DimIn

DimIn

Smart lighting made simple

Energy data • EPBD ready • Plug-and-play control.

DimIn is a compact, upgradeable control module that connects directly to Optoga AC LED modules. It offers DALI-2, Casambi BLE, potentiometer and switch control – all without the need for an external driver.

With built-in energy monitoring (DALI Parts 251, 252, 253), DimIn is fully prepared for EPBD 2024/1275. It integrates seamlessly into BACS/BMS systems, providing real-time energy data, diagnostics and compliance for the future of smart buildings.

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Overview

DimIn is Optoga's compact communication module that transforms any OptoDrive IoT LED module into a connected, intelligent light source. By mounting directly on the LED module's IoT interface, DimIn enables full DALI-2 interoperability, real-time energy reporting, and predictive maintenance capabilities.

DimIn supports:

- DALI-2 Parts 251, 252, 253 (Luminaire Data, Energy Data, Diagnostics)
- Seamless integration with Casambi and BACS/BMS systems
- TM21-based lifetime data (L80/B50) directly from the LED module
- Field-upgradable firmware via OTA

Key Features

- Real-time monitoring: Power (W), energy (kWh), Tc temperature, operating hours
- Predictive maintenance: Uses IEC 62386-253 maintenance data for service planning
- Interoperable: Works with any DALI-2 compliant system and Casambi gateways
- Future-proof: EPBD ready, supports energy reporting for BACS integration

Product Areas – Built for the Future of Smart Lighting

DimIn is more than a control module - it is a platform. Compact, removable, and upgradeable, it mounts directly onto Optoga AC LED modules, eliminating the need for external drivers.

With support for DALI-2, Casambi BLE, potentiometer, and switch control, DimIn gives luminaire makers the freedom to choose wired precision, wireless flexibility, or simple manual control. And with built-in energy monitoring (DALI Parts 251, 252, 253), DimIn is EPBD 2024/1275 ready, ensuring seamless integration with BACS/BMS systems for energy reporting, diagnostics, and predictive maintenance.

One platform Many applications

Platform	Table- or freestanding light 	Downlight 	Spotlight 	Pendent 	Medium size Opaque glass 	Big size Opaque glass 
Lilly80	X	X		X	X	
ADA60	X	X	X	X	X	
ADA76		X	X	(X)		
Sanna158				X	X	
Sanna158 HCL				X		
Sanna290				X		X
Sanna290 HCL				X		X

Application Area	Ideal DimIn + LED Module Combination	Benefits
Table or freestanding luminaires	Lilly80 / ADA60	Minimal footprint, easy retrofits, plug-and-play connectivity
Downlights	Lilly80 / ADA60 / ADA76	Smooth dimming, TW/HCL ready, no external driver needed
Spotlights & Pendants	ADA60 / ADA76	Compact and upgradeable – perfect for decorative fixtures
Medium opaque glass	ADA60 / Lilly80 / Sanna158 IoT	High lumen packages with consistent color quality. Can also be used with Human-Centric Lighting and Tunable White support via DALI-2 DT8.
Large opaque glass luminaires	Sanna290 AC IoT	Powerful output, ready for networked control and monitoring. Can also be used with Human-Centric Lighting and Tunable White support via DALI-2 DT8.

Article number structure

DimIn

Article code	Article	Control Type	EPBD/BACS Ready	Functions
105656	DimIn DALI PHM126	DALI-2	No	DALI type 2 with 1 channel and PHM126
105766	DimIn DALI Memory PHM126	DALI-2 + Part 251/252/253	Yes	DALI type 2 with 1 channel and PHM126. Energy Monitoring *support (251, 252, 253)* for BACS/BMS
	DimIn DALI DT8 Memory PHM126	DALI-2 + Part 251/252/253 +TW/HCL	Yes	DALI type 2 with 2 channel and PHM126, TW/HCL + Energy Monitoring *support (251, 252, 253)* for BACS/BMS
105671	Dimin Casambi IoT2	BLE	No	Wireless Control
	Dimin Casambi IoT2	BLE + momentary switch	No	Wireless Control + external momentary switch
	Dimin Casambi IoT2	BLE	No	Wireless Control with 2 channel TW/HCL
105672	Dimin Casambi IoT2 External Antenna	BLE	No	Wireless Control + External Antenna
	Dimin Casambi IoT2 External Antenna	BLE	No	Wireless Control, 2 channel TW/HCL + External Antenna
105040	DimIn POT	Potentiometer	No	Potentiometer dimming internally in a luminary
105652	DimIn Switch	Momentary Switch	No	Simple on/off + dimming

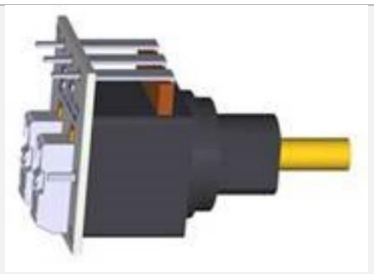
Smart Control & Connectivity - Choose the Right Interface

Optoga's DimIn platform gives luminaire makers full freedom:
select DALI-2 for wired precision, Casambi BLE for wireless control, or manual modules for simple standalone luminaires.

Interface	Key Benefits	EPBD/BACS Readiness
DALI-2	Two-way communication, smooth dimming to 1 %, individual or group addressing	**Yes** - with DimIn DALI Memory (251/252/253)
DALI-2 DT8	Tunable White & HCL on a single address, scene transitions	**Yes** - IEQ-ready for EPBD 2024/1275
Casambi BLE	Wireless mesh control, OTA updates, works offline	**Yes** - bridgeable to BACS/BMS
Potentiometer	Direct manual dimming, on/off function	**No**
Momentary Switch	Simple push-button dimming, optional auto-off	**No**

This makes it easy to design future-proof luminaires: start with simple dimming or wireless control today, and upgrade to full EPBD-compliant monitoring later by adding a DimIn DALI Memory module.

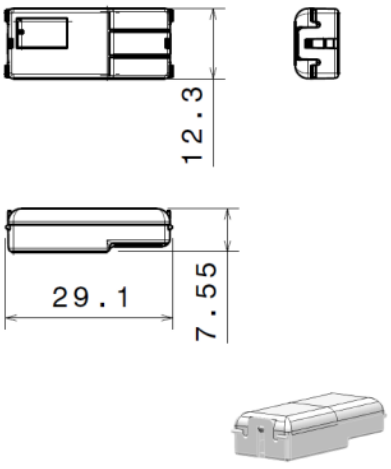
Accessories

Article code	ARTICLE NAME	DimIn Potentiometer design	Information
105148	Dimin Potentiometer		When the knob is rotated counterclockwise to the end position and you hear (and feel) the click, the resistance between the connectors is basically infinite because that position acts as an open switch. As soon as you turn it clockwise so that it clicks, the resistance becomes very low, 2-3 ohms. If you continue to turn clockwise, the resistance increases up to approx. 100 kOhm.

Package

Description	Qty (pcs)	Dimension (cm)			GW (kg)
		Length	Width	Height	
Inner box	74	35.6	22.7	9.6	0.5
Outer box	2304	46.5	37.5	39.6	TBD

Dimensions DimIn Module



Regulatory & Standards Alignment

DimIn DALI Memory supports EU Fit for 55 climate package by enabling measurable efficiency improvements and lower CO_2e per light point.

EPBD 2024/1275

- Integrates with BACS for energy metering and control
- Real-time data supports SRI assessments
- Tunable White and high CRI for IEQ requirements

ESG & CSRD

- Energy history and operational data for sustainability reporting
- Contributes to reduced environmental impact through optimized lighting operation

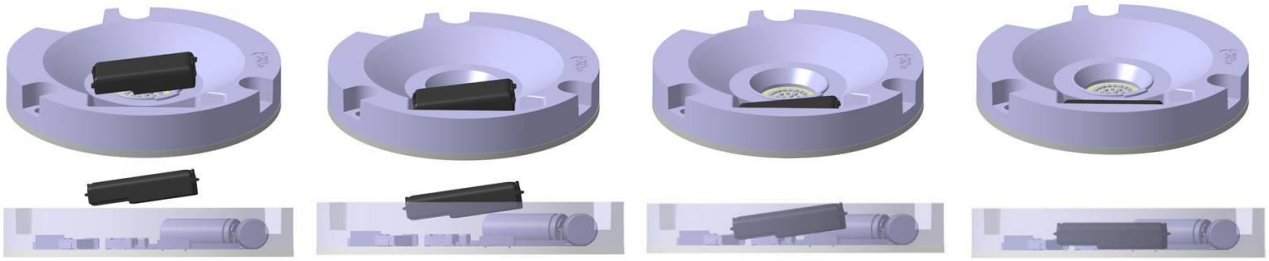
Standards

- IEC 62031, IEC 62471, EN 60598-1
- DALI-2 (Memory bank 251/252/253) testing under process
- RoHS III, REACH, POPs

Mounting & Integration

DimIn is designed for direct plug-in connection to the LED module through a standardized interface – no additional brackets or adapters are required.
This ensures:

- No impact on luminaire design, same footprint, no redesign needed
- No loss of light output, full optical performance is maintained



Integrated Power & IoT-Ready

In IoT versions, the AC driver is fully integrated into the LED module.

- **Direct mains connection**, no external driver needed
- **Integrated connector**, easy attachment of DimIn or other functional modules
- **Normal mode fallback**, if no module is attached, the LED module works as a standard dimmable light source

Compliance & Performance

When a DimIn module is installed:

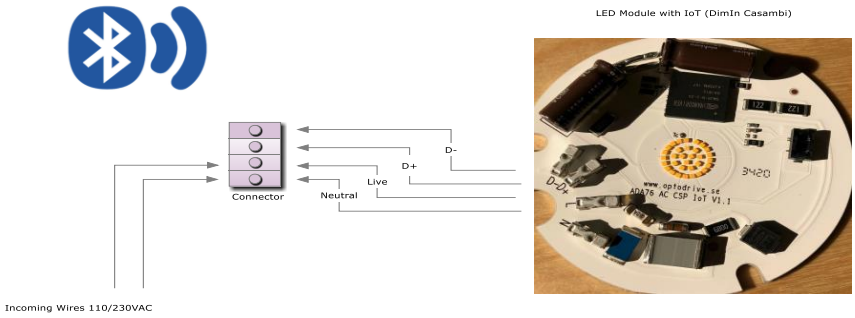
- **Smart control is activated**, enabling DALI, Casambi or other IoT functions
- **Real-time monitoring**, power, temperature and runtime data are reported
- **Eco-Design compliance**, flicker-free dimming across the entire range, meeting EU 2024 (SVM ≤ 0.4) requirements

Flexible Installation

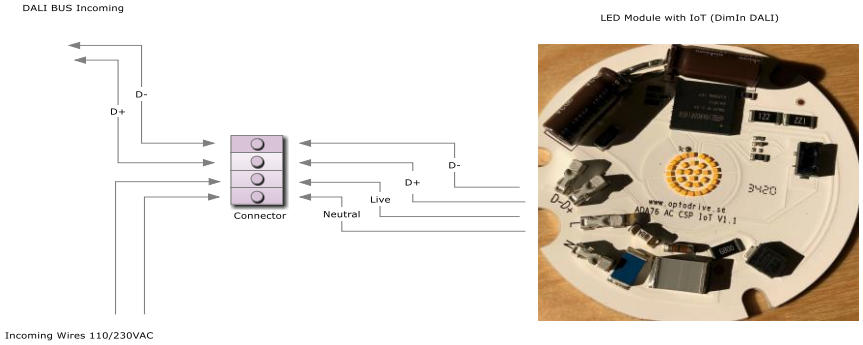
- **At production:** Luminaire manufacturers can pre-install DimIn for ready-to-ship smart luminaires
- **In the field:** Modules can be added later, enabling retrofit upgrades without rewiring

Wiring for different DimIn versions

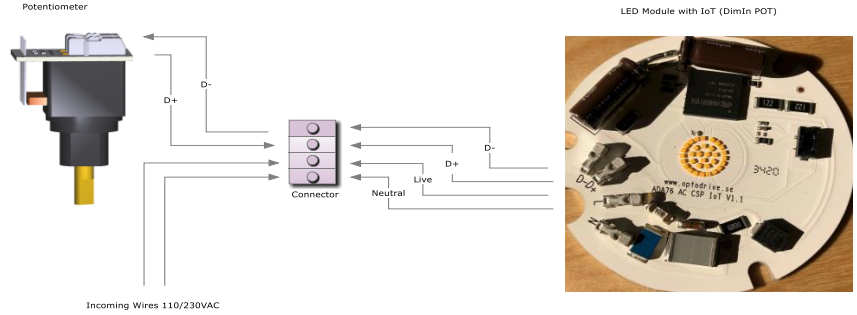
Casambi



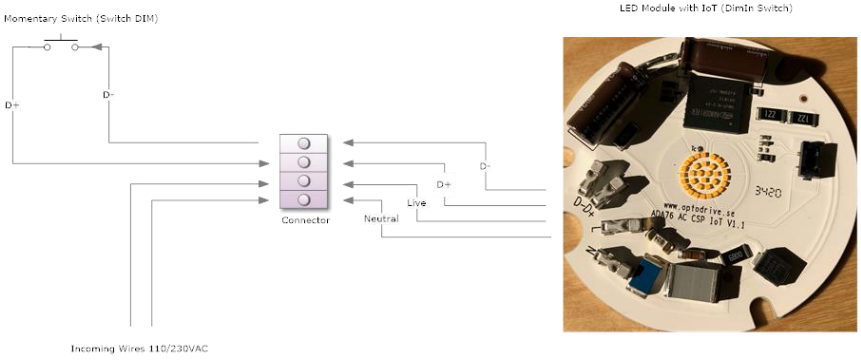
DALI



POT / Potentiometer



Switch



Precautions for use

Handling in regards to static electricity

- The Optodrive products have integrated circuits (IC) on board that may be damaged if exposed to static electricity. Please handle the products only while using equipment that prevents static electricity. Do not handle them without having ESD protection.
- The Optodrive products are not be installed into the end product without proper ESD protection.
- Optodrive LED Modules meet IEC61547:2009 and IEC61000-4-2. We recommend the light fixture manufacturer to take the mentioned standards under consideration.

Storage before use

- Use only properly rated test equipment and tools for the rated voltage and current of the product being tested.
- It is strongly suggested to wear rubber insulated gloves and rubber bottom shoes while handling the product.
- Do not wear any conductive items (such as jewellery) which could accidentally contact electric circuits.
- Faults, lightning, or switching transients can cause voltage surges in excess of the normal ratings.
- Internal component failure can cause excessive voltages.
- Stored or residual electricity in long wire could be hazardous.

ROHS III Compliant

All our LED modules meet the Restrictions of Hazardous Substances (RoHS III)!

There has been a growing consensus that Lead Free Systems should increase for the safety of our environment. It is a very serious problem that lead and other harmful materials are being used in commercial and industrial products, causing more and more environmental problems. This has led to regulations such as RoHS (Restriction of the use of certain Hazardous Substances) from the EU and the Japan Ministry of Trade and Industry (MITI). All LED module makers providing products to these countries should comply with these restrictions. In order to meet the RoHS III regulation, Optoga is strictly implementing a ban on lead and other hazardous materials in its products. This is in compliance with our responsibilities as good corporate citizens.

Design for Environment:

According to the EU-directive (RoHS III) the following substances must not be used in this product

Lead	(Pb)	Polybrominated diphenyl ethers	PBDE
Mercury	(Hg)	Bis(2-ethylhexyl) phthalate	DEPH
Cadmium	(Cd)	Butyl benzyl phthalate	BBP
Chromium	VI (Cr^{6+})	Dibutyl phthalate	DBP
Polybrominated biphenyls	PBB	Diisobutyl phthalate	DIBP

Do you want to know more about benefits of OptoDrive LED?

Read more about OptoDrive at www.optoga.com.
You can contact us via info@optoga.com.
You can also call us on +46 (0)589 490 950.

Optoga AB
Optoga was founded in November 2004 in Arboga, Sweden and has many years of experience in electronics design. The company developes and supplies LEDs and LED-module solutions for the lighting industry, vehicle manufacturers and electronics companies.

With the OptoDrive LED-module, Optoga has taken the initiative to replace strip lights, incandescent and halogen bulbs with LED-based sources.

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