LEDVANCE.COM

LEDVANCE

THE NEW DIMMABLE LED TUBE EXTERNAL SYSTEM

REPLACE LAMP, KEEP HOUSING

LED TUBE EXTERNAL SYSTEM DIMMABLE – REPLACEABLE – FIT FOR EMERGENCY LIGHTING

WORKING IN THE DARK SOON?

Climate change and rising energy costs are forcing us to rethink and are demanding sustainable solutions. When it comes to lighting, the EU has set specific requirements. As early as in the course of 2023, mercury-containing or inefficient light sources may no longer be placed on the market throughout Europe. The fluorescent tube's fate is sealed and the switch to climate-friendly, future-proof alternatives is inevitable – and is worthwhile thanks to the high potential savings.

But the best thing is that with LEDVANCE the switch is very easy. Whether you need a retrofit, upgrade or new luminaires installed – we offer excellent switching options for different requirements on site. The new LED TUBE EXTERNAL SYSTEM is a particularly versatile solution for existing T5/T8 systems where a direct lamp replacement does not work or a dimmable LED tube solution is required. It is DALI-2 compatible and therefore dimmable, suitable for emergency lighting and, thanks to replaceable components, sustainable and economical.

WE HAVE A BETTER IDEA!
LEDVANCE LED TUBE EXTERNAL SYSTEM

DIMMABLE LED TUBE SYSTEM

CIRCULAR ECONOMY APPROACH

EMERGENCY LIGHTING

THE MISSION: EASY SWITCH TO LED

- Simple upgrade of old fluorescent lamp systems with dimmable DALI control to LED technology
- Clever modernization of luminaires with replaceable lighting components following the circular economy approach
- Quick equipment of emergency lighting systems with LED tubes

OUR SOLUTION: OPTIMIZED DIMMABLE LED TUBE AND DRIVER SYSTEM

- Support for the circular economy thanks to replaceable components
- Easy installation – keep the housing, replace the ECG with the DRIVER LED TUBE EXTERNAL and insert the LED TUBE T5/T8 EXTERNAL
- Lamp and driver system concept as in fluorescent tube installations

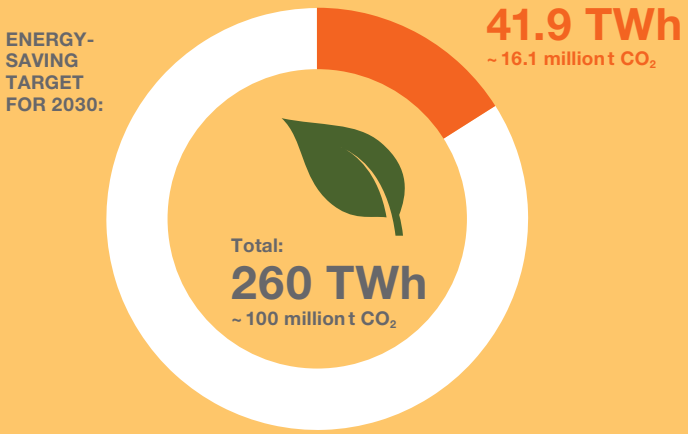
MORE THAN 3 GOOD REASONS
LEDVANCE LED TUBE EXTERNAL SYSTEM

Energy-efficient, suitable for emergency lighting and including replaceable components keeping the circular economy in mind. The LEDVANCE LED TUBE EXTERNAL SYSTEM is the first replacement solution to combine these three important product features. Add to that dimmability and simple, cost-saving installation.

REASON 1: HIGH EFFICIENCY

THE CURRENT SITUATION IN EUROPE:
- Lamp ban on T5/T8 tubes from August 2023
- High energy costs because of the energy crisis
- The need to reduce CO_2 emissions in the fight against climate change

▸ OUR SOLUTION:
- Energy efficiency through switch to LED
- Savings through dimmability of LED tube lighting
- Additional energy savings through integrating a light management system (e.g. with sensors)



REASON 2: CIRCULAR ECONOMY APPROACH

REPLACEABLE LIGHTING COMPONENTS
- LED tube and driver are easy to replace
- Guaranteed compatibility: matching LED tube and driver system
- SELV system: LED tubes can also be replaced by the facility manager

▸ LED TUBE EXTERNAL SYSTEM follows the circular economy approach

AVOID WASTE
- Keep the existing luminaire
- Keep the existing light management installation

▸ Reduce electronic and plastic waste

REASON 3: FIT FOR EMERGENCY LIGHTING*

1. CENTRALIZED BATTERY APPLICATION
The LED TUBE EXTERNAL driver
- carries the emergency lighting symbol (EL symbol) which allows installation in emergency lighting systems in accordance with IEC 61347-2-13, Annex J.
- can be operated on 220–240 V and 0/50–60 Hz.
- switches to 100 % light output in an emergency.

2. DECENTRALIZED BATTERY APPLICATION
The LED TUBE T5/T8 EXTERNAL is a constant current DC tube and can therefore be operated directly on a decentralized battery system.

EL

* Compatibility and required technical parameters of the LED TUBE T5/T8 EXTERNAL according to applicable emergency lighting standards must be checked prior to installation

LOTS OF QUESTIONS?
WE ARE AT YOUR SIDE

Which ballast is installed and is it compatible with LED tubes? How can you achieve dimmability, sensor control or integration into a light management system? And the key question coming up time and again: What's the most economical way to carry out the switch to LED technology? The challenges associated with the switch are just as diverse as the requirements on site. LEDVANCE helps you to find a solution. In many cases, however, the best answer will now be LED TUBE EXTERNAL SYSTEM.

YOUR CHALLENGE – OUR SOLUTION

How should I replace the old fluorescent application with LED tubes and DALI-2 ECG? I need a DALI-2 dimmable LED tube solution!

SOLUTION

▶ Dimmable solution with **LED TUBE EXTERNAL SYSTEM**

How should I replace a conventional fluorescent tube with an LED tube? ECGs in the luminaires are not compatible with HF LED tubes. What shall I do now?

▶ NO ECG compatibility neccessary, due to perfectly matched **LED TUBE EXTERNAL SYSTEM**

How should I replace the old fluorescent application with LED tubes? I'm not allowed to change the existing luminaire.

▶ Keep existing luminaire by using **LED TUBE EXTERNAL SYSTEM**

EASY REPLACEMENT OF DIMMABLE FLUORESCENT TUBES WITH LED TUBE EXTERNAL SYSTEM

The LED TUBE EXTERNAL SYSTEM is a perfectly matched combination of LED tube and external DALI-2 driver which allows the components in existing luminaires to be easily replaced when upgrading to LED.

THE BENEFITS OF THE LED TUBE EXTERNAL SYSTEM

- Optimized LED tube and multi-watt DALI-2 driver system for switching to a dimmable LED tube solution
- Optimal system efficiency guarantees excellent performance with high energy savings and long lifetime
- No compatibility problems thanks to a LED tube and driver system that fits
- Replaceable lighting components offer advantages in terms of economy and sustainability

FEATURES LEDVANCE LED TUBE EXTERNAL SYSTEM

PERFORMANCE CLASS

DRIVER LED TUBE EXTERNAL

- Multi-watt constant current SELV driver (1-channel and 2-channel version)
- High flexiblity due to adjustable output currents via dip switch, fit for all T5 and T8 LED TUBE EXTERNAL
- DALI-2.0 interface for dimming and sensor operations
- Push DIM application for easy control
- Installation in emergency lighting systems according to IEC 61347-2-13, Appendix J
- ENEC mark
- Lifetime up to 100 000 h
- 5-year guarantee

LED TUBE T5/T8 EXTERNAL

- Dimmable constant current LED tube
- Shatter protection thanks to special PET coating
- No bending thanks to glass tube
- Very high resistance to switching loads
- 4 000 K/6 500 K; 1.2 m/1.5 m
- Lifetime up to 50 000 h
- 5-year guarantee
- Mercury-free and RoHS-compliant
- Linear lighting for industry, offices, warehouses and retail outlets

DRIVER
LED TUBE EXTERNAL

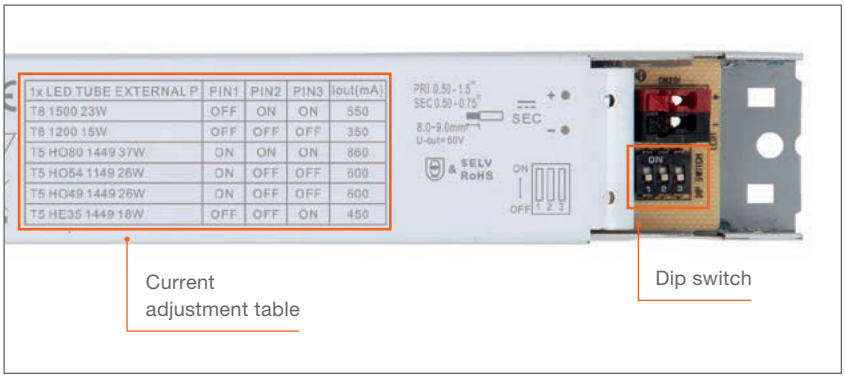
LED TUBE
T8 EXTERNAL

LED TUBE
T5 EXTERNAL

INSTALLATION AND INTEGRATION
ONE FITS THE OTHER

As an experienced installer you can simply use the existing wiring of the luminaire for effortless installation in existing devices. This is quick and easy because the old ballast and the new external DALI-2 driver have the same dimensions. And because we always think and act systematically, LED TUBE T5/T8 EXTERNAL and DRIVER LED TUBE EXTERNAL are of course perfectly matched to one another. As with all conversions, a new CE declaration must be issued.

ONE DRIVER FOR ALL TUBES
PRESETS MAKE IT POSSIBLE

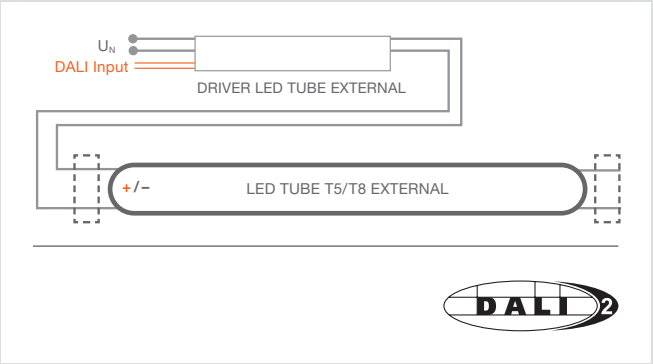


DRIVER LED TUBE EXTERNAL MULTI-WATT

- DRIVER LED TUBE EXTERNAL is a multi-watt driver
  ▶ One driver for all LED TUBE T5/T8 EXTERNAL
- LED TUBE T5/T8 EXTERNAL current will be set before operation by the dip switch on the DRIVER LED TUBE EXTERNAL
- Current tables are printed on the driver product labels
- Initial setting is limited to min. output current (350 mA) to avoid operation over the specified current

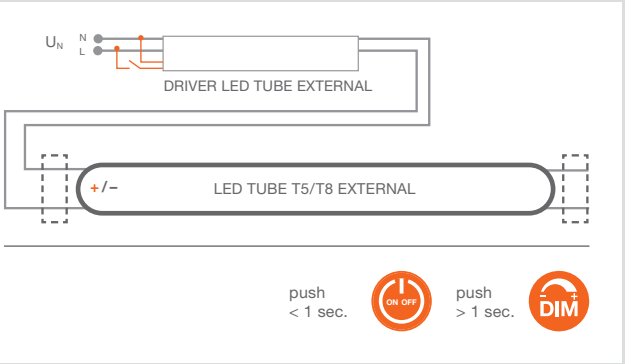
INSTALLATION IN
DALI-2 OR PUSH DIM APPLICATIONS

DALI-2



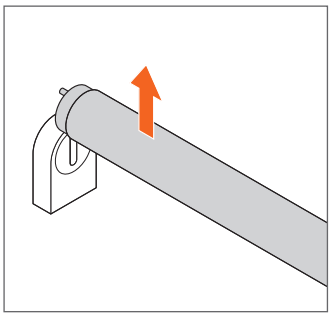
- Integration in existing DALI-2 light management system
- Existing DALI control lines can be kept
- DRIVER LED TUBE EXTERNAL can be combined with DALI-2 sensors via DALI-2 controller

PUSH DIM

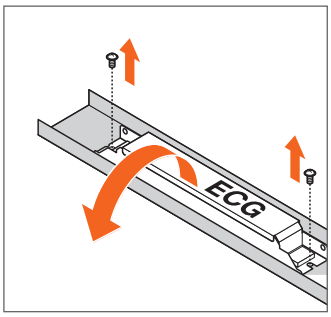


- Dimming via push-button
- Up to 15 DRIVER LED TUBE EXTERNAL can be dimmed by one push-button
- Switch lamp OFF/ON: Click push-button
- Dimming: Press and hold push-button

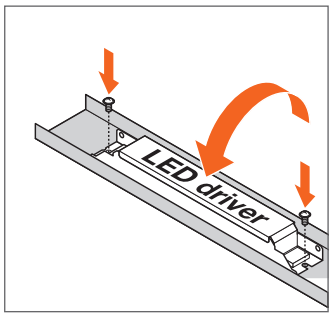
SIMPLE INSTALLATION
IN A FEW STEPS



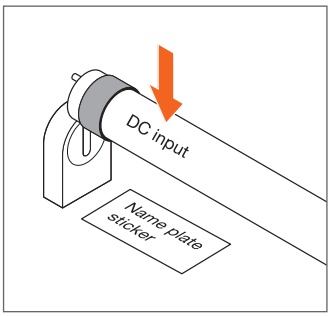
Remove the fluorescent tube from the base as usual.



Release fastenings and remove ballast.



Insert, screw on and wire the same-size DRIVER LED TUBE EXTERNAL.



Insert the LED TUBE T5/T8 EXTERNAL on the active DC input side.

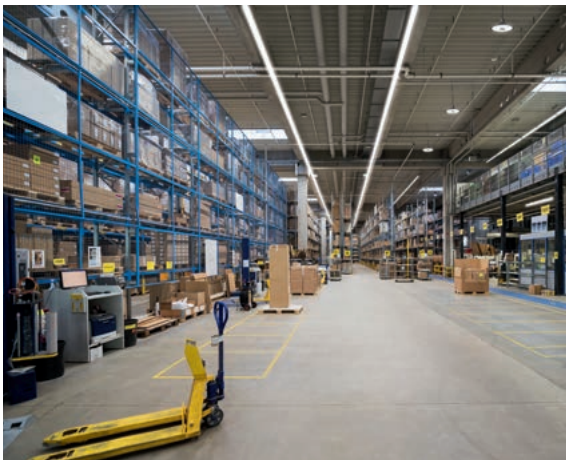
Installation must be carried out by a qualified electrician. All wires need to be approved for the existing voltages and protection classes.
For detailed information see user instructions.

VIDEO INSTALLATION
For more information go to:
https://youtu.be/9IhWFJeydEU

FIND OUT MORE
For more information go to:
ledvance.com/ext-system

LED TUBE EXTERNAL SYSTEM
A CLEVER DECISION

The ban on the production of fluorescent lamps will come in 2023. This means that you will have to upgrade by the time fluorescent tubes are out of action. But if you are clever you will invest now to be future-proof and sustainable and to save high energy costs. Especially since you can continue to use the components in your existing DALI light management system such as sensors, switches, etc. as well as control lines. You will benefit from optimal, flicker-free illumination, less maintenance and a long life. LED TUBE EXTERNAL SYSTEM is the best possible solution.



WAREHOUSES

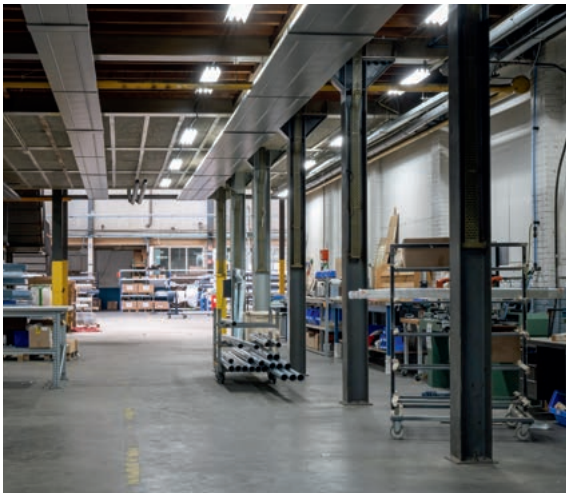
THE CHALLENGE:
High shelves, narrow aisles, little daylight. The lighting needs to be bright and efficient, but only when someone is in the warehouse. To save costs the existing DALI light management system (LMS) including emergency lighting needs to continue to be used.

OUR SOLUTION:
- Dimmable LED TUBE EXTERNAL SYSTEM for saving energy
- Integration into the sensor-controlled DALI system with presence control
- Reliable notification of a lamp failure via the LMS
- Economical: existing luminaire housings remain in use
- LED tubes can be replaced by the facility manager
- Suitable for emergency lighting

PRODUCTION HALL

THE CHALLENGE:
The working areas require optimal illumination, low-flicker and energy-saving, also in continuous shift operation. Upgrading the many luminaires which are sometimes difficult to access is time-consuming and costly. This is why they should be retained – as should emergency lighting.

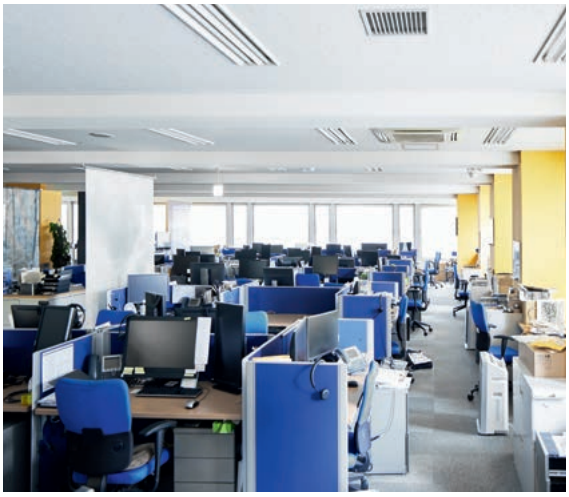
OUR SOLUTION:
- Dimmable LED TUBE EXTERNAL SYSTEM for saving energy
- Sensor-controlled DALI-2 system with daylight control
- Reliable notification of a lamp failure via the LMS
- Short upgrade time as existing luminaire housings can remain in use
- LED tubes can be replaced by the facility manager
- Suitable for emergency lighting



WORKSHOPS WITH WAREHOUSES

THE CHALLENGE:
Existing fluorescent tubes are only replaced if necessary. Despite the lack of time and money to upgrade, energy costs need to be reduced without sacrificing lighting quality.

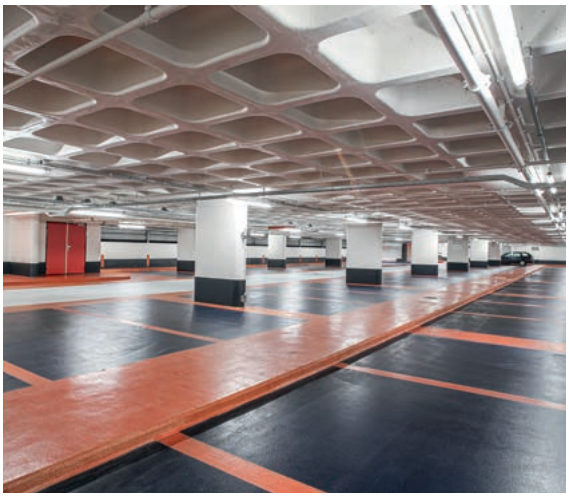
OUR SOLUTION:
- Quick payback of the investment through energy-saving LED TUBE EXTERNAL SYSTEM
- No compatibility problems with ECG-compatible LED tubes as driver and LED tube are replaced
- Existing luminaire housings can be retained
- Low upgrade and maintenance costs
- LED tubes can be replaced by the caretaker
- Energy savings through dimming via Push DIM function



OFFICES/SCHOOLS/DESK WORKPLACES

THE CHALLENGE:
Wherever work is mainly done at desks, a high-quality, homogeneous and dimmable LED alternative to traditional fluorescent tubes is required. It needs to provide flexible and demand-oriented lighting control in the working environment.

OUR SOLUTION:
- Dimmable LED TUBE EXTERNAL SYSTEM for saving energy
- Integration in DALI LMS allows different lighting scenes
- Energy savings through presence-dependent lighting control with sensors
- Luminaire housings can be retained
- Low maintenance costs; LED tubes can be replaced by the caretaker



CAR PARKS

THE CHALLENGE:
Safety and orientation play a major role here, but also flexible lighting control and significant energy savings with low maintenance costs.

OUR SOLUTION:
- Dimmable LED TUBE EXTERNAL SYSTEM for saving energy
- Integration in DALI system enables presence control and reliable feedback in the event of lamp failure
- Instant light for optimal illumination of car parks
- Luminaire housings can be retained; alternatively DAMP PROOF HOUSING is available
- Low maintenance costs; LED tubes can be replaced by the facility manager

HUGE SAVINGS AND QUICK PAYBACK
THE SWITCH TO LED TUBE EXTERNAL SYSTEM IN A WAREHOUSE

LED TUBE EXTERNAL SYSTEM

LED TUBE T8 EXT P 23 W/4000 K 1500 mm
EAN: 4058075730557
Driver: DR EXT DALI-P -1X15-37W 220-240
EAN: 4058075730632

	OLD: Traditional T8 58W	NEW: LED TUBE T8 EXTERNAL SYSTEM	SAVINGS
Guarantee		5 years[1]	
Efficiency	90 lm/W	161 lm/W	
System wattage	58 W	23 W	
Average lifetime	15 000 h	50 000 h[2]	
Energy consumption of project	6.8 kW	2.3 kW	
Energy consumption over period of operation	254 592 kWh	86 122 kWh	131 040 kWh
CO_2 emissions (231 g/kWh)[3]	58 811 kg	19 892 kg	30 270 kg
Total cost savings up to[4]		50 %	
Payback time from		11 months	

TOTAL COST SAVINGS UP TO 50 %

COST SAVINGS FOR ELECTRICITY UP TO 60 %

PAYBACK TIME FROM 11 MONTHS

ENERGY SAVINGS UP TO 131 040 KWH

TOTAL CO_2 SAVINGS UP TO 60 %

! FURTHER ENERGY SAVINGS THROUGH THE USE OF SENSORS

GLOBAL PARAMETERS: Period of operation: 60 months, 5 years, 37 440 operating hours | Operating times: 6 days per week, 52 weeks per year, 24 hours per day, dimming not included in calculation
Number of light points: 100 lamps, 50 luminaires

[1] Refer to www.ledvance.com/guarantee for precise conditions | [2] Lifetime: LED TUBE T8 EXT P 50 000 h, t[h]: L70/B50 at 25 °C (T_a), DRIVER LED TUBE EXTERNAL P 100 000 h, T_c: 65 °C; 10 % failure rate
[3] 2020 European level of GHG emission intensity of electricity generation (www.eea.europa.eu) | [4] Calculation Parameters: Replacement costs: Traditional T8 58 W 4.10 €*/piece, LED TUBE T8 EXT P 23 W/4 000 K 1 500 mm 26.30 €*/piece, DR EXT DALI-P-1X15-37 W 220-240 71.97 €*/piece, costs for exchanging: retrofit lamp 10.00 €*/housing, conversion LED Tube External System 15.00 €*/housing, electricity costs: 0.40 €*/kWh. *Illustrative pricing. Prices may vary in your country.

LED TUBE EXTERNAL P

PERFOR-MANCE CLASS

LED TUBE T8 and T5 EXTERNAL for LED DRIVER EXTERNAL

1

2

Please visit our website for the latest
LED TUBE EXTERNAL SYSTEM product information
www.ledvance.com/ext-system

EXT DIM GLASS LEDVANCE 5 year guarantee [1]

PRODUCT FEATURES

- Designed to power only with LEDVANCE DRIVER LED TUBE EXTERNAL
- Mercury-free and RoHS-compliant

PRODUCT BENEFITS

- Compatible with LEDVANCE DRIVER LED TUBE DALI EXTERNAL
- Shatter protection thanks to special PET coating
- No bending thanks to glass tube
- Very high resistance to switching loads
- 5-year guarantee

AREAS OF APPLICATION

- Industrial lighting (e.g. manufacturing plants, logistic centers, warehouses)
- Linear lighting for office, education, storage areas and retail
- Shops, supermarkets
- Suitable for indoor SELV installations
- General illumination within ambient temperatures from -20…+50 °C

	Product name	Segmentation	GTIN (EAN)	w≙W		[mm]	W	lm	lm/W	K		CRI	t[h] [2]	[2]		No.
NEW	LED TUBE T8 EXT P 15 W/4000 K 1200 mm	■	4058075**730595**	36	G13	1 200	15	2 400	160	4 000	190	80	50 000	D	25	1
NEW	LED TUBE T8 EXT P 15 W/6500 K 1200 mm	■	4058075**730618**	36	G13	1 200	15	2 400	160	6 500	190	80	50 000	D	25	1
NEW	LED TUBE T8 EXT P 23 W/4000 K 1500 mm	■	4058075**730557**	58	G13	1 500	23	3 700	160	4 000	190	80	50 000	D	25	1
NEW	LED TUBE T8 EXT P 23 W/6500 K 1500 mm	■	4058075**730571**	58	G13	1 500	23	3 700	160	6 500	190	80	50 000	D	25	1

	Product name	Segmentation	GTIN (EAN)	w≙W		[mm]	W	lm	lm/W	K		CRI	t[h] [2]	[3]		No.
NEW	LED TUBE T5 EXT HO54 P 26 W/4000 K 1149 mm	■	4058075**730472**	54	G5	1 149	26	4 000	153	4 000	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HO54 P 26 W/6500 K 1149 mm	■	4058075**730496**	54	G5	1 149	26	4 000	153	6 500	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HE35 P 18 W/4000 K 1449 mm	■	4058075**730519**	35	G5	1 449	18	2 800	155	4 000	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HE35 P 18 W/6500 K 1449 mm	■	4058075**730533**	35	G5	1 449	18	2 800	155	6 500	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HO49 P 26 W/4000 K 1449 mm	■	4058075**730434**	49	G5	1 449	26	4 000	153	4 000	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HO49 P 26 W/6500 K 1449 mm	■	4058075**730458**	49	G5	1 449	26	4 000	153	6 500	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HO80 P 37 W/4000 K 1449 mm	■	4058075**730410**	80	G5	1 449	37	5 600	151	4 000	180	80	50 000	D	25	2
NEW	LED TUBE T5 EXT HO80 P 37 W/6500 K 1449 mm	■	4058075**730397**	80	G5	1 449	37	5 600	151	6 500	180	80	50 000	D	25	2

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instructions.
The operating temperature range of LED tube is restricted. If in doubt regarding suitability of the application please measure T_c max temperature on the product prior to installation.

[1] Refer to www.ledvance.com/guarantee for precise conditions | [2] L70/B50 | [3] Energy efficiency class (EEC) on a scale of A (highest efficiency) to G (lowest efficiency)

■ SUPERIOR CLASS ■ PERFORMANCE CLASS ■ VALUE CLASS

DRIVER LED TUBE EXTERNAL P

PERFOR-MANCE CLASS

Constant current LED DRIVER EXTERNAL for LED TUBE EXTERNAL T5/T8 – indoor

1

2

Please visit our website for the latest
LED TUBE EXTERNAL SYSTEM product information
www.ledvance.com/ext-system

ENEC 05 | EXT | DIM | DALI-2 | IP20 | LEDVANCE 5 year guarantee [1]

PRODUCT FEATURES

- Safety extra-low-voltage (SELV) driver
- Advanced applications with DALI light installations
- Lifetime: up to 100 000 h (for T_c = 65 °C)
- ENEC mark

PRODUCT BENEFITS

- Compatible with LEDVANCE LED TUBE EXTERNAL
- High flexibility due to adjustable output currents via dip switch
- DALI 2.0 interface for dimming and sensor operations
- High-quality dimming of 1…100 %
- Push DIM application for easy control

AREAS OF APPLICATION

- Suitable for luminaires of protection class I
- General illumination within ambient temperatures from -20…+50 °C
- Industrial lighting (e.g. manufacturing plants, logistic centers, warehouses)
- Installation in emergency lighting systems according to IEC 61347-2-13, appendix J

	Product name	Segmentation	GTIN (EAN)	W	Hz	W	t[h] [2]	Ta	Tc	PROTECTION CLASS	L × W × H [mm]		No.
NEW	DR EXT DALI-P -1X15-37W 220-240	■	4058075**730632**	37	0/50/60	1…100	100 000	-20…+50	80	I	286.0 x 31.0 x 21.0	25	1
NEW	DR EXT DALI-P -2X15-26W 220-240	■	4058075**730656**	52	0/50/60	1…100	100 000	-20…+50	90	I	360.0 x 31.0 x 21.0	25	2

SAFETY ADVICE

Operation in outdoor applications in suitable damp-proof luminaires possible according to data sheet and installation instructions.

[1] Refer to www.ledvance.com/guarantee for precise conditions | [2] T_c: 65 °C/10 % failure rate

■ SUPERIOR CLASS ■ PERFORMANCE CLASS ■ VALUE CLASS

ABOUT LEDVANCE

With offices in more than 50 countries and business activities in more than 140 countries, LEDVANCE is one of the world's leading general lighting providers for professional users and end consumers. Having emerged from OSRAM's general lighting division, LEDVANCE offers a wide-ranging portfolio of LED luminaires for a broad spectrum of applications, intelligent lighting products for Smart Home and Smart Building solutions, one of the most comprehensive ranges of advanced LED lamps in the lighting industry, traditional light sources, an LED Strip System and light management systems.

LEDVANCE

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voltimum

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