## Light is flexible OPTOTRONIC® Linear LED drivers

Linear indoor drivers with big impact: OPTOTRONIC® Intelligent DALI, OPTOTRONIC® Intelligent and OPTOTRONIC® FIT

**Light is OSRAM** 



# Excellent reasons to choose OPTOTRONIC® drivers

With our OPTOTRONIC® drivers, users benefit from high-performance products that are characterized by high reliability, efficiency, flexibility and quality:

- Maximum reliability thanks to long experience:
   Re-use of know-how from well-proven OSRAM ECGs
   (electronic control gears) such as HALOTRONIC®,
   POWERTRONIC® and QUICKTRONIC®.
- 2. High energy efficiency: Up to 92 % (full load) and further energy saving with proprietary OSRAM light management systems (LMS).
- **3. Freedom of design:** Small form factors similar to ECGs for traditional lamps, SELV and non-isolated drivers for maximum flexibility in luminaire design.
- Flexibility of application: Suitable for PrevaLED® modules and other modules available in the market.
- **5. Wide product portfolio:** Various product families, window drivers, dimmable products and different wattages.

#### **Future-proof solutions**

Using OPTOTRONIC® drivers not only means using durable, high-performance products but also staying flexible in terms of future application: OPTOTRONIC® drivers can be perfectly adjusted for their respective tasks and, if required, also be optimized by means of top-quality additional components such as OSRAM LMS.



#### Our OPTOTRONIC® Linear portfolio



#### OPTOTRONIC® Intelligent DALI

Highest efficiency, full flexibility and maximum reliability



#### **OPTOTRONIC®** Intelligent

Highest efficiency, flexibility and maximum reliability



#### **OPTOTRONIC® FIT**

High efficiency and maximum reliability

#### Where can OPTOTRONIC® Linear drivers be used?









Floor-standing uplights (free-standing)

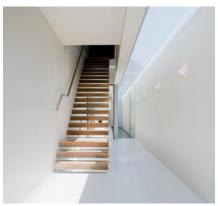


Suspended luminaires



Surface-mounted luminaires









Recessed luminaires



Wall and ceiling luminaires (linear)



Trunking systems and batten luminaires





Damp- and water-proof luminaires

#### **Application areas**

- Offices, e.g. small or open-plan offices, meeting rooms, reception areas
- Public buildings, e.g. hospitals, universities, schools and gyms
- Industry, e.g. production or logistics areas
- Retail, e.g. big retail outlets, food and non-food areas

## OPTOTRONIC® Linear LED drivers

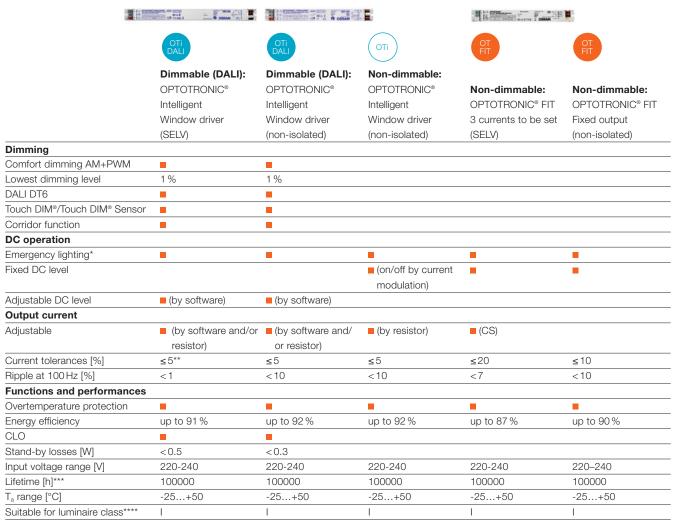
OPTOTRONIC® Linear drivers are the solution for a wide variety of luminaire types and applications. Developed for linear light applications such as office or industry lighting, the OPTOTRONIC® Linear drivers offer you maximum flexibility in the design of your LED-based luminaires – no matter if you need SELV or non-isolated drivers. Designed for the needs of your customer!

OPTOTRONIC® is a global brand with products suitable for the Americas. Please consult your sales contact for more information.

#### Main benefits at a glance

- Extensive portfolio of easy-to-use solutions: two product families with wide dimming range or on/off with adjustable output current
- SELV and non-isolated versions: many possible combinations with any LED module
- Easy integration into new LED luminaires thanks to the 30x21 mm housing of all devices
- High level of efficiency and reliability
- Fully programmable and digital platform see OPTOTRONIC® Intelligent DALI

#### **OPTOTRONIC®** Linear driver portfolio



<sup>\*</sup> According to IEC 61347-2-13

AM = Amplitude Modulation

PWM = Pulse Width Modulation

DT6 = DALI Device Type 6

CS = Current Setting

CLO = Constant Lumen Output

<sup>\*\*</sup> Version with < 2 % available soon

<sup>\*\*\*</sup> Operation at max.  $T_{c}$  -10 K, maximum failure rate of 10 %

<sup>\*\*\*\*</sup> Special permission for class II luminaires possible on request

## Guarantee and product identification

Applicable guarantee periods and OSRAM nomenclature/marking

#### Guarantee

OSRAM is committed to the high quality of its products. Any product that has failed because of a material or manufacturing defect will be refunded or given a credit note. The following guarantee periods apply to the OPTOTRONIC® Linear drivers:

OPTOTRONIC® Intelligent DALI 5 years\*
OPTOTRONIC® Intelligent 5 years\*
OPTOTRONIC® FIT 5 years\*



All details on relevant guarantees and the general requirements can be found at:

www.osram.com/guarantee

Project-specific guarantees on request.

#### Nomenclature and marking (example) Product family and dimming OTi DALI: OPTOTRONIC® Intelligent DALI OTi: OPTOTRONIC® Intelligent OT FIT: OPTOTRONIC® FIT Power (out)\* 30: 30 W 35: 35 W 50: 50 W 60: 60 W 80: 80 W 90: 90 W Supply voltage 220-240: 220-240 V **Output current (max.)** 125: 125 mA 250: 250 mA 350: 350 mA 550: 550 mA 700: 700 mA 1A0: 1000 mA 1A4: 1400 mA 1A6: 1600 mA 2A1: 2100 mA Non-isolated D: Direct current (non-isolated) **Control (current)** CS: Current setting LT2: LEDset2 Form factor L: Linear OTI DALI 60/220-240/550 D LT2 L

 $<sup>^{\</sup>star}$  Operating time of no more than 5000 hours per year, not exceeding max. allowed  $T_{\rm c}$  temperature

<sup>\*</sup> For detailed power values, please see product data sheet (www.osram.com)

## OPTOTRONIC® Intelligent DALI



Highest efficiency, full flexibility and maximum reliability















#### **Product features**

- Window driver with adjustable output current via DALI or LEDset2 interface (resistor)
- Suitable for class I luminaires
- Lifetime of up to 100 000 hours\*\* and high ambient temperature of up to +50/60°C
- Overtemperature, overload and short-circuit protection as well as open-circuit-proof
- Stepless and color-consistent dimming with DALI (from 100 % to 1 %, hybrid (comfort) dimming)
- Programmable features: CLO (constant lumen output), corridor function, Touch DIM® (Sensor), emergency lighting
- Suitable for emergency lighting systems with central battery according to IEC 61347-2-13

#### **Technical data**

Product reference	Product number	LxWxH (mm)	I <sub>out</sub> (mA)	U <sub>out</sub> (V)	P <sub>out</sub> (W)	Eff. max. (%)	T <sub>a</sub> /T <sub>c</sub> (°C)	Lifetime (h)***	I <sub>out</sub> accur. (%)	Isolation	Ripple at 100 Hz (%)
OTi DALI 35/220-				20-			-2560/				
240/700 LT2 L	4052899 <b>245389</b>	360x30x21	200-700	54****	4-37	>89	75/65	50k/100k	2	SELV	< 1
OTi DALI 50/220-				20-			-2550/				
240/1A4 LT2 L	4052899 <b>028098</b>	360x30x21	600-1400	54****	12-54	>89	75/65	50k/100k	2	SELV	< 1
OTi DALI 80/220-				20-			-2550/				
240/1A6 LT2 L	4052899 <b>028074</b>	360x30x21	600-1600	54****	12-80	>90	80/70	50k/100k	2	SELV	< 1
OTi DALI 80/220-				20-			-2550/				
240/2A1 LT2 L	4052899 <b>028050</b>	360x30x21	1000-2100	54****	32-80	>91	80/70	50k/100k	2	SELV	< 1
OTi DALI 60/220-							-2560/			non-	
240/550 D LT2 L	4052899 <b>188662</b>	280x30x21	120-550	54-240	1.5-60	>92	75/65	50k/100k	5	isolated	< 10
OTi DALI 90/220-							-2550/			non-	
240/1A0 LT2 L	4008321 <b>867568</b>	280x30x21	250-1000	54-240	13.5-90	≥92	75/65	50k/100k	5	isolated	< 10



- \* For details on our guarantee requirements, go to www.osram.com/guarantee
- $^{\star\star}$  Operation at max.  $T_{\text{c}}$  -10 K, maximum failure rate of 10 %
- \*\*\* At corresponding  $T_c$  temperature, maximum failure rate of 10 %
- \*\*\*\* Smart power management allows the operation of LED modules with a forward voltage above 54 V at a very low ambient temperature

## OPTOTRONIC® Intelligent DALI



Special OTi features go way beyond the normal DALI standard

### New flexibility thanks to programmable DALI LED drivers

The DALI LED drivers of the second generation (OSRAM DALI) allow for full digital programming via the DALI magic hardware and a specific free OEM software:

- Tuner4TRONIC® (T4T)
- No need for an external resistor to set the current in case of digital programming
- Settings can be locked to prevent unauthorized changes

OEMs can download T4T at:

www.osram.com/T4T



#### **SMART GRID**

The OSRAM DALI LED drivers can monitor the power consumption, the lamp operating hours (resettable) and the operating temperature of the driver. Advantage: SMART GRID can also analyze the lighting, thus allowing for an even more efficient operation of the system.



#### Touch DIM® function\*

The Touch DIM® function offers a simple and cost-effective way of manual dimming and switching of up to 20 OTi DALI LED drivers via standard pushbuttons. Moreover, the lighting level can be automatically controlled with special, directly connectable Touch DIM® light and presence sensors, leading to energy savings of more than 50%. In addition to this plug & play functionality, the Touch DIM® function also allows an individual parameterization via DALI magic and Tuner4TRONIC®.



#### Corridor function\*

The corridor function provides direct connection to commercially available motion sensors. A pre-installed program runs "out of the box" in the device. It can be individually adjusted via DALI magic and Tuner4TRONIC®. Three dimming levels and the associated overrun times can be adjusted individually as required. Advantage: Simple and energy-efficient lighting in application areas such as stairwells, corridors and parking blocks.



#### Emergency light (according to IEC 61347-2-13)

OTi DALI, OTi and OT FIT drivers have an EL quality label and are designed for emergency lighting according to IEC 61347-2-13. In addition to the functions used in accordance with the DALI standard, e.g. system failure level (fractionation of the control line), DALI LED drivers offer an optional automatic detection of the DC supply, which sets a pre-programmed luminous flux between 0 and 100% (factory setting: 15%). This variably adjustable luminous flux value is protected from inadvertent overwriting by a locking bit. The setting can be carried out via the bus system or DALI magic and Tuner4TRONIC®.



#### **CLO** (constant lumen output)

The CLO functionality is an essential part of OSRAM DALI LED drivers. Activating this function provides stable lighting conditions over the entire lifetime of LED modules. Year by year, the lumen output of LED modules decreases due to the loss of phosphoric components. In order to balance this out, the CLO function increases the output current smoothly over the entire lifetime of the modules – it typically starts with 85% of the LED power. This not only ensures stable lighting but also saves energy and increases the lifetime of the LEDs.

<sup>\*</sup> Useful information for the installation of the Touch DIM® and corridor function can be found in the technical application guide QUICKTRONIC® Intelligent DALI DIM (www.osram.com/oem-download)

#### **LEDset 2nd Generation standardization**

With the experience gained from the LEDset technology and as a reaction to the growing demand of OEMs to introduce a standardized multi-vendor electrical interface for SSL systems, OSRAM now presents an enhanced version of LEDset with plenty of new features: LEDset 2nd Generation.

A smart electrical interface between the LED driver and the LED modules is the missing link essential to the maturity of the SSL components business. With the LEDset 2nd Generation standardized electrical interface for SSL systems, OSRAM offers a technology that closes this link and fully matches the requirements:

- Cost-efficient
- Reliable
- Easy and ready to use

LEDset 2nd Generation is an analog 3-wire interface, including LED supply, allowing basic communication between an LED driver and one or more LED modules. The interface supports the following main functions:

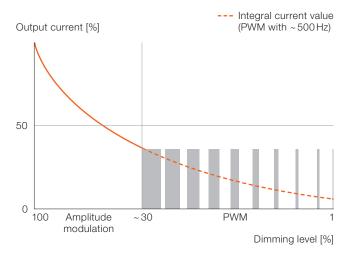
- Output current setting of constant-current drivers to single LED modules as well as to series/parallel-connected LED modules
- Best matching of driver and modules working point (e.g. lm/W)
- Self-configuration according to system structure, automatic tracking of technology development (future-proof)
- Easy mode of operation (plug & play)
- Additional monitoring and protection features (e.g. thermal protection of the LED modules)
- Added value for OEMs: reliable TCO proposition, reduced structural costs

#### Hybrid (comfort) dimming technology

OPTOTRONIC® Intelligent DALI LED drivers dim from 100% to 1%. In order to achieve optimum dimming, e.g. by ensuring that it is not visible and by avoiding stroboscopic effects, OSRAM combines two dimming methods: amplitude modulation and pulse width modulation (PWM).

From 100% to around 30%, the drivers are dimmed by amplitude modulation. This is done by the adjustment of the current amplitude: the amplitude is decreased to dim the lighting down. The dimming levels between 1% and around 30% are controlled by pulse width modulation (PWM). This combination offers the best way to ensure a smooth, non-flicker dimming behavior.

#### Hybrid dimming



#### **Individual DALI programming**

OTi DALI Linear drivers offer wide operating windows and thus ensure a high degree of flexibility. Therefore, LED generation upgrades can be easily managed, allowing for future-proof solutions, and the number of different product versions in the warehouse can be reduced.

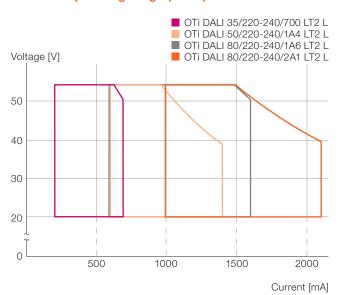
Adjustment of the current is possible in three different ways:

- Programming by OSRAM software
- Use of a simple resistor (LEDset2)
- Automatic recognition via the LEDset2 interface when connected to certain PrevaLED® or other LED modules with LEDset wire

#### **LED** ⋈ set

Various operating windows are optimized for different general lighting applications and target lumen packages. Please find out more about the programming feature on page 7.

#### **OTi DALI operating range (SELV)**



For detailed data, please see product data sheet (www.osram.com)

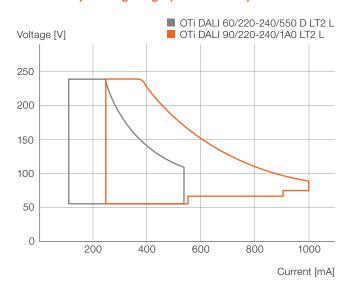
#### Example:

■ OTi DALI 80/220-240/2A1 LT2 L:

Voltage: 20-54 V

Current: 1000-2100 mA

#### **OTi DALI operating range (non-isolated)**



For detailed data, please see product data sheet (www.osram.com)

#### Example:

OTi DALI 90/220-240/1A0 LT2 L:

Voltage: 54-240 V Current: 250-1000 mA

## OPTOTRONIC® Intelligent



Highest efficiency, flexibility and maximum reliability













#### **Product features**

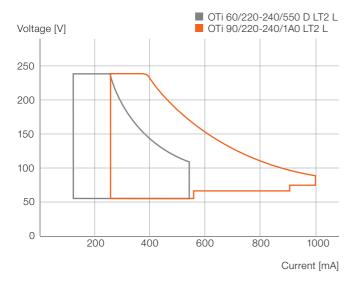
- Window driver with adjustable output current via LEDset2 interface (resistor)
- Suitable for class I luminaires
- Lifetime of up to 100 000 hours\*\* and high ambient temperature of up to +50 °C
- Overtemperature, overload and short-circuit protection as well as open-circuit-proof
- Suitable for emergency lighting systems with central battery according to IEC 61347-2-13

OPTOTRONIC® Intelligent (OTi) driver

#### **Technical data**

Product	Product	LxWxH	lout	$\mathbf{U}_{\mathrm{out}}$	$P_{\text{out}}$	Eff. max.	$T_a/T_c$	Lifetime	I <sub>out</sub> accur.	Isolation	Ripple at
reference	number	(mm)	(mA)	(V)	(W)	(%)	(°C)	(h)***	(%)		100 Hz (%)
OTi 60/220-				54-			-2550/	50k/		non-	
240/550 D LT2 L	4052899 <b>188419</b>	280x30x21	125-550	240	6.5-60	>92	75/65	100k	5	isolated	<10
OTi 90/220-				54-	13.5-		-2550/	50k/		non-	
240/1A0 LT2 L	4052899 <b>188556</b>	280x30x21	250-1000	240	90	>92	75/65	100k	5	isolated	< 10

#### OTi operating range (non-isolated)



For detailed data, please see product data sheet (www.osram.com)

#### Example:

OTi 90/220-240/1A0 LT2 L: Voltage: 54-240 V Current: 250-1000 mA

<sup>\*</sup> For details on our guarantee requirements, go to www.osram.com/guarantee

 $<sup>^{**}</sup>$  Operation at max.  $T_{\scriptscriptstyle c}$  -10 K, maximum failure rate of 10 %

<sup>\*\*\*</sup> At corresponding  $T_{\!\scriptscriptstyle C}$  temperature, maximum failure rate of 10  $\!\%$ 



## OPTOTRONIC® FIT



#### High efficiency and maximum reliability





#### **Product features**

- Two product families:
  - 3 output currents to be set (OT FIT CS L current setting)
  - Fixed output current (OT FIT D L direct current)
- Suitable for class I luminaires
- Lifetime of up to 100 000 hours\*\* and high ambient temperature of up to +50 °C
- Overtemperature, overload and short-circuit protection as well as open-circuit-proof
- Low ripple of output current (<10 at 100 Hz (%)) for a higher quality of light (e.g. no flickering on video recording)
- Suitable for emergency lighting systems with central battery according to IEC 61347-2-13

OPTOTRONIC® FIT (OT FIT) driver

#### **Technical data**

Product	Product	LxWxH	l <sub>out</sub>	$\mathbf{U}_{\mathrm{out}}$	$\mathbf{P}_{\mathrm{out}}$	Eff. max.	$T_a/T_c$	Lifetime	I <sub>out</sub> accur.	Isolation	Ripple at
reference	number	(mm)	(mA)	(V)	(W)	(%)	(°C)	(h)***	(%)		100 Hz (%)
OT FIT 35/220-			500/600/				-2550/				
240/700 CS L	4052899 <b>032828</b>	280x30x21	700	27-54	13-35	≥86	75/65	50k/100k	10	SELV	< 7
OT FIT 50/220-			800/925/				-2550/				
240/1A0 CS L	4052899 <b>032804</b>	280x30x21	1050	27-54	23-55	≥86	75/65	50k/100k	10	SELV	< 7
OT FIT 80/220-			1200/1400/				-2550/				
240/1A6 CS L	4052899 <b>032781</b>	360x30x21	1550	27-54	32-83	≥87	75/65	50k/100k	10	SELV	< 7
OT FIT 30/220-				54-			-1550/			non-	
240/125 D L	4052899 <b>222557</b>	210x30x21	125	216	6.8-27	≥90	75/65	50k/100k	10	isolated	< 10
OT FIT 50/220-				54-	13.5-		-1550/			non-	
240/250 D L	4052899 <b>222571</b>	210x30x21	250	216	54	≥90	75/65	50k/100k	10	isolated	< 10
OT FIT 50/220-				54-	18.9-		-1550/			non-	
240/350 D L	4052899 <b>222595</b>	210x30x21	350	150	52.5	≥90	75/65	50k/100k	10	isolated	<10



<sup>\*</sup> For details on our guarantee requirements, go to www.osram.com/guarantee

 $<sup>^{**}</sup>$  Operation at max.  $T_{\text{\tiny c}}$  -10 K, maximum failure rate of 10 %

 $<sup>^{\</sup>star\star\star}$  At corresponding  $T_{\rm c}$  temperature, maximum failure rate of 10 %

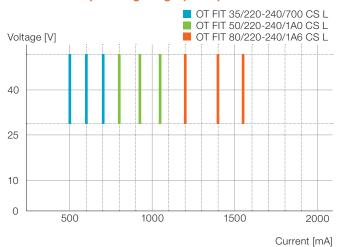
#### Multiple current setting

Each OT FIT CS L driver offers three selectable currents. The main advantage of multiple current setting is the reduction of the number of different product versions in the warehouse. Furthermore, steps between currents are kept small, avoiding any need for LED drivers with intermediate currents.

#### Features of the current setting

- CS (current setting) of OT FIT offers the easiest way to choose the output currents without the need for resistors and to avoid typical mistakes when using DIP switches
- Each product offers at least one typical current used in the market and will give you the possibility to reduce the current when LEDs will become even more efficient

#### OT FIT CS L operating range (SELV)



For detailed data, please see product data sheet (www.osram.com)

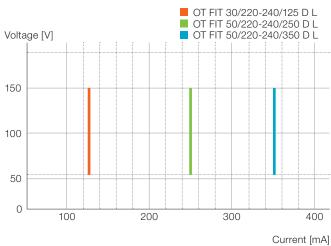
#### Example:

OT FIT 50/220-240/1A0 CS L:

Voltage: 27-54 V

Current: 800/925/1050 mA

#### OT FIT D L operating range (non-isolated)



For detailed data, please see product data sheet (www.osram.com)

#### Example:

OT FIT 50/220-240/350 D L:

Voltage: 54–150 V Current: 350 mA

# System solutions with OSRAM OPTOTRONIC® drivers and LED modules

OSRAM always offers you the perfect match of light source and driver







PrevaLED® Linear Value 2



PrevaLED® Linear Value 1



PrevaLED® Area Value



PrevaLED® Bar Value

Optimum lighting does not only depend on the performance of the single components but also on the clever combination of these components to create a unique system solution. By combining OPTOTRONIC® Linear drivers with PrevaLED® modules from OSRAM, you can rest assured that you have found the perfect match for your lighting solution.

OSRAM OPTOTRONIC® drivers in combination with OSRAM LED modules offer you unique added value:

- Perfect system match, tested by OSRAM
- Just one provider for your lighting system

The following applies to all OSRAM LED modules:

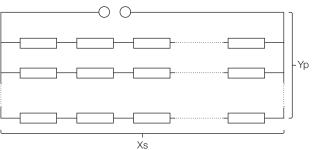
- Parallel connection to SELV drivers
- Series connection to non-isolated drivers

Regarding the clearances and creepage distances, OSRAM SELV modules (<54 V) are accordingly designed for series connection (<250 V).



Typical wiring example:

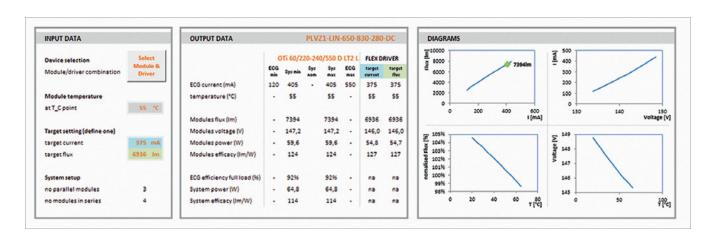
XsYp → X series Y parallel → Input from one side



#### System combinations OPTOTRONIC® - PrevaLED® PLVG1-Ar-4500-8xx-530x530-DC PLVG1-Bar-1100-8xx-280x48-DC PLVG1-Bar-2200-8xx-560x48-DC PLVG1-Ar-1100-8xx-270x270-DC PLSZ2-LIN-2000-8x0-280-DC PLSZ2-LIN-2200-8x0-560-DC PLSZ2-LIN-1100-8x0-280-DC PLSZ2-LIN-4000-8x0-560-DC PLVZ2-LIN-1300-8xx-560-DC PLVZ2-LIN-2200-8xx-560-DC PLVZ1-LIN-2200-8xx-560-DC PLVZ2-LIN-1100-8xx-280-DC PLVZ1-LIN-1100-8xx-280-DC PLVZ1-LIN-1300-8xx-560-DC PLSZ2-LIN-650-8x0-280-DC PLVZ2-LIN-650-8xx-280-DC PLVZ1-LIN-650-8xx-280-DC PrevaLED® Linear Value 2 PrevaLED® Linear Value 1 PrevaLED® Linear Slim 2 PrevaLED® Area Value PrevaLED® Bar Value SELV OTi DALI 35/220-240/700 LT2 L OTi DALI 50/220-240/1A4 LT2 L OTi DALI 80/220-240/1A6 LT2 L i OTi DALI 80/220-240/2A1 LT2 L i OT FIT 35/220-240/700 CS L OT FIT 50/220-240/1A0 CS L OT FIT 80/220-240/1A6 CS L i. Non-isolated OTi DALI 60/220-240/550 D LT2 L OTi DALI 90/220-240/1A0 LT2 L OTi 60/220-240/550 D LT2 L OTi 90/220-240/1A0 LT2 L OT FIT 35/220-240/125 D L OT FIT 50/220-240/250 D L

Detailed information on specific combinations (series/parallel) and resulting lumen packages, power levels and system efficacies can be found in the "Matchmaker" at www.osram.com/oem-download. The corresponding wiring options and wiring diagrams are specified in the respective product data sheets.

OT FIT 50/220-240/350 D L

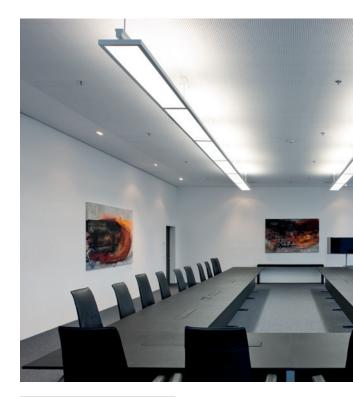


# System solutions with OSRAM OPTOTRONIC® drivers and light management systems (LMS)

For higher levels of efficiency, flexibility and customization

Combining OSRAM OPTOTRONIC® LED drivers and light management systems (LMS) allows you to create unique lighting solutions that offer plenty of benefits to your customers. Your flexibility during projects is increased tremendously as the LMS provide a simple way to address OTi DALI LED drivers for easy dimming and setting of the desired lighting level. And the best thing about it: You also save huge amounts of energy. With LMS from OSRAM, you will always find the ideal solution – for various applications, luminaires and customer demands.







Touch DIM® LS LI and LS/PD LI sensor

#### OPTOTRONIC® and Touch DIM®

The Touch DIM® functionality, integrated in all OTi DALI LED drivers, is as easy as it gets. Via standard pushbuttons, up to 20 OTi DALI LED drivers can be manually dimmed and switched in a convenient way and a scene can be stored – all without the need for a controller. Moreover, with special Touch DIM® light and presence sensors, which can be connected directly to the OTi DALI LED drivers, energy savings of more than 50% can be achieved.



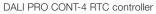


DALleco® Control unit and PC configuration software

#### OPTOTRONIC® and DALIeco® Control - configuration by mouse click

With the DALleco® Control unit for up to 32 OTi DALI LED drivers, you can increase comfort and energy efficiency of your lighting in no time at all. No matter if used for a single luminaire or luminaire group, in individual or open-plan offices, corridors or production and storage areas – with the multi-functional DALleco® Control, individual function profiles can be set up by a few mouse clicks and transmitted via remote control at the push of a button. Purely manual control or a time sequence control can be realized just as easy as the convenient automation by presence and light sensors.







DALI PRO Touch Panel



DALI LS/PD LI sensor DALI HIGHBAY ADAPTER

#### **OPTOTRONIC®** and **DALI PROFESSIONAL**

The combination of OPTOTRONIC® LED drivers and DALI PROFESSIONAL is the perfect choice for anyone looking for maximum flexibility in the control of a larger number of luminaires, groups or scenes. With just one controller, up to 256 OTi DALI LED drivers can be controlled in 4 x 16 groups via 4 DALI lines. In addition, up to 50 sensors or pushbutton couplers can be connected to the DALI line. Via DALI SWITCH SO switch actuators, non-dimmable OT FIT LED drivers can also be integrated. DALI PROFESSIONAL offers a flexible configuration: Changes can be made quickly and conveniently at all times via a free PC software – without the need for rewiring. Thanks to the wide choice of user interfaces and sensors as well as an integrated real-time clock, DALI PROFESSIONAL is suitable for industrial buildings and warehouses and also for office spaces with single and open-plan offices.

#### For more information, please go to:

- OPTOTRONIC®: www.osram.com/optotronic
- Light management systems: www.osram.com/lms
- PrevaLED®: www.osram.com/prevaled
- Tuner4TRONIC®: www.osram.com/t4t
- LEDset: www.osram.com/ledset
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#### OSRAM GmbH

Head office:

Marcel-Breuer-Strasse 6 80807 Munich, Germany Phone +49 89 6213-0 Fax +49 89 6213-2020

www.osram.com



