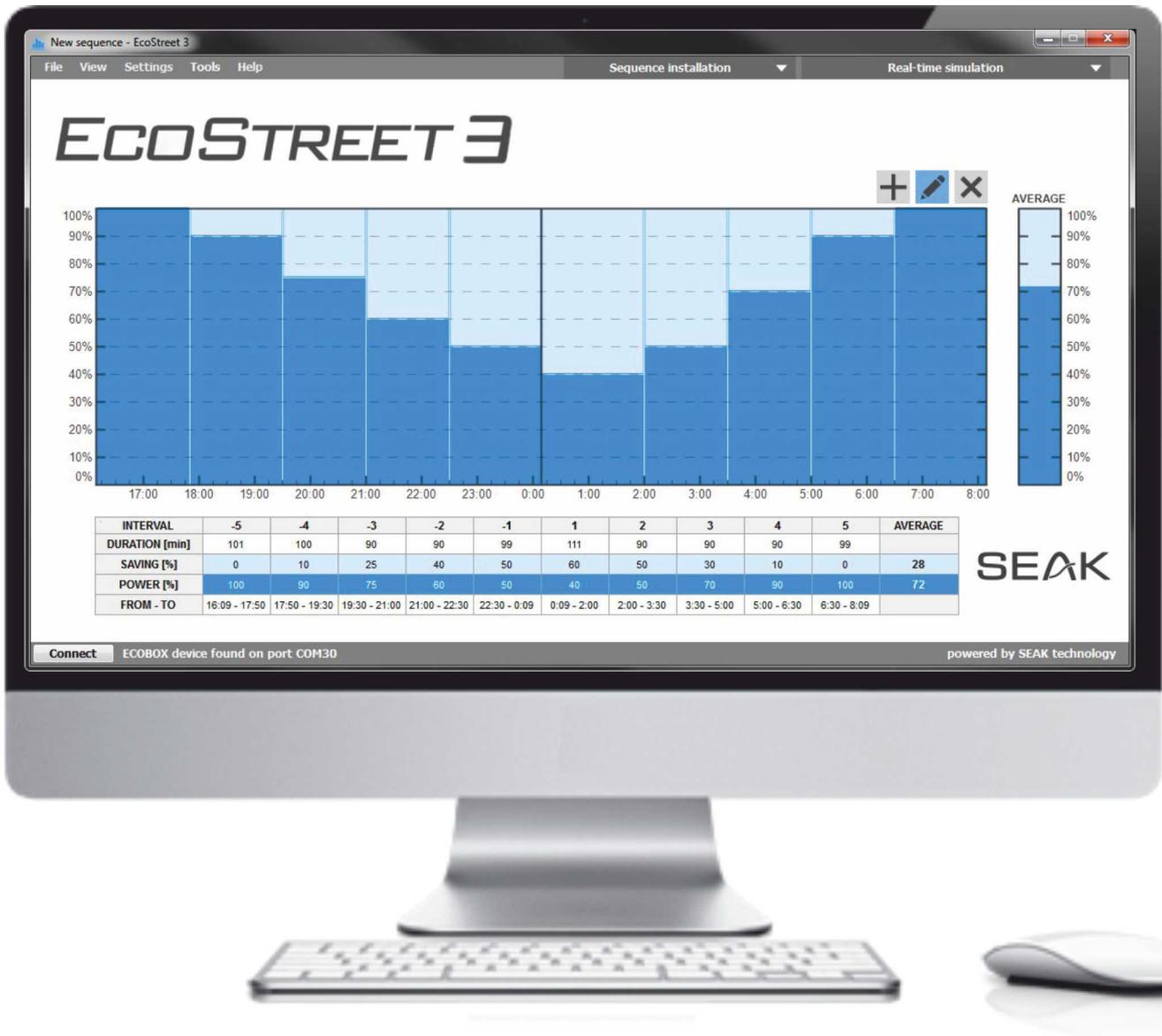


Ecostreet 3 User's Manual



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Introduction

The EcoStreet 3 application is primarily used for creation and installation of energy saving lighting schedules (for lighting installations containing SEAK technology). It offers several useful functions such as the real time simulation of created schedules, setting the constant light output option or setting the max. power output limits (CLO and power output limiting is available in demodulators with firmware versions X5 and higher).

1 Executing the application

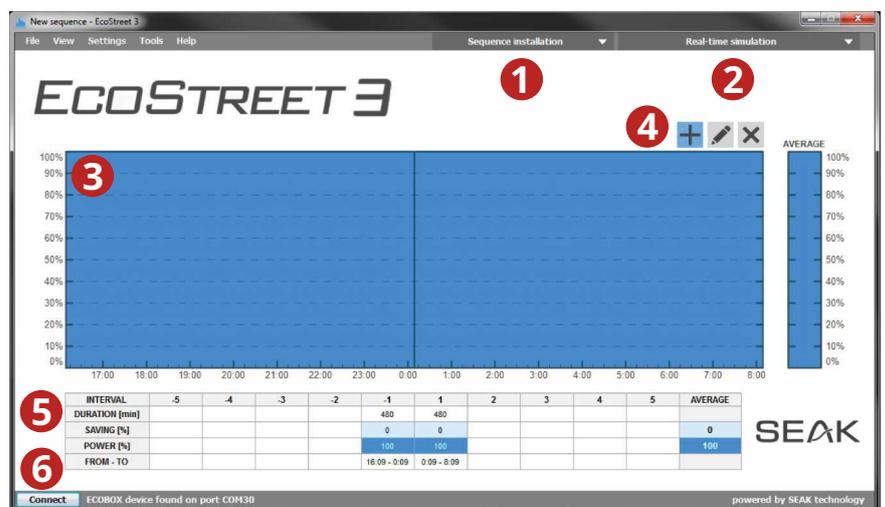
Connect the Ecobox II or Ecobox Mini device to a PC or a notebook. Execute the application and wait until it finishes scanning. Once done, click OK to connect to the device (Pic.1). The application can also run without a connected Ecobox device, but the application`s functions will be limited.



Pic. 1 Ecobox II connected to PC on port COM

2 Main application window

1. Show/hide button for the schedule-sequence installation panel
2. Show/hide button for the schedule-sequence real time simulation panel
3. Panel with lighting schedule
4. Buttons for creating, editing and deleting of the schedule intervals
5. Editable schedule interval table
6. Button for repeat connection to the Ecobox devices



Pic. 2 Main application window EcoStreet 3

3 Choosing the mode of operation

Before we create a new schedule, we must choose the mode of operation in the File tab -> New schedule:

- ✓ Artificial midnight
- ✓ Fixed operation

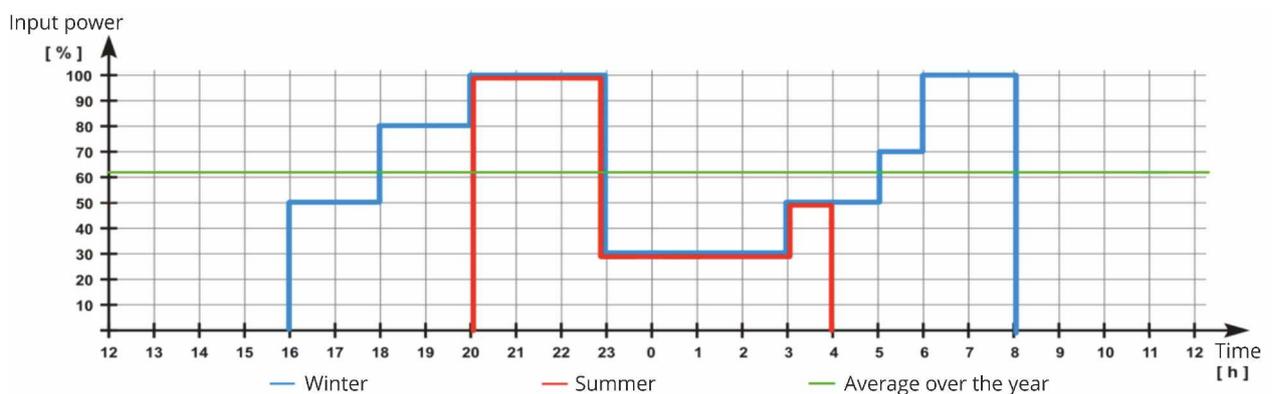
3.1 Artificial midnight mode

This mode is designed for lighting control with consideration of ever changing length of nights through the year. A possible installation in the cabinet or switchbox only requires a dusk/dawn sensor and a contactor. The electronic ballast will adjust its intervals according to the length of time the dusk/dawn sensor turns the lighting on. The first operational time the ballast is running on 100% and is measuring the first operational ON time. Valid operational time the demodulator registers is from 30 minutes to 23 hours and 50 minutes. While the ballast/demodulator is turned on for the first operational time, these instances can occur:

- 1) time is less than 30min - demodulator is not controlling the ballast. The next time it is turned on, the ballast is set to 100% and the time is measured again.
- 2) time is more than 23h 50min - demodulator will save it as the 23h 50min interval.
- 3) time is between 30min and 23h 50min - next operation is controlled by the demodulator's recorded schedule in the artificial night mode.

The middle of the current operation (artificial midnight) is calculated from the last operation interval. Change of the operation interval is done after two consecutive operations where their operational times deviate less than +8 minutes. In the case of power outage during the operation, the operational time will not change, but will be copied from the last operation.

An example on the 3rd picture shows the course of regulation of the same schedule during the winter time (blue color), summer time (red color) and the average power consumption during the year.



Pic. 3 An Example of lighting regulation in the artificial mode during the year

3.2. Fixed operation mode

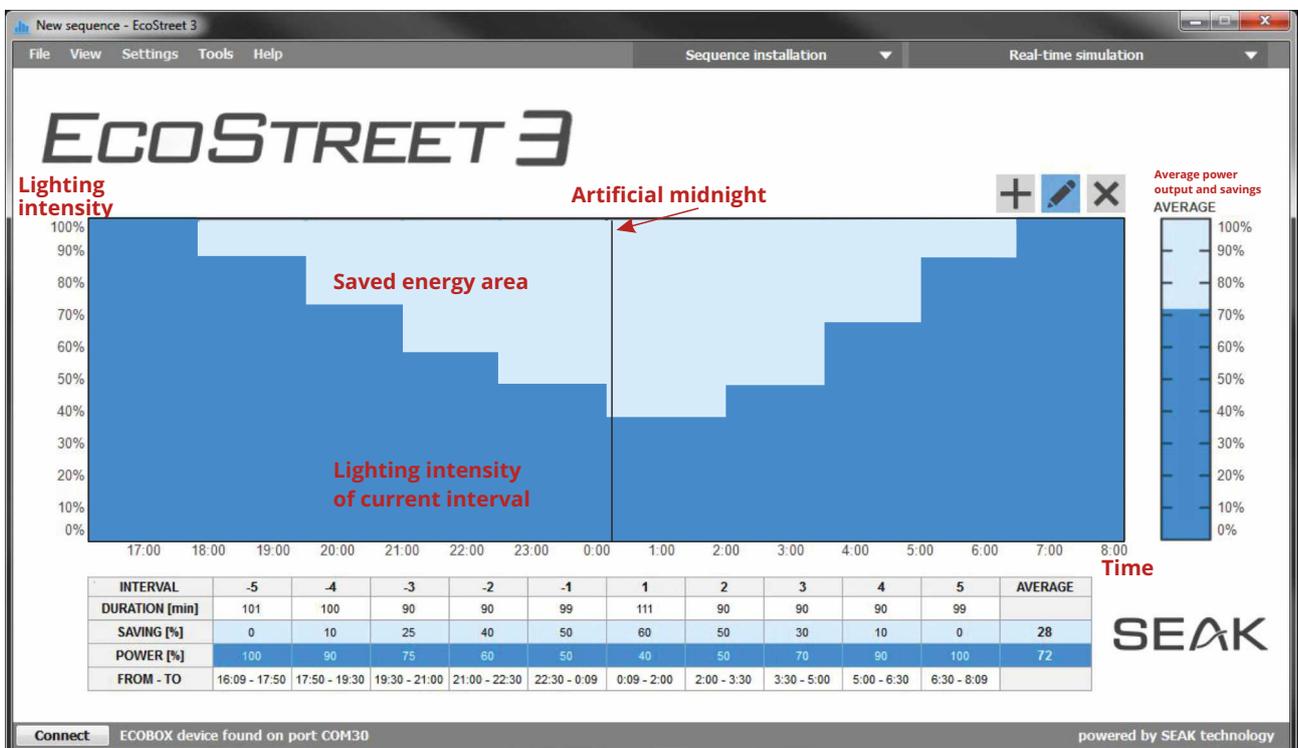
This mode of operation is applied where regulation has fixed intervals and the power to the lighting is switched with a timer switch. When the ballast is turned on, it immediately starts regulating from the 1st interval according to the recorded schedule until it reaches the end of schedule or is turned off. When a power outage occurs or the ballast is simply turned off, the next time it is turned on, regulation starts from the schedule`s 1st interval.

4. Creating, editing and deleting of the intervals

Schedule intervals are made as following:

1. Interval dividing lines are added with the plus button. Possitions of the dividing lines can be edited anytime with the mouse in the pencil button mode.
2. Lighting intensity is edited with the mouse in the pencil button mode. By holding down the left mouse button, the intensity of an interval can be changed smoothly (the amount of saved energy is shown in light blue). Intensity can be also changed by editing the values in the schedule table.
3. Removal of intervals is done by the X button. After clicking, the cursor changes and it is now possible to remove the interval dividing lines.

5 The lighting schedule panel



Pic. 4 Example of artificial midnight schedule

6 The lighting schedule table

It is possible to edit the created schedule by right clicking on the numeric values in the schedule table.

INTERVAL	-5	-4	-3	-2	-1	1	2	3	4	5	AVERAGE
DURATION [min]	101	100	90	90	99	111	90	90	90	99	
SAVING [%]	0	10	25	40	50	60	50	30	10	0	28
POWER [%]	100	90	75	60	50	40	50	70	90	100	72
FROM - TO	16:09 - 17:50	17:50 - 19:30	19:30 - 21:00	21:00 - 22:30	22:30 - 0:09	0:09 - 2:00	2:00 - 3:30	3:30 - 5:00	5:00 - 6:30	6:30 - 8:09	

Pic.5 The schedule table

7 Registration and instalation of a schedule

The application permits instalation of registered schedules only. So if the schedule is registered, we can install it in the luminaire.

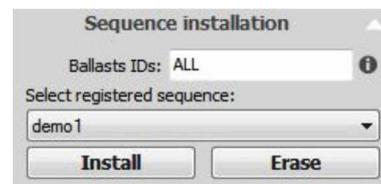
7.1 Registration of a schedule

A created schedule must be registered before any instalation:

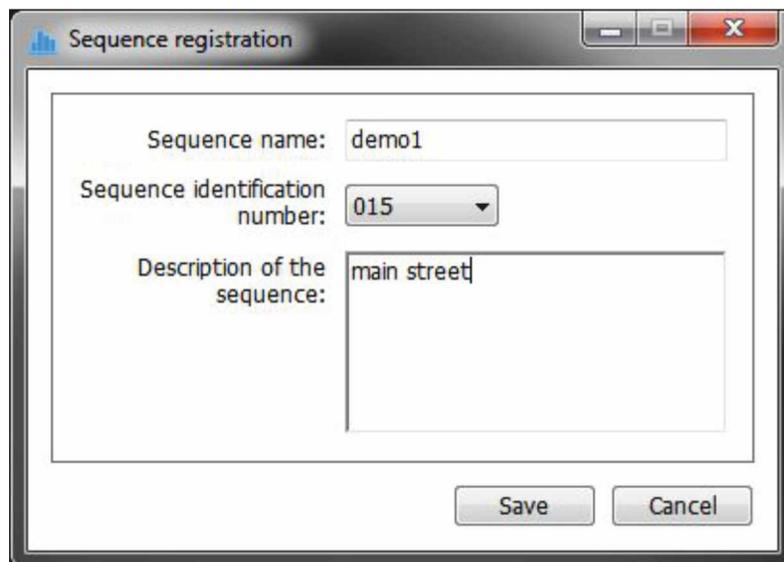
1. In the sequence installation panel, choose the ID`s of luminaires, their range and click on Install. After clicking a registration window pops up (Pic. 6).
2. Enter required values and save the schedule (Pic. 7 a Pic. 8). Instalation of the schedule immidiately begins.



Pic. 6 Schedule registration confirmation



Pic. 7 Schedule instalation panel



Pic. 8 Schedule registration window

The application also allows registration without instalation of the schedule. This function is found in tools -> sequence registration. A sequence registration window pops up and we can continue as in step 2 mentioned earlier. The application allows a max. of 250 registered schedules.

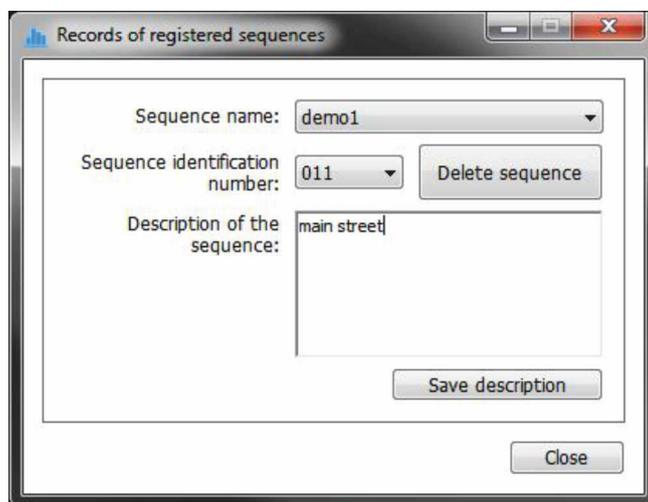
7.2 Instalation of a schedule

A registered schedule can be installed by clicking the Install button. If the instalation is succesfull, the luminaire is switched to stand-by or if this function is not supported, the ballast will be set to the lowest power input of the lamp.

An actual installed schedule can be removed by the delete button. The luminaire will go to 100% after the schedule is deleted.

7.3 List of installed schedules

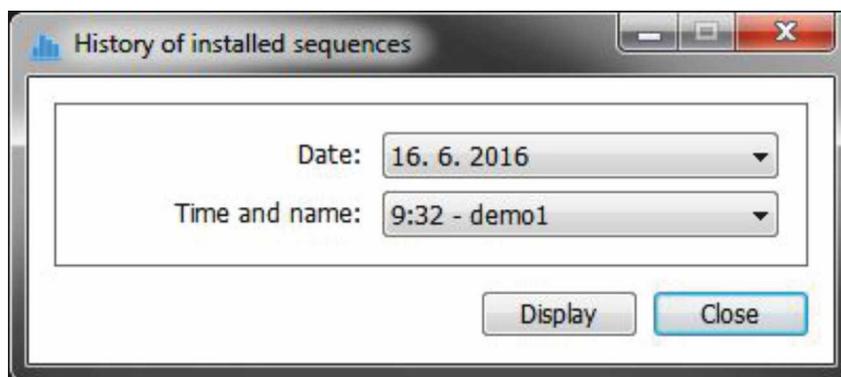
The window with registered schedules can be shown by clicking on tools -> records of registered sequences (Pic. 9). After finding the right schedule, we can add a description or remove an unneeded schedule. If the luminaires are being configured on multiple computers, we can use the import and export functions in the File menu.



Pic. 9 Installed schedules window

7.4 History of installed schedules

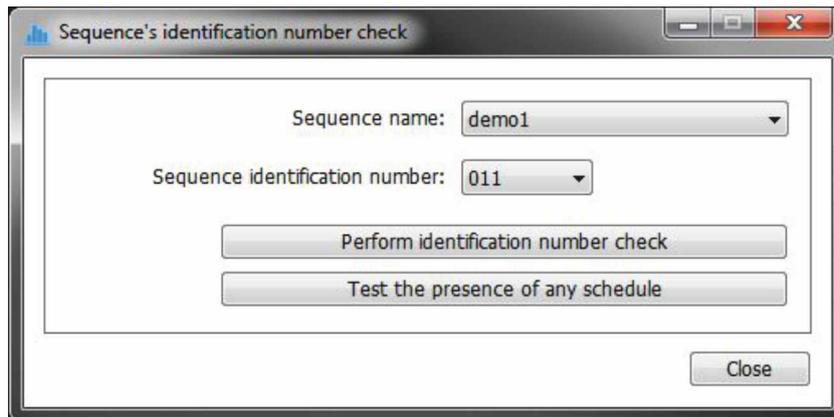
The history of installed schedules and their details can be brought up from the tools tab. (Pic. 10)



Pic. 10 History of installed sequences

7.5 Checking of the schedule`s ID

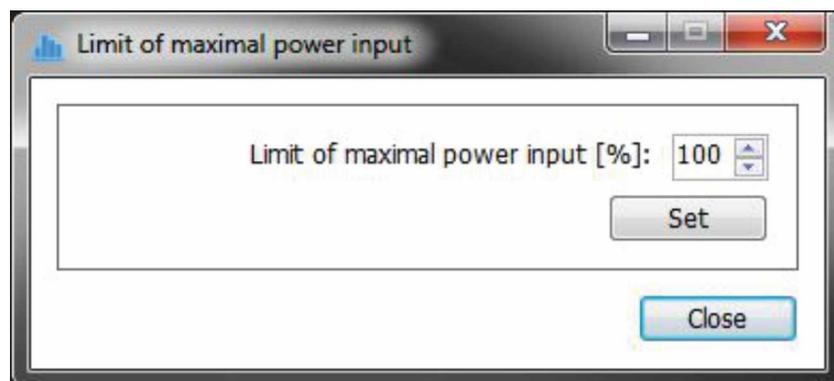
The application offers a way to check the installed schedule in the luminaire/demodulator. This function is found in tools -> sequence`s identification number check (Pic. 11). Choose the schedule to test and then run the schedule ID test. The lamp will react by turning off - going to stand-by (or if no stand-by function is present, dimms to lowest value) in case the right schedule is installed. If the tested schedule is not present, the lamp`s light intensity is without change. If it`s not clear if the lamp actually has a schedule recorded, clicking on the Test the presence of any schedule button will give us the answer. If the schedule is present, the lamp will go to stand-by or dimm low.



Pic. 11 Sequence`s identification number check window

8 Maximum power output limitation

This function allows to set the max. power output of the ballast between 50 to 100%. To use this function, click on tools -> limit of maximum power input. By changing the value and clicking the set button, all lamps connected to the ecobox device will change their max. power output (Pic. 12)

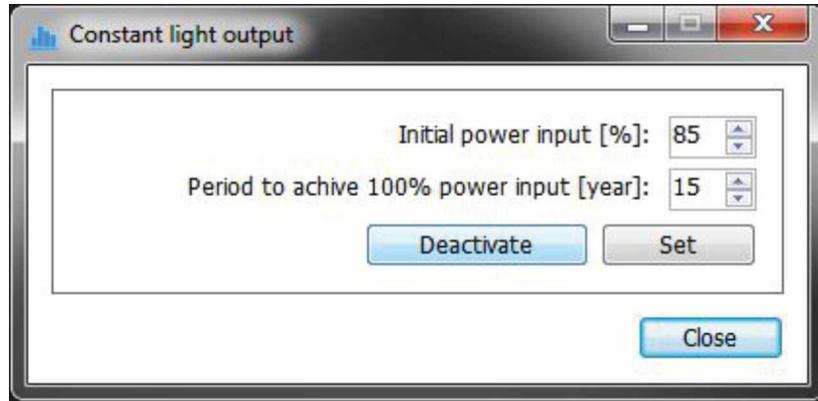


Pic. 12 Limit of maximum power output

A luminaire with a 50W ballast will be set to 50% of it`s maximum power output, so when a command to change the intensity to 100% is issued, the ballast`s power output will be 25W, if a 50% intensity command is sent, ballast will output 12,5W.

9 Constant light output

The constant light output function keeps the light intensity even despite aging of the light sources, whose light output will decrease over time. To use this function, click on tools -> constant light output (Pic.13).

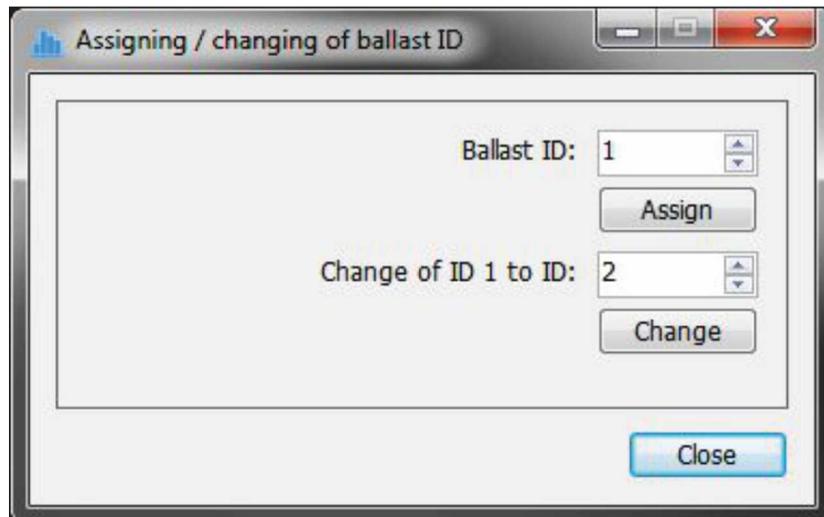


Pic. 13 Constant light output

The setting of CLO consists of writing the initial power output and the number of years the initial output reaches 100% to the ballast/demodulator firmware. At the first operation cycle, the power output is limited to the set initial value and in the following operation cycles the limit will slowly ramp up, thus eliminating the lost light output of the luminaire. 100% will be reached after the set amount of time has passed. 1 operation cycle is meant as 1 day of year and 365 operation cycles are meant as 1 year. In case the limit of maximum power output function is set, the CLO function takes that limit as 100% power output. By clicking on the Set button, the function will be activated in the connected luminaire. Clicking on the Deactivate will turn the function off.

10 Adding/changing of lamp`s ID

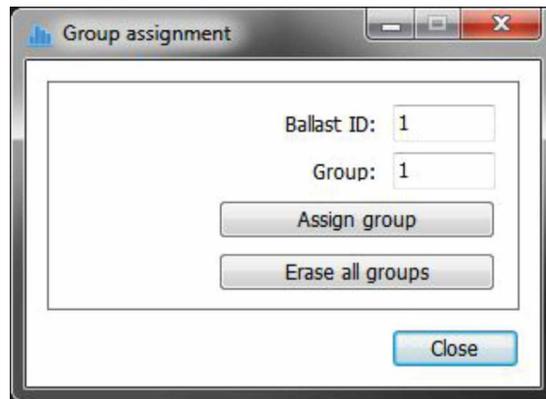
Each luminaire fitted with Seak regulation should have a unique identification number (ID). To add or change an ID on a lamp, click on tools -> assigning/changing of ballast ID (Pic.14). Clicking on the Assign button, the shown number will be transferred as a new ID of the connected luminaire(s). If not already assigned in factory, the demodulator`s ID is set to 0. With the Change button, it is possible to change the known ID of the connected luminaire to another number. It is not recommended to have 2 or more equal IDs on a single power line.



Pic. 14 Assigning/changing of ballast ID

11 Group assignment

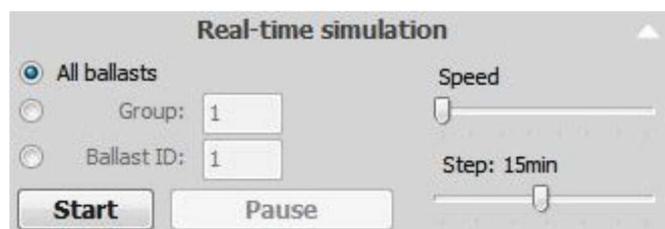
Thanks to the application`s group assignment function, we can assign individual luminaires into groups (e.g. ID 1 to 20 goes to the main street, ID21 to 58 town square, etc.). The function can be found in the tools -> group assignment (Pic.15). Insert the ID of luminaire, number of group we want the luminaire to be in and click on Assign group button. By clicking on the Erase all groups button, we erase all existing groups the lamp is assigned to. One luminaire can be assigned to as many as 16 groups. These groups can be then controlled from the application with the help of the LUMiMASTER control unit.



Pic. 15 Group assignment

12 Real time simulation

For presentation purposes a created schedule can be run in simulation mode to observe the change of light intensity of the luminaire according to the different intensity set in the schedule. To show the simulation panel, click on the real-time simulation button in the main application window.



Pic. 16 Real-time simulation panel

Simulation in real-time can be modified by changing these values:

1. *Speed* - choice of speed the simulation is running at, 8 fast-forward steps to choose from
2. *Step* - length of one step in minutes
3. *Choice of controlled luminaires* - all controlled, control a group, control an ID

If we pause and change the intensity of lighting in the step the simulation was currently running, the application will execute the change immediately and also change the intensity in the connected luminaire(s). By pressing the space key on the keyboard while the simulation is paused, the application will send a change intensity command with the value of intensity from the step the simulation was paused in.