

Extended OSRAM-specific add-on functions

Besides the standardized DALI functions, OSRAM devices also support optional add-on functionalities, which bring additional benefits for certain applications. These functions can be activated on demand by the Tuner4TRONIC® software.



Optional add-on dimming functionalities



Easy switching and dimming of up to 20 DALI drivers

In addition to the DALI feature, some OSRAM DALI LED drivers support Touch DIM[®] operation. With Touch DIM[®], standard pushbuttons (suitable for mains power) can be used to switch and dim the lighting and save a desired brightness value. A maximum of up to 20 drivers is supported.



Efficient light control of a single luminaire with sensor

With this feature, LT2 digital sensors (e.g. LS/PD LT2 LI UF) can be directly connected to LED drivers via the LEDset interface without the need of an additional control unit. Dimming and switching as well as set point storage for daylight-dependent regulation can either be done via the sensor-integrated pushbutton or via the Touch DIM[®] interface of the driver.



Flexible lighting profiles for maximum convenience and security

The Corridor Function available for OSRAM DALI drivers allows configuration of a lighting profile over up to two levels. This defines the extent to which brightness values are retained when a person leaves the room. The brightness values and levels can be modified at any time using Tuner4TRONIC[®]. A typical area of application is the illumination of stairwells.



Dimming down to extremely low light levels

This feature allows steady dimming below 1 %, which enables steady dimming down to the final switch-off of the device. This feature is suitable for theaters, movie theaters or other special applications. For LED drivers with pure amplitude dimming, the minimal dimming value in percent is determined by the ratio of minimal output current to rated current.



Smooth continuous dimming down to off

As soon as the device receives a switch-off command by a control interface (e.g. Touch DIM[®] or DALI), this feature dims the device down to zero nearly logarithmically, and with pre-defined delay times. This function is supposed to simulate the behavior of traditional halogen lamps.



Emergency Light: optional DC voltage detection

In addition to DALI-compliant functions, such as system failure level (disconnecting the control line), OSRAM DALI LED drivers with this feature offer the automatic detection of DC voltage supply. When DC voltage is detected, a preprogrammed luminous flux level between 0 and 100 % is implemented.

Typically, the factory setting for indoor LED drivers is 15 %. This luminous flux value can be additionally protected from unintentional overwriting by setting a locking bit. The settings can be adjusted via the Tuner4TRONIC® software.



Well-being and good working conditions with Tunable White control

In combination with different white LEDs, this feature enables multi-channel DALI LED drivers (Device Type 8) to change the color temperature and brightness. This makes offering Human Centric Lighting possible, where the color temperature and brightness are adapted to the human circadian rhythm and well-being.

Optional add-on functionalities for light control system and service



Optimization of the actual energy consumption

Drivers with this feature provide the actual input power consumption of the device. By using these data, it is possible to visualize the current power consumption of the lighting installation in a light management system, without the manual entry of dimming level/power consumption tables for every light point.



Data for predictive maintenance of luminaires and energy efficiency optimization

LED drivers with this feature offer additional operation and status information that exceeds what is currently offered by the DALI standard (such as energy consumption, power, operating time, overvoltage or undervoltage etc.). By using these data, it is possible to offer predictive maintenance and an overall better lighting service. Moreover, it makes the light management system intelligent. Monitoring Data is an enhancement of the “Smart Grid” feature. The data can also be visualized in the Tuner4TRONIC® software.





Luminaire info with electronic type label

To make light management systems intelligent in terms of service and predictive maintenance, they need basic information about the connected luminaire (model, power, service life etc.). During production, the luminaire manufacturer can store these data in the LED driver, and the light management system can recall these data in the installation.

Optional add-on functionalities for improved luminaire performance



Fast and simple programming without mains voltage

In combination with OSRAM Tuner4TRONIC® software, LED drivers with NFC technology allow fast and contactless programming without connecting mains voltage during and after the luminaire manufacturing process. In the field optionally with the T4T-F app, which runs on mobile devices with an integrated NFC reader (ISO 15693) e.g. for specific outdoor LED drivers.



Constant Lumen Function for improved maintenance cycles

To ensure the maintenance interval of the system, the light level must be achieved also at the end of the entire lifetime. Due to lumen depreciation of the light source over time, the system usually needs to be overpowered at the beginning, which leads to increased energy cost. This is not necessary thanks to the Constant Lumen Function, as the operating output is adjusted continuously to compensate for the lumen loss.



Improved light quality thanks to analog dimming

This feature allows purely analog dimming down to the minimal dimming value of the device. The analog dimming process achieves lower light modulation (flicker) and therefore better light quality.



Luminaire variety reduction with Tuning Factor

Within limits predefined by the luminaire manufacturer, this feature allows an adjustment of the amount of light in the field or in production. Thus, one luminaire can manage different lumen packages. If the feature is combined with LEDset2, other lumen packages can also be achieved which differ in terms of resistor coding.



Simple current setting by resistor

LEDset2 is a multi-vendor LED module interface which allows to set the correct operating current for the LED module by resistor coding, without the necessity to reprogram the constant current LED driver, if an LED module has to be replaced by a newer generation. This ensures optimal efficacy and the right amount of light at all times.



Accurate current setting by software

This feature allows to set the operating current of a constant current LED driver with the Tuner4TRONIC® software. Compared to current setting by LEDset2 interface, a higher current accuracy can be achieved, and no resistor is necessary on the LED module, which reduces the effort within the luminaire (insulation, wiring etc.).



Flexible thermo management, adapted to the luminaire

By default, the internal protection mechanisms of the LED driver are designed for maximum temperature, however, not for those of the luminaire. By means of this feature, you can adjust the temperature derating of the LED driver so that it not only matches the luminaire, but also leads to a higher reliability of the luminaire.



Protection against unintentional access to device settings

This feature enables luminaire manufacturers (OEMs) to safeguard certain predefined setting parameters in the LED driver against unintentional access and unauthorized users via Tuner4TRONIC® software. Drivers and luminaires need to be protected against unintentional access.



Intelligent access control management of device settings

This feature is an advancement of OEM Key, which allows controlling the access rights for individual features within the LED driver via Tuner4TRONIC® software and to assign different rights to the luminaire manufacturer, to the service team and to the general user. Assigning user rights also allows offering “light as a service” and still maintaining total control over who may change what within the device or luminaire.

Note: The exact operating modes of the individual additional functions can be found in the technical data sheets and application brochures for the respective devices.



Effective LED lighting for your success – OPTOTRONIC® LED drivers



Whether it's innovative or classic design, constant current or constant voltage, DALI or 1...10V, indoor or outdoor lighting – we have the LED driver to meet your needs.

The diverse OPTOTRONIC® portfolio from OSRAM has the optimum solution for an extremely broad range of requirements, bringing you energy-saving LED applications with high light quality, long operating life and exceptional reliability.

Fully in line with your requirements: OSRAM OPTOTRONIC® Linear – constant current LED drivers

Our linear LED drivers are perfect for a wide range of luminaires and applications, especially in office, industrial and retail scenarios.

Greater design flexibility for compact luminaires: OSRAM OPTOTRONIC® constant current LED drivers

No compromise on performance, more options and greater flexibility – discover the new miniaturized LED drivers especially for shop and hospitality applications.

Smart efficiency modification: OSRAM OPTOTRONIC® constant voltage LED drivers

LED drivers with an output voltage of 12 V and 24 V are the perfect choice for implementing modular and flexibly scalable LED systems.

High level of functionality: OPTOTRONIC® Outdoor drivers

Particularly efficient and robust LED drivers for luminaires and lighting applications in outdoor areas.

OSRAM Digital Lighting Systems' wide range of products and services helps you give your customers what they want:

Design flexibility

Complete component portfolio, created with maximum compatibility and design freedom in mind, individual design-in support and customer-specific mass production

User friendliness

Simple selection, configuration, installation and use, reliable operations for the product's entire lifespan

Stability

Proven brand quality, long-life, efficient products, optimally coordinated systems

Planning security

Complexity and risk reduction, simple and efficient warehousing

OSRAM guarantee

Three or five years guarantee for our products and systems
(details and general requirements:
www.osram.com/system-guarantee)

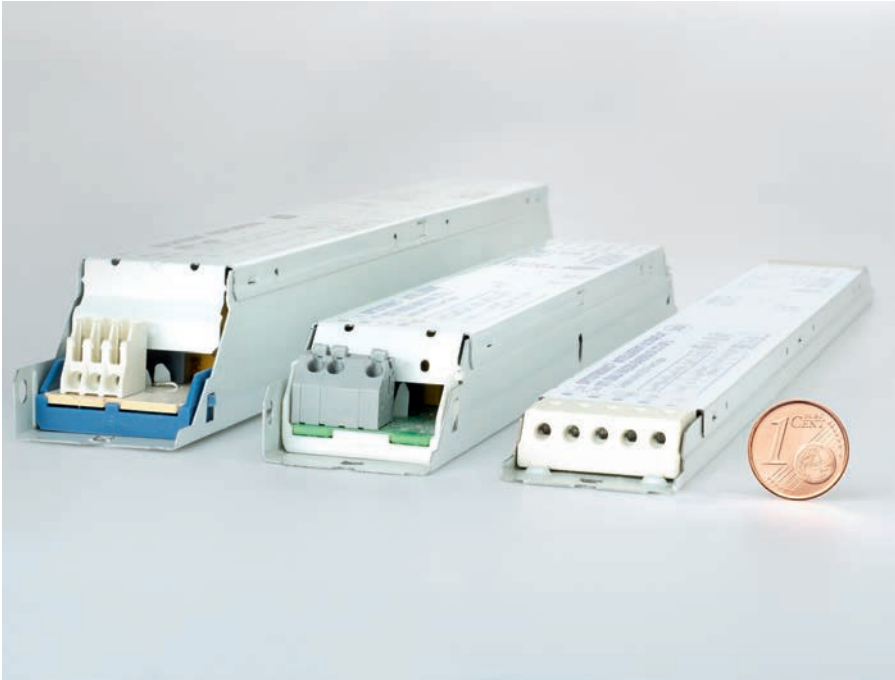


Details of all OPTOTRONIC® LED drivers can be found at www.osram.com/optotronic



OPTOTRONIC[®] Indoor LED drivers

The perfect choice for your lighting applications



No matter if you are looking for linear office, educational-sector, industry, retail or hospitality lighting solutions, OSRAM offers the perfect choice of drivers. Cutting-edge design for ultra-flat luminaires, innovative service and maintenance functionalities or outstanding lighting quality and long lasting reliability are just some of the portfolio proof points. Dedicated software tools and programming interfaces such as NFC (near-field communication) add further value through higher programming speed.

1. The most important features of OPTOTRONIC® Linear constant current LED drivers:

- Cutting-edge housing design – UltraFlat family (driver and sensor) with only 11 mm housing height – all other drivers with dimensions of 30x21 mm
- Extremely long-lasting, highly efficient and brand-new industry (IND) driver family
- Tunable White/Human Centric Lighting (HCL) made easy with the all-new OTi DALI TW (Tunable White) product family
- Intelligent commissioning (all OPTOTRONIC® DALI) and predictive maintenance features (OPTOTRONIC® DALI IND) integrated
- NFC integrated in OPTOTRONIC® DALI as well as FIT drivers for speeding up the OEM production
- Innovative DEXAL™ (DX) technology for direct sensor connection
- Analog dimming available as standard in all OPTOTRONIC® DALI drivers
- All OPTOTRONIC® OTi DALI window drivers are fully programmable by DALI and/or NFC
- SELV and non-isolated versions available for maximal choice of module combinations
- Five OPTOTRONIC® DALI driver families:
 - OPTOTRONIC® Intelligent DALI UF, height: only 11 mm
 - OPTOTRONIC® Intelligent DALI NFC TW L, Tunable White driver
 - OPTOTRONIC® Intelligent DALI NFC IND L, industry driver
 - OPTOTRONIC® Intelligent DX L, DEXAL™ driver with sensor connection
 - OPTOTRONIC® Intelligent DALI L
- Five OPTOTRONIC® ON/OFF driver families:
 - OPTOTRONIC® FIT D IND NFC L, industry window driver with NFC
 - OPTOTRONIC® FIT D NFC L, window driver (NFC)
 - OPTOTRONIC® FIT D LT2 L, window driver (LEDset)
 - OPTOTRONIC® FIT D L with fixed output
 - OPTOTRONIC® FIT CS L G2 with DIP switch (4 currents)



OPTOTRONIC[®] Intelligent – DEXAL[™]



The programmable OSRAM OPTOTRONIC[®] LED driver with DEXAL[™] technology (Data Exchange for Advanced Lighting) is a DALI-based intra-luminaire interface that enables bi-directional communications and supply current between the driver and luminaire-integrated components such as intelligent sensors and wireless modules.

This interface allows easy connection to different wireless-based building management systems. It provides exact luminaire-specific data, including diagnostics, to light management systems. Luminaire manufacturers can design smart luminaires and streamline the configuration process by leveraging DEXAL[™] as a standard bi-directional communications interface.

Product benefits

- Versatile DEXAL[™] window driver up to 50 W due to flexible output characteristic
- Integrated power supply over DALI Version-1 to power sensors and wireless modules
- Simplified luminaire design for different wireless lighting control systems and sensors
- Extended luminaire/driver data (power, energy, operating hours etc.) for analytics

Product features

- Input voltage: 120...277 V
- Available with an output current range of up to 1,400 mA
- Constant lumen function
- Overtemperature protection with external NTC
- End-of-life indication

Equipment/accessories

- OT Programmer hardware for configuration of DEXAL™ ECGs necessary
- Programmable via OT Programmer software

DEXAL™ video:

www.osram.com/dexal

The full DEXAL™ product portfolio is available on page 3.28

DEXAL™ – Connecting Partners

OSRAM offers a partner program for products working together with OSRAM DEXAL™ LED drivers. Please contact your OSRAM sales representative for further information.



OPTOTRONIC® Linear LED driver portfolio

	OTI DALI	OTI DALI	OTI DALI
	Dimmable DALI OPTOTRONIC® Intelligent Window drivers (non-isolated)	Dimmable DALI OPTOTRONIC® Intelligent TW Window drivers (non-isolated)	Dimmable DALI OPTOTRONIC® Intelligent IND Window drivers (non-isolated)
Product families	OTI DALI D UF L OTI DALI D L	OTI DALI NFC TW L	OTI DALI NFC IND L
Dimming			
Comfort dimming	1...100% analog dimming	1...100% analog dimming (AM/PWM selectable)	1...100% analog dimming
Lowest dimming level	1%	1%	1%
DALI DT (device type)	DT6	DT6/DT8 programmable	DT6
Touch DIM®/Touch DIM® Sensor	■	■	■
Corridor function	■	■	■
DC operation			
Emergency Lighting ¹⁾	■	■	■
Fixed DC level			
Adjustable DC level	■ (by software)	■ (by software)	■ (by software)
Programming			
Programming interface	DALI and NFC	DALI and NFC	DALI and NFC
Easy commissioning	■	■	■
Predictive maintenance			■
Output current			
Adjustable	■ (by software and/or resistor)	■ (by software)	■ (by software and/or resistor)
Ripple at 100 Hz [%]	< 1	< 1	< 1
Functions and performances			
Overtemperature protection	■	■	■
Energy efficiency	Up to 94%	Up to 92%	Up to 96%
CLO	■	■	■
Stand-by losses [W]	< 0.25	< 0.2	< 0.2
Input voltage range [V]	220-240	220-240	220-240
Lifetime [h]	Up to 100000 @ T _c 65 °C ²⁾	Up to 100000 @ T _c 65 °C ²⁾	Up to 100000 @ T _c 75 °C ³⁾
T _a range [°C]	-25...+50	-25...+50	-40...+65
Suitable for luminaire class	I	I	I

1) In line with IEC 61347-2-13

2) Maximum failure rate of 10 %




















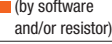
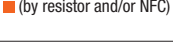

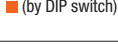






3) Preliminary data

4) For output currents above 450 mA, for lower currents PWM dimming with 460 Hz

5) DX only

6) DEXAL™ < 0.5 W

AM = Amplitude modulation
PWM = Pulse width modulation
DT6 = DALI Device Type 6
DT8 = DALI Device Type 8
CS = Current setting, flexible
CLO = Constant Lumen Output

 OTi DALI	 OT FIT	 OT FIT	 OT FIT	 OT FIT
Dimmable DALI OPTOTRONIC® Intelligent Window drivers (SELV)	Not dimmable OPTOTRONIC® FIT IND Window driver (non-isolated)	Not dimmable OPTOTRONIC® FIT Window driver (non-isolated)	Not dimmable OPTOTRONIC® FIT Fixed current (non-isolated)	Not dimmable OPTOTRONIC® FIT DIP switch (four selectable currents) (SELV)
OTi DX L OTi DALI L	OT FIT D IND L	OT FIT D NFC L OT FIT D LT2 L	OT FIT D L	OT FIT CS L G2
1...100 % analog dimming				
1% DX ⁴⁾				
DT6				
 (DALI only)				
 (DALI only)				
    				
   				
 (DALI only, by software)				
DALI				
				
 ⁵⁾				
 (by software and/or resistor)  (by resistor and/or NFC)  (by resistor or NFC)  (by DIP switch)				
< 1				
< 4				
< 4				
< 10				
< 4				
    				
Up to 90 %				
Up to 96 %				
Up to 93 %				
Up to 90 %				
Up to 90 %				
				
< 0.3 ⁶⁾				
220-240				
220-240				
220-240				
220-240				
220-240				
Up to 100000 @ T _c 65 °C ²⁾				
Up to 100000 @ T _c 75 °C ³⁾				
Up to 100000 @ T _c 65 °C ²⁾				
Up to 100000 @ T _c 65 °C ²⁾				
Up to 100000 @ T _c 65 °C ²⁾				
-25...+50				
-40...+65				
-25...+50				
-25...+50				
-25...+50				









The most important features of ELEMENT – linear constant current LED drivers

- ON/OFF non-isolated versions up to 60 W for basic lighting needs
- Efficiency up to 90 %
- < 30 % ripple current
- Up to 50.000 hour lifespan at T_c max

2. The most important features of OPTOTRONIC® Compact constant current LED drivers

- OPTOTRONIC® Intelligent DALI window drivers are based on a digital platform and are fully programmable
- LT2: Window driver with LEDset current setting
- NFC: Window driver with NFC current setting
- 3 ON/OFF driver families:
 - OPTOTRONIC® FIT CS with DIP-switch current-setting drivers
 - OPTOTRONIC® FIT LT2 S window drivers with small housing
 - OPTOTRONIC® FIT LT2 LP window drivers with low-profile housing
- OPTOTRONIC® ECO PC Dimmable via phase-cut (10–100 %, depending on dimmer)
- Many possible combinations with LED modules

OPTOTRONIC® Compact LED driver portfolio

	 OTi DALI	 OTi DALI	 OT FIT	 OT FIT	 OT FIT	 OTe
	OTi DALI LT2 Dimmable (DALI): OPTOTRONIC® Intelligent DALI	OTi DALI NFC Dimmable (DALI): OPTOTRONIC® Intelligent DALI	OT FIT CS ON/OFF: Current setting via DIP switches	OT FIT LT2 S ON/OFF: Window drivers Small housing	OT FIT LT2 S ON/OFF: Window drivers Low-profile housing	OTe PC Dimmable (PC): OPTOTRONIC® ECO Phase-cut
Dimming						
Comfort dimming AM	■	■				
Lowest dimming level	1 %	1 %				10 %
Type of dimming	■ DALI DT6	■ DALI DT6				■ Trailing- or leading-edge phase control
Touch DIM®	■	■ ³⁾				
Corridor function	■	■ ³⁾				
DC operation						
Emergency lighting ¹⁾	■	■			■	
Fixed DC level					■	
Adjustable DC level	■ (by software)	■ (by software)				
Output current						
Adjustable	■ (by software or resistor)	■ (by software, resistor or NFC ⁴⁾)	■ (by DIP switches)	■ (by resistor)	■ (by resistor)	
Current tolerances [%]	3	3	7.5	5	5	10
Ripple at 100 Hz [%]	<2	<2	<5	<1	<5	<35
Functions and performances						
Overtemperature protection	■	■	■	■	■	■
Connectable during operation	■	■				
CLO	■	■				
Standby losses [W]	<0.5	<0.5				
Input voltage range [V]	220-240	220-240	220-240	220-240	220-240	220-240
Lifetime [h] ²⁾	Up to 100,000	Up to 100,000	Up to 50,000	Up to 100,000	Up to 100,000	Up to 50,000
T _a range [°C]	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50	-20...+50
Suitable for protection class	I + II	I + II	I + II	I + II	I + II	I + II

1) In line with IEC 61347-2-13

2) Operation at max. T_a +10K, maximum failure rate of 10 %

3) Except OTi DALI 10

4) OTi DALI 10 only software or NFC

AM = Amplitude modulation

PWM = Pulse-width modulation

DT6 = DALI Device Type 6

CS = Current setting, flexible

CLO = Constant Lumen Output

Ceiling installations with cable clamps

OPTOTRONIC® Compact from OSRAM for indoor use can easily be retrofitted with suitable cable clamps at any time. If an independent installation is required, the same driver can be used with the additional cable clamp. Simply order the appropriate cable clamp from OSRAM.



CABLE CLAMP A Style TL



CABLE CLAMP B Style TL



CABLE CLAMP B Style



CABLE CLAMP D Style

3. The most important features of ELEMENT – compact constant current LED drivers

- Simple, fixed current ON/OFF SELV driver family up to 44 W
- Suitable for LEDs with chip-on-board technology and discrete LEDs
- < 30 % ripple current
- Up to 30,000-hour lifespan at T_c max, with max 10 % failure rate
- Suitable for luminaire installation and separate mounting

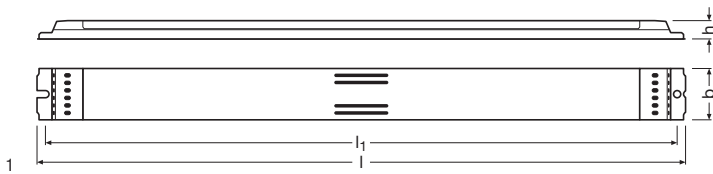


ELEMENT LD 60/220...240/1A4



OPTOTRONIC® Intelligent UltraFlat

Linear / Area constant current LED drivers – Dimmable DALI



Product name	GTIN (EAN)	Hz	V _{IN}	V _{min-max}	mA	V _{OUT}
OTI DALI 35/220...240/400 D LT2 UF L	4052899957022	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / NFC / LEDset / Programmable	54...240
OTI DALI 75/220...240/700 D LT2 UF L	4052899957046	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / NFC / LEDset / Programmable	54...240

Product name	↓	I [mA]	Ripple 100Hz	W	Isolation	l [mm]	b [mm]	h [mm]
OTI DALI 35/220...240/400 D LT2 UF L	DALI, NFC	75...400 ²⁾	< 1 %	4...38	Non-isolated	360	30	11
OTI DALI 75/220...240/700 D LT2 UF L	DALI, NFC	250...700 ²⁾	< 1 %	9.7...75	Non-isolated	360	30	11

Product name	h [mm]	T _a	Control	CONTROL	W	Light No.
OTI DALI 35/220...240/400 D LT2 UF L	350	-25...+60	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20
OTI DALI 75/220...240/700 D LT2 UF L	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20

1) Permitted voltage range
2) ±5%



Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile DALI window driver up to 75 W due to flexible output characteristic
- Supply voltage: 220...240 V
- Available with output current range: up to 700 mA
- Direct Ultraflat sensor connection via LEDset (LS/PD LT2 LI UF Sensor), see page 4.09
- Use with Ultraflat DALI sensor (LS/PD DALI LI UF Sensor), see page 4.64
- Constant Lumen Output (CLO)
- Non-isolated drivers
- DALI-2 certified (Part -101, -102 and -207)

Product benefits

- Ultra-flat housing (11 mm height) for innovative luminaire designs and applications
- LEDset interface for direct Ultraflat sensor connection (LS/PD LT2 LI UF sensor)
- Fully programmable via software (DALI Interface, NFC)
- Lifetime: up to 100,000 h (temperature at $T_c = 65\text{ °C}$, max. 10 % failure rate)
- High-quality dimming of 1...100 % by amplitude dimming
- High quality of light thanks to <1% output ripple current
- Very high efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Versatile scope of application due to OSRAM DALI Technology

- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting
- Luminaire information for easy maintenance

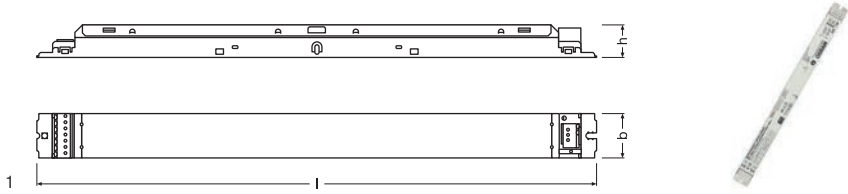
Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for luminaires of protection class I



OPTOTRONIC® Intelligent

Linear / Area constant current LED drivers – Tunable White



Product name	GTIN (EAN)	Hz	V _{IN}	DV min-max	mA	V _{OUT}
OTi DALI 35/220...240/400 D NFC TW L ¹⁾	4052899990302	0 / 50 / 60	198...264	176...276	DALI / NFC / Programmable	54...240
OTi DALI 75/220...240/700 D NFC TW L ¹⁾	4052899990326	0 / 50 / 60	198...264	176...276	DALI / NFC / Programmable	54...240

Product name		I _I [mA]	Ripple 100Hz	W		I [mm]	b [mm]	h [mm]
OTi DALI 35/220...240/400 D NFC TW L ¹⁾	DALI, NFC	75...400	< 1 %	4...38	Non-isolated	360	30	21
OTi DALI 75/220...240/700 D NFC TW L ¹⁾	DALI, NFC	125...700	< 1 %	8.1...75	Non-isolated	360	30	21

Product name	I _r [mm]	T _a		CONTROL	W		
OTi DALI 35/220...240/400 D NFC TW L ¹⁾	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	1
OTi DALI 75/220...240/700 D NFC TW L ¹⁾	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	1

1) Preliminary data



Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile DALI window driver up to 75 W due to flexible output characteristic
- Supply voltage: 220...240 V
- Usable as DT6 (2-channel) or DT8 (Tunable White) driver
- Available with output current range: up to 700 mA
- Constant lumen function
- Integrated customizable thermal management (Driver Guard)
- Non-isolated drivers
- DALI-2 certified (Part -101, -102 and -207)

Product benefits

- Control of standard white or Tunable White light acc. to DALI device type 8 (DT8)
- TouchDIM® Tunable White integrated for use without additional LMS (within 2018)
- Fully programmable via software (DALI Interface, NFC)
- Lifetime: up to 100,000 h (temperature at $T_c = 65\text{ °C}$, max. 10 % failure rate)
- High-quality dimming of 1...100 % (amplitude and/or PWM selectable by software)
- High quality of light thanks to <1% output ripple current
- Very high efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Versatile scope of application due to OSRAM DALI Technology

- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting
- Luminaire information for easy maintenance

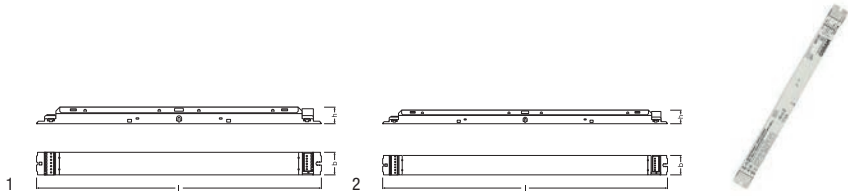
Areas of application

- For Tunable White as well as for 2-channel use (e.g. direct/indirect lighting)
- Perfect system match with PrevaLED® Linear Tunable White (see page 2.06)
- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I



OPTOTRONIC® Intelligent

Linear / Area constant current LED drivers – Industry



Product name	GTIN (EAN)	Hz	V _{IN}	V _{min-max}	mA	V _{OUT}		
OTI DALI 100/220...240/700 D NFC IND L ¹⁾	4052899559516	0 / 50 / 60	198...264	176...276	DALI / NFC / LEDset / Programmable	64...300		
OTI DALI 150/220...240/1A0 D NFC IND L ¹⁾	4052899559530	0 / 50 / 60	198...264	176...276	DALI / NFC / LEDset / Programmable	64...300		
Product name		I [mA]	Ripple 100Hz	W	U	I [mm]	b [mm]	h [mm]
OTI DALI 100/220...240/700 D NFC IND L ¹⁾	DALI, NFC	125...700	< 1 %	28...100	Non-isolated	360	30	21
OTI DALI 150/220...240/1A0 D NFC IND L ¹⁾	DALI, NFC	250...1000	< 1 %	43...150	Non-isolated	425	30	21
Product name	h [mm]	T _a		CONTROL	W			
OTI DALI 100/220...240/700 D NFC IND L ¹⁾	350	-40...+65	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	1	
OTI DALI 150/220...240/1A0 D NFC IND L ¹⁾	415	-40...+65	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	2	

1) Preliminary data

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 150 W
- Supply voltage: 220...240 V
- Available with output current range: up to 1,000 mA
- Constant lumen function
- Integrated customizable thermal management (Driver Guard)
- Non-isolated drivers
- DALI-2 certified (Part -101,-102 and -207)

Product benefits

- Fully programmable via software (DALI Interface, NFC)
- Lifetime: up to 100,000 h (temperature at $T_c = 75^\circ\text{C}$, max. 10 % failure rate, preliminary data)
- High light quality: 1...100% amplitude dimming and <1% output ripple current
- Wide operating temperature range: $-40\dots+65^\circ\text{C}$
- High surge protection: up to 4 kV (L-N)/4 kV (L/N-PE)
- Integrated inrush current limiter
- Very high efficiency (up to 96%)
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Versatile scope of application due to OSRAM DALI Technology

- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting
- Luminaire information for easy maintenance
- Advanced luminaire/driver data (power, energy, operating hours...) for analytics

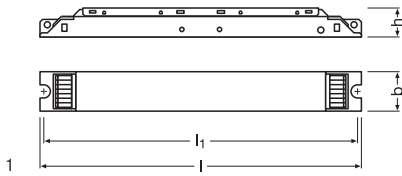
Areas of application

- Linear lighting solutions for industry, storage areas and retail applications
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I



OPTOTRONIC® Intelligent

Linear / Area constant current LED drivers – DEXAL™



Product name	GTIN (EAN)	Hz	V _{IN}	mA	V _{OUT}	Prog+	I [mA]
OTI 30/120...277/1A0 DX L	4052899345829	50 / 60	108...305	Programmable	10...56	Prog+	150...1050
OTI 50/120...277/1A4 DX L	4052899345836	50 / 60	108...305	Programmable	10...56	Prog+	600...1400
Product name	Ripple 100Hz	W	SELV	I [mm]	b [mm]	h [mm]	h [mm]
OTI 30/120...277/1A0 DX L	< 1 % ¹⁾	10...30	SELV	360	30	25,4	350
OTI 50/120...277/1A4 DX L	< 1 % ¹⁾	15...50	SELV	360	30	25,4	350
Product name	T _a	CONTROL	W	CONTROL	No.		
OTI 30/120...277/1A0 DX L	-30...+50	Yes	DALI / DEXAL	1...100 %	20	1	
OTI 50/120...277/1A4 DX L	-30...+50	Yes	DALI / DEXAL	1...100 %	20	1	

¹⁾ For output currents above 450mA, for lower currents PWM dimming with 460 Hz

Product features

- Input voltage: 120...277 V
- UL Class 2 output, SELV
- Available with output current range: up to 1,400 mA
- Constant lumen function
- Overtemperature protection via external NTC
- End-of-life indication

Product benefits

- Versatile DEXAL™ LED driver up to 50 W due to flexible output characteristic
- Integrated DALI (Version-1) bus power supply for sensors and wireless radios
- Simplified luminaire design for wireless lighting control system and sensors
- Analytics possibility using luminaire data (power, energy, operating hours)

Areas of application

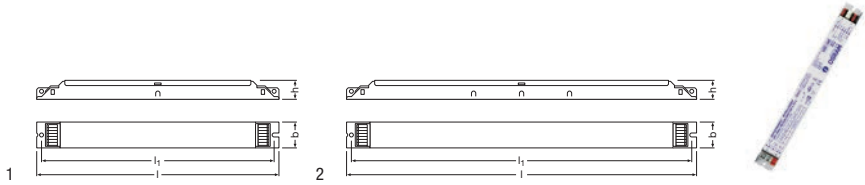
- Offices

Equipment/Accessories




- OT Programmer hardware for configuration of DEXAL™ ECGs necessary
- Programmable only via OT Programmer software

OPTOTRONIC® Intelligent








Linear / Area constant current LED drivers – Dimmable DALI



Product name	GTIN (EAN)	Hz	V_{IN}	$U_{V_{min-max}}$	I_{mA}	V_{OUT}
OTi DALI 35/220...240/400 D LT2 L	4052899494220	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	54...240 ²⁾
OTi DALI 60/220...240/550 D LT2 L	4052899494206	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	54...240 ²⁾
OTi DALI 90/220...240/700 D LT2 L	4052899494244	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	54...240 ²⁾
OTi DALI 90/220...240/1A0 LT2 L	4052899494268	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	54...240 ²⁾
OTi DALI 35/220...240/700 LT2 L G2	4052899551763	0 / 50 / 60	198...264	220...240	DALI / LEDset / Programmable	15...54
OTi DALI 50/220...240/1A4 LT2 L G2	4052899551787	0 / 50 / 60	198...264	220...240	DALI / LEDset / Programmable	15...54
OTi DALI 80/220...240/1A6 LT2 L	4052899028074	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	20...54 ³⁾
OTi DALI 80/220...240/2A1 LT2 L	4052899028050	0 / 50 / 60	198...264 ¹⁾	176...276	DALI / LEDset / Programmable	20...54 ³⁾

Product name		I_{mA}		W		$l_{[mm]}$	$b_{[mm]}$	$h_{[mm]}$
OTi DALI 35/220...240/400 D LT2 L	DALI	75...400	< 1 %	4...38	Non-isolated	280	30	21
OTi DALI 60/220...240/550 D LT2 L	DALI	120...550	< 1 %	6.4...60	Non-isolated	280	30	21
OTi DALI 90/220...240/700 D LT2 L	DALI	250...700	< 1 %	13.5...90	Non-isolated	280	30	21
OTi DALI 90/220...240/1A0 LT2 L	DALI	250...1000	< 1 %	13.5...90	Non-isolated	280	30	21
OTi DALI 35/220...240/700 LT2 L G2	DALI	200...700	< 1 %	4...37	SELV	360	30	21
OTi DALI 50/220...240/1A4 LT2 L G2	DALI	600...1400	< 1 %	12...50	SELV	360	30	21
OTi DALI 80/220...240/1A6 LT2 L	DALI	600...1550	< 1 %	32...80	SELV	360	30	21
OTi DALI 80/220...240/2A1 LT2 L	DALI	1000...2100	< 1 %	32...80	SELV	360	30	21

Product name

							
OTi DALI 35/220...240/400 D LT2 L	270	-25...+60	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	1
OTi DALI 60/220...240/550 D LT2 L	270	-25...+60	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	1
OTi DALI 90/220...240/700 D LT2 L	270	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	1
OTi DALI 90/220...240/1A0 LT2 L	270	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	1
OTi DALI 35/220...240/700 LT2 L G2	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	2
OTi DALI 50/220...240/1A4 LT2 L G2	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 %	20	2
OTi DALI 80/220...240/1A6 LT2 L	350	-25...+50	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	2
OTi DALI 80/220...240/2A1 LT2 L	350	-25...+45	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁴⁾	20	2

1) Permitted voltage range

2) Maximum 350 V

3) Maximum 60 V

4) For maximum nominal output current

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile DALI window driver up to 90 W due to flexible output characteristic
- Supply voltage: 220...240 V
- Available with output current range: up to 2,100 mA
- Constant lumen function
- Integrated customizable thermal management (Driver Guard)
- SELV and non-isolated versions available
- DALI-2 certified (Part -101,-102 and -207)

Product benefits

- Fully programmable via software (DALI Interface)
- Flexible current setting (LEDset2)
- Lifetime: up to 100,000 h (temperature at $T_c = 65^\circ\text{C}$, max. 10 % failure rate)
- High-quality dimming of 1...100 % by amplitude dimming (except 80W versions)
- High quality of light thanks to <1% output ripple current
- Very high efficiency
- Very low standby power consumption: < 0.15 W (SELV), < 0.25 W (non-isolated)
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Versatile scope of application due to OSRAM DALI Technology

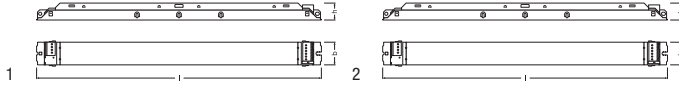
- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting
- Luminaire information for easy maintenance

Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for luminaires of protection class I

OPTOTRONIC® FIT IND NFC L

Linear / Area constant current LED drivers – Non-dimmable

**Product name**

GTIN (EAN)



OT FIT 100/220...240/700 D NFC IND L ¹⁾	4052899990128	0 / 50 / 60	198...264	176...276	LEDset / NFC	64...340
OT FIT 150/220...240/1A0 D NFC IND L ¹⁾	4052899990142	0 / 50 / 60	198...264	176...276	LEDset / NFC	64...340

Product name

OT FIT 100/220...240/700 D NFC IND L ¹⁾	125...700	< 1 %	28...100	Non-isolated	360	30	21
OT FIT 150/220...240/1A0 D NFC IND L ¹⁾	250...1000	< 1 %	43...150	Non-isolated	425	30	21

Product name

OT FIT 100/220...240/700 D NFC IND L ¹⁾	350	-40...+65	No	I	IP20	20	1
OT FIT 150/220...240/1A0 D NFC IND L ¹⁾	415	-40...+65	No	I	IP20	20	2

1) Preliminary data

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 150 W
- Supply voltage: 220...240 V
- Available with output current range: up to 1,000 mA
- Constant lumen function
- Non-isolated drivers

Areas of application

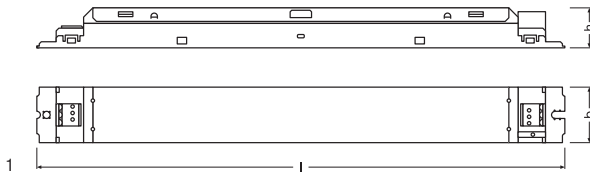
- Linear lighting solutions for industry, storage areas and retail applications
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I

Product benefits

- Flexible and future-proof current setting via NFC (Near Field Communication)
- Lifetime: up to 100,000 h (temperature at $T_c = 75^\circ\text{C}$, max. 10 % failure rate, preliminary data)
- Wide operating temperature range: -40...+65 °C
- High quality of light thanks to <1% output ripple current
- High surge protection: up to 4 kV (L-N)/4 kV (L/N-PE)
- Very high efficiency (up to 96%)
- Integrated inrush current limiter
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

OPTOTRONIC® FIT NFC D L

Linear / Area constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT} min...max	mA	V _{OUT}	I _{OUT} [mA]
OT FIT 35/220...240/350 D NFC L	4052899990166	0 / 50 / 60	198...264	176...276	NFC	54...216	75...350 ¹⁾
OT FIT 75/220...240/550 D NFC L	4052899990180	0 / 50 / 60	198...264	176...276	NFC	54...216	125...550 ¹⁾
Product name	Ripple 100Hz	W	Isolation	I [mm]	b [mm]	h [mm]	h [mm]
OT FIT 35/220...240/350 D NFC L	< 1 %	4.1...35	Non-isolated	280	30	21	270
OT FIT 75/220...240/550 D NFC L	< 1 %	6.8...75	Non-isolated	280	30	21	270
Product name	T _a	Protection	EMC	IP	Mounting	Light bulb	
OT FIT 35/220...240/350 D NFC L	-25...+60	No	I	IP20	20	1	
OT FIT 75/220...240/550 D NFC L	-25...+60	No	I	IP20	20	1	

1) ±5%

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 75 W
- Supply voltage: 220...240 V
- Available with output current range: up to 550 mA
- Non-isolated drivers

Product benefits

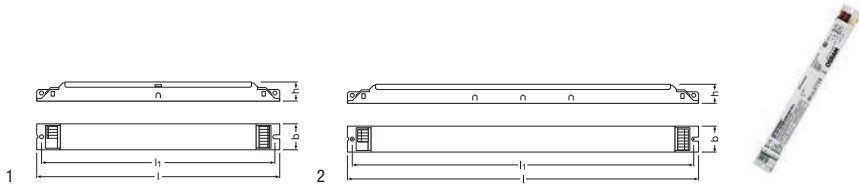
- Flexible and future-proof current setting via NFC (Near Field Communication)
- Lifetime: up to 100,000 h (temperature at T_c = 65 °C, max. 10 % failure rate)
- High quality of light thanks to <1% output ripple current
- Very high efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I

OPTOTRONIC® FIT D LT2 L

Linear / Area constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V_{IN}	$V_{min-max}$	mA	V_{OUT}	I [mA]
OT FIT 25/220...240/300 D LT2 L	405289990289	0 / 50 / 60	198...264	176...276	LEDset	60...216	35...300 ¹⁾
OT FIT 35/220...240/350 D LT2 L	4052899478411	0 / 50 / 60	198...264	176...276	LEDset	54...216	65...350 ²⁾
OT FIT 75/220...240/550 D LT2 L	4052899478435	0 / 50 / 60	198...264	176...276	LEDset	54...216	125...550 ²⁾
OT FIT 120/220...240/750 D LT2 L	4052899497900	0 / 50 / 60	198...264	176...276	LEDset	54...216	250...700 ¹⁾

Product name	Ripple 100Hz	W	III	I [mm]	b [mm]	h [mm]	h [mm]
OT FIT 25/220...240/300 D LT2 L	< 5 %	2...25	Non-isolated	280	30	21	270
OT FIT 35/220...240/350 D LT2 L	< 1 %	4.1...35	Non-isolated	280	30	21	270
OT FIT 75/220...240/550 D LT2 L	< 1 %	6.8...75	Non-isolated	280	30	21	270
OT FIT 120/220...240/750 D LT2 L	< 1 %	13.5...120	Non-isolated	360	30	21	350

Product name	T _a	III	IP	h [mm]	No.	
OT FIT 25/220...240/300 D LT2 L	-25...+60	No	I	IP20	20	1
OT FIT 35/220...240/350 D LT2 L	-25...+60	No	I	IP20	20	1
OT FIT 75/220...240/550 D LT2 L	-25...+60	No	I	IP20	20	1
OT FIT 120/220...240/750 D LT2 L	-25...+60	No	I	IP20	20	2

1) ±5%
2) ±3%

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 120 W
- Supply voltage: 220...240 V
- Available with output current range: up to 750 mA
- Non-isolated drivers

Product benefits

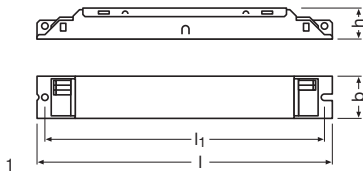
- Flexible current setting (LEDset2)
- Lifetime: up to 100,000 h (temperature at $T_c = 65^\circ\text{C}$, max. 10 % failure rate)
- High quality of light thanks to low output ripple current
- Very high efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I

OPTOTRONIC® FIT D L

Linear / Area constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{min-max}	mA	V _{OUT}	I [mA]
OT FIT 30/220...240/125 D L	4052899222557	0 / 50 / 60	198...264 ¹⁾	176...276	Fixed current	54...216	125 ²⁾
OT FIT 50/220...240/250 D L	4052899222571	0 / 50 / 60	198...264 ¹⁾	176...276	Fixed current	54...216	250 ²⁾
OT FIT 50/220...240/300 D L	4052899469884	0 / 50 / 60	198...264 ¹⁾	176...276	Fixed current	54...175	300 ³⁾
OT FIT 50/220...240/350 D L	4052899222595	0 / 50 / 60	198...264 ¹⁾	176...276	Fixed current	54...150	350 ²⁾

Product name	Ripple 100Hz	W	Isolation	I [mm]	b [mm]	h [mm]	h [mm]
OT FIT 30/220...240/125 D L	< 10 %	6.8...27 ⁴⁾	Non-isolated	210	30	21	200
OT FIT 50/220...240/250 D L	< 10 %	13.5...54 ⁵⁾	Non-isolated	210	30	21	200
OT FIT 50/220...240/300 D L	< 10 %	16.2...52.5	Non-isolated	210	30	21	200
OT FIT 50/220...240/350 D L	< 10 %	18.9...52.5	Non-isolated	210	30	21	200

Product name	T _a	Protection	IP	IP	No.	
OT FIT 30/220...240/125 D L	-15...+50	No	I	IP20	20	1
OT FIT 50/220...240/250 D L	-15...+50	No	I	IP20	20	1
OT FIT 50/220...240/300 D L	-15...+50	No	I	IP20	20	1
OT FIT 50/220...240/350 D L	-15...+50	No	I	IP20	20	1

1) Permitted voltage range
 2) ±10%
 3) ±5%
 4) Partial load 7...27 W
 5) Partial load 14...54 W

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 50 W
- Supply voltage: 220...240 V
- Available with output current range: up to 350 mA
- Non-isolated drivers

Product benefits

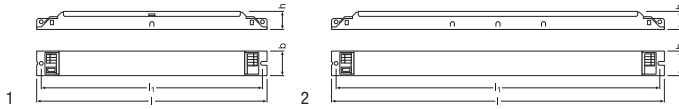
- Small housing design
- Fixed current
- Lifetime: up to 100,000 h (temperature at T_c = 65 °C, max. 10 % failure rate)
- High quality of light thanks to low output ripple current
- High efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Suitable for luminaires of protection class I

OPTOTRONIC® FIT CS L G2

Linear / Area constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	$\frac{V}{\text{min-max}}$	$\frac{\text{mA}}$	V _{OUT}
OT FIT 35/220...240/700 CS L G2	4052899522534	0 / 50 / 60	198...264 ¹⁾	176...276	DIP switch	27...51
OT FIT 55/220...240/1A0 CS L G2	4052899522558	0 / 50 / 60	198...264 ¹⁾	176...276	DIP switch	27...51
OT FIT 75/220...240/1A4 CS L G2	4052899522572	0 / 50 / 60	198...264 ¹⁾	176...276	DIP switch	27...51

Product name	$\frac{\text{mA}}$	Ripple 100Hz	W	$\frac{\text{V}}$	$\frac{\text{I}}{\text{[mm]}}$	$\frac{\text{b}}{\text{[mm]}}$	$\frac{\text{h}}{\text{[mm]}}$
OT FIT 35/220...240/700 CS L G2	500 mA / 600 mA / 650 mA / 700	< 5 %	13.5...35.7	SELV	280	30	21
OT FIT 55/220...240/1A0 CS L G2	800 mA / 900 mA / 975 mA / 1050	< 5 %	21.6...53.6	SELV	280	30	21
OT FIT 75/220...240/1A4 CS L G2	1100 mA / 1200 mA / 1300 mA / 1400	< 5 %	29.7...71.4	SELV	360	30	21

Product name	$\frac{\text{I}}{\text{[mm]}}$	T _a	$\frac{\text{V}}$	$\frac{\text{I}}{\text{[mm]}}$	IP	$\frac{\text{I}}{\text{[mm]}}$	No.
OT FIT 35/220...240/700 CS L G2	279	-25...+50	No	I	IP20	20	1
OT FIT 55/220...240/1A0 CS L G2	279	-25...+50	No	I	IP20	20	1
OT FIT 75/220...240/1A4 CS L G2	359	-25...+50	No	I	IP20	20	2

1) Permitted voltage range

Product features

- Line frequency: 0 Hz 50 Hz 60 Hz
- Versatile scope of application due to output power range of up to 75 W
- Supply voltage: 220...240 V
- Available with output current range: up to 1,400 mA
- SELV system

Product benefits

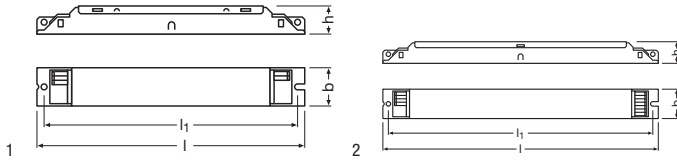
- Flexible current setting (DIP switch – 4 currents)
- Lifetime: up to 100,000 h
(temperature at T_c = 65 °C, max. 10 % failure rate)
- High efficiency
- High quality of light thanks to low output ripple current
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection

Areas of application

- Linear lighting for office, education, industry, storage areas and retail
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for luminaires of protection class I

ELEMENT

Linear / Area constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	mA	V _{OUT}	I [mA]
ELEMENT 18/220...240/350 D CS L ¹⁾	4052899553071	50 / 60	198...264	DIP switch	25...54	200 mA / 250 mA / 300 mA / 350 ⁵⁾
ELEMENT 40/220...240/350 D CS L ¹⁾	4052899553095	50 / 60	198...264	DIP switch	80...160 V / 70...110 ²⁾	200 mA / 250 mA / 300 mA / 350 ⁵⁾
ELEMENT 60/220...240/350 D CS L ¹⁾	4052899553118	50 / 60	198...264	DIP switch	100...200 V / 90...180 ²⁾	200 mA / 250 mA / 300 mA / 350 ⁵⁾
ELEMENT 35/220...240/800 CS L ¹⁾	4052899553132	50 / 60	198...264	DIP switch	25...54 V / 25...51 ³⁾	500 mA / 600 mA / 700 mA / 800 ⁵⁾
ELEMENT 55/220...240/1200 CS L ¹⁾	4052899553156	50 / 60	198...264	DIP switch	27...54 V / 27...51 ⁴⁾	920 mA / 1050 mA / 1075 mA / 1200 ⁵⁾

Product name	100Hz	W		[mm]	[mm]	[mm]	[mm]
ELEMENT 18/220...240/350 D CS L ¹⁾	< 30 %	18	Non-isolated	210	30	21	200
ELEMENT 40/220...240/350 D CS L ¹⁾	< 30 %	40	Non-isolated	210	30	21	200
ELEMENT 60/220...240/350 D CS L ¹⁾	< 30 %	60	Non-isolated	210	30	21	200
ELEMENT 35/220...240/800 CS L ¹⁾	< 30 %	35	SELV	280	30	21	270
ELEMENT 55/220...240/1200 CS L ¹⁾	< 30 %	55	SELV	280	30	21	270

Product name	T _a				No.	
ELEMENT 18/220...240/350 D CS L ¹⁾	-20...+50	No	I	IP20	20	1
ELEMENT 40/220...240/350 D CS L ¹⁾	-20...+50	No	I	IP20	20	1
ELEMENT 60/220...240/350 D CS L ¹⁾	-20...+50	No	I	IP20	20	1
ELEMENT 35/220...240/800 CS L ¹⁾	-20...+50	No	I	IP20	20	2
ELEMENT 55/220...240/1200 CS L ¹⁾	-20...+50	No	I	IP20	20	2

1) Preliminary data
 2) At 200/250mA / At 300/350mA
 3) At 500/600mA / At 700/800mA
 4) At 920/1050mA / At 1075/1200mA
 5) ±5%

Product features

- Versatile scope of application due to output power range of up to 60 W
- Supply voltage: 220...240 V
- Available with output current range: up to 1,200 mA
- SELV and non-isolated versions available

Areas of application

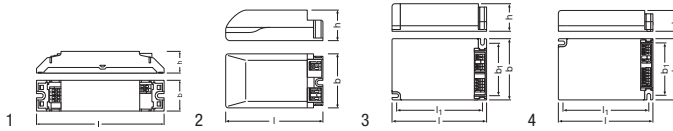
- Linear lighting for office, education, industry, storage areas and retail
- Suitable for luminaires of protection class I

Product benefits

- Small housing design
- Flexible current setting (DIP switch – 4 currents)
- Lifetime: up to 50,000 h (temperature at T_e = 65°C, max 10% failure rate)
- High efficiency
- Fulfill safety requirement due to overload, overtemperature, Hot Plug protection (no overload protection for ELEMENT 40/220...240/350 D CS L)

OPTOTRONIC® Intelligent

Compact constant current LED drivers – Dimmable DALI NFC



Product name	GTIN (EAN)	Hz	V _{IN}	V _{min-max}	V _{OUT}	I _[mA]
OTi DALI 10/220...240/700 NFC	4052899562639	0 / 50 / 60	198...264	176...276	2.5...45	150...700
OTi DALI 15/220...240/1A0 LT2 NFC	4052899548190	0 / 50 / 60	198...264 ¹⁾	176...264	7.5...54	150...1050
OTi DALI 25/220...240/700 LT2 NFC	4052899548213	0 / 50 / 60	198...264 ¹⁾	176...276	12...54 ³⁾	180...700 ⁴⁾
OTi DALI 35/220...240/1A0 LT2 NFC	4052899548237	0 / 50 / 60	198...264 ¹⁾	176...276	15...54 ³⁾	350...1050 ⁴⁾
OTi DALI 50/220...240/1A4 LT2F NFC	4052899548251	0 / 50 / 60	198...264 ¹⁾	176...276	15...54 ³⁾	600...1400 ⁴⁾

Product name	Ripple 100Hz	W	I [mm]	b [mm]	h [mm]	I ₁ [mm]	b ₁ [mm]	T _a	T _c
OTi DALI 10/220...240/700 NFC	< 1 % ⁶⁾	10	124	31	21	115	-	-20...+50	75 ²⁾
OTi DALI 15/220...240/1A0 LT2 NFC	2 % ⁶⁾	18	95	53	30	-	-	-20...+50	75 ²⁾
OTi DALI 25/220...240/700 LT2 NFC	1 % ⁶⁾	27 ⁷⁾	103	67	29.5	94	58	-20...+50	75 ²⁾
OTi DALI 35/220...240/1A0 LT2 NFC	2 % ⁶⁾	35 ⁸⁾	103	67	29.5	94	58	-20...+50	75 ²⁾
OTi DALI 50/220...240/1A4 LT2F NFC	2 % ⁶⁾	55 ⁹⁾	110	75	25	99	64	-20...+50	80 ²⁾

Product name	Control	W	I / II	Control	No.	
OTi DALI 10/220...240/700 NFC	Yes	DALI	1...100 %	I / II	20	1
OTi DALI 15/220...240/1A0 LT2 NFC	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	I / II	20	2
OTi DALI 25/220...240/700 LT2 NFC	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	I / II	20	3
OTi DALI 35/220...240/1A0 LT2 NFC	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	I / II	20	3
OTi DALI 50/220...240/1A4 LT2F NFC	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	I / II	20	4

- 1) Permitted voltage range
 2) Maximum at the T_a point
 3) Maximum 60 V
 4) ±5%
 5) For maximum nominal output current
 6) Ripple average at 100 Hz %
 7) Partial load 7...27 W
 8) Partial load 15...35 W
 9) Partial load 22...55 W



Product features

- Supply voltage: 220...240 V
- Line frequency: 0 Hz 50 Hz 60 Hz
- Line voltage: 198...264 V
- Safety according to EN 61347-1, 61347-2-13, 62384
- RI suppression according to EN 55015:2007+A1:2007/CDN
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- Lifetime: up to 100,000 h (temperature at $T_c = 65\text{ }^\circ\text{C}$, max. 10 % failure rate)
- Type of protection: IP20
- Independent connection via through-looping (except OTi DALI 15)

Product benefits

- Versatile DALI window driver due to flexible output characteristic
- Very high efficiency
- Protection of the system thanks to thermal management and Smart Control
- High-quality dimming of 1...100 % by amplitude dimming
- Soft switch-off function (OTi DALI 15)
- Easy and fast output current setting via NFC

Versatile scope of application due to OSRAM DALI Technology

- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting

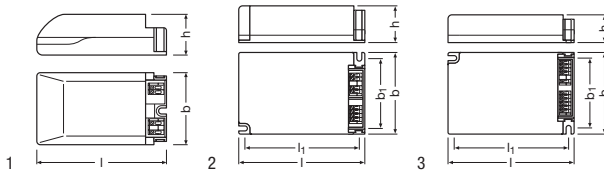
Areas of application

- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- For use in luminaires with flexible current setting (DALI, CLO, LEDset, NFC)
- Suitable for indoor SELV installations
- Suitable for luminaires of protection classes I and II
- Suitable for downlights, spotlights and LED panels
- Installation via Cable Clamp Kit possible (depending on version of product)



OPTOTRONIC® Intelligent G2

Compact constant current LED drivers – Dimmable DALI



Product name	GTIN (EAN)	Hz	V_{IN}	$V_{min-max}$	V_{OUT}	I [mA]	Ripple 100Hz
OTI DALI 15/220...240/1A0 LT2	4052899324879	0 / 50 / 60	198...264 ¹⁾	176...276	7.5...54 ³⁾	150...1050 ⁴⁾	< 2 % ⁶⁾
OTI DALI 25/220...240/700 LT2	4052899488144	0 / 50 / 60	198...264 ¹⁾	176...276	12...54 ³⁾	180...700 ⁴⁾	< 1 % ⁶⁾
OTI DALI 35/220...240/1A0 LT2	4052899488168	0 / 50 / 60	198...264 ¹⁾	176...276	15...54 ³⁾	350...1050 ⁴⁾	< 2 % ⁶⁾
OTI DALI 50/220...240/1A4 LT2 FAN	4052899488182	0 / 50 / 60	198...264 ¹⁾	176...276	15...54 ³⁾	600...1400 ⁴⁾	< 2 % ⁶⁾

Product name	W	l [mm]	b [mm]	h [mm]	l ₁ [mm]	b ₁ [mm]	T _a
OTI DALI 15/220...240/1A0 LT2	18 ⁷⁾	95	53	30	-	-	-20...+50
OTI DALI 25/220...240/700 LT2	27 ⁸⁾	103	67	29.5	94	58	-20...+50
OTI DALI 35/220...240/1A0 LT2	35 ⁹⁾	103	67	29.5	94	58	-20...+50
OTI DALI 50/220...240/1A4 LT2 FAN	55 ¹⁰⁾	110	75	25	99	64	-20...+50

Product name	T _c	CONTROL	W	I / II	No.	
OTI DALI 15/220...240/1A0 LT2	75 ²⁾	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	20	1
OTI DALI 25/220...240/700 LT2	75 ²⁾	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	20	2
OTI DALI 35/220...240/1A0 LT2	75 ²⁾	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	20	2
OTI DALI 50/220...240/1A4 LT2 FAN	80 ²⁾	Yes	DALI / Touch DIM / Touch DIM Sensor	1...100 % ⁵⁾	20	3

- 1) Permitted voltage range
2) Maximum at the T_c point
3) Maximum 60 V
4) ±5%
5) For maximum nominal output current
6) Ripple average at 100 Hz %
7) Partial load 3...18 W
8) Partial load 7...27 W
9) Partial load 15...35 W
10) Partial load 22...55 W



Product features

- Supply voltage: 220...240 V
- Line frequency: 0 Hz 50 Hz 60 Hz
- Line voltage: 198...264 V
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 62384
- Prepared for DALI-2 certification (Part -101,-102 and -207)
- RI suppression according to EN 55015:2007+A1:2007/CDN
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- Lifetime: up to 100,000 h (temperature at $T_c = 65^\circ\text{C}$, max. 10 % failure rate)
- Type of protection: IP20
- Independent connection via through-looping (except OTi DALI 15)

Product benefits

- Versatile DALI window driver due to flexible output characteristic
- Very high efficiency
- Protection of the system thanks to thermal management and Smart Control
- High-quality dimming of 1...100 % by amplitude dimming
- Soft switch-off function (OTi DALI 15)

Versatile scope of application due to OSRAM DALI Technology

- Easy to use in corridors and restrooms because of three-level Corridor function
- Touch DIM® application: easy to control via pushbutton or sensor
- Energy-efficient Touch DIM® operation due to automatic switch-off at sufficient residual light
- Suitable for emergency installations (acc. to EN 60598-2-22 and IEC 61347-2-13, appendix J) thanks to DC detection (0 Hz, pulsating DC), on/off switchable
- Feedback of power consumption and operating hours (Fit for SMART GRID)
- Suitable for buildings according to EPBD/BREEAM/LEED due to automatic Constant Lumen Output setting

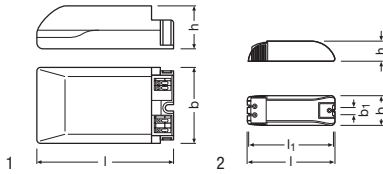
Areas of application

- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Suitable for use in luminaires with flexible current setting (DALI, CLO, LEDset)
- Suitable for indoor SELV installations
- Suitable for luminaires of protection classes I and II
- Suitable for downlights, spotlights and LED panels
- Installation via Cable Clamp Kit possible (depending on version of product)



OPTOTRONIC® PC

Compact constant current LED drivers – Dimmable phase-cut



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	I _[mA]	Ripple 100Hz	W	l [mm]	b [mm]
OTe 10/220...240/700 PC	4052899105300	50 / 60	198...264 ¹⁾	7...14	700 ⁶⁾	35 % ⁶⁾	10 ⁹⁾	95	53
OTe 13/220...240/350 PC	4052899105324	50 / 60	198...264 ¹⁾	18...38 ³⁾	350 ⁶⁾	25 % ⁶⁾	13 ¹⁰⁾	95	53
OTe 18/220...240/500 PC	4052899105362	50 / 60	198...264 ¹⁾	18...36 ³⁾	500 ⁶⁾	< 35 % ⁶⁾	18 ¹¹⁾	95	53
OTe 18/220...240/350 PC	4052899105348	50 / 60	198...264 ¹⁾	27...54 ⁴⁾	350 ⁶⁾	< 35 % ⁶⁾	19 ¹²⁾	95	53
OTe 25/220...240/700 PC	4052899105386	50 / 60	198...264 ¹⁾	18...36 ³⁾	700 ⁶⁾	< 35 % ⁶⁾	25 ¹³⁾	95	53
OTe 35/220...240/700 PC	4008321825520	50 / 60	195...264 ¹⁾	27...50 ⁵⁾	700 ⁷⁾	< 35 % ⁶⁾	35 ¹⁴⁾	153	54

Product name	h [mm]	l [mm]	T _a	T _c	Dimming	W	Mounting	IP	No.
OTe 10/220...240/700 PC	25	-	-20...+55	80 ²⁾	Yes	10...100 %	I / II	20	1
OTe 13/220...240/350 PC	25	-	-20...+55	85 ²⁾	Yes	10...100 %	I / II	20	1
OTe 18/220...240/500 PC	30	-	-20...+55	75 ²⁾	Yes	10...100 %	I / II	20	1
OTe 18/220...240/350 PC	30	-	-20...+50	75 ²⁾	Yes	10...100 %	I / II	20	1
OTe 25/220...240/700 PC	30	-	-20...+50	75 ²⁾	Yes	10...100 %	I / II	20	1
OTe 35/220...240/700 PC	36	146	-20...+45	75 ²⁾	Yes	10...100 %	I / II	10	2

- 1) Permitted voltage range
- 2) Maximum at the T_c point
- 3) Maximum <48 V
- 4) Maximum 60 V
- 5) Maximum <58 V
- 6) ±10%
- 7) ±5%
- 8) Typical
- 9) Partial load 5...10 W
- 10) Partial load 6.5...13.5 W
- 11) Partial load 9...18 W
- 12) Partial load 9.5...19 W
- 13) Partial load 12.5...25 W
- 14) Partial load 19...35 W

Product features

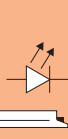
- Dimmable via leading edge/trailing edge
- Type of protection: IP20

Product benefits

- Compact housing for mounting in very tight spaces
- Compatible with the most common leading-edge and trailing-edge phase dimmers

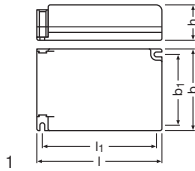
Areas of application

- Optional cable clamp E-style for independent mounting
- Suitable for indoor installations
- Suitable for indoor SELV installations



OPTOTRONIC® FIT LT2 LP

Compact constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{min-max}	V _{OUT}	I [mA]
OT FIT 15/220...240/500 LT2 LP	4052899490673	0 / 50 / 60	198...264	176...276	15...50	150...500
OT FIT 25/220...240/700 LT2 LP	4052899490697	0 / 50 / 60	198...264	176...276	15...50	300...700
OT FIT 40/220...240/1A0 LT2 LP	4052899490734	0 / 50 / 60	198...264	176...276	15...50	500...1050

Product name	Ripple 100Hz	W	l [mm]	b [mm]	h [mm]	l ₁ [mm]	b ₁ [mm]
OT FIT 15/220...240/500 LT2 LP	< 5 %	4.5...17.5	103	67	22.5	94	58
OT FIT 25/220...240/700 LT2 LP	< 5 %	8.0...26.5	103	67	22.5	94	58
OT FIT 40/220...240/1A0 LT2 LP	< 5 %	13...40	103	67	22.5	94	58

Product name	T _a	T _c	⊙	⏏	⏏	⏏
OT FIT 15/220...240/500 LT2 LP	-20...+50	75	No	I / II	20	1
OT FIT 25/220...240/700 LT2 LP	-20...+50	75	No	I / II	20	1
OT FIT 40/220...240/1A0 LT2 LP	-20...+50	75	No	I / II	20	1

Product features

- Supply voltage: 220...240 V
- Line frequency: 0 Hz 50 Hz 60 Hz
- Line voltage: 198...264 V
- Safety according to EN 61347-1, 61347-2-13, 62384
- RI suppression according to EN 55015
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- Lifetime: up to 100,000 h
(temperature at T_c = 65 °C, max. 10 % failure rate)
- Independent connection via through-looping
(depending on version of product)

Product benefits

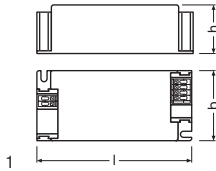
- Versatile scope of application due to output power range of up to 40 W
- Fulfill safety requirement due to overload, overtemperature protection
- High efficiency
- Higher quality of light thanks to <5 % output ripple current

Areas of application

- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J
- Luminaires with flexible current setting (LEDset2)
- Suitable for indoor SELV installations
- Suitable for luminaires of protection classes I and II
- Suitable for downlights, spotlights and LED panels
- Independent mounting via Cable Clamp Kit possible

OPTOTRONIC® FIT LT2 S

Compact constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V_{IN}	V_{OUT}	I [mA]	Ripple 100 Hz
OT FIT 15/220...240/500 LT2 S	4052899956995	50 / 60	198...264	15...50	150...500	< 1 %
OT FIT 25/220...240/700 LT2 S	4052899957008	50 / 60	198...264	15...50	300...700	< 1 %
OT FIT 40/220...240/1A0 LT2 S	4052899957015	50 / 60	198...264	15...50	500...1050	< 1 %

Product name	W	$\frac{l}{[mm]}$	$\frac{b}{[mm]}$	$\frac{h}{[mm]}$	$\frac{l1}{[mm]}$	$\frac{b1}{[mm]}$	T_a
OT FIT 15/220...240/500 LT2 S	4.5...17.5	97	43	29.5	88	34	-20...+50
OT FIT 25/220...240/700 LT2 S	8.0...26.5	97	43	29.5	88	34	-20...+50
OT FIT 40/220...240/1A0 LT2 S	13...40	97	43	29.5	88	34	-20...+40

Product name	T_c				No.
OT FIT 15/220...240/500 LT2 S	75	No	I / II	20	1
OT FIT 25/220...240/700 LT2 S	75	No	I / II	20	1
OT FIT 40/220...240/1A0 LT2 S	75	No	I / II	20	1

Product features

- Supply voltage: 220...240 V
- Line frequency: 50 Hz 60 Hz
- Line voltage: 198...264 V
- Safety according to EN 61347-1, 61347-2-13, 62384
- RI suppression according to EN 55015
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- Lifetime: up to 100,000 h
(temperature at $T_c = 65^\circ\text{C}$, max. 10 % failure rate)
- Cable clamp kit for independent mounting

Product benefits

- Versatile scope of application due to output power range of up to 40 W
- Fulfill safety requirement due to overload, overtemperature protection
- High efficiency
- High quality of light thanks to < 1 % output ripple current
- Small housing for flexible luminaire designs

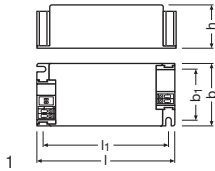
Areas of application

- Luminaires with flexible current setting (LEDset2)
- Suitable for indoor SELV installations
- Suitable for luminaires of protection classes I and II
- Suitable for downlights, spotlights and LED panels
- Independent mounting via Cable Clamp Kit possible



OPTOTRONIC® FIT CS

Compact constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	I _I [mA]
OT FIT 20/220...240/500 CS	4052899435612	50 / 60	198...264	25...42	250 / 350 / 450 / 500
OT FIT 30/220...240/700 CS	4052899435636	50 / 60	198...264	25...42	500 / 600 / 700 / 650
OT FIT 40/220...240/1A0 CS	4052899435650	50 / 60	198...264	25...42	800 / 900 / 1050 / 950

Product name	Ripple 100Hz	W	I [mm]	b [mm]	h [mm]	l [mm]	b1 [mm]
OT FIT 20/220...240/500 CS	< 5 %	6.5...21	97	43	29.5	88	34
OT FIT 30/220...240/700 CS	< 5 %	11.5...29.4	97	43	29.5	88	34
OT FIT 40/220...240/1A0 CS	< 5 %	20...44	97	43	29.5	88	34

Product name	T _a	T _c	⊙	⊕	⊞	No.
OT FIT 20/220...240/500 CS	-20...+50	80	No	II	20	1
OT FIT 30/220...240/700 CS	-20...+50	80	No	II	20	1
OT FIT 40/220...240/1A0 CS	-20...+50	75	No	II	20	1

Product features

- Supply voltage: 220...240 V
- Line frequency: 50 Hz 60 Hz
- Line voltage: 198...264 V
- Safety according to EN 61347-1, 61347-2-13, 62384
- RI suppression according to EN 55015
- Line harmonics according to EN 61000-3-2
- Immunity according to EN 61547
- Lifetime: up to 50,000 h
(temperature at T_c = 70 °C, max. 10 % failure rate)
- Cable clamp kit for independent mounting

Product benefits

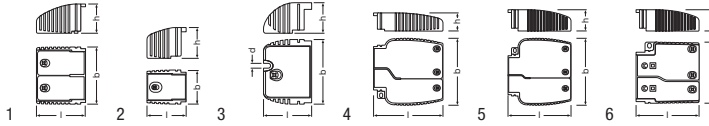
- High quality of light thanks to low output ripple current
- High flexibility due to four different output currents
- Small housing for flexible luminaire designs
- High efficiency



Areas of application

- Suitable for downlights, spotlights and LED panels
- Suitable for luminaires of protection classes I and II

OPTOTRONIC® Cable Clamp

Driver accessories



Product name	GTIN (EAN)	l [mm]	b [mm]	h [mm]		 No.
OT CABLE CLAMP A-STYLE	4052899089570	35	65	25	20	1
OT CABLE CLAMP B-STYLE	4052899077881	49.2	57.7	29.5	20	1
OT CABLE CLAMP D-STYLE	4052899077904	38.5	33	29.5	40	2
OT CABLE CLAMP E-STYLE	4052899167896	38	53	25	20	3
OT CABLE CLAMP F-STYLE	4052899325555	38	53	30	20	3
OT CABLE CLAMP A-STYLE TL	4052899325982	90	92	25	20	4
OT CABLE CLAMP B-STYLE TL	4052899948051	90	92	29.5	20	5
OT CABLE CLAMP B-STYLE LP TL	4052899530997	50	67	22	20	6

Product features

- Easy-to-install and flexible cable clamps
- Separate cable clamps for primary and secondary side
- Pre-fixed, captive screws
- Through-looping (TL version)

Areas of application

- Downlights, flat luminaires
- Suitable for different cable types
- Suitable for indoor installations

Product benefits

- Simple and quick cable mounting
- Sufficient space for cable connection
- Cost-effective and space-saving solution (TL version)
- Free cable connection thanks to open flaps
- Immediate installation thanks to pre-assembled cable clamps



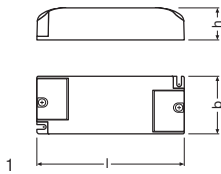
Summary of LED driver/cable clamp combinations

	Product name	GTIN (EAN)	OT Cable Clamp	
DALI – SELV	OTI DALI 15/220-240/1A0 LT2 NFC	4052899324879	F-STYLE	
	OTI DALI 25/220-240/700 LT2 NFC	4052899488144	B-STYLE, B-STYLE TL	
	OTI DALI 35/220-240/1A0 LT2 NFC	4052899488168	B-STYLE, B-STYLE TL	
	OTI DALI 50/220-240/1A4 LT2F NFC	4052899488182	A-STYLE, A-STYLE TL	
	OTI DALI 15/220-240/1A0 LT2	4052899324879	F-STYLE	
	OTI DALI 25/220-240/700 LT2	4052899488144	B-STYLE, B-STYLE TL	
	OTI DALI 35/220-240/1A0 LT2	4052899488168	B-STYLE, B-STYLE TL	
	OTI DALI 50/220-240/1A4 LT2 FAN	4052899488182	A-STYLE, A-STYLE TL	
	Phase-cut (PC) – SELV	OTE 10/220-240/700 PC	4052899105300	E-STYLE
		OTE 11/220-240/300 PC	4052899482937	E-STYLE
OTE 13/220-240/350 PC		4052899105324	E-STYLE	
OTE 18/220-240/350 PC		4052899105348	E-STYLE	
OTE 18/220-240/500 PC		4052899105362	E-STYLE	
OTE 25/220-240/700 PC		4052899105386	E-STYLE	
OTE 35/220-240/700 PC		4008321825520	E-STYLE	
OT FIT CS – SELV	OT FIT 20/220-240/500 CS	4052899435612	D-STYLE	
	OT FIT 30/220-240/700 CS	4052899435636	D-STYLE	
	OT FIT 40/220-240/1A0 CS	4052899435650	D-STYLE	
OT FIT LT2 – SELV	OT FIT 15/220-240/500 LT2 S	4052899956995	D-STYLE	
	OT FIT 25/220-240/700 LT2 S	4052899957008	D-STYLE	
	OT FIT 40/220-240/1A0 LT2 S	4052899957015	D-STYLE	
OT FIT LT2 LP – SELV	OT FIT 15/220-240/500 LT2 LP	4052899490673	B-STYLE LP TL	
	OT FIT 25/220-240/700 LT2 LP	4052899490697	B-STYLE LP TL	
	OT FIT 40/220-240/1A0 LT2 LP	4052899490734	B-STYLE LP TL	



ELEMENT S

Compact constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	I _l [mA]	Ripple 100kHz	W	l [mm]
ELEMENT 6/220...240/150 S	4052899552821	50 / 60	220...240	30...42	150 ¹⁾	< 30 %	6	115
ELEMENT 8/220...240/200 S	4052899552845	50 / 60	220...240	30...42	200 ¹⁾	< 30 %	8	115
ELEMENT 10/220...240/250 S	4052899552869	50 / 60	220...240	30...42	250 ¹⁾	< 30 %	10	115
ELEMENT 12/220...240/300 S	4052899552883	50 / 60	220...240	30...42	300 ¹⁾	< 30 %	12	115
ELEMENT 15/220...240/350 S	4052899552906	50 / 60	220...240	30...42	350 ¹⁾	< 30 %	15	115
ELEMENT 20/220...240/500 S	4052899552920	50 / 60	220...240	30...42	500 ¹⁾	< 30 %	20	115
ELEMENT 25/220...240/600 S	4052899552944	50 / 60	220...240	30...42	600 ¹⁾	< 30 %	25	115
ELEMENT 30/220...240/700 S	4052899552999	50 / 60	220...240	30...42	700 ¹⁾	< 30 %	30	115
ELEMENT 33/220...240/800 S	4052899553019	50 / 60	220...240	30...42	800 ¹⁾	< 30 %	33	115
ELEMENT 38/220...240/900 S	4052899553033	50 / 60	220...240	30...42	900 ¹⁾	< 30 %	38	115
ELEMENT 44/220...240/1050 S	4052899553057	50 / 60	220...240	30...42	1050 ¹⁾	< 30 %	44	115

Product name	b [mm]	h [mm]	T _a			IP		
ELEMENT 6/220...240/150 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 8/220...240/200 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 10/220...240/250 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 12/220...240/300 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 15/220...240/350 S	45	25	-25...+50	No	I / II	IP20	50	1
ELEMENT 20/220...240/500 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 25/220...240/600 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 30/220...240/700 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 33/220...240/800 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 38/220...240/900 S	45	25	-20...+50	No	I / II	IP20	50	1
ELEMENT 44/220...240/1050 S	45	25	-20...+50	No	I / II	IP20	50	1

1) ±5%

Product features

- Available with wattages of up to 44 W
- Constant output current
- Integrated cable clamp for luminaire and independent installation
- Operated with safety extra-low voltage (SELV): < 60 V
- Reversible overtemperature, overload, short-circuit and open-circuit protection

Product benefits

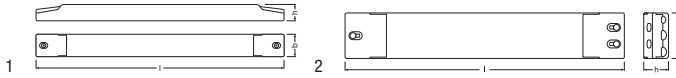
- Compatible with LEDs with chip-on-board technology and discrete LEDs
- High efficiency
- Simple installation and wiring

Areas of application

- Spotlight and downlight installations for shops
- Recessed luminaires
- Suitable for luminaires of protection classes I and II
- Suitable for indoor SELV installations

OPTOTRONIC®

Constant voltage LED drivers 24 V with DALI



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	W	I [mm]	b [mm]	h [mm]
OTI DALI 50/220...240/24 1...4 CH	4052899452916	0 / 50 / 60	198...264	24 ¹⁾	50	346	32	22
OTI DALI 50/220...240/24 TW	4052899490772	0 / 50 / 60	198...264	24 ¹⁾	50	346	32	22
OTI DALI 80/220...240/24 1...4 CH	4052899452893	0 / 50 / 60	198...264	24 ¹⁾	80	346	32	22
OTI DALI 80/220...240/24 TW	4052899490758	0 / 50 / 60	198...264	24 ¹⁾	80	346	32	22
OTI DALI 160/220...240/24 1-2 CH	4052899986305	0 / 50 / 60	198...264	24 ¹⁾	160	300	50	35
OTI DALI 160/220...240/24 TW	4052899986312	0 / 50 / 60	198...264	24 ¹⁾	160	300	50	35

Product name	T _a	⌚	W	⚡	IP	📦	💡 No.
OTI DALI 50/220...240/24 1...4 CH	-20...+45	Yes	0.1...100 %	I / II	IP20	20	1
OTI DALI 50/220...240/24 TW	-20...+45	Yes	0.1...100 %	I / II	IP20	20	1
OTI DALI 80/220...240/24 1...4 CH	-20...+45	Yes	0.1...100 %	I / II	IP20	20	1
OTI DALI 80/220...240/24 TW	-20...+45	Yes	0.1...100 %	I / II	IP20	20	1
OTI DALI 160/220...240/24 1-2 CH	-20...+45	Yes	0.1...100 %	I / II	IP20	20	2
OTI DALI 160/220...240/24 TW	-20...+45	Yes	0.1...100 %	I / II	IP20	20	2

1) DC voltage

Product features

- Dimmable via Touch DIM®
- LED driver whose output power can be shared arbitrarily among the 4 channels
- Dimming range: 0.1...100 %
- Line frequency: 0 Hz 50 Hz 60 Hz

Product benefits

- Intelligent power matching thanks to Smart Power Supply
- Slim form factor for mounting on the cove or in linear luminaires
- Minimized flicker thanks to high PWM frequency
- Suitable for installation in emergency lighting systems according to EN 60598-2-22
- Available as Tunable White version (DALI Device Type 8)
- DALI message detection "LED module failure"

Areas of application

- Cove lighting, wall washer, corridor, handrail
- Suitable for use in luminaires of protection class I and II

Equipment/Accessories

- Suitable for 24 V LED modules

OPTOTRONIC®

Constant voltage LED drivers 24 V with 1...10 V



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	W	I [mm]	b [mm]	h [mm]	h [mm]
OT 80/220...240/24 DIM P	4008321981677	50 / 60	198...264	24 ¹⁾	80	250	50	34	241
OT 120/220...240/24 DIM P	4008321981691	50 / 60	198...264	24 ¹⁾	120	250	60	39	241
OT 240/220...240/24 DIM P	4008321981714	50 / 60	198...264	24 ¹⁾	240	250	80	39	241

Product name	b ₁ [mm]	T _a	⊙	W	⊕	IP	⊞	⚡
OT 80/220...240/24 DIM P	14	-25...+55	Yes	3...100 %	II	IP67	10	1
OT 120/220...240/24 DIM P	15	-25...+55	Yes	3...100 %	I	IP67	10	2
OT 240/220...240/24 DIM P	16	-25...+55	Yes	3...100 %	I	IP67	8	3

1) +1.0/-0.5 V

Product features

- Dimmable via fully isolated 1...10 V interface
- Driver with output power range of up to 240 W

Product benefits

- Versatile 1...10 V window driver up to 240 W due to flexible output characteristic
- Very high efficiency
- IP rating: IP67
- High surge protection: up to 3 kV (L-N)/6 kV (L/N-PE)

Areas of application

- Suitable for use in tight, flat luminaires or installation in suspended ceilings
- Suitable for indoor and outdoor SELV installations



OPTOTRONIC®

Constant voltage LED drivers 24 V



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	W	I [mm]	b [mm]	h [mm]
OT 6/200...240/24 CE	4008321113269	50 / 60	180...264	24	6	51	50	22
OT 20/200...240/24	4050300618111	50 / 60	198...264	24	20	109	50	35
OT 30/220...240/24 P	4052899043497	50 / 60	198...264	24	30	220	40	22
OT 50/220...240/24	405289905566	50 / 60	198...264	24	50	242	40	16
OT 50/220...240/24 P	4052899043510	50 / 60	198...264	24	50	220	40	22
OT 75/220...240/24	4050300817477	50 / 60	198...264	24	75	220	47	44
OT 75/220...240/24 E	4008321362476	50 / 60	198...264	24	75	241	43	30
OT 80/220...240/24 P	4008321981684	50 / 60	198...264	24	80	250	50	34
OT 120/220...240/24 P	4008321981707	50 / 60	198...264	24	120	250	60	39
OT 240/220...240/24 P	4008321981721	50 / 60	198...264	24	240	250	80	39

Product name	h [mm]	T _a			IP	
OT 6/200...240/24 CE	-	-20...+50	Yes ¹⁾	II	IP65	20
OT 20/200...240/24	-	-20...+45	Yes ¹⁾	II	IP20	20
OT 30/220...240/24 P	213	-25...+55	Yes ¹⁾	II	IP66	30
OT 50/220...240/24	-	-20...+45	Yes ¹⁾	II	IP20	20
OT 50/220...240/24 P	213	-25...+55	Yes ¹⁾	II	IP66	30
OT 75/220...240/24	180	-20...+50	Yes ¹⁾	II	IP20	10
OT 75/220...240/24 E	227	-20...+60	Yes ¹⁾	II	IP64	10
OT 80/220...240/24 P	241	-25...+55	Yes ¹⁾	II	IP67	10
OT 120/220...240/24 P	241	-25...+55	Yes ¹⁾	I	IP67	10
OT 240/220...240/24 P	241	-25...+55	Yes ¹⁾	I	IP67	8

1) With OPTOTRONIC dimmers

Product benefits

- Versatile scope of application due to output power range of up to 240 W
- Very high efficiency
- Constant luminous flux for very low and high temperatures due to Smart Power Supply

Areas of application

- Suitable for indoor and outdoor SELV installations
- Outdoor applications only in suitable installations
- Suitable for use in tight, flat luminaires or installation in suspended ceilings

OPTOTRONIC®

Constant voltage LED drivers 12 V



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	W	l [mm]	b [mm]
OT 15/220...240/12 P	4052899905559	50 / 60	198...264	12.5	15	237	20
OT 30/220...240/12 P	4052899905542	50 / 60	198...264	12.5	30	220	40
OTe 60/110...277/12 E	4008321794338	50 / 60	100...305	12.5	60	241	43
OT 60/220...240/12 P	4008321790811	50 / 60	198...264	12.5	60	180	50
OTe 120/110...277/12 E	4008321821263	50 / 60	100...305	12.5	120	258	51.2
OT 120/220...240/12 P	4008321790835	50 / 60	198...264	12.5	120	250	60

Product name	h [mm]	T _a			IP	
OT 15/220...240/12 P	22	-25...+55	Yes ¹⁾	II	IP66	50
OT 30/220...240/12 P	22	-25...+55	Yes ¹⁾	II	IP66	30
OTe 60/110...277/12 E	30	-25...+55	No	I	IP64	10
OT 60/220...240/12 P	34	-25...+55	Yes ¹⁾	II	IP67	10
OTe 120/110...277/12 E	44.5	-25...+55	No	I	IP64	10
OT 120/220...240/12 P	39	-25...+55	Yes ¹⁾	I	IP67	10

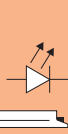
1) With OPTOTRONIC dimmers

Product benefits

- Versatile scope of application due to output power range of up to 120 W
- Very high efficiency
- IP rating: up to IP67
- High surge protection: up to 3 kV (L-N)/6 kV (L/N-PE)

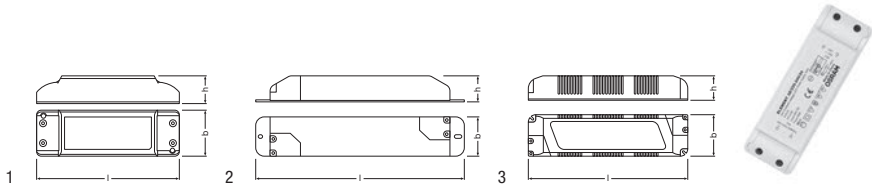
Areas of application

- Suitable for indoor and outdoor installations
- Ideal for mounting in very tight spaces



ELEMENT

Constant voltage LED drivers 24 V – Non-dimmable



Product name	GTIN (EAN)	Hz	V _{IN}	V _{OUT}	W	SELV	l [mm]	b [mm]
ELEMENT 30/220...240/24	4052899463776	50 / 60	198...264	24	30	SELV	140	45
ELEMENT 60/220...240/24	4052899463790	50 / 60	198...264	24	60	SELV	238.9	45.5
ELEMENT 90/220...240/24	4052899463813	50 / 60	198...264	24	90	SELV	230	60

Product name	h [mm]	T _a	⊙	II III	IP	⊞	Lightbulb No.
ELEMENT 30/220...240/24	27.5	-20...+45	No	II	IP20	20	1
ELEMENT 60/220...240/24	30	-20...+50	No	II	IP20	20	2
ELEMENT 90/220...240/24	35	-20...+50	No	II	IP20	20	3

Product features

- Lifetime: up to 50,000 h (temperature at t_c = 75 °C)
- Overtemperature protection
- Overload protection

Product benefits

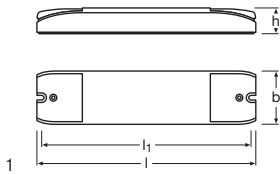
- Large output power range: up to 90 W
- Compatible with OSRAM Flex® products
- Excellent price/performance ratio

Areas of application

- Suitable for luminaires of protection class II
- Decorative lighting in hospitality, restaurants and shops
- Shelf lighting for shops
- Cove lighting
- Under-cabinet lighting

OPTOTRONIC®

Constant voltage dimmers with Bluetooth



Product name	GTIN (EAN)	V_{OUT}	W	I [mm]	b [mm]	h [mm]	l [mm]
OT BLE DIM	4052899557833	12...24	240	172	42	20	164
Product name	T_a				IP		
OT BLE DIM	-20...+45	Yes	0...100 %	III	IP20	20	1

Product features

- Wireless 4-channel dimmer, with a output voltage of 12 V and 24 V
- Control of LED loads of up to 240 W
- Wireless module based on Bluetooth Low Energy

Areas of application

- Suitable for indoor installations
- Shops and hospitality: retail, hotels, restaurants
- Museums
- Residential buildings

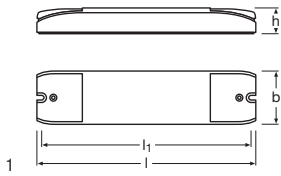
Product benefits

- Control of white, Tunable White, RGB and RGBW LED modules
- Independent housing for ceiling installation
- Support of systems based on Casambi lighting control solutions
- Minimal installation effort
- Dry contacts for connection to any commercial pushbutton



OPTOTRONIC®

Constant voltage dimmers with DALI



Product name	GTIN (EAN)	V_{OUT}	W	I [mm]	b [mm]	h [mm]	h [mm]
OTi DALI DIM	4008321061195	10.5...24	120	172	42	20	164
Product name	T_a	Yes	W	II	IP	20	No.
OTi DALI DIM	-20...+50	Yes	0...100 %	II	IP20	20	1

Product features

- Intelligent digital dimmer (DALI) with constant output voltage
- Dimming range: 0...100 %
- Device fits also for special applications where dimming below 1 % is required

Areas of application

- Suitable for indoor installations
- Separate installation (ceiling mounting)

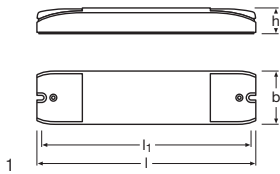
Product benefits

- Very precise dimming thanks to digital light control



OPTOTRONIC®

Constant voltage dimmers with DMX



Product name	GTIN (EAN)	V_{OUT}	W	l [mm]	b [mm]	h [mm]	l_1 [mm]
OT DMX RGB DIM	4008321160829	10.5...24	144	172	42	20	164
OT DMX RGBW DIM	4052899557949	12...24	172	172	42	20	164
Product name	T_a				IP		
OT DMX RGB DIM	-20...+50	Yes	0...100 %	III	IP20	20	1
OT DMX RGBW DIM	-20...+50	Yes	0...100 %	III	IP20	20	1

Product features

- Intelligent DMX dimmer with multi-channel topology and single control
- Automatic or manual addressing
- Device fits also for special applications where dimming below 1 % is required

Areas of application

- Suitable for indoor installations
- Shops and hospitality: retail, hotels, restaurants
- Museums
- Residential buildings

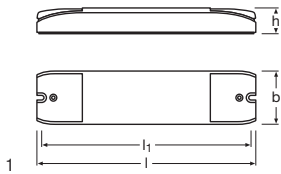
Product benefits

- 3- and 4-channel DMX dimmer for RGB and RGBW LED modules
- Independent housing for ceiling installation
- High PWM frequency to optimize video recording



OPTOTRONIC®

Constant voltage dimmers with 1...10 V



Product name	GTIN (EAN)	V_{OUT}	W	$\frac{l}{[mm]}$	$\frac{b}{[mm]}$	$\frac{h}{[mm]}$	$\frac{l_1}{[mm]}$
OT DIM	4050300943459	10.5...24	120	172	42	20	164
Product name	T_a		$\frac{W}{\%}$		IP		
OT DIM	-20...+50	Yes ¹⁾	0...100 %	II	IP20	20	1

1) 1 channel PWM output

Product features

- Intelligent analog dimmer (1...10 V) with constant output voltage
- Dimming range: 0...100 %
- Cable clamp housing for independent mounting
- Device fits also for special applications where dimming below 1 % is required

Areas of application

- Suitable for indoor SELV installations

Product benefits

- 1...10V control port basic isolated





OPTOTRONIC®

Outdoor LED drivers

OPTOTRONIC® LED drivers for outdoor applications

Long life, low maintenance and high efficiency are very important for outdoor applications. OPTOTRONIC® LED drivers for outdoor applications fulfill these expectations and use the advantages of LED-based light sources.

The high flexibility of these devices enables the optimal adaptation to required lighting conditions as well as the cost optimization of LED luminaire systems.








Significant energy savings as well as a reduction of CO₂ emissions can be achieved thanks to the integrated dimming functions (depending on the device family). Because of the large operating window (voltage/current) of these LED drivers, a wide range of LED modules are supported. The table on the next page can be used as a guide.

OSRAM sets new standards with integrated overvoltage protection for protection class I and II luminaires. The following constant current LED driver families are available for outdoor applications.

For further information, go to www.osram.com/outdoordimming



ON/OFF ON/OFF 1DIM 2DIM 4DIM 4DIM

Product name	OT 700 P5	High Current	OT 1DIMLT2 E	OT 2DIMLT2 P	OT 4DIMLT2 E	OT 4DIMLT2 G2 E
Output power	17–250W	50–200W	2–165W	10–110W	6–165W	2–165W
Output current	700 mA	2100–5600 mA	70–1050 mA	105–800 mA 180–1250 mA/ 1400 mA	70–1050 mA	70–1050 mA
Isolation prim./sec.	Double	Double	Double	Double	Double	Double
Surge voltage strength						
L - N	6 kV	6 kV	6 kV	6 kV	6 kV	6 kV
L/N - Earth	6 kV	6 kV	10 kV	6 kV	8 kV	10 kV
Dimming functionality						
 StepDIM	—	—	—	● ¹⁾	●	●
 AstroDIM	—	—	●	—	●	●
 AstroDIM (incl. presence detection)	—	—	—	● ¹⁾	●	●
 MainsDIM	—	—	—	—	●	●
 0-10V	—	—	—	●	—	—
 DALI (Version-1)	—	—	—	—	●	—
 DALI-2	—	—	—	—	—	●
CLO function ²⁾ (constant lumen output)	—	—	●	●	●	●
Additional features						
Emergency Light ²⁾	—	—	—	—	●	●
Monitoring Data ²⁾	—	—	—	—	—	●
Luminaire Information ²⁾	—	—	—	—	—	●
Tuning Factor ²⁾	—	—	●	—	—	●
Driver Guard ²⁾	—	—	●	—	—	●
OEM Key ²⁾	—	—	—	—	●	—
Configuration Lock ²⁾	—	—	●	—	—	●
LED module interface						
LEDset2	—	—	●	●	●	●
Programming software						
Tuner4TRONIC®	—	—	●	●	●	●
Tuner4TRONIC® Field	—	—	●	—	—	●
Programming tool						
DALI magic	—	—	—	—	●	●
OT Programmer	—	—	—	●	—	—
NFC Programmer	—	—	●	—	—	●

1) With external relay

2) Feature summary on page 3.07 ff.



Control interfaces/dimming possibilities

Stand-alone control



AstroDIM

AstroDIM provides multi-stage night-time power reduction based on an internal timer referenced to the power ON/OFF time. There is no need for an external control infrastructure. The unit automatically performs a dimming profile based on the predefined scheduled reference to the midpoint, which is calculated based on the power ON/OFF times.



Presence-controlled

In this dimming mode, the light output can be adjusted to the activity around each light point with an additional external sensor powered by the mains, regardless of the actual dimming level of the AstroDIM mode.

Group control



StepDIM

The StepDIM (bi-power) mode allows switching between two output levels, the “normal” mode and the “reduced load” mode, by means of an additional switched phase. In the “reduced load” mode, the driver reduces the lighting level and therefore the energy consumption. The light levels can be preprogrammed flexibly.



MainsDIM

This feature is mainly used in combination with magnetic ballasts for outdoor applications. The light output is reduced by lowering the mains voltage. The reduction of the mains voltage is applied by a controller in the distribution cabinet.



Network control



DALI

In DALI mode, the driver can be integrated into a light management system such as the OSRAM Street Light Control system. The standardized DALI interface enables bi-directional communication between the driver and the light management system, which means that stepless dimming, status requests and addressing of each individual luminaire are possible. For additional information, please refer to pages 3.06 ff. and 4.60 ff.



0-10V

With a 0-10V interface, the driver can be integrated into a light management system such as the OSRAM Street Light Control system. This uni-directional interface allows adjusting the light output of the system.

Additional features



External temperature sensor

This feature allows the temperature protection of the LED module or the complete luminaire in hot ambient temperatures via an external sensor (e.g. NTC, negative temperature coefficient resistor). The derating can be modified via the Tuner4TRONIC® software.



Tuning Factor

Within limits predefined by the luminaire manufacturer, this feature allows an adjustment of the amount of light in the field or in production. Thus, one luminaire can manage different lumen packages. If the feature is combined with LEDset2, other lumen packages can also be achieved which differ in terms of resistor coding.



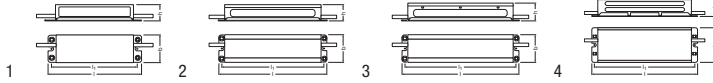
High overvoltage protection

With the OSRAM-developed EQUI connection, these drivers (depending on the OPTOTRONIC® family type) offer a high overvoltage protection up to 10 kV in common mode (6 kV in differential mode) for protection class I or II, protecting not only the LED driver, but also the connected module.



OPTOTRONIC® Outdoor

Constant current LED drivers – Non-dimmable



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	I [mA]	$\frac{l}{[mm]}$	$\frac{b}{[mm]}$	$\frac{h}{[mm]}$
OT 50/120...277/700 P5	4052899259003	108...305 ¹⁾	50 ²⁾	24...74	700 ⁶⁾	168	50	30
OT 100/120...277/700 P5	4052899259065	108...305 ¹⁾	100 ³⁾	55...152	700 ⁶⁾	168	60	39
OT 180/120...277/700 P5	4052899259027	108...305 ¹⁾	180 ⁴⁾	115...257	700 ⁶⁾	251	60	39
OT 250/120...277/700 P5	4052899259041	108...305 ¹⁾	250 ⁵⁾	180...357	700 ⁶⁾	267	89	55

Product name	$\frac{h}{[mm]}$	T_a			IP		
OT 50/120...277/700 P5	152	-40...+55	No	I	IP65	20	1
OT 100/120...277/700 P5	152	-40...+55	No	I	IP65	20	2
OT 180/120...277/700 P5	236.3	-40...+55	No	I	IP65	10	3
OT 250/120...277/700 P5	254.6	-40...+50	No	I	IP65	6	4

- 1) Permitted voltage range
 2) Partial load 17...50 W
 3) Partial load 39...100 W
 4) Partial load 80...180 W
 5) Partial load 125...250 W
 6) $\pm 5\%$

Product features

- Available with different wattages: 50 W, 100 W, 180 W, 250 W
- Input voltage: 120...277 V
- Output current: 700 mA
- Overtemperature protection

Product benefits

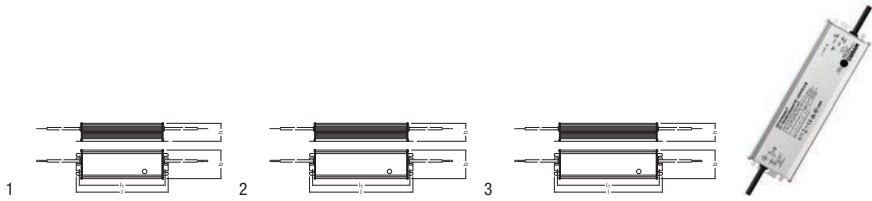
- High surge protection:
up to 6 kV (L-N)/6 kV (L/N-PE)
- High efficiency
- Great flexibility due to wide operating temperature range of -40...50 °C or 55 °C
- IP rating: IP65

Areas of application

- Street and urban lighting
- Industry
- Suitable for luminaires of protection class I

OPTOTRONIC® Outdoor

High current LED drivers – Non-dimmable



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	$I_{[mA]}$	I [mm]	b [mm]	h [mm]
OT 100/220...240/4A2 P5	4052899410657	198...264 ¹⁾	100 ²⁾	24...48	2.1...4.2 ⁵⁾	212.5	68	42.5
OT 150/220...240/4A9 P5	4052899410671	198...264 ¹⁾	150 ³⁾	30...60	2.45...4.9 ⁵⁾	242.5	68	42.5
OT 200/220...240/5A6 P5	4052899410695	198...264 ¹⁾	200 ⁴⁾	35...70	2.8...5.6 ⁵⁾	252.5	68	42.5

Product name	l [mm]	T_a			IP		
OT 100/220...240/4A2 P5	201.6	-40...+55	No	I	IP65	10	1
OT 150/220...240/4A9 P5	231.5	-40...+55	No	I	IP65	10	2
OT 200/220...240/5A6 P5	241.6	-40...+50	No	I	IP65	10	3

1) Permitted voltage range
 2) Partial load 51...100 W
 3) Partial load 74...150 W
 4) Partial load 98...200 W
 5) ±5%

Product features

- Overtemperature protection
- Available with different wattages: 100 W, 150 W, 200 W
- Line voltage: 220...240 V
- Current setting via potentiometer without programming

Product benefits

- High surge protection: up to 6 kV
- High efficiency
- Adjustable and wide output current range
- Constant current output
- Protection through double isolation between primary and secondary side (SELV)
- IP rating: IP65
- Long lifetime: up to 100,000 h

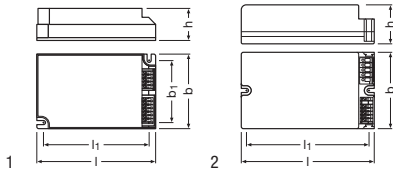
Areas of application

- Independent installation
- Street and urban lighting
- Industry
- Suitable for luminaires of protection class I



OPTOTRONIC® Outdoor

Constant current LED drivers with 1DIM/AstroDIM



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	$I_{[mA]}$	l [mm]	b [mm]	h [mm]
OT 20/170...240/1A0 1DIMLT2 G1 CE	4052899517400	170...264	22	10...38	70...1050	123	79	33
OT 40/170...240/1A0 1DIMLT2 G1 CE	4052899517424	170...264	40	15...56	70...1050	123	79	33
OT 75/170...240/1A0 1DIMLT2 G1 CE	4052899541092	170...264	75	35...115	70...1050	133	77	40
OT 110/170...240/1A0 1DIMLT2 G1 CE ¹⁾	4052899541115	170...264	110	80...220	70...1050	150	90	40

Product name	l [mm]	b_1 [mm]	T_a			IP		
OT 20/170...240/1A0 1DIMLT2 G1 CE	111	67	-40...+60	Yes	I / II	IP20	20	1
OT 40/170...240/1A0 1DIMLT2 G1 CE	111	67	-40...+60	Yes	I / II	IP20	20	1
OT 75/170...240/1A0 1DIMLT2 G1 CE	122.5	-	-40...+60	Yes	I / II	IP20	10	2
OT 110/170...240/1A0 1DIMLT2 G1 CE ¹⁾	134	-	-40...+55	Yes	I / II	IP20	10	2

¹⁾ In development, data preliminary

Product features

- Supply voltage: 220...240 V
- Current output range: 70...1,050 mA
- Easy and fast wireless luminaire programming via NFC
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Standby power consumption: < 0.5 W
- Constant lumen function
- Overtemperature protection via external NTC
- Integrated customizable thermal management (Driver Guard)

Product benefits

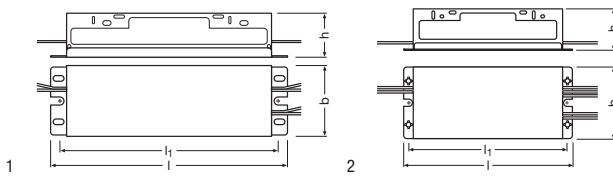
- Easy and fast wireless luminaire programming
- Very high efficiency
- Optimized for AstroDIM operation
- Wide current output range: 200 mA...1050 mA
- High surge protection: up to 10 kV (in protection class I or II)
- Great flexibility due to wide operating temperature range of -40...55 °C or 60 °C
- Protection through double isolation between mains input and LED output

Areas of application

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires with IP > 65
- Suitable for use in outdoor luminaires of protection class I and II

OPTOTRONIC® Outdoor

Constant current LED drivers with 2DIM/0...10 V



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	$I_{[mA]}$	l [mm]	b [mm]	h [mm]
OT 50/120...277/800 2DIMLT2 P ¹⁾	4052899173781	108...305 ⁵⁾	50 ⁶⁾	30...115	105...800	168	50	30
OT 50/120...277/1A2 2DIMLT2 P ¹⁾	4052899173804	108...305 ⁵⁾	50 ⁷⁾	20...55	180...1250	168	50	30
OT 100/120...277/800 2DIMLT2 P ¹⁾	4052899253414	108...305 ⁵⁾	100 ⁸⁾	50...186	105...800	168	68	38
OT 110/120...277/1A4 2DIMLT2 P ¹⁾	4052899253438	108...305 ⁵⁾	110 ⁹⁾	35...85	180...1400	168	68	38

Product name	l [mm]	T_a			IP		
OT 50/120...277/800 2DIMLT2 P ¹⁾	152	-40...+55 ⁵⁾	Yes	I / II	IP64	20	1
OT 50/120...277/1A2 2DIMLT2 P ¹⁾	152	-40...+55 ⁵⁾	Yes	I / II	IP64	20	1
OT 100/120...277/800 2DIMLT2 P ¹⁾	152	-40...+55 ⁵⁾	Yes	I / II	IP64	20	2
OT 110/120...277/1A4 2DIMLT2 P ¹⁾	152	-40...+55 ⁵⁾	Yes	I / II	IP64	20	2

1) No on/off switching of lamps possible via 0...10 V interface

2) $T_a(\max) = 50^\circ\text{C}$ for input voltage 120/277 V_{AC} 3) $T_a(\max) = 45^\circ\text{C}$ for input voltage 120 V_{AC} / $T_a(\max) = 50^\circ\text{C}$ for input voltage 277 V_{AC} 4) $T_a(\max) = 40^\circ\text{C}$ for input voltage 120 V_{AC} / $T_a(\max) = 55^\circ\text{C}$ for input voltage 277 V_{AC}

5) Permitted voltage range

6) Partial load 11...50 W / Not dimmed

7) Partial load 12...50 W / Not dimmed

8) Partial load 45...100 W / Not dimmed

9) Partial load 45...110 W / Not dimmed

Product features

- Available with different wattages: 50 W, 100 W, 110 W
- Input voltage: 120...277 V
- Available with output current range: up to 1,400 mA
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro mode)
- Isolated 0...10 V interface for unidirectional telemanagement systems
- Constant lumen function
- Overtemperature protection with external NTC or LEDset2 interface

Product benefits

- 2DIM functionality in one device (AstroDIM, 0...10 V)
- High surge protection: up to 6 kV (in protection class I or II)

- Fast programming without mains voltage
- High efficiency
- Great flexibility due to wide operating temperature range of $-40...55^\circ\text{C}$
- Protection through double isolation between mains input and LED output
- IP rating: IP64

Areas of application

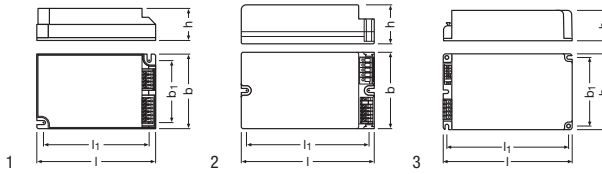
- Street and urban lighting
- Industry
- Suitable for luminaires of protection classes I and II

Equipment/Accessories

- OT Programmer hardware for configuration of 2DIM ECs necessary
- Programmable via Tuner4TRONIC® software

OPTOTRONIC® Outdoor

Constant current LED drivers with 4DIM/DALI



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	$I_{[mA]}$	$\frac{l}{[mm]}$	$\frac{b}{[mm]}$	$\frac{h}{[mm]}$
OT 40/120...277/1A0 4DIMLT2 E	4052899925182	108...305 ¹⁾	40 ⁴⁾	15...56	70...1050	123	79	33
OT 60/170...240/1A0 4DIMLT2 E	4052899925199	170...264 ¹⁾	60 ⁵⁾	30...115 ⁸⁾	70...1050	133	77	40
OT 90/170...240/1A0 4DIMLT2 E	4052899925205	170...264 ¹⁾	90 ⁶⁾	57...186	70...1050	133	77	40
OT 165/170...240/1A0 4DIMLT2 E	4052899925212	170...264 ¹⁾	165 ⁷⁾	95...285 ⁹⁾	120...1050	170	100	40

Product name	$\frac{l}{[mm]}$	$\frac{b1}{[mm]}$	T_a			IP		
OT 40/120...277/1A0 4DIMLT2 E	111	67	-40...+60 ²⁾	Yes	I / II	IP20 ¹⁰⁾	20	1
OT 60/170...240/1A0 4DIMLT2 E	122.5	-	-40...+60 ³⁾	Yes	I / II	IP20 ¹⁰⁾	20	2
OT 90/170...240/1A0 4DIMLT2 E	122.5	-	-40...+55	Yes	I / II	IP20 ¹⁰⁾	20	2
OT 165/170...240/1A0 4DIMLT2 E	160	90	-30...+55	Yes	I / II	IP20 ¹⁰⁾	10	3

1) Permitted voltage range

2) $T_a(\max) = 55^\circ\text{C}$ for input voltage 120/277 V_{ac}3) $T_a(\max) = 60^\circ\text{C}$ $I_{out} \leq 700\text{ mA}$, $T_a(\max) = 55^\circ\text{C}$ $I_{out} > 700\text{ mA}$

4) Partial load 7...40 W / Not dimmed

5) Partial load 11...60 W / Not dimmed

6) Partial load 20...90 W / Not dimmed

7) Partial load 32...165 W / 150 W max. for output currents < 680 mA / Not dimmed

8) 35...115 V for output current > 700 mA

9) 90...242 V for output current > 680 mA

10) IP fixture rating > IP54

Product features

- Available with different wattages: 40 W, 60 W, 90 W, 165 W
- Input voltage: 120...277 V (40 W), 220...240 V (60 W, 90 W, 165 W)
- Current output range: 70...1,050 mA
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Allows for energy saving in twilight phases
- MainsDIM function for dimming via reduction of line voltage amplitude
- Isolated DALI interface for bidirectional telemanagement systems
- Standby power consumption: < 0.5 W
- Constant lumen function
- Overtemperature protection via external NTC

Product benefits

- 4DIM functionality in one device (StepDIM, AstroDIM, MainsDIM, DALI)
- Very high efficiency
- High surge protection: up to 10 kV (1 pulse)/8 kV, in protection class I or II
- Low luminous efficacy tolerance through low output current tolerance of $\pm 3\%$
- Great flexibility due to wide operating temperature range of $-40...55\text{ }^{\circ}\text{C}$ or $60\text{ }^{\circ}\text{C}$
- Protection through double isolation between mains input and LED output

Areas of application

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires with IP > 54
- Suitable for use in outdoor luminaires of protection class I and II

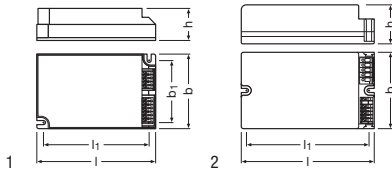
Equipment/Accessories

- DALI magic hardware for configuring 4DIM ECGs necessary
- Programmable via Tuner4TRONIC® software



OPTOTRONIC® Outdoor

Constant current LED drivers with 4DIM/DALI and NFC



Product name	GTIN (EAN)	V_{IN}	W	V_{OUT}	$I_{[mA]}$	l [mm]	b [mm]	h [mm]
OT 20/170...240/1A0 4DIMLT2 G2 CE	4052899981928	170...264	22	10...38	70...1050	123	79	33
OT 40/170...240/1A0 4DIMLT2 G2 CE	4052899981935	170...264	40	15...56	70...1050	123	79	33
OT 75/170...240/1A0 4DIMLT2 G2 CE ¹⁾	4052899981942	170...264	75	35...115	70...1050	133	77	40
OT 110/170...240/800 4DIMLT2 G2 CE ¹⁾	4052899981959	170...264	110	80...220	70...1050	150	90	40

Product name	l [mm]	b_1 [mm]	T_a			IP		
OT 20/170...240/1A0 4DIMLT2 G2 CE	111	67	-40...+60	Yes	I / II	IP20	20	1
OT 40/170...240/1A0 4DIMLT2 G2 CE	111	67	-40...+60	Yes	I / II	IP20	20	1
OT 75/170...240/1A0 4DIMLT2 G2 CE ¹⁾	122.5	-	-40...+60	Yes	I / II	IP20	10	2
OT 110/170...240/800 4DIMLT2 G2 CE ¹⁾	134	-	-40...+55	Yes	I / II	IP20	10	2

1) In development, data preliminary

Product features

- Supply voltage: 220...240 V
- Current output range: 70...1,050 mA
- Easy and fast wireless luminaire programming via NFC
- Flexible current setting with one additional wire (LEDset2)
- AstroDIM for autonomous dimming with five independent levels (astro, time mode)
- Allows for energy saving in twilight phases
- MainsDIM function for dimming via reduction of line voltage amplitude
- Isolated DALI interface for bidirectional telemanagement systems
- Standby power consumption: < 0.5 W
- Constant lumen function
- Overtemperature protection via external NTC
- Integrated customizable thermal management (Driver Guard)

Product benefits

- 4DIM functionality in one device (StepDIM, AstroDIM, MainsDIM, DALI)
- Easy and fast wireless luminaire programming
- Very high efficiency
- Wide current output range: 200 mA...1050 mA
- High surge protection: up to 10 kV (in protection class I or II)
- Great flexibility due to wide operating temperature range of -40...55 °C or 60 °C
- Protection through double isolation between mains input and LED output

Areas of application

- Street and urban lighting
- Industry
- Suitable for outdoor applications in luminaires with IP > 54
- Suitable for use in outdoor luminaires of protection class I and II



Light is smart

NFC makes the installation and maintenance of LED street lighting as easy as it gets. Use the **Tuner4TRONIC® Field app** for the wireless NFC programming of OT 1DIM and OT 4DIM NFC LED drivers.

Light is **OSRAM**

OSRAM

Tuner4TRONIC®

The Tuner4TRONIC® (T4T) software suite allows luminaire manufacturers to program OSRAM drivers via DALI and/or NFC in a simple, fast and cost-effective way, speeding up the production process. This software for Windows consists of three main modules: T4T Development (T4T-D), T4T Production (T4T-P) and T4T Machine (T4T-M).

With T4T Development, drivers can be configured by setting each individual parameter such as output current, dimming levels, constant lumen output, operating modes and much more. With the Configuration Lock, drivers can be protected with a multi-level password system against unauthorized modification while service personnel can be given access to modify selected features. When the configuration is finished, the settings are exported as an encrypted read-only production file and sent to the assembly line.

T4T Production features a multilingual user interface and allows operators to load the encrypted production files intuitively to start the automatic programming for fast mass production. Rest assured, no driver configuration changes can be done at this stage.

DALI magic, OT Programmer or FEIG NFC readers can be used as hardware programming interfaces to program the drivers. The FEIG NFC readers allow an even quicker, wireless and mains-free programming process. The OT Programmer is used for non-DALI OT drivers with universal input voltage 120-277 VAC.



T4T Machine completes our unique software suite and consists of a DLL and a command line tool to provide integration into existing automated programming and testing stations in the factory line.

In addition, OSRAM offers custom integration into ERP systems as an add-on service to optimize the production process.

Tuner4TRONIC® for Windows can be downloaded from: www.osram.com/t4t

USB interfaces



DALI magic



OT Programmer

Wireless NFC interfaces



PRH101



CPR30

OT Programmer

OSRAM also offers programmable UL-certified LED drivers. These drivers can be programmed with the OT Programmer Windows software together with the OT Programmer programming interface (Prog+).

To download the OT Programmer software, please visit:

www.osram.com/otprogrammer

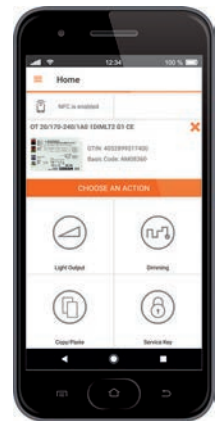
Tuner4TRONIC® Field app

The new T4T Field app makes the installation and maintenance of street light luminaires as easy as it gets by allowing the wireless programming of OSRAM outdoor OT 1DIM and OT 4DIM NFC LED drivers without the need for mains voltage. After entering the service password of the LED driver provided by the luminaire manufacturer, the user-friendly interface shows how to scan the LED driver's NFC tag with the smartphone's integrated antenna or the optional NFC Scanner (Bluetooth to NFC adapter) and adjust the luminaire settings.

With the T4T Field app, the luminaire settings can be easily adapted according to the specific needs and within a predefined range set by the luminaire manufacturer. Typical examples are the adjustment of light output depending on the required road class or changing the dimming times or levels to optimize energy savings. With the Tuner4TRONIC® Field app there is also the easy possibility to disable dimming functionality as it is requested for special applications such as roundabouts or pedestrian crossings.

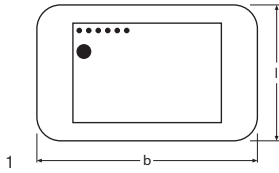
Replacing a flexible LED luminaire with a new luminaire of the same type was never as easy as now! Using the copy-and-paste functionality of the T4T Field app, the settings of the original luminaire can be easily transferred to the new one in a matter of seconds.

The T4T Field app only supports LED drivers that have been protected with a Master key by the luminaire manufacturer to ensure that only authorized parameters can be modified and thus avoid unauthorized modifications.



DALI magic

USB to DALI programming interface



Product name	GTIN (EAN)	Hz	W SYSTEM	IP	COLOR	l [mm]
DALI magic	4052899039551	50 / 60	7	IP20	White	120
Product name	b [mm]	h [mm]	V			No.
DALI magic	76	28	100...240	1	1	

Product features

- USB DALI converter for Tuner4TRONIC® and DALI Wizard software for Windows PC
- Pushbutton to test DALI dimming without the need of connection to a computer
- Powered by USB or by included universal power supply
- Integrated automatic DALI supply of up to 64 devices (up to 4 if powered by USB)

DALI Wizard software features (included)

- Intuitive configuration of up to 64 DALI electronic control gears
- Offline/online configuration of DALI installations
- “DALI Spy“ functionality for recording DALI-line data flow

Tuner4TRONIC® software features

- Programming of OSRAM ECG
- Suitable for shop floor environments
- Performs fast manual and automatic programming
- Easily enables the use of the pre-parameterization service

Areas of application

- Configuration of DALI ECG functions
- Monitoring of DALI installations

Equipment/Accessories

- Universal power supply (100...240 V_{AC}, 5.9 V_{DC}, 1.15 A, EU plug)
- USB cable (male A to male B), 180 cm
- Bipolar plug for DALI connection

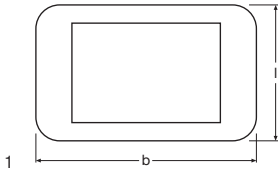
References/Links



Compatible software available at www.osram.com/ds-tools

Tuner4TRONIC® software available at www.osram.com/t4t

OT Programmer

USB programming interface



Product name	GTIN (EAN)	V	T _a	l [mm]	b [mm]	h [mm]	IP		 No.
OT Programmer	4052899209640	5 ¹⁾	0...+50	120	76	28	IP20	1	1

1) Supplied by USB

Product features

- Standard USB interface
- Very fast programming of single OPTOTRONIC® devices with the Prog +/- interface
- Programming without applying mains voltage to the driver
- Suitable only for non-DALI OPTOTRONIC® devices with the Prog +/- interface

Equipment/Accessories

- Programmable via Tuner4TRONIC® software

References/Links

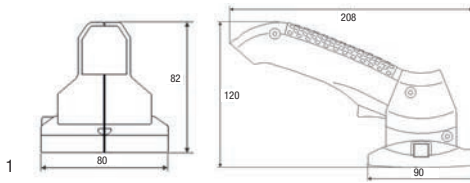
Tuner4TRONIC® software available at www.osram.com/t4t


OT Programmer software available at www.osram.com/ds-tools



PRH101-USB

NFC programming interfaces



Product name	GTIN (EAN)	l [mm]	b [mm]	h [mm]	
PRH101-USB	4055462165152	230	80	100	1

Product features

- Standard USB interface
- Wireless programming of OPTOTRONIC® devices with the NFC interface
- Programming without applying mains voltage to the OPTOTRONIC® driver

Equipment/Accessories

- USB cable for connection to PC with Tuner4TRONIC® software

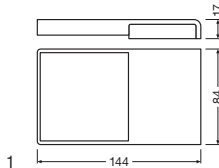
References/Links



Tuner4TRONIC® software available at www.osram.com/t4t



CPR30-USB

NFC programming interfaces



Product name	GTIN (EAN)	l [mm]	b [mm]	h [mm]		
CPR30-USB	4055462165169	144	84	17	1	1

Product features

- Standard USB interface
- Wireless programming of OPTOTRONIC® devices with the NFC interface
- Programming without applying mains voltage to the OPTOTRONIC® driver

Equipment/Accessories

- USB cable for connection to PC with Tuner4TRONIC® software

References/Links

Tuner4TRONIC® software available at www.osram.com/t4t

NFC Scanner

Bluetooth to NFC adapter for Tuner4TRONIC® Field



Product name	GTIN (EAN)	l [mm]	b [mm]	h [mm]	IP	Icons
NFC Scanner	4055462203571	76	42	18	IP54	1

Product features

- Small and robust NFC antenna extension
- Provides NFC functionality to smartphones without NFC antenna using Bluetooth

Tuner4TRONIC® Field app features

- Wireless and mains voltage-free programming of OSRAM outdoor NFC LED drivers
- Adjustment of the light output and dimming levels of a luminaire
- Copy and paste luminaire settings from defective to replacement LED drivers
- Support of OSRAM's new generation of OT 1DIM and 4DIM outdoor LED NFC drivers

Areas of application

- Wireless programming of LED drivers using the T4T Field software

Equipment/Accessories

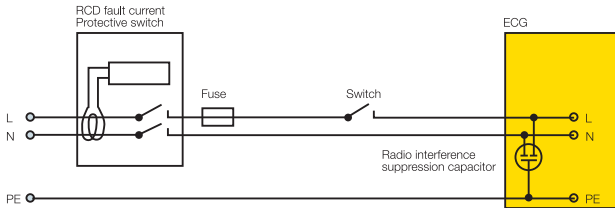
- USB cable (Micro USB type B)

References/Links

Tuner4TRONIC® software available at www.osram.com/t4t



Installation and operating instructions



The following installation and operating instructions have been included to help you get the most out of your electronic control gears.

Requirements

The requirements to be met by lighting systems with electronic control gears fall into the following categories:

1. Residual currents/residual current detector
2. Capacity for automatic cutouts/switch-on currents
3. ECGs in 3-phase operation
(overvoltages/undervoltages/missing neutral conductor)
4. LED drivers in emergency lighting systems
(voltage ranges and switch-on times)
5. Power factor/compensation
6. Permissible cable lengths
7. DALI ECGs with Touch DIM®/corridor function should not be operated on open DALI lines
8. Permissible switching cycles for LED drivers
9. Dimming operation
10. Luminaires with LED drivers
11. Ambient and control gear temperatures
12. LED drivers for outdoor luminaires
13. Wiring of LED drivers
14. Lifespan and reliability of LED drivers

For more detailed information, see the Technical Guides at www.osram.com/ds-certificates

1. Residual currents/residual current detector

Problem

For LED drivers with protective earth (PE), both the high short-duration inrush current and the small leakage current from the interference suppression capacitors in the electronic control gears can trigger the residual current detector.

Solution

- Distribute luminaires across 3 phases and use 3-phase circuit breakers
- Use surge-current-resistant, short-delay circuit breakers
- If permissible, use 30 mA RCDs

2. Capacity for automatic cutouts

On switch-on at peak voltage, the storage capacitors of electronic control gears cause a high but very brief current pulse. OSRAM offers an inrush current limiter for some OPTOTRONIC® devices. The EBN-OS restricts the switch-on current, which means that a larger number of LED drivers can be connected to an automatic cutout.

When using the values given in the tables, please note the following:

- For LED driver operation, the load data relates to switching on at peak voltage
- If circuit breaker types have C characteristics, the number of permitted luminaires for LED driver operation can be increased by 70 % (as compared to B characteristics)
- Circuit breaker design:

The specified loading is for single-pole circuit breakers. When multi-pole circuit breakers (2-pole, 3-pole) are used, the number of permitted luminaires is reduced by 20 %.
- Circuit impedance:

The specified loading applies with reference to a line impedance of 800 mΩ (corresponding to a 15 m long cable with a diameter of 1.5 mm from the distribution board to the first luminaire and a further distance of 20 m to the middle of the circuit; at a line impedance of 400 mΩ, the permitted values are reduced by 10 %, and by 20 % with 200 mΩ)



Max. permissible number of LED drivers on type B or C automatic circuit breakers

Product family	I _{max} [A _{ns}]	T _H [us]	Max. permissible number of OTs on an automatic circuit breaker					
			B 6 A	C 6 A	B 10 A	C 10 A	B 13 A	C 13 A
Type								
OTi DALI Linear SELV								
OTi DALI 80/220-240/2A1 LT2 L	53	200			18	14	13	22
OTi DALI 80/220-240/1A6 LT2 L	53	200			12	14	13	22
OTi DALI 35/220-240/700 LT2 L G2			11	18	18	31	24	41
OTi DALI 50/220-240/1A4 LT2 L G2			7	12	12	21	16	27
OTi DALI Linear non-isolated								
OTi DALI 60/220-240/550 D LT2 L	53	300			8	14	13	22
OTi DALI 90/220-240/1A0 LT2 L	53	200			8	13	13	22
OTi DALI 35/220-240/400 D LT2 L			10	17	17	29	22	38
OTi DALI 35/220-240/400 D LT2 UF L			11	18	18	31	24	41
OTi DALI 75/220-240/400 D LT2 UF L			7	12	12	21	16	27
OT FIT Linear SELV G2								
OT FIT 35/220-240/700 CS L G2	< 16	100	12	21	21	35	27	46
OT FIT 55/220-240/1A0 CS L G2	20	200	9	15	15	26	20	34
OT FIT 75/220-240/1A4 CS L G2	40	200	4	8	8	13	10	17
OT FIT Linear non-isolated								
OT FIT 30/220-240/125 D L	Not relevant	Not applicable			35	59	56	95
OT FIT 50/220-240/250 D L	Not relevant	Not applicable			35	59	56	95
OT FIT 50/220-240/350 D L	Not relevant	Not applicable			35	59	56	95
OT FIT 50/220-240/300 D L	Inrush current limiter		21	21	35	35	45	45
OT FIT 25/220-240/300 D LT2 L	< 30	5	38	38	63	63	82	82
OT FIT 35/220-240/350 D LT2 L	30	145	4	7	7	12	9	16
OT FIT 75/220-240/550 D LT2 L	41	124	9	16	16	27	21	35
OT FIT 120/220-240/750 D LT2 L	70	146	4	8	8	13	10	17
OTi DALI Compact SELV NFC								
OTi DALI 15/220-240/1A0 LT2 G2	5	45	60	60	100	100	131	131
OTi DALI 25/220-240/700 LT2 G2	< 20	100	30	30	50	50	65	65
OTi DALI 35/220-240/1A0 LT2 G2	< 20	100	20	34	34	57	45	75
OTi DALI 50/220-240/1A4 LT2 FAN G2	30	200	7	12	12	21	16	27
OTi DALI 10/220-240/700 NFC			tbd	tbd	tbd	tbd	tbd	tbd
OTi DALI 15/220-240/1A0 LT2 NFC	5	45	60	60	100	100	131	131
OTi DALI 25/220-240/700 LT2 NFC	< 20	100	30	50	50	84	65	109
OTi DALI 35/220-240/1A0 LT2 NFC	< 20	100	20	34	34	57	45	75
OTi DALI 50/220-240/1A4 LT2F NFC	30	200	7	12	12	21	16	27
OT FIT Compact SELV								
OT FIT 15/220-240/500 LT2 LP	14	140	22	37	37	63	49	82
OT FIT 25/220-240/700 LT2 LP	15	210	9	16	16	27	21	35
OT FIT 40/220-240/1A0 LT2 LP	17	210	11	18	18	31	24	41
OT FIT 15/220-240/500 LT2 S	8		22	37	37	63	49	82
OT FIT 25/220-240/700 LT2 S	13		11	18	18	31	24	41
OT FIT 40/220-240/1A0 LT2 S	15		11	18	18	31	24	41
OT FIT 20/220-240/500 LT2 CS	< 16	100	19	31	31	52	41	68
OT FIT 30/220-240/700 LT2 CS	< 16	100	9	15	15	26	20	34
OT FIT 40/220-240/1A0 LT2 CS	< 16	100	9	15	15	26	20	34

Product family	I max [A _{av}]	T _{th} [μs]	Max. permissible number of OTs on an automatic circuit breaker					
			B 6 A	C 6 A	B10A	C 10 A	B 13 A	C 13 A
Type								
OT ECO PC Compact SELV								
OTe 10/220-240/700 PC	<5	100			55	93	85	145
OTe 13/220-240/350 PC	<5	100			55	93	85	145
OTe 18/220-240/350 PC	<5	100			55	93	85	145
OTe 18/220-240/500 PC	<5	100			55	93	85	145
OTe 25/220-240/700 PC	<7	100			40	68	65	110
OTe 35/220-240/700 PC	<10	250			30	51	50	85

If MCBs with a C characteristic are used, the number of permitted LED drivers can be increased by 70 %
 Circuit impedance: The specified loading applies with reference to a line impedance of 800 mΩ (corresponding to a 15 m long cable with a diameter of 1.5 mm² from the distribution board to the first luminaire and a further distance of 20 m to the middle of the circuit; at a line impedance of 400 mΩ, the permitted values are reduced by 10%, and by 20% with a line impedance of 200 mΩ)

Product family	Max. permissible number of OTs on an automatic circuit breaker					
	B 16 A	C 16 A	B 20 A	C 20 A	B 25 A	C 25 A
Type						
OTi DALI Linear SELV						
OTi DALI 80/220-240/2A1 LT2 L	24	17	16	27	20	34
OTi DALI 80/220-240/1A6 LT2 L	16	17	16	27	20	34
OTi DALI 35/220-240/700 LT2 L G2	30	50	37	63	46	78
OTi DALI 50/220-240/1A4 LT2 L G2	20	33	25	42	31	51
OTi DALI Linear non-isolated						
OTi DALI 60/220-240/550 D LT2 L	10	17	16	27	20	34
OTi DALI 90/220-240/1A0 LT2 L	10	17	16	27	20	34
OTi DALI 35/220-240/400 D LT2 L	28	47	35	58	43	73
OTi DALI 35/220-240/400 D LT2 UF L	30	50	37	63	46	78
OTi DALI 75/220-240/400 D LT2 UF L	20	33	25	42	31	51
OT FIT Linear SELV G2						
OT FIT 35/220-240/700 CS L G2	34	57	42	71	53	89
OT FIT 55/220-240/1A0 CS L G2	25	42	31	52	39	65
OT FIT 75/220-240/1A4 CS L G2	13	21	16	27	20	32
OT FIT Linear non-isolated						
OT FIT 30/220-240/125 D L	45	77	70	118	87	148
OT FIT 50/220-240/250 D L	45	77	70	118	87	148
OT FIT 50/220-240/350 D L	45	77	70	118	87	148
OT FIT 50/220-240/300 D L	56	56	70	70	87	87
OT FIT 25/220-240/300 D LT2 L	100	100	125	125	156	156
OT FIT 35/220-240/350 D LT2 L	30	20	15	25	46	31
OT FIT 75/220-240/550 D LT2 L	26	43	32	54	40	67
OT FIT 120/220-240/750 D LT2 L	13	21	16	27	20	32
OTi DALI Compact SELV NFC						
OTi DALI 15/220-240/1A0 LT2 G2	160	160	200	200	250	250
OTi DALI 25/220-40/700 LT2 G2	80	80	100	100	125	125
OTi DALI 35/220-40/1A0 LT2 G2	55	92	68	115	85	143
OTi DALI 50/220-40/1A4 LT2 FAN G2	20	33	25	42	31	51
OTi DALI 10/220-40/700 NFC	tbd	tbd	tbd	tbd	tbd	tbd
OTi DALI 15/220-40/1A0 LT2 NFC	160	160	200	200	250	250
OTi DALI 25/220-40/700 LT2 NFC	80	134	100	168	125	209
OTi DALI 35/220-40/1A0 LT2 NFC	55	92	68	115	85	143
OTi DALI 50/220-40/1A4 LT2F NFC	20	33	25	42	31	51



Product family	Max. permissible number of OTs on an automatic circuit breaker					
	B 16 A	C 16 A	B 20 A	C 20 A	B 25 A	C 25 A
OT FIT Compact SELV						
OT FIT 15/220-240/500 LT2 LP	60	100	75	126	93	156
OT FIT 25/220-240/700 LT2 LP	26	43	32	54	46	78
OT FIT 40/220-240/1A0 LT2 LP	30	50	37	63	46	78
OT FIT 15/220-240/500 LT2 S	60	100	75	126	93	156
OT FIT 25/220-240/700 LT2 S	30	50	37	63	46	78
OT FIT 40/220-240/1A0 LT2 S	30	50	37	63	46	78
OT FIT 20/220-240/500 LT2 CS	50	84	62	105	78	131
OT FIT 30/220-240/700 LT2 CS	25	42	31	52	39	65
OT FIT 40/220-240/1A0 LT2 CS	25	42	31	52	39	65
OT ECO PC Compact SELV						
OTe 10/220-240/700 PC	69	117	106	181	132	226
OTe 13/220-240/350 PC	69	117	106	181	132	226
OTe 18/220-240/350 PC	69	117	106	181	132	226
OTe 18/220-240/500 PC	69	117	106	181	132	226
OTe 25/220-240/700 PC	52	89	81	137	101	171
OTe 35/220-240/700 PC	40	69	62	106	78	132

The circuit breaker's rated current may not be exceeded.
Installations of 1.5 mm² may be protected with a max. 16 A circuit breaker.

Maximum permissible number of OPTOTRONIC® LED drivers on an automatic circuit breaker

LED drivers	I _p [A]	T _{rr} [µs] measured at 50 % I _{peak}	Maximum no. of LED drivers on circuit breakers 10 A 16 A	LED driver	I _p [A]	T _{rr} [µs] measured at 50 % I _{peak}	Maximum no. of LED drivers on circuit breakers 10 A 16 A
OPTOTRONIC® constant voltage 12 V				OPTOTRONIC® constant voltage 24 V with DALI			
OT 15/12 P	20	170	32 51	OTi DALI 50/220-240/24 1...4CH	43 160	9 15	
OT 30/12 P	30	170	13 21	OTi DALI 50/220-240/24 TW	43 160	9 15	
OT 60/12 P	35	170	11 17	OTi DALI 80/220-240/24 1...4CH	48 220	6 10	
OT 120/12 P	40	300	6 10	OTi DALI 80/220-240/24 TW	48 220	6 10	
OTe 60/110-277/12 E	15	200	7 12	OTi DALI 160/220-240/24 1...2CH	69 280	tbd tbd	
	40	200	7 12	OTi DALI 160/220-240/24 TW		tbd tbd	
OTe 120/110-277/12 E	60	250	3 6				
	100	250	3 6	OPTOTRONIC® constant voltage 24 V with 1...10 V			
ELEMENT constant voltage				OT 80/24 DIM P	35	360	7 10
Element 30/220-240/24	< 8	100	17 28	OT 120/24 DIM P	60	250	6 10
Element 60/220-240/24	< 23	1700	10 16	OT 240/24 DIM P	70	250	5 8
Element 90/220-240/24	< 43	1900	6 11	OPTOTRONIC® constant voltage 24 V			
				OT 6/200-240/24 CE	15	240	30 48
				OT 20/120-240/24 S	45	150	7 11
				OT 30/220-240/24 P	23	270	13 21
				OT 50/220-240/24	45	80	12 19
				OT 50/220-240/24 P	22	270	12 19
				OT 75/220-240/24	41	200	7 12
				OT 75/220-240/24 E	41	200	7 12
				OT 80/220-240/24 P	35	360	7 10
				OT 120/220-240/24 P	60	250	6 10
				OT 240/220-240/24 P	70	250	5 8

1) On request or in data sheet

Max. permissible number of OTs on an EBN-OS inrush current limiter

Product family	GTIN (EAN)	Max. permissible number of OTs on an automatic circuit breaker	Max. permissible number of OTs on an EBN-OS inrush current limiter
		Type B 16 A	Type B 16 A
OTi DALI Linear non-isolated			
OTi DALI 60/220-240/550 D LT2 L	4052899188662	13	40
OTi DALI 90/220-240/1A0 LT2 L	4008321867568	13	40
OTi Linear non-isolated			
OTi 60/220-240/550 D LT2 L	4052899188419	13	40
OTi 90/220-240/1A0 D LT2 L	4052899188556	13	40
OTi DALI Compact SELV			
OTi DALI 50/220-240/1A4 LT2 FAN	4052899919433	20	50



EBN-OS inrush current limiter



Max. permissible number of LED drivers on type B or C automatic circuit breakers

Product family	I max [A _{pk}]	T _H [μs]	Max. permissible number of OTs on an automatic circuit breaker						
			B10	C10	B16	B16 + EBN-OS	C16	B25	C25
OT 40/1A0 4DIMLT2 E	30	250	10	17	17	45	28	28	44
OT 60/1A0 4DIMLT2 E	55	230	7	12	12	30	20	20	32
OT 90/1A0 4DIMLT2 E	57	210	7	12	12	30	20	20	32
OT 165/1A0 4DIMLT2 E	62	330	4	8	8	15	14	14	21
OT 50/1A2 2DIMLT2 P	30	250	10	17	17	45	28	28	45
OT 50/800 2DIMLT2 P	30	250	10	17	17	45	28	28	45
OT 100/1A2 2DIMLT2 P	55	230	7	11	10	30	17	16	26
OT 110/800 2DIMLT2 P	55	230	7	11	10	30	17	16	26
OT 50/700 P 5	50	200	8	14	13	–	22	20	34
OT 100/700 P 5	100	200	4	7	7	–	12	12	19
OT 180/700 P 5	110	200	4	7	7	–	12	11	19
OT 240/700 P 5	65	200	6	10	9	–	15	15	23

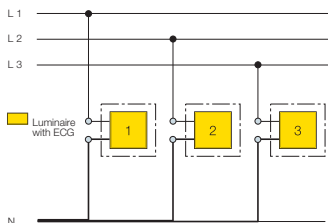
Product family	I max [A _{pk}]	T _H [μs]	Max. permissible number of OTs on an automatic circuit breaker											
			B6	C6	B10	C10	B13	C13	B16	C16	B20	C20	B25	C25
1DIM														
OT 20/170-240/1A0 1DIMLT2 G1 CE	<25	150	13	22	22	37	29	49	36	60	45	75	56	93
OT 40/170-240/1A0 1DIMLT2 G1 CE	<26	180	10	17	17	29	22	38	28	47	35	58	43	73
OT 75/170-240/1A0 1DIMLT2 G1 CE	54	190	4	7	7	12	9	16	12	20	15	25	18	31
OT 110/170-240/1A0 1DIMLT2 G1 CE	65	160	4	6	6	11	9	15	11	18	13	23	17	28
4DIM														
OT 20/170-240/1A0 4DIMLT2 G2 CE	<25	150	13	22	22	37	29	49	36	60	45	75	56	93
OT 40/170-240/1A0 4DIMLT2 G2 CE	<25	180	10	17	17	29	22	38	28	47	35	58	43	73
OT 75/170-240/1A0 4DIMLT2 G2 CE	54	190	4	7	7	12	9	16	12	20	15	25	18	31
OT 110/170-240/1A0 4DIMLT2 G2 CE	65	160	4	6	6	11	9	15	11	18	13	23	17	28

Circuit impedance: The specified loading applies with reference to a line impedance of 800 mΩ (corresponding to a 15 m long cable with a diameter of 1.5 mm² from the distribution board to the first luminaire and a further distance of 20 m to the middle of the circuit; at a line impedance of 400 mΩ, the permitted values are reduced by 10%, and by 20% with a line impedance of 200 mΩ).

3. ECGs in 3-phase operation

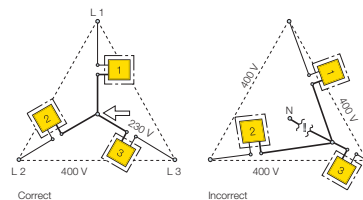
Overvoltage/undervoltage/no neutral conductor

1. Check whether the line voltage is within the application range of the ECG (AC/DC range from 198 V to 254 V for example).
2. The mains connection should only be made to the luminaire terminal. For luminaires or luminaire groups in 3-phase circuits.
3. Make absolutely sure that the neutral conductor is correctly connected to all luminaires and that it is making proper contact.
4. Cables should only be connected or disconnected when no voltage is present.
5. For 3x230/240V supply networks in triangular circuit arrangements, protection by way of common disconnection of the phase conductor is necessary.



Important

- In new systems, the loads must not be connected when the insulation resistance is measured with 500 V DC, as, according to VDE 0100-600 Section 9, the test voltage is also applied between the neutral conductor (N) and all 3 external lines (L1, L2, L3). In existing systems, it is sufficient to conduct an insulation test between the external conductors (L1, L2, L3) and protective earth (PE) without disconnecting from the network. The neutral conductor (N) and protective earth (PE) must not be electrically connected in any way while this is being done. For this insulation measurement (500 V = to ⊕), the neutral conductor disconnection terminal may only be opened after the line voltage has been disconnected.
- Make sure that the N conductor is correctly connected before putting the equipment into operation.
- During operation of the lighting system, do not disconnect the N conductor under any circumstances.



The diagram above shows the wiring for luminaires or luminaire groups in 3-phase circuits and with a common neutral conductor. If the common neutral conductor is interrupted in a 3-phase star configuration and voltage is present, then luminaires or groups of luminaires may be exposed to unacceptably high voltages and the electronic control gears may be destroyed.

4. LED drivers in emergency lighting systems with DC voltage

Permitted battery voltage	Upper limit	Lower limit
OTi DALI ²⁾	276 V ¹⁾	176 V
OTi ²⁾	276 V ¹⁾	176 V
OT FIT ²⁾	276 V ¹⁾	176 V

Switch-on times	Maintained Supply is switched from AC to DC	Non-maintained Emergency luminaires are switched on from cold
OTi DALI	0.2 s	0.3 s ³⁾ /0.6 s ⁴⁾
OTi	< 0.5 s	< 0.5 s
OT FIT	< 0.5 s	< 0.5 s

1) DC voltage or pulsed DC voltage (>198 V necessary for switch-on)

2) OTi DALI and OTi drivers (not dimmable) can detect DC voltage and adjust to 15% output current. Positive with regard to battery capacity.

If higher output currents than 15% (factory setting) are necessary for OTi DALI, these can be configured using DALI magic/Wizard or DALI magic/Tuner4TRONIC®.

3) Switch-on time (emergency lighting mode activated)

4) Switch-on time (at 230 V/50 Hz/full load in accordance with DALI standard) emergency lighting mode not activated

Please find conformity certificates with central battery systems online (please see the “Others” section):

EATON Conformity certificate

www.osram.com/ds-certificates

INOTEC Conformity certificate

www.osram.com/ds-certificates



5. Power factor/compensation

The power factor λ for an electrical load is the ratio of the effective power (P_{eff} = voltage x effective current) to the apparent power (P_{app} = voltage x current). This value is affected both by the phase displacement $\cos \varphi$ between the current and the voltage and by the current distortion ε .

$$\lambda = \frac{P_{\text{eff}}}{P_{\text{app}}} = \varepsilon \cdot \cos \varphi$$

However, distortion in the sine-wave current supply occurs during the operation of electronic control gears. Generally speaking, these distortions are classified by integer multiples of the line frequency (harmonics).

The harmonic content of the line current is strictly controlled by national and international standards (IEC 61000-3-2).

OSRAM LED drivers have integrated active electronic harmonic filters for this purpose, which ensure a value for ε of more than 0.95 and therefore a power factor λ greater than 0.9 (exceptions are indicated).

6. Permissible cable lengths

OPTOTRONIC®

The maximum cable length between OPTOTRONIC® and the LED module depends on the type of cable, the currents carried, compliance with radio interference limit values and how the cable is routed. The following maximum cable lengths can be used as guidelines:

Max. permissible cable length	LED driver family	Typical LED driver type
10 m	OPTOTRONIC® constant voltage: 12V and 24 V	e.g. OT.../12 P/ OT... 24 DIM (P), QTi DALI 75/24
2 m	OPTOTRONIC® constant current	e.g. OT...350..., OTi DALI..., OTe
2 m	OPTOTRONIC® OUTDOOR: constant current	OT 4DIM
10 m	OPTOTRONIC® OUTDOOR: constant current	OT 2DIM
10 m	OPTOTRONIC® OUTDOOR: constant current	OT ... 700 P5
2 m	LEDset cables	

Cable routing

For reasons of interference suppression, the power cable should not be laid parallel to the casing and/or the secondary cable. This will avoid high-frequency coupling effects.

Measurement of secondary voltage

Standard multimeters with appropriate accuracy can be used.



7. DALI ECGs with Touch DIM®/corridor function should not be operated on open DALI lines

Due to an increasing number of questions about DALI installations where no DALI controller is (yet) connected, we recommend you short-circuit the (currently) open DALI lines in the sub-distribution cabinet to avoid unwanted switching/unsynchronized dimming.

Recommendation

In DALI installations where no DALI controller is (yet) connected, short-circuit the open DALI lines in the sub-distribution cabinet (also applies to installations where Touch DIM®/corridor mode operation is planned).

Reason

To avoid unwanted switching/unsynchronized dimming caused by electrical distortions/coupling into open DALI lines.

Technical background

Even low induced voltages can trigger the DALI Touch DIM® mode on the DALI input connector of the control gear and therefore cause different and unsynchronized dimming levels. This antenna effect depends on the length and location of the open DALI line. With open DALI lines of more than 10 m, we recommend short-circuiting the DALI line.

Reset in cases of error

If the DALI ECGs have already been triggered incorrectly, do the following:

1. Disconnect the mains power to the DALI ECGs and connect a DALI control unit (e.g. OSRAM DALI Repeater or OSRAM DALI MCU)
2. Reconnect the power: The DALI ECGs will detect the signal and switch back to DALI mode again

3. Interrupt the mains power again and disconnect the DALI control unit
4. Short-circuit the DALI line
5. Connect up the power again

Applies **only** to DALI ECGs with Touch DIM®/corridor function.

8. Permissible switching cycles for LED drivers

OPTOTRONIC® constant current LED drivers and OSRAM LED modules are designed for at least 100,000 switching cycles. For OSRAM systems used in high switching cycle applications, such as in car parks, corridors, elevators and logistics areas, this ensures reliable operation over a period of at least 5 years based on approximately 50 switching cycles per day (i.e. approx. 18,000 switching cycles per year).

No. of switching cycles	LED driver	Comment
> 1,000,000	DALI LED driver OTi DALI...	DALI driver in standby mode, switching via DALI commands
> 150,000	DALI LED driver OTi DALI... Window driver OTi...	Switching on the mains side of the LED driver ON/OFF
> 150,000	LED driver with three current settings or a fixed output current OT FIT	Switching on the mains side of the LED driver ON/OFF
> 100,000	OT ECO OTe...	Switching on the mains side of the LED driver ON/OFF

In-house tests at OSRAM have shown that even significantly higher switching cycles can be achieved without failure of an OSRAM LED driver or OSRAM LED module.

Another benefit of the LED light solution is the fact that – in contrast to fluorescent lamp solutions – no “burn-in” time is required: LED modules immediately achieve the full luminous flux.

For applications with particularly high switching cycle requirements, OSRAM recommends DALI LED drivers which are permanently operated in standby mode (permanent power supply voltage) and switched exclusively via DALI commands (DALI command 0 = 0% luminous flux and DALI command 254 = 100% luminous flux or any other luminous flux required). Since the DALI LED drivers remain in standby mode, ON/OFF switching on the primary side is no longer required. This ensures that inrush current peaks have no negative effect on the service life of either the DALI LED driver or the LED module. This operating mode enables more than 1,000,000 switching cycles.

Another user-friendly option for corridors and storage areas is to define a lower dimming setting of 5 to 10% which provides orientation in the room. This means that the illumination level will only be increased when a person or a forklift truck enters the corridor or the storage area.



Possible DALI solution for applications in corridors: DALIeco with activated corridor function (2 changing lighting values)

9. Dimming operation

- OPTOTRONIC® provides the following interfaces for dimming: 1...10V, DALI, phase-cut dimmer. The minimum dimming value depends on the type of device. Constant voltage LED drivers can be extended using appropriate DIM modules (page 3.51 ff.).

10. Luminaires with LED drivers

The following general points apply to luminaires with LED drivers:

- The temperature limits of the LED drivers regarding ambient temperature and measuring point temperature on the device must not be exceeded (see 11. Ambient and control gear temperatures).
- The maximum permissible radio interference suppression values (EN 55015) must not be exceeded. Make sure the protective conductor and the function earth are correctly connected. Running the lamp cables and protective conductor together (e.g. NYM cables) may lead to problems due to high-frequency interference.

11. Ambient and control gear temperatures

The temperature ranges specified for the relevant control gear must be maintained to enable the LED driver to operate reliably. Generally speaking, lower operating temperatures can extend the life of LED drivers. When LED drivers are built into luminaires, the measuring point temperature T_c on the casing is the crucial parameter. The maximum permissible value specified for the device must not be exceeded.



12. LED drivers for outdoor usage

Some constant current and constant voltage LED drivers of the OT 2DIM, OT 4DIM, OT...E and OT..P families have been especially designed for outdoor usage. These drivers are equipped against moisture (up to IP67), mains voltage peaks (up to 6 kV) and vibrations (wind load, railroad vehicles).

More information about ingress protection (IP) can be found in the technical application guide "IP codes in accordance with IEC 60529" at: www.osram.com/ds-tag-ip

For the technical data of these drivers, please check the technical descriptions for the Outdoor drivers earlier in this chapter (LED drivers).

13. Wiring of LED drivers

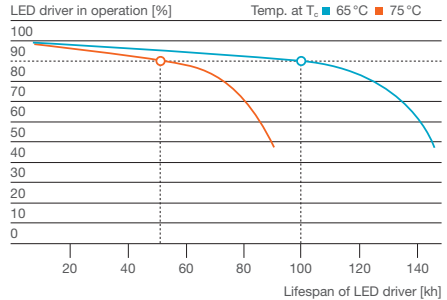
In general, connecting OPTOTRONIC® LED drivers on the secondary side is not permitted. In exceptional cases, parallel connection of OT 50/220-240/24 E and OT 75 220-230/24 E is possible. Moreover, series connection of OPTOTRONIC® LED drivers on the secondary side requires specific indication in the datasheet. Please also see the technical application guide "OPTOTRONIC® LED drivers for indoor applications."

14. Lifespan and reliability of LED drivers

The lifespan of OPTOTRONIC® LED drivers is dependent on the lifespan of the electrical components used and their individual electrical and thermal loads. Each OPTOTRONIC® LED driver is marked with a so-called T_c point. To ensure reliable operation, the temperature at the T_c point should not exceed the defined maximum temperature. This will also ensure that OPTOTRONIC® LED drivers typically achieve a rated life of up to 50,000 hours at a maximum failure rate of 10 %.

If you install an LED driver outside of a luminaire, please make sure that it is not located too close to a source of heat. Otherwise there is a risk of overheating. The exponential dependency between lifespan and temperature means that the life of an LED driver can be extended when it is always operated below the defined maximum temperature at the T_c point. As a rule of thumb, you can expect to double the lifespan of an OPTOTRONIC® LED driver if the temperature maintained at the T_c point is 10 °C lower than the maximum permissible temperature. The following graphic shows the typical lifespan of an OPTOTRONIC® LED driver at different T_c temperatures (with a nominal service life of 50,000 hours and a maximum T_c temperature of 75 °C).

Expected lifespan of an OPTOTRONIC® LED driver



Special applications, such as operation in corrosive atmospheres, strong vibrations, impermissible voltage conditions etc., may necessitate further protective measures.