Sensor's manual

Mini300 LED gen2

1. Introduction. 2
2. Installation of PC Bluetooth module. 2
3. Quick set up of few luminaires. 3
4. Mini300 LED gen2 PC application. 4
4.1. Scanning. 4
4.2. Main screen. 4
4.3. Luminaire status screen. 5
4.4. Set name status screen. 6
4.5. Set data and time screen. 6
4.6. Setup luminaire screen. 6
4.6.1. Step 1: Work mode. 7
4.6.2. Step 2: FIX setting. 7
4.6.3. Step 2: PIR only setting. 7
4.6.4. Step 2: DLS only setting. 8
4.6.5. Step 2: DLS+PIR setting. 8
4.6.6. Step 2: Scheduler setting. 8
4.6.6.1. Step 2: Scheduler setting – add time frame. 9
4.7. Send configuration. 9
4.8. Advanced tools. 10
4.8.1. Addressing procedure for Master – Slave. 10
4.8.2. Driver information. 10
5. Mini300 LED gen2 smartphone application 11
5.1. Scanning 11
5.2. Connect to luminaires 11
5.3. Main screen 12
6. FAQ. 16

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1. *Introduction.*

Build in Mini300 LED gen2 sensor offers possibility to save energy by light output auto adjustment base on the movement uder luminaire and/or ambient light and/or day of week and/or time of a day. Sensor's configuration depens on purchased sensor and can contain following, main modules:

	MDU	PH	MDU PH
Movement detector module – PIR (Passive Infra Red)	X		X
Day Light Sensor module – DLS		X	X
Bluetooth Communication module – BT	X	X	X

Each sensor has a predefined, factory settings which allowes luminaire immidielty operation after installation.
For sensor's parameters customization PC or smartphone application can be use.

! *This product has the option to communicate via mobile communication technology. Take careful attention to signs, instructions and safety rules, and obey these. This includes restrictions on the use of mobile phones or laptops in defined safety zones around the dispensers. Commissioning should only to be performed by certified professionals in strict accordance of local regulations and site rules.*

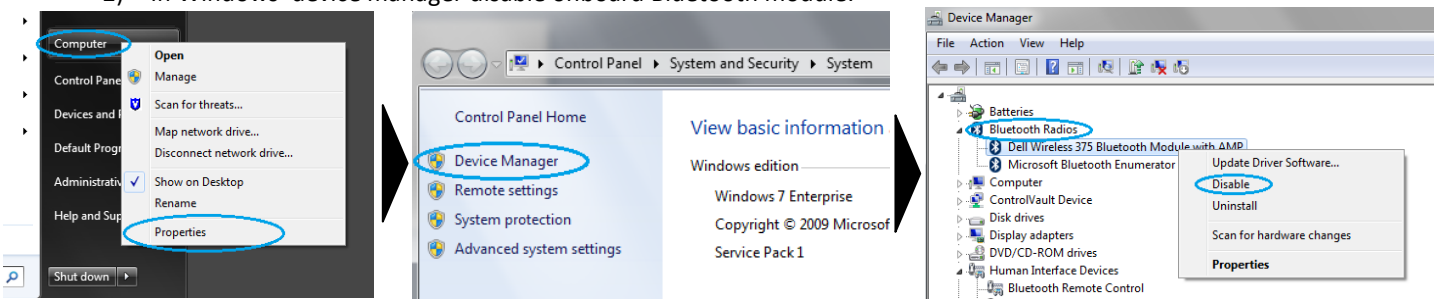
2. *Installation of PC Bluetooth module.*

PC application works with the PC / laptops with Microsoft, Broadcom, Toshiba Bluetooth standards. It can happen that Bluetooth standard in user PC / laptop is not supported then external USB Bluetooth is required.

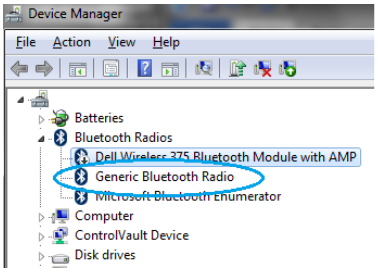
! *Preffered USB Bluetooth is one utiliazing **Cambridge Silicon Radio** chip.*

To install external USB Bluetooth please follow the procedure:

1) Disconnect already connected external USB Bluetooth modules
2) In Windows' device manager disable onboard Bluetooth module:



3) Re-connect external Bluetooth module and wait till it is visible in system (see device manager):

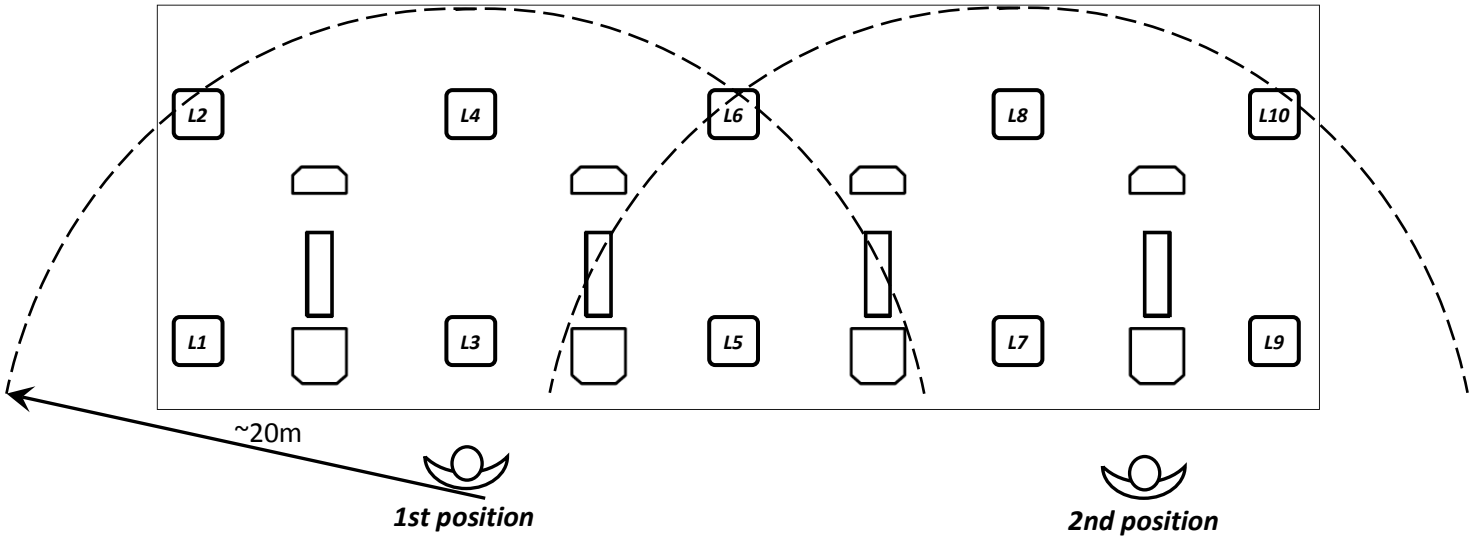


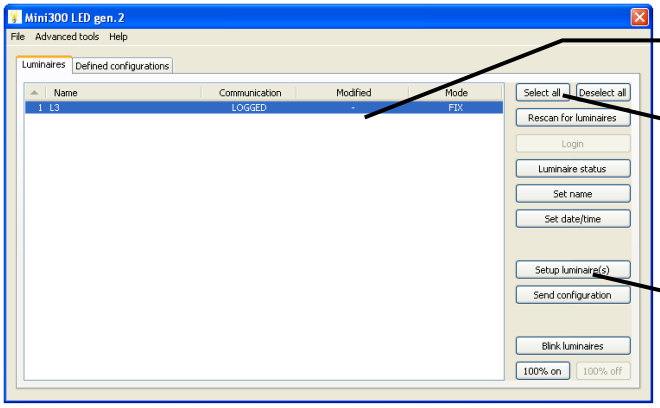
4) Do not search for Bletooth devices manually (as you normally would for a phone) – Mini 300 LED gen2 application does this automatically.
5) Start the Mini300 LED gen2 application.

3. Quick set up of few luminaires.

For quick set up of luminaires:

a) Start scanning lumianires starting from one side (1st position)

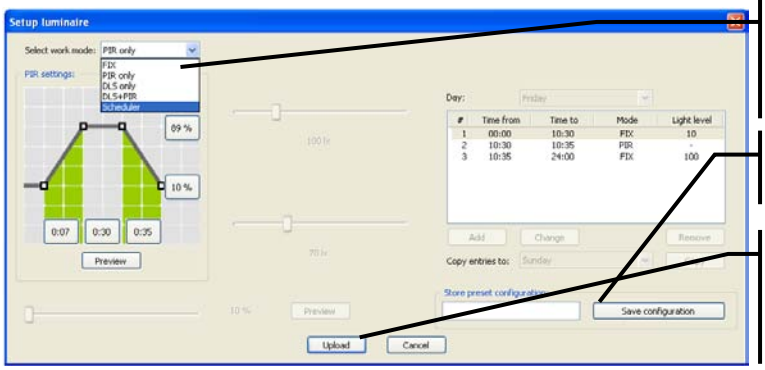




In 1st position scanned luminaire will apear on the list:

Select them all.

Go to *Setup lumianire(s).*

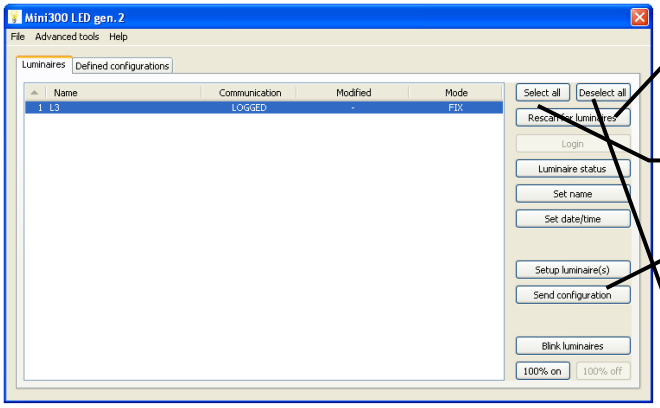


Step 1: Select the right work mode.
Step 2: make an appropriate setting (see chapters 5.6.1. – 5.6.6)

Save configuration.

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

b) Go close to the next group of luminaires (2nd position).



Rescan luminaire(s). New luminaires will appera on the list.

Select them all.

Send alredy saved configuration.

Deselect all luminaires.

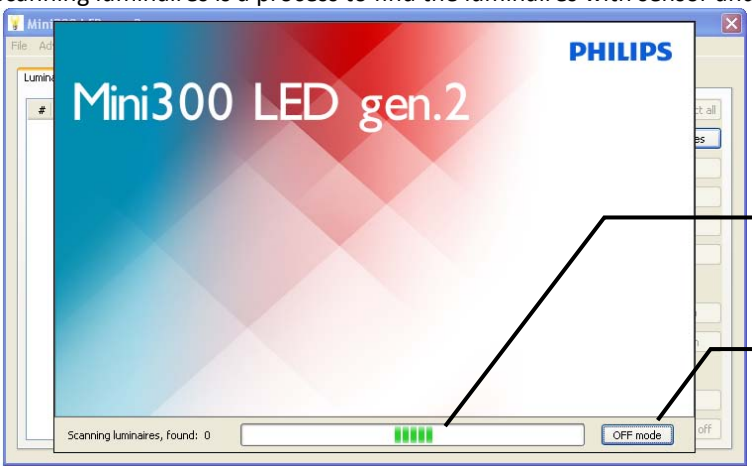
c) If needed go close to the next group of luminaires.

4. Mini300 LED gen2 PC application.

Mini300 LED gen2 PC application allows customization of parameters of available modules. Application can be downloaded from: www.

4.1. Scanning.

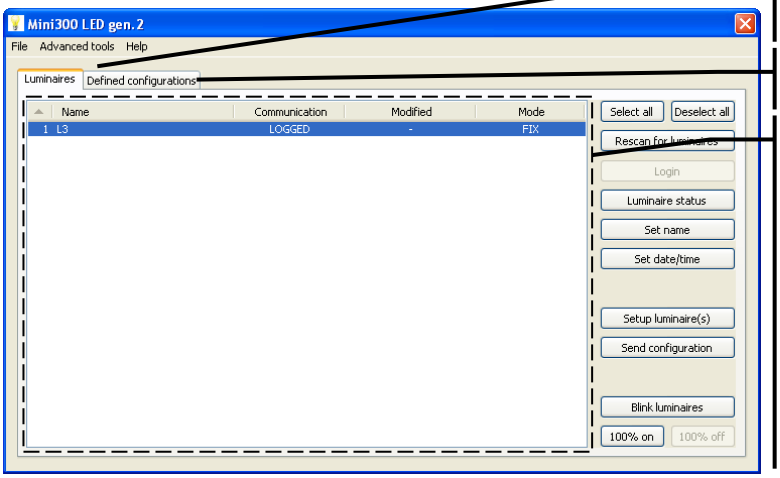
Scanning luminaires is a process to find the luminaires with sensor and runns automaticly after application running.



Scanning luminaires progress. Scanning time depends on Bluetooth device, number of luminaires in surroundings.

Skip scanning luminaires and work in *OFF mode*, allowing to prepare configuration being not connected to any luminaire.

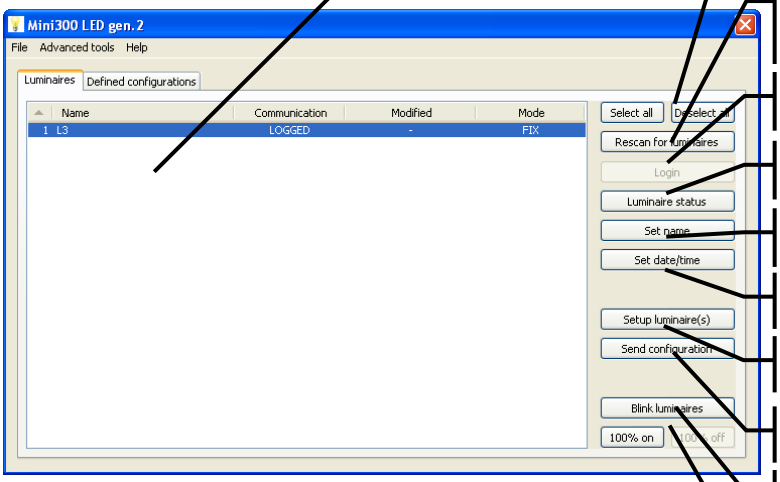
4.2. Main screen.



Menu *File*, menu *Advanced tools* (see chapter 3.8.), menu *Help*.

Allows define and manage defined configurations.

List of scanned luminaires:
Name – default or set name.
Communication – status of connection:
LOGGED – logged to luminaire, action with luminaire is allowed.
PASSWORD – communicated with luminaire but password is required.
ERROR – some errors with communication due to distance,
Modify – day/time of last modification.
Mode – current luminaire mode.



Select luminaires for further actions. Luminaire blinks 3 times after selection for and waves after for better recognition which luminiare(s) is connected and ready for further asctions.

Select all / deselect all luminaires from the list in one click or select chosen luminaires from the list by clicking on each of them.

Rescan luminaires to program others luminaires on site. Please move under next group of luminaires.

Login to luminaire . Active when password is set.

Luminaires status will be presented (see chapter 3.3.).

Luminaires name will be set (see chapter 3.4.).

Luminaires data and time will be set (see chapter 3.5.).

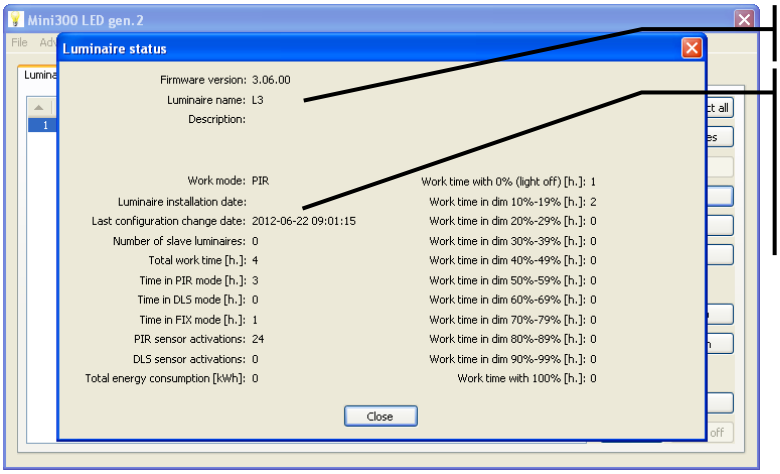
Setup luminaire's work parameters (see chapter 3.6.).

Send defined configuration to luminaires (see chapter 3.7.).

Blink selected luminaires.

Immediately switch 100% of all luminaires.

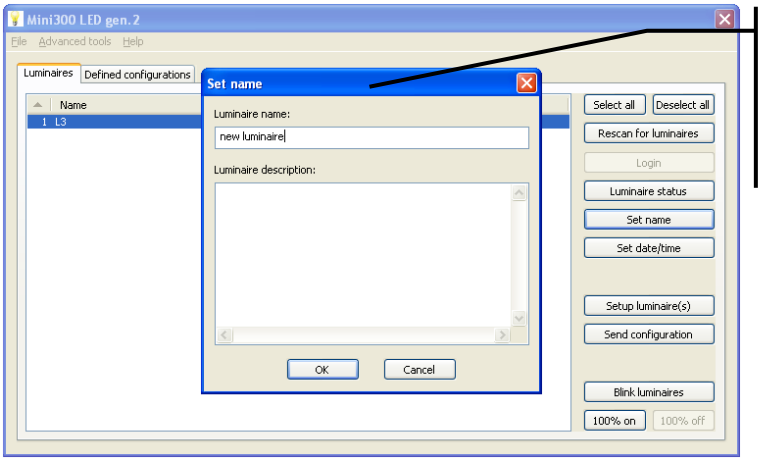
4.3. Luminaire status screen.



Basic information about firmaware and luminaire.

Luminaire installation date is set automatically after 4 hr of continues operation.
Number of slaves luminaires connected to this luminaire – is used in Master – Slave installation.

4.4. Set name status screen.

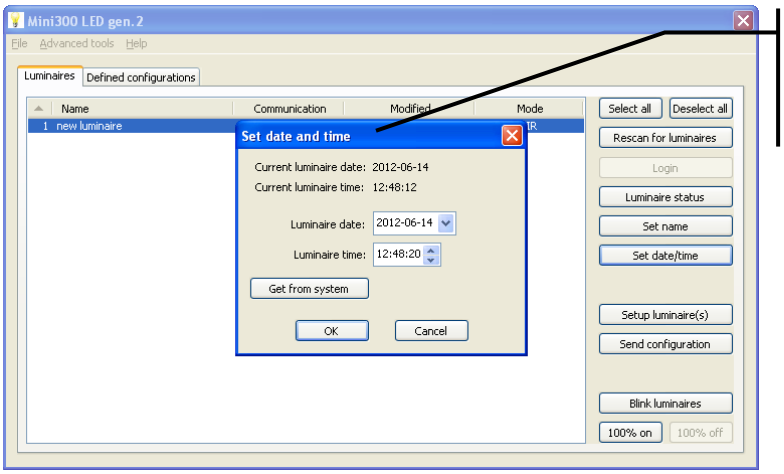


Unique name and description can be set for each luminaire.

There are some strategies of naming eg.:

1) Each luminaire can have a own name *L1, L2, L3, …*
2) Some luminaires can be named the same eg. *Sym Main Path, Ass left, …*

4.5. Set data and time screen.



Data and time can be set or get from PC/Laptop.

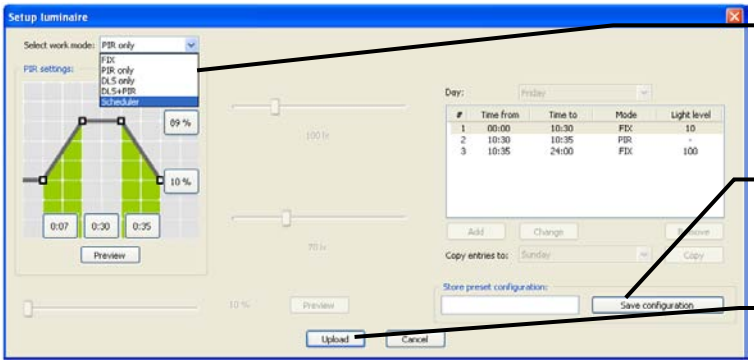
! Right data are necessary for proper work of luminaire in Scheduler mode.

4.6. Setup luminaire screen.

There are several settings and options which allow to customize the luminaire. Available Work mode depends on choosen luminaire's configuration (see table below).

Work mode	Description	MDU	PH	MDU PH
FIX	Constant light output from luminaire is kept.	X	X	X
PIR only	Light output depends on movement.	X		X
DLS only	Light level is kept on required level.		X	X
DLS+PIR	Luminaire goes ON in the evening – act base on movement – goes OFF in the morning.		X	X
Scheduler	Different mode can be set for each hour of each day.	X	X	X

4.6.1. Step 1: Work mode.

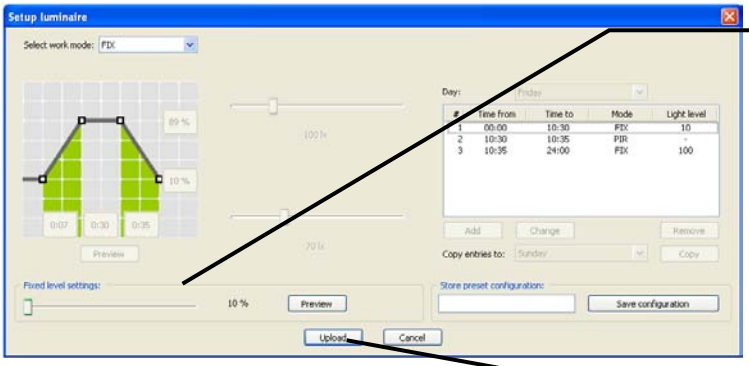


Step 1: Please select the right work mode.
Step 2: Please follow one of steps described in chapters 4.6.2. – 4.6.6. (depending on chosen work mode).

Configuration can be save in application memory.

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.2. Step 2: FIX setting.

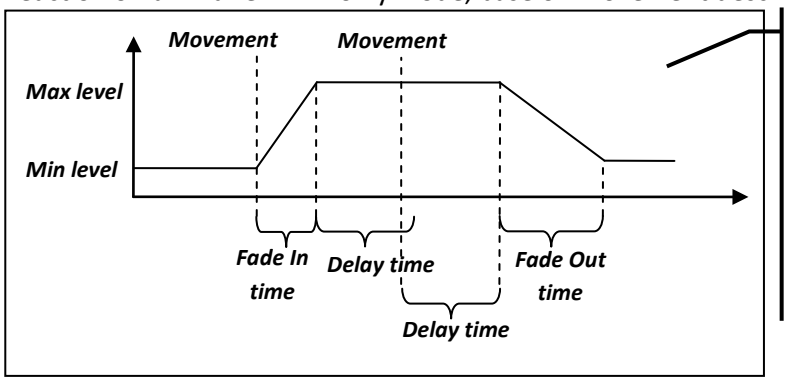


Select work mode as *FIX.*
Please adjust light output from luminaire. Percentage of nominal luminaire light output will be kept.
Nominal luminaire light output = 100%.
Preview bottom allows to see the results before uploading to selected luminaire (s).
Parameters of others work modes can not be adjusted (are grayed out).
If all parameters are adjusted please *Upload* them to selected luminaire(s).

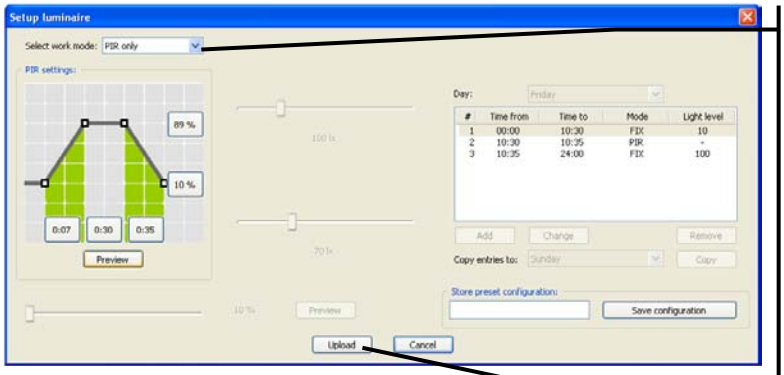
Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.3. Step 2: PIR only setting.

Reaction of luminaire in PIR only mode, base on movement describes picture below.



Max level – light level in % reach by movement detection.
Min level – light level in % reach after delay time.
Delay time – time when Max level is kept after movement detection.
Fade In time – time when light goes from Min to Max level.
Fade out time – time when light goes from Max to Min level.
Movement – movement detected by lumianire.
When during Delay time next movement is detected Delay time is started.

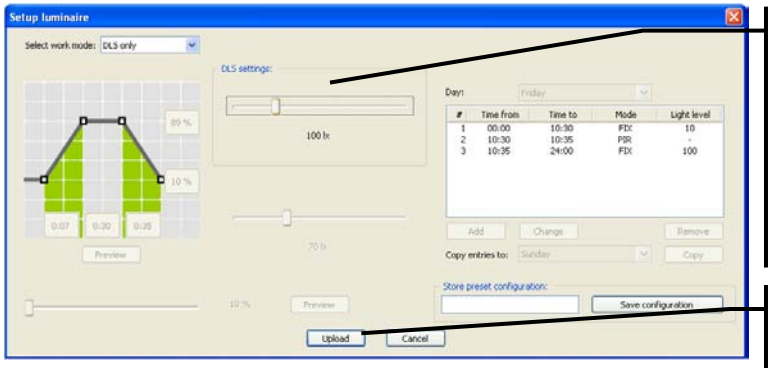


Select work mode as PIR *only.*
When the work mode *PIR only* is selected please adjust parameters:
Fade In, Delay, Fade Out, Max level, Min level by clicking on the icons.
Preview bottom allows to see the results before uploading to selected luminaire (s).
Parameters of others work modes can not be adjusted (are grayed out).
If all parameters are adjusted please *Upload* them to selected luminaire(s).

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.4. Step 2: DLS only setting.

DLS only mode allows to self adjust light output from luminaire according to measured ambient light level. Luminaire will control the light level to keep set *DLS settings.*

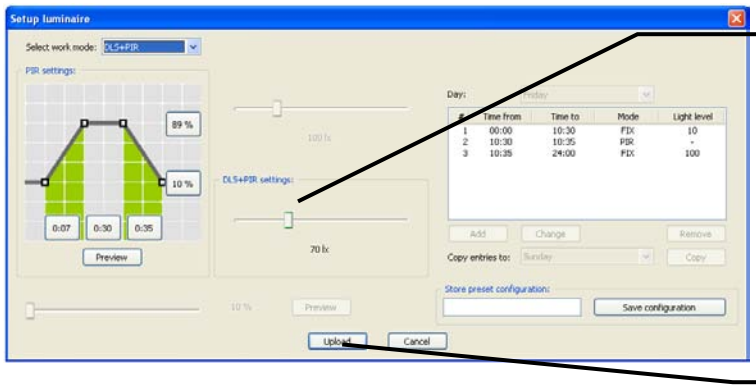


Select work mode as *DLS only.*
Use slide bar to set the lux level which has to be kept by luminaire.
Parameters of others work modes can not be adjusted (are grayed out).
If all parameters are adjusted please *Upload* them to selected luminaire(s).

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.5. Step 2: DLS+PIR setting.

DLS+PIR mode allows to switch ON the light when the ambient light is lower than set, after that luminaire will act base on movement detection (PIR) according to setting from PIR setting section. When the ambient light is higher than set light will be automatically switched OFF. Despite luminires stays completely dimmed down luminaire is still live. In this mode there is no need to switch ON/OFF installation by separate device.

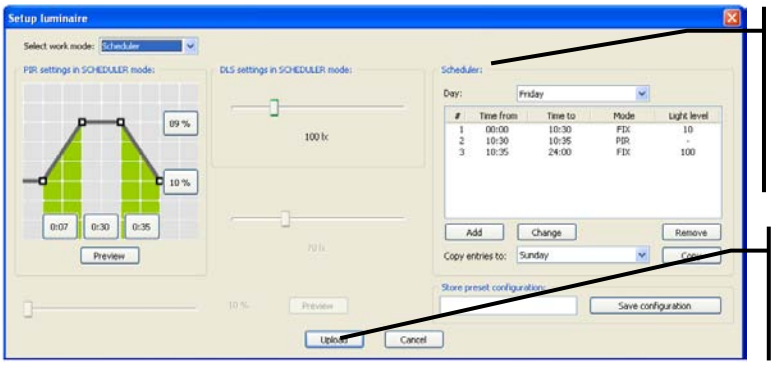


For DLS setting use slide bar to set the lux level which has to be kept by luminaire.
For PIR setting set parameters in *PIR setting* section (see chapter 6.1.3.).
Parameters of others work modes can not be adjusted (are grayed out).
If all parameters are adjusted please *Upload* them to selected luminaire(s).

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.6. Step 2: Scheduler setting.

Scheduler mode allows to set different work modes for different time frame and different day. It is possible to switch OFF luminaire in some hours during the day, to set FIX mode in some hours during the day, to switch OFF luminaire for chosen days.

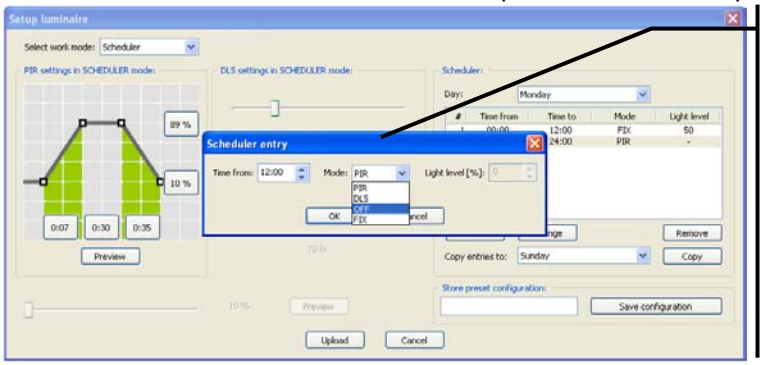


Day – chose the day to which setting will be done.
Add – add the time frame to the table (see chapter 3.6.6.1.).
Change – change the setting for selected time frame.
Remove – remove selected time frame.
Copy entries to – copy current setting to other days.

Upload to luminaire changed/new parameters. Change will be effective when you go to main screen and deselect all luminaires (log out from luminaire(s)).

4.6.6.1. Step 2: Scheduler setting – add time frame.

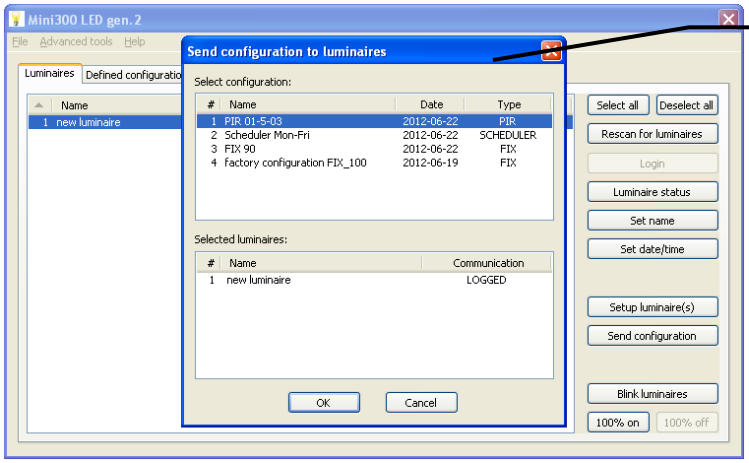
Allows to define new time frame. There is possible to define up to 8 time frames.



Time from – define start hr of new time frame. If needed others time frames will adjust automatically.
Mode – chose mode for time frame.
Light level [%]– chose light level for FIX mode.
Adjust PIR and DLS setting in *Setup luminaire* window. Parameters set for PIR and DLS stays the same for all time frames for all days. *Light level [%]* can be different for each time frame definition.

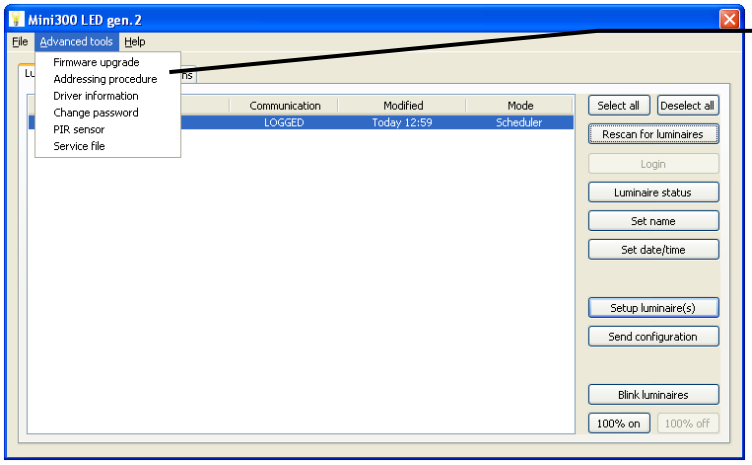
4.7. Send configuration.

Allow to send pre defined configurations to selected lumianire(s). With this option luminaires programming can be speeded up.



Chose configuration which will be sent to selected luminaires.

4.8. Advanced tools.

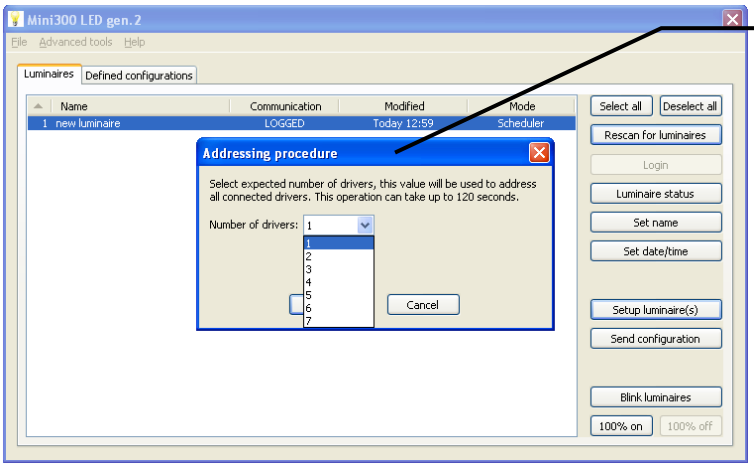


Advanced tools give unique options like:

- *Firmware upgrade* – allows to download the new version of firmware (software in sensor).
- *Addresing procedure* – used in Master-slave configuration (see chapter 3.8.1.).
- *Driver information* – allows to check all parameters build in driver (see chapter 3.8.2).
- *Change password* – allows to change passworn of selected luminaire(s).
- *Service file* – allows to download and save in file all parameters and data from all main luminaire's components. Due to data quantity it can takes about one minute. This file should be send to service in case of any complain.

4.8.1. Addressing procedure for Master – Slave.

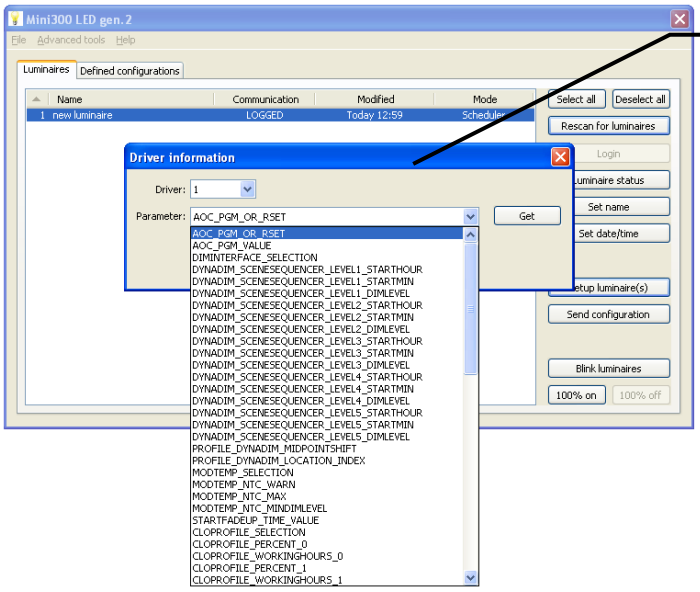
This option has to be used when few (minimum one, maximum seven) slaves luminires (without the sensor) are connected to one master luminaire (with senor). Slaves luminaires reaction will be the same like the master one.



Chose how many slaves luminaires are connected to the master. Application will perform addressing procedure automatically.

4.8.2. Driver information.

This option reads the data from driver. This option is dedicated for trained service.



Driver – in case of stand alone luminaire it is "1". In case of Mastar-Slave configuration chose the driver(luminaire) from which the data will be read out.

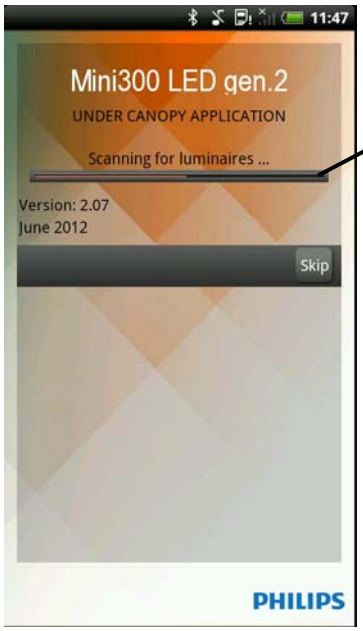
5. *Mini300 LED gen2 smartphone application*

Mini300 LED gen2 smartphone application allows customization of luminaire's parameters. Requirements for application:

- Smartphone with Android version at least 3.6
- Resolution: 320x480 or 480x800.

The smartphone application has some limitations when compared to the PC one – it does not allow to execute 'advanced' operations on the luminaire like: firmware update, store service file, execute addressing procedure for master/slave configuration. To execute those one must use the PC application.

5.1. Scanning

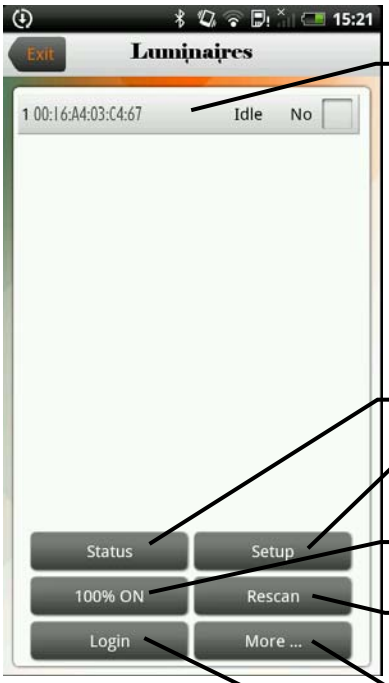


Scanning starts automatically upon each application launch. One may skip the scan by taping on the "Skip" button. Note: the list of luminaires will be empty.

5.2. Connect to luminaires

Unlike the PC application to be able to make any interaction with the luminaire one needs to connect to them by taping on an empty rectangle on the right of luminaires name (next to "No"), which will invoke Bluetooth' pairing process. Please observe the screen and allow pairing request from the luminaire. After successful pairing the selected luminaire's name will be highlighted in green an a green check-mark will be visible.

5.3. Main screen



List of scanned luminaires:
Name – default or set name.
Communication – status of connection:
LOGGED – logged to luminaire, action with luminaire is allowed.
PASSWORD – communicated with luminaire but password is required.
ERROR – some errors with communication due to distance,

Select luminaires for further actions. Luminaire blinks 3 times after selection for and waves after for better recognition which luminiare(s) is connected and ready for further actions.

Luminaires status will be presented (see chapter 5.4.).

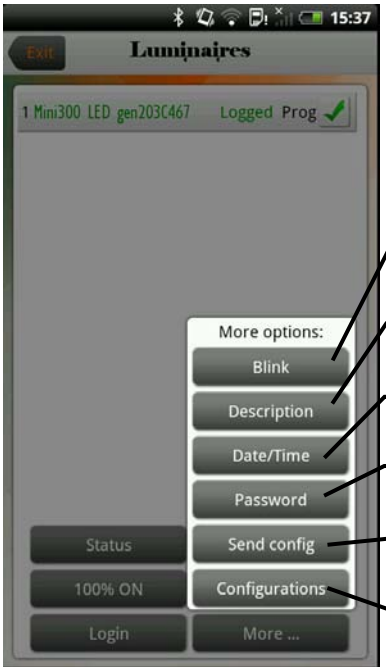
Setup luminaire's work parameters (see chapter 5.5.).

Immediately switch 100% of all luminaires.

Rescan luminaires to program others luminaires on site. Please move under next group of luminaires.

Tap for more options.

Login to luminaire . Active when password is set.



Blink selected luminaire(s).

Luminaire(s) name will be set.

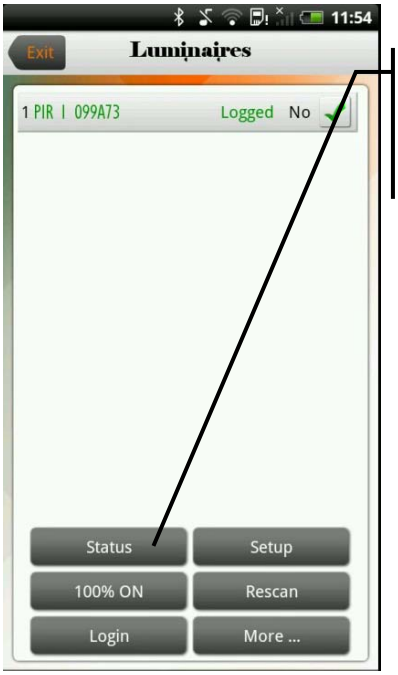
Luminaire(s) data and time will be set.

Luminaire(s) password will be set.

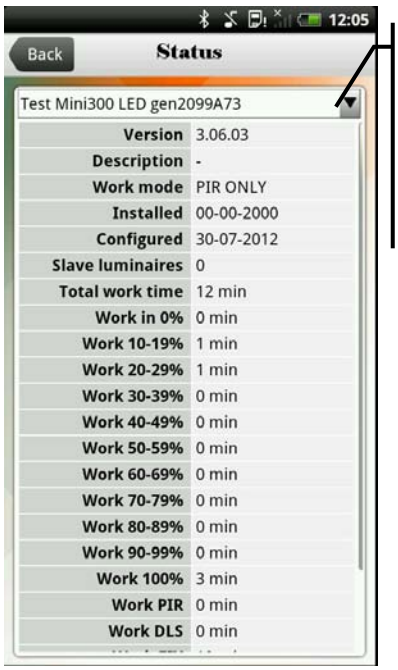
Send defined configuration to luminaires (see chapter 5.7).

Define and manage configurations (see chapter 5.6).

5.4. Luminaire status

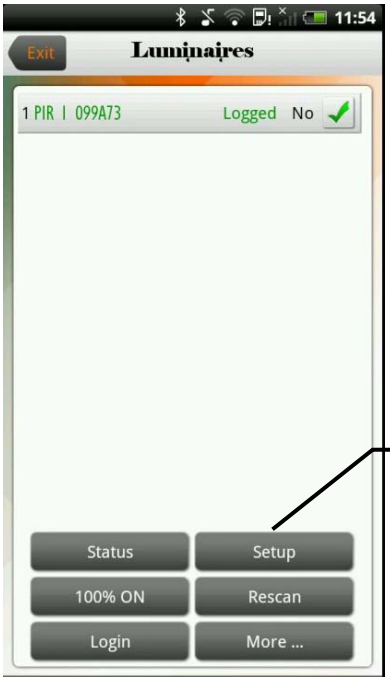


To see luminaires status one has to tap on a “Status” button near the bottom of the screen.



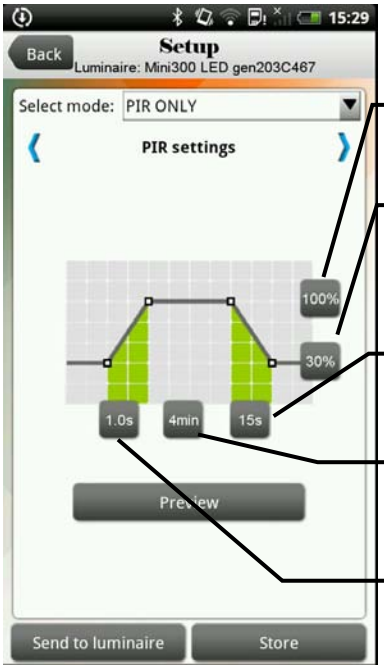
If there’re multiple luminaires selected it’s possible to see the statuses from all of them – just select the desired luminaire in the drop-down list.

5.5. Setup luminaire(s)



To change the work mode one has to tap on the “Setup” button.

Select the desired mode form the drop-down list.



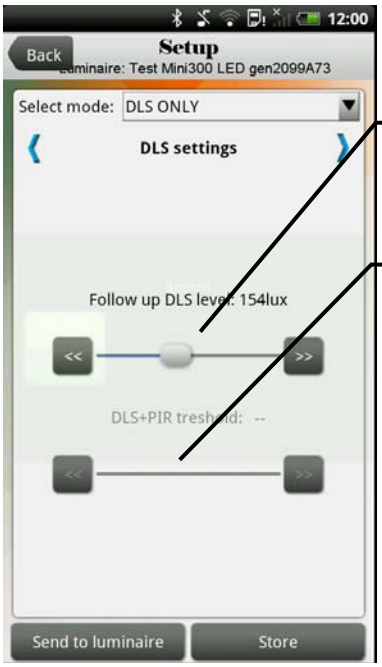
Max level – light level in % reach by movement

Min level – light level in % reach after delay time.

Fade out time – time when light goes from Max to Min

Delay time – time when Max level is kept after

Fade In time – time when light goes from Min to

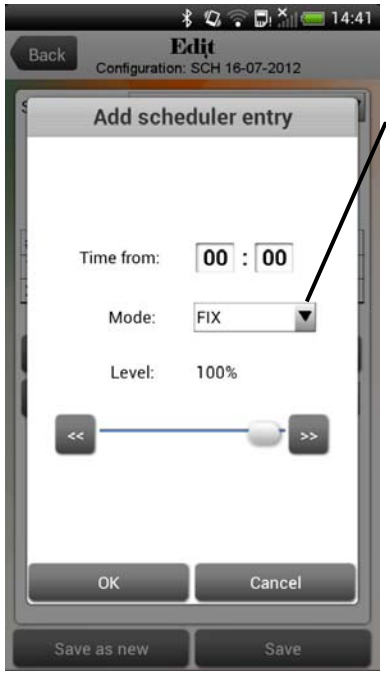


Use slider bar to set the lux level which has to be kept by luminaire.

Use slide bar to set the lux level which will trigger the luminaire to power on and automatically switch to PIR mode.
PIR settings need to be set in *PIR setting* section, which is available after scrolling the screen via blue arrows above.

Select day of week you wish to modify.

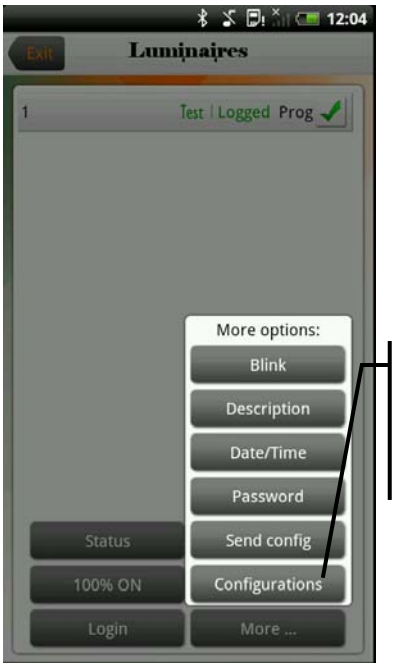
To add scheduler entry tap “Add”,
to edit existing one tap “Edit”.
“Remove” will delete highlighted entry.



Only FIX value is editable directly in “Add scheduler entry” window – other values have to be set in corresponding screens (scroll between screens via blue arrows)

5.6. Prepare configuration

It is possible to prepare configurations in ’off-line’ mode (without connection to any luminaire).



Already prepared configurations are visible after taping on “Configurations”

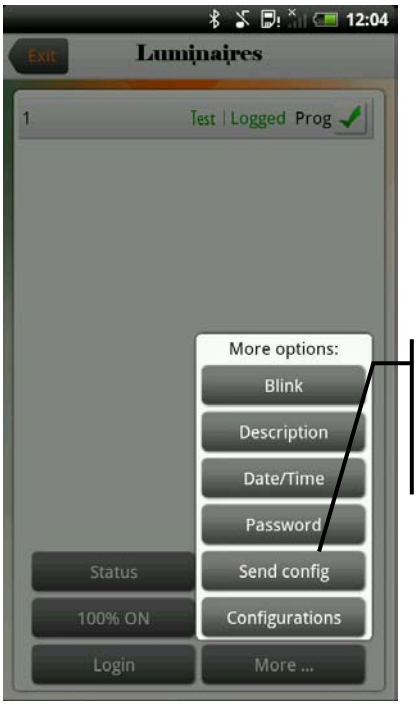
To add a new configuration tap on “Add”.

To edit existing one tap on “Edit”.

To remove tap “Remove”.

Note: It’s impossible to remove the configuration labeled “Factory FIX 100%”.

5.7. Send stored configurations



Select “Send config.” To send already prepared configurations.

Select the configuration you want to send.

Select the luminaires you want to receive the configuration chosen in previous step.

6. FAQ.

Frequently asked question list consists questions which can asked during setting and using a luminaire with sensor.

6.1. Is the orientation of the the luminaire important?

Yes it's important, especially if the luminaire is equipped with movement detection sensor and for asymmetric light distribution (please find details in Installation Manual).

6.2. How we can change light output? (change luminaire settings).

For luminaire with sensor light output can be changed by appropriate settings of:

a. Light level in FIX mode (chose the luminaire (s) → setup →chose the FIX mode → set in % light output.
b. Light level in PIR mode (chose the luminaire (s) → setup →chose the PIR mode → set in % light output for max level and min level.

6.3. Which mode of sensor is most energy saving?

DLS+PIR is the most efficient. In this mode luminaire will switch ON when light level is lower than required (in the evening), after that will work in PIR mode and will switch OFF when light level is higher than required.

6.4. Why I can't set the PIR or DLS?

There are sensors in the luminaire in following configurations:

a. PIR + DLS + BT (movement detection + light regulation + communication Bluetooth module; characteristic used in designation: MDU PH).
b. PIR +BT (movement detection + communication Bluetooth module; characteristic used in designation: MDU).
c. DLS + BT (light regulation + communication Bluetooth module; characteristic used in designation: PH).

So , there is no DLS for configuration: 2 and no PIR for configuration 3.

6.5. How many slave luminaire can be manage by master luminaire?

Total system can consist of max 7 luminaires – one master and 6 slaves.

6.6. What does it mean slave and master luminaire?

Master luminaire is a luminaire with a sensor incorporated into it. The slave luminaires do not have sensors inside, and they are connected with the master luminaire by means of DALI wires. Master luminaire is the one which receives the all commands from the remote controller and acts according to the settled mode of working in the sensor. All these settings are forced in the slave luminaires via DALI interfaces.

6.7. What is DLS mode for?

DLS stands for Day Light Sensor and describes sensor which measures the light reflected from surroundings (floor, wall, external light, …). Base on that signal luminaire can adapt light output to keep the required light level (flux) what allows the energy save.

6.8. What is PIR mode for?

PIR stands for Passive Infra Red and allows to detect the movement. Base on the signal from that sensor lumianire after movement detection goes into max light level for delay time and after goes into min light level till new movement.

6.9. What is the distance from luminaire to phone or laptop?

Maximum distance between luminaire and controller (laptop or mobile phone) is 20m.