



## Driving greater efficiency with an easy, stand-alone, dimming control

**Maximize eHID and LED energy-savings with the Dynadimmer 0-10V luminaire-based control for outdoor applications**

Dynadimmer 0-10V is a lamp control device that enables high energy savings with low installation efforts. The small, stand-alone, luminaire-based device can drive a 1-10V electronic ballast to facilitate on-demand light levels and does not require an additional switching wire.

The Dynadimmer 0-10V dimming schedule is flexible up to five dimming levels and five time periods. Easy-to-operate software and programming equipment enable end users to re-program dim times and levels when and as they wish. Offering energy-efficiency and flexibility, the Dynadimmer 0-10V control is ideal for residential, roadway, parking, and industrial applications.

**The Dynadimmer 0-10V solution offers:**

- Reduced energy usage through dimming
- Reduced light nuisance
- Very small size, fits inside almost any luminaire
- Easy-to-use software provides a forecast of energy savings

# PHILIPS

## Applications

Each Dynadimmer 0-10V can control a driver-lamp combination in a stand-alone manner. It is designed for use in residential, street and road lighting applications, including parking lots, roadway, residential and industrial complexes. The design of the Dynadimmer 0-10V is optimized for mounting in a luminaire.

Dynadimmer 0-10V is designed to interact with Philips Advance I-10V drivers and is compatible with dimmable drivers with a standard I-10V interface. Compatible with eHID and LED solutions, it features a galvanic separation between the I-10V output and mains input.

The Dynadimmer family consists of:

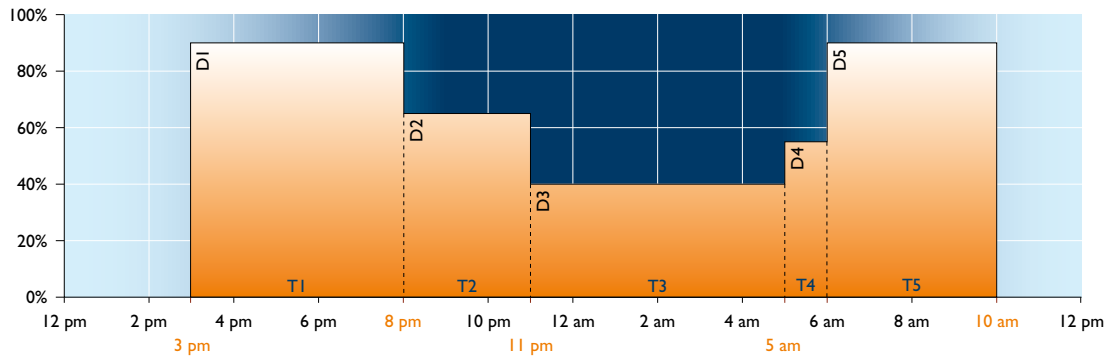
- LLC7230 Dynadimmer 0-10V
- KIT7210 Dynadimmer Programming Kit (Optional)
- LCC 7210 Dynadimmer USB PC Cable

## General Operation

A dimming schedule is easily created within the Dynadimmer software. This easy-to-use software enables the user to obtain not only a quick dimming shape configuration, but also a forecast of energy savings. The dimming schedule may be fine-tuned and, by means of the Programmer or the USB PC cable, programmed into each individual Dynadimmer 0-10V.

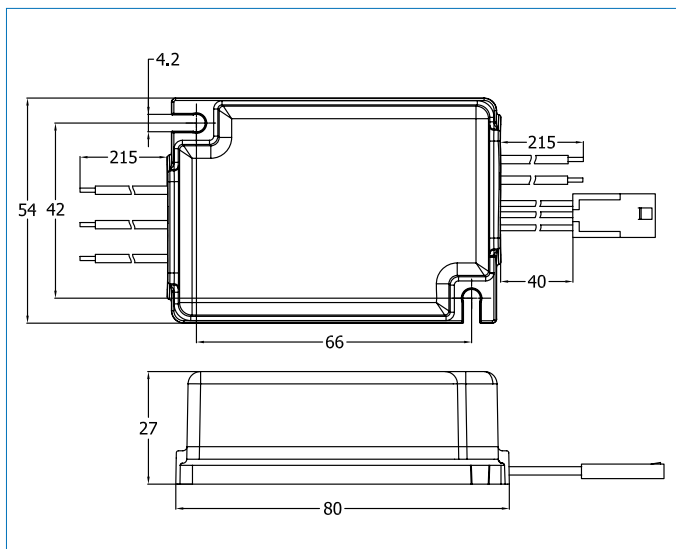
The Dynadimmer 0-10V has no internal clock and uses a mid-point calculation to determine the absolute time. The mid-point is calculated as the middle point between switch on and switch off.

Depending on the selected location, a time is allocated to this mid-point. The Dynadimmer 0-10V needs two nights to check the consistency of the duration of both nights. The dimming schedule will start to operate on the third night after installation.\*



Example dimming schedule using Dynadimmer

## Dimensions (mm)



## Mounting information

The Dynadimmer 0-10V is designed to be built into a luminaire, a box, an enclosure or the like and is not intended to be mounted outside a luminaire, without special precautions. (The control driver compartment in the base of a road lighting pole is considered to be an enclosure.)

The Dynadimmer 0-10V can therefore be mounted in any position if the enclosure is IP43 or higher. Wiring has to be in accordance with UL standards. Dynadimmer must be located within 20 feet of the 0-10V driver.

Dynadimmer can control multiple drivers, however the dimming range will be limited. Please contact Philips Sales Representative for more information on your specific driver requirements.

\* Dynadimmer must be on for a minimum of 4 hours per day, and a maximum of 22 hours per day. If these conditions are not met, Dynadimmer will not function properly.

### Dynadimmer software

A dimming schedule is created in the Dynadimmer software. Dynadimmer software can be downloaded free-of-charge from the Philips website at <http://www.philips.com/dynadimmerus>. There are several variables that allow the configuration of a dimming schedule. Light levels D1 to D5 can be chosen within the range that the selected driver allows. The time frames T1 to T5 can be chosen freely to accommodate any requirement.



Dynadimmer Software

### Dynadimmer USB PC Cable

The USB programming cable is used to directly link and program Dynadimmer 0-10V from the PC. When using this cable, no programmer tool is needed. Dynadimmer software has a special button to activate the USB feature. In addition to programming and uploading the existing dimming schedule, an option is available for multi-programming. With multi-programming, connecting the Dynadimmer is sufficient to program it and there is no need to press any button on the computer. This is specially designed for factories to program large quantities of luminaires in a very short time.



Dynadimmer USB PC Cable

### Dynadimmer Software Programming

#### Programming via Computer

The dimming shape can be easily be downloaded into the Dynadimmer 0-10V via the USB port on your personal computer using a custom Philips USB cable.

NOTE: When using Dynadimmer with a motion detector, Dynadimmer must be programmed so that at least one programming slot contains the override value. For example, if the override function should go to 100%, at least one Dynadimmer programming slot must be set to 100%.

### Dynadimmer Programming Kit (Optional)

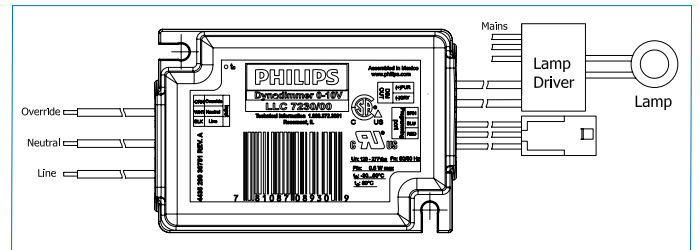
The dimming shape can also be easily be downloaded into the optional Dynadimmer programmer. The Dynadimmer programmer then enables the user to program the individual Dynadimmers either on or off-site. The Dynadimmer programmer is powered by 4 AA or LR6 batteries.



Dynadimmer Programmer (optional)

### Wiring the Dynadimmer 0-10V

It is imperative that users wire Dynadimmer in accordance with the UL requirements laid down in the regulations relating to luminaires.



Dynadimmer 0-10V Wiring Diagram



#### Warning

Completely turn off the external power supply when installing or placing wiring. Not doing so could cause electric shock or personal injury.



#### Warning

Disconnect mains power supply before connecting the Dynadimmer programmer to the Dynadimmer 0-10V. Failure to do so could result in personal injury, and/or damage to the Dynadimmer.

## Technical data

### Storage conditions

Temperature	min -40° C / max +80° C
Relative humidity	min 5% / max 95% RH

### Operating conditions

Ambient temperature	min -30° C / max +60° C
Case temperature	80° C
Relative humidity	min 10% / max 90% RH (no condensation)

### Mains connection

Operational voltage	120-277V ± 10%
Frequency	50/60 Hz ± 5%
Maximum load	Not applicable

### Mains / 1-10v connections

Connector type	WAGO 250 Cage Clamp
Drivers per Dynadimmer 1-10v	2 max.
Wire range	18 gauge
Wire strip length	203 mm
Power consumption	0.5W at 220VAC/60Hz

### Programming connector

Connector type	Micro MATE-N-LOK connector
Factory setting	After power-up, the control voltage will rise slowly to +5VDC

### Dim interface

Control voltage	1-10V
Max. current	0.3mA sinking
Dim curve	Defined by selected driver
Protection	Protected against accidental connection with mains voltage
Output impedance	2700 ohm

## Ordering Data

Type	Min. Order Qty.	Ordering number
LLC7230 Dynadimmer 0-10V	20	LLC7230M
KIT7210 Programming Kit	1	KIT7210I
LCC7210 USB PC Cable	1	LCC7210

### Housing

Protection class	Tested to IP66
Dimensions (H x W x L)	25 mm x 54 mm x 80 mm
Weight	0.085 Kg
Material	PC-GE LEXAN 223R-111
Color	Black
Glow wire test	≥ 850° C at 1 mm material thickness
Flammability	UL94-V2 at 0.75 mm material thickness UL94-V0 at 6 mm material thickness
Fixation	M8 x 16 bold (class 8.8) or 2 x M4 screw with cylinder head

The LLC7230 is designed to be built into a luminaire, a box, an enclosure, or the like and is not intended to be mounted outside a luminaire, etc. without special precautions.

The LLC7230 housing provides insulation for class 2.

### Safety

1-10V interface	The interface is double (0-10V) isolated from the mains supply (4kV routine test for transformer)
Programming interface	The interface is double (0-10V) isolated from the mains supply (4kV routine test for transformer)



### Warning

Mains has to be disconnected before connecting the programmer. Failure to do so could result in personal injury, and/or damage to the Dynadimmer



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