

## DynaDimmer

The DynaDimmer functionality is a dimming solution offering up to 5 steps flexibility. It is up to users if they want to use all the five steps or less. The main function is to have a reduced light level for a certain time during the night when it is not required to have the full lumen output.

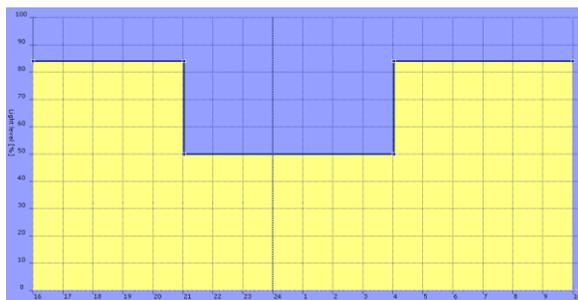


Fig: DynaDimmer Schedule with 2 steps

All DynaVision Xtreme drivers have the DynaDimmer function integrated. To enable it there are two elements to be used:

- The DynaVision DALI Xt Programmer
- The USB DALI Programmer

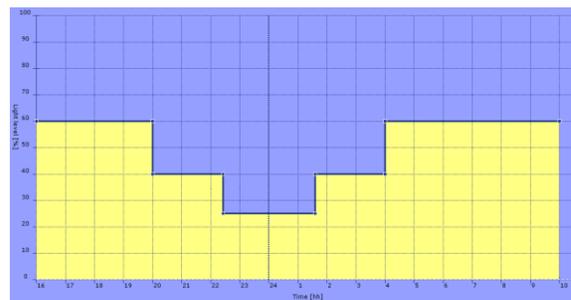


Fig: DynaDimmer Schedule with 4 steps

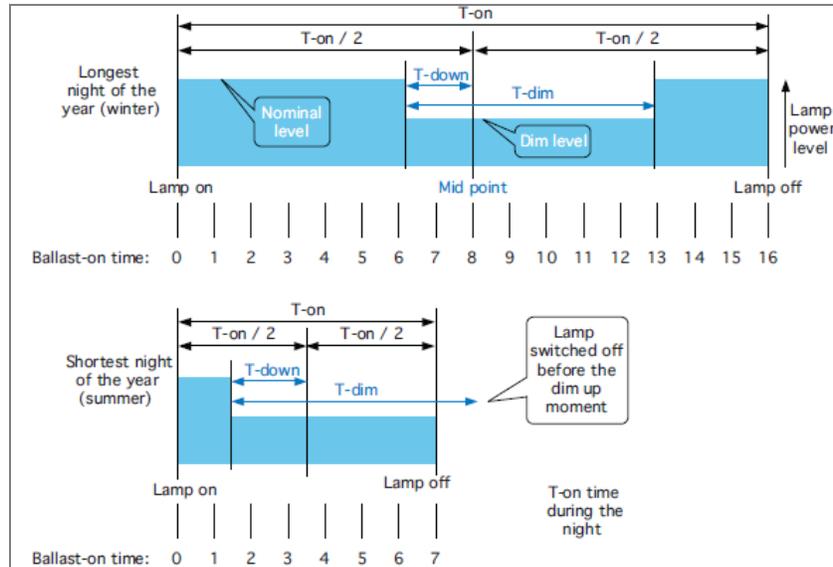
### How it works

The “Midpoint” of the night is used as a reference point from which the time is calculated when to go to the “Dim level”.

The software from inside the driver calculates the “Midpoint” based on the first active nights after installment. This point sets the middle of the distance between the times when the driver was switched on in the evening and switched off in the morning.

Note that the first dim-down point can be after the “Midpoint”. These dim moments vary in time during the year, and in summer it can happen that the driver is switched off before the lamp is returned to 100% power.

The software is keeping track on the average T-on time and will dim the lamp to the specific “Dim levels” and “Nominal level” at the required moments.



DynaDimmer explained on a two steps program

The software:

- Is synchronizing on the mains frequency. It is detecting whether the mains is a 50Hz or a 60 Hz network.
- Is requiring an initial 3 days learning period to determine the night length
- Is also keeping track on the average T-on time. In respect to this information the software will dim the lamp to the “Dim level” and “Nominal level” at the required moments.
- When T-on used differs with more than 1 hour than the actual calculated time the dimming will not be executed for the next 2 days in order to re-synchronize.
- Is also handling power dips by saving the last DynaDimmer status into the non-volatile memory, and trying to recover when possible.

## Enable the feature

The feature can be enabled via the:

- DynaVision DALI Xt Programmer software in combination with the
- USB DALI programmer.

The parameters to be defined are:

- Country
- Times when you wish to dim
- Levels of dimming

The steps needed to program are:

1. Read from Device
2. Enable the functionality inside the driver
3. Pick the country in which the driver will be functioning
4. Define the schedule you wish for your DynaDimmer program
5. Write to device

## Multiple device programming

In case you need to program multiple devices with the same schedule, following steps are recommended:

1. Read from Device
2. Enable the functionality inside the driver
3. Pick the country in which the driver will be functioning
4. Define the schedule you wish for your DynaDimmer program
5. Save the schedule with a recognizable name (you might consider to use this on an add on lable to makr the programmed drivers)
6. Write to device
7. Disconnect the driver and reconnect the next one.
8. Write to device
9. Repeat the steps 7. and 8. until you programmed the full batch

In case you need to program multiple devices with an already created schedule, the following steps are recommended:

1. Open the Dynadimemr tab
2. Load the schedule
3. Write to device

## Definitions

**Dim level:** Light level setting of the lamp during dimming

**Fade-down/up speed:** The time required for changing lamp power from “nominal level” to “dim level” and from “dim level” to “nominal level”

**Learning mode:** Mode in which the driver is busy with the determination of the average T-on time

**Mid point:** The arithmetic or virtual middle of the night.  $T\text{-on-average} / 2$

This isn't equal to the real life midnight.

**Nominal level:** 100% Light level setting of the lamp

**Power dip:** An interruption of the mains voltage supply

**T-down:** Time before the arithmetic middle of the night at which the lamp has to be set to the dim level

**T-on:** The time the driver is switched on during the night

**T-on-average:** The average T-on time calculated over the last 3 valid T-on times

**T-dim:** Duration of the dimmed level, after this time the driver switches back to the nominal level

## Override the DynaDimmer function

If your lamp park is dimmed due to the DynaDimmer schedule, but in certain circumstances, **you wish to have all your light points at 100%**, you the Line Switch Functionality can support you with this. As a matter of fact, when the DynaDimmer is scheduled – the Line Switch function will only work as **a break from the DynaDimmer program**.

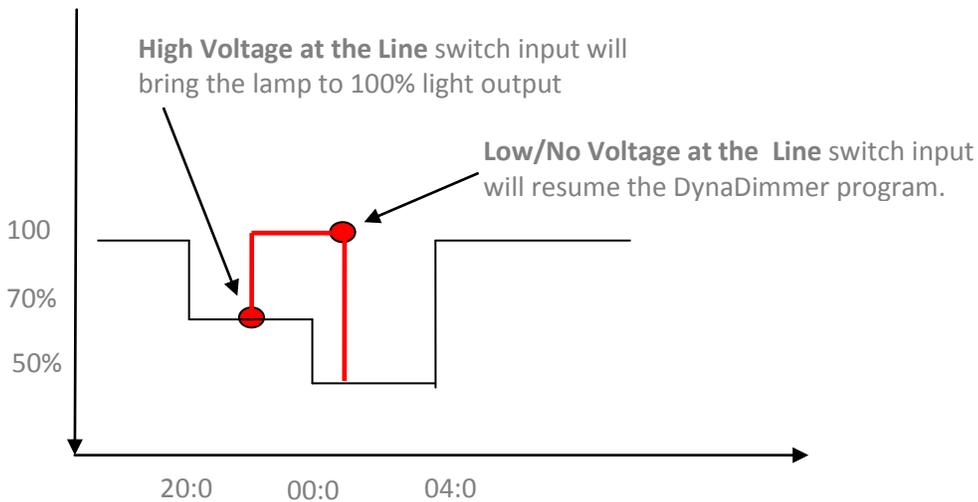
### Use case 1:

Line Switch configuration:

Line switch	
Use line switch	<input checked="" type="checkbox"/>
Configuration	
High V Level:	100 % light level
Low V Level:	50 % light level

Expected behavior:

When there is high voltage at the Line switch input the driver will take the lamp to 100% light level, **overriding the schedule of the DynaDimmer**. No voltage at the Line switch input will resume the DynaDimmer program.



The Line Switch function enables users to **override, in field**, the DynaDimmer schedule and **go to a user-defined light level whenever** desired.

In the case above – introducing high voltage input in the Line switch will escape the DynaDimmer schedule – taking your light park to 100% light output. To go back to the schedule apply no/low voltage at the Line switch input.

## Use case 2:

Line Switch configuration:

### Line switch

Use line switch

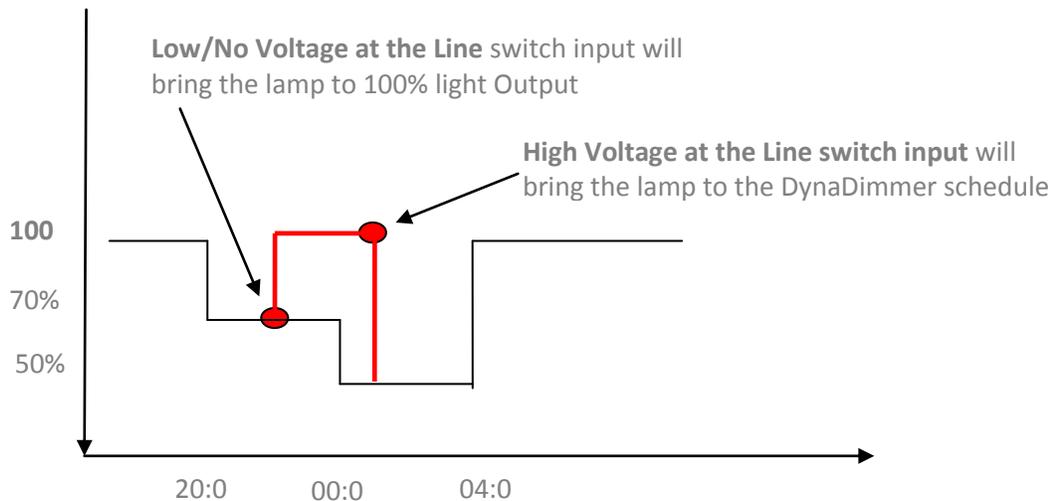
Configuration

High V Level:  % light level

Low V Level:  % light level

Expected behavior:

When there is low or no voltage at the Line switch input the driver will take the lamp to 100% output, **overriding the schedule of the DynaDimmer**. High voltage at the Line switch input will bring the driver back to the DynaDimmer program.



The Line switch function enables users to **override, in field**, the DynaDimmer schedule and **go to a user-defined light output whenever** desired.

In the case from above – applying no/low voltage at the Line switch input will escape the DynaDimmer schedule – taking your light park to 100% light output. To go back to the schedule apply a high voltage level at the Line switch input.

The Line Switch overrides the DynaDimmer with the input that offers the higher light level.

- If at high V output your configuration asks for 80% light output
- And at low V output your configuration asks for 50 % light output

Then you override the DynaDimmer by introducing high voltage ( 207 - 288) in the LineSwitch input.