# LLC7220
# Dynadimmer SELV

*Dimensions in mm*

## General Description

The Dynadimmer SELV is a lamp driver control device that enables high-energy savings with low installation efforts in a variety of applications. The small stand-alone luminaire-based device can drive a 1-10V electronic driver to facilitate on-demand light levels. The Dynadimmer SELV does not require an additional switching wire. The Dynadimmer SELV dimming schedule is flexible up to five dimming levels and five time periods. Easy-to-operate software and programming equipment enable municipal councils to re-program the dim times and dim levels as and when they wish.

The Dynadimmer family consists of:
• LLC7210 Dynadimmer
• LLC7220 Dynadimmer SELV
• KIT7210 Dynadimmer Programming Kit
• LCC 7210/00 Dynadimmer USB PC Cable.

The Dynadimmer SELV is specifically designed for LED luminaires and has a galvanic separation between the 1-10V output and mains input.
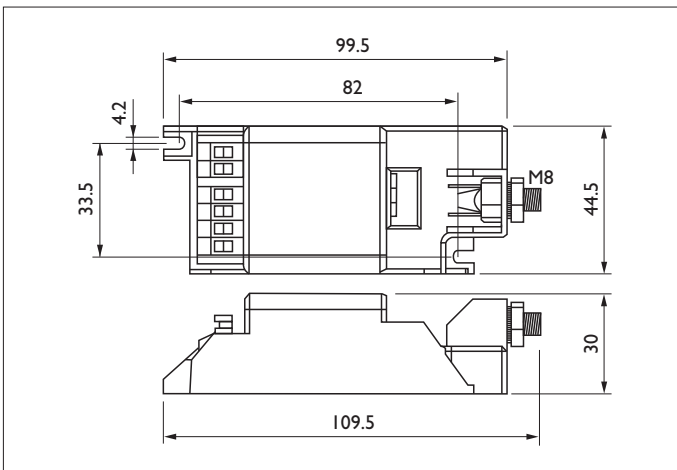
## Applications

Each Dynadimmer SELV 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, ports, train stations and industrial complexes. The design of the Dynadimmer SELV is optimized for mounting in a luminaire.
The Philips Dynadimmer SELV is designed and released to interact with Philips 1-10V gear and is compatible with dimmable drivers with a standard 1-10V interface.

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## Benefits and advantages

The major benefits and advantages of using the Dynadimmer SELV solution are:
• Energy savings through dimming
• Reduced light nuisance
• Very small size, fits inside almost any luminaire
• Software provides a forecast of energy savings
• Easy-to-use software

## General operation

The dimming schedule is created in 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 SELV.

The Dynadimmer SELV has no internal clock and uses a midnight point calculation to determine the absolute time. The midnight point is calculated as the middle point between switch on and switch off. Depending on the selected country, a time is allocated to this midnight point. The Dynadimmer SELV 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.
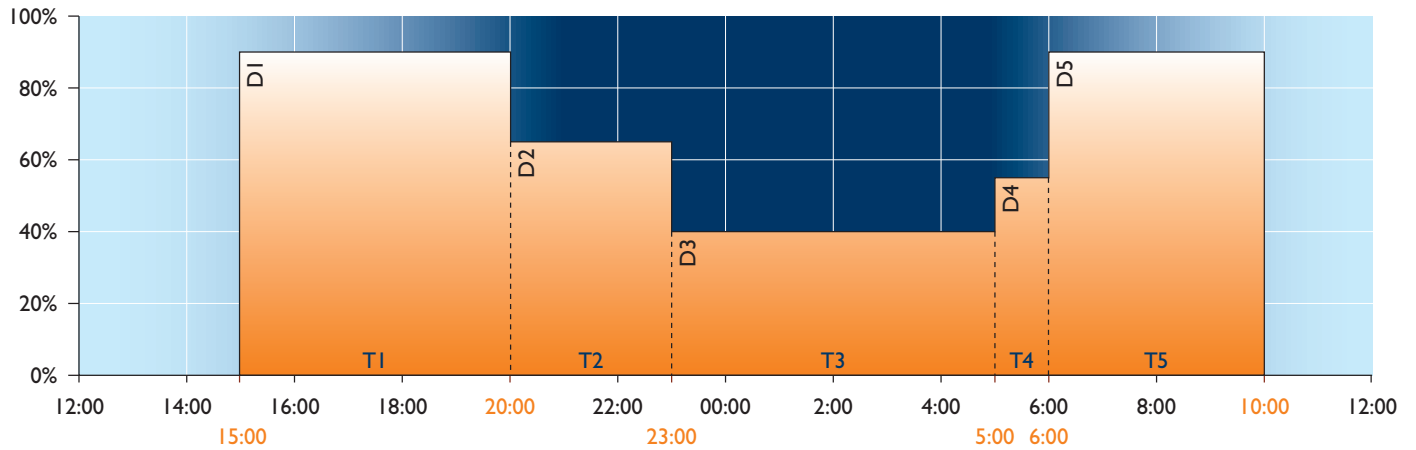


*Dimming shape example*

## Mounting information

The Dynadimmer SELV 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 control gear compartment in the base of a road lighting pole is considered to be an enclosure. The Dynadimmer SELV can therefore be mounted in any position if the enclosure is IP43 or higher. Wiring has to be in accordance with EN60598.
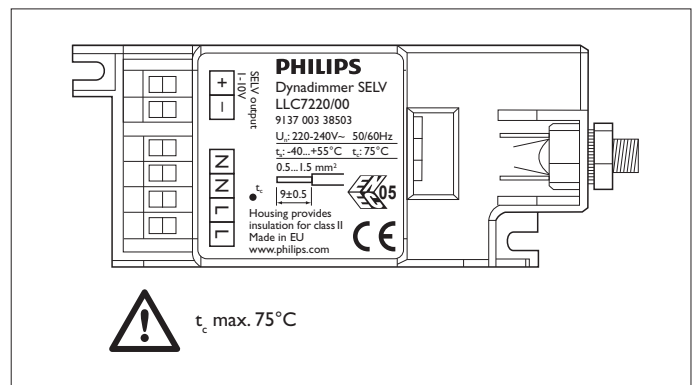


*Tc point Dynadimmer SELV*

## Dynadimmer software

The dimming schedule is created in the Dynadimmer software. The Dynadimmer software can be downloaded free of charge from the Philips website at www.philips.com/dynadimmer. There are several variables that allow the configuration of a dimming schedule. The 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*

## Programming the Dynadimmer

### Dynadimmer Programming Kit

Once defined, the dimming shape can simply be downloaded into the Dynadimmer Programmer. The Dynadimmer Programmer then enables the user to program the individual Dynadimmers on-site or off-site. The Dynadimmer Programmer is powered by 4 AA or LR6 batteries for easy on-site use.

The Dynadimmer Programmer has 3 buttons
- On/Off (green), to switch the Programmer On and/or Off
- Select correct dimming shape (orange), to preload the dimming shape that needs to be programmed in Dynadimmer SELV
- Write (black), to actually write the dimming shape into Dynadimmer SELV

The Dynadimmer Programmer contains an LCD screen to inform the user about action statuses.



*Dynadimmer Programmer*

## Dynadimmer USB PC Cable

The USB Programming cable is a cable to directly link and program Dynadimmer SELV from the PC. When using this cable no Programmer tool is needed. The 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 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 in a very short time.



*Dynadimmer USB PC Cable*

## Released drivers

The drivers released to interact with the Dynadimmer's 1-10V dimming interface are currently:
Philips HF-Regulator PL-T/C EII 26-42W
Philips HF-Regulator PL-L EII 24-55W
Philips HID-DynaVision 1-10V 150 SON
Philips HID-DynaVision 1-10V 100 SON
Philips HID-DynaVision 1-10V 70 SON
Philips HID-DynaVision 1-10V 150 CDO
Philips HID-DynaVision 1-10V 100 CDO
Philips HID-DynaVision 1-10V 70 CDO
Philips HID-DynaVision Controller 1-10V 250 SON
Philips HID-DynaVision Controller 1-10V 400 SON

## Wiring the Dynadimmer SELV

In accordance with the requirements laid down in the regulations relating to luminaires (EN60589)
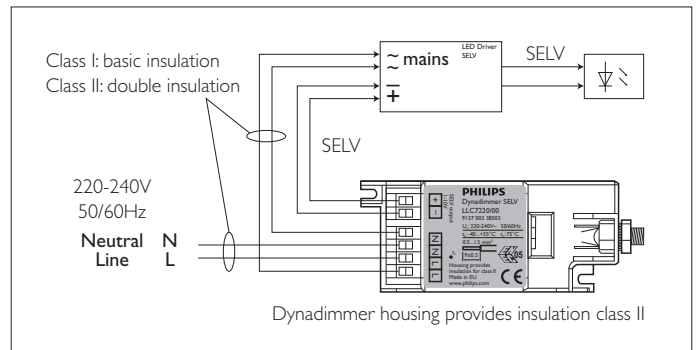


*Dynadimmer SELV wiring diagram*

⚠ **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 SELV.

## Technical data

### Storage conditions
| | |
|---|---|
| Temperature | -40°C ... +85°C |
| Relative humidity | 5% ... 95% RH |

### Operating conditions
| | |
|---|---|
| Ambient temperature | -40°C ... +55°C |
| Case temperature | 75°C |
| Relative humidity | 10% ... 90% RH (no condensation) |

### Mains connection
| | |
|---|---|
| Rated voltage | 220-240V ±10% |
| Frequency | 50/60 Hz ±5% |
| Maximum load | Not applicable |

### Mains / 1-10V connections
| | |
|---|---|
| Connector type | WAGO 250 Cage Clamp |
| Drivers per Dynadimmer SELV | 2 max. |
| Wire range | 0.5 ... 1.5mm$^2$ solid |
| Wire strip length | 8.5 ... 9.5mm |
| Power consumption | 1.2W at 230VAC/50Hz |

### 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 |

### Norms
| | |
|---|---|
| Safety | EN61347-2-11; EN60598 |
| Immunity | EN61547 |
| Emission | CISPR15 ed. 7.1 |
| Approbation | Product complies with the relevant European Directive (CE) ENEC |
| Environment | WEEE/RoHS compliant |

### Housing
| | |
|---|---|
| Protection class | IP20 |
| Dimensions (HxWxL) | 30mm x 44.5mm x 99.5mm |
| Weight | 0.085 Kg |
| Material | PC-GE LEXAN 223R-111 |
| Color | Black |
| Glow wire test | ≥ 850 °C at 1mm material thickness |
| Flammability | UL94-V2 at 0,75mm material thickness UL94 V0 at 6mm material thickness |
| Fixation | M8x16 bold (class 8.8) or 2 x M4 screw with cylinder head |

The LLC7220 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 LLC7220 housing provides insulation for class II.

### Safety
| | |
|---|---|
| 1-10V interface | The interface is double (SELV) isolated from the mains supply. (4kV routine test for transformer) |
| Programming interface | The interface is double (SELV) isolated from the mains supply (4kV routine test for transformer) |

⚠️ **Warning**
Mains has to be disconnected before connecting the programmer.

### Packing data

| Type | Box dimensions (mm) | Qty | Material | Weight (Kg) net | gross |
|---|---|---|---|---|---|
| LLC7220 Dynadimmer SELV | 360 x 280 x 120 | 48 | cardboard | 4.08 | 4.60 |
| KIT7210 Programming kit | 150 x 280 x 65 | 1 | cardboard | 0.73 | 0.83 |
| LCC7210/00 USB PC Cable | 16.5 x 10 x 1.8 | 1 | plastic bag | 0.078 | 0.080 |

### Ordering Data

| Type | MOQ | Ordering number | EAN code level 1 | EAN code level 3 | EOC |
|---|---|---|---|---|---|
| LLC7220 Dynadimmer SELV | 48 | 9137 003 38503 | n.a. | 87279 00881387 | 881387 00 |
| KIT7210 Programming kit | 1 | 9137 003 34703 | n.a. | 87279 00857177 | 857177 00 |
| LCC7210/00 USB PC Cable | 1 | 9137 003 34603 | 87279 00900576 | 87279 00900583 | 900576 00 |

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