



ActiLume DALI 2nd Generation

OEM application guide

PHILIPS

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I What is ActiLume DALI 2nd Generation

Global warming, climate change, carbon emissions – these words seem to be on everyone’s lips. Today, we all know that our energy consumption comes at a price. Commercial, institutional and industrial buildings account for about half of total energy consumption. And up to 35% of the electricity used in an office building, for example, is spent on lighting.

Lighting controls are key to creating lighting solutions that make the maximum difference in terms of cutting energy usage. At the same time, they effectively manage the quality of the light, enhancing people’s lives – at the office, in industry, in shops, at school, etc. And the beauty of stand-alone controls is that they do all this in an extremely simple manner – now that’s smart!

The first ActiLume DALI was designed to fulfill the needs of those working in open-plan and cell offices, but can also be adapted to suit other applications. It combines automatic energy saving functions with easy-to-use manual controls. The presence and daylight functions allow savings of up to 50-75% on electricity, while push-button and infrared controls provide manual interaction. For optimal daylight harvesting savings two groups are used. Installation was also easy.

The new ActiLume DALI Gen 2 offers the same simplicity of the ActiLume DALI but gives you more advanced features.

With ActiLume DALI Gen 2 it is possible to realize more advanced lighting concepts and a bigger lighting installation. Instead of 2 lighting groups, the ActiLume DALI Gen 2 gives the design freedom to create 4 lighting

groups. Over the 4 lighting groups, 34 DALI luminaires can easily be installed. Overall this increase from a maximum of 11 to 34 Luminaires brings down the initial investment of the ActiLume DALI Gen 2 and secures a short payback, even when the installation is operating energy efficient LED luminaires.

With the possibility of parallel connecting the different ActiLume DALI Gen2 systems, the interconnected systems give a behavior which you normally would get from an advanced Building Management System at no additional costs and installation efforts. On the other hand when a Building Management System is required, the ActiLume DALI Gen2 can also be integrated.

The ActiLume DALI Gen 2 is based on a new hardware and software platform which secures the future and will bring further range enrichments in the future.

2 Product characteristics

ActiLume consists of the following basic components:

- ▶ LLC1663/00 ActiLume DALI Gen 2 (LLC1663)
- ▶ LRI1663/00 ActiLume Gen 2 Multi-Sensor (LRI1663)



Figure 1 LLC1663



Figure 2 LRI1663

Additional components are:

- ▶ Three infrared remote controls intended for installers and facility managers to make the commissioning easier:
 - ▶ The IRT8097 for grouping of luminaires, walk test, start 100h burn in and to set the reference light level
 - ▶ The IRT8098 to choose between mode 1 and mode 2 and to set the reference light level
 - ▶ The IRT8099 for advanced commissioning for all modes and to change several default factory values
- ▶ Four infrared remote controls intended for end users:
 - ▶ IRT8010
 - ▶ IRT8030
 - ▶ IRT8050
 - ▶ UID8510

All three can be used to personalize the light levels with preset dim values, scene setting or manual override of light levels.

- ▶ Additional movement detection area extension sensors (LRM8118 and LRM8119) to assure movement is detected wherever needed

This chapter will cover the product characteristics of the ActiLume DALI Gen 2 sensor and controller. The remote controls information can be found in chapter 7.3, "Infrared (IR) control", and information on the extension sensors LRM8118 and LRM8119 can be found in chapter 13.2 - Extension sensor LRM8118 and LRM8119.

2.1 ActiLume Gen 2 Multi-Sensor LRI 1663

The ActiLume Gen 2 Multi-Sensor contains four functional devices in one housing and is wired with a connection cable of one meter to the controller. The functional devices are:

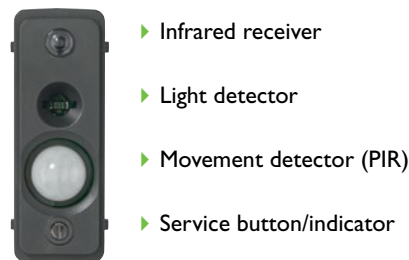


Figure 3

The application area of ActiLume DALI is a typical indoor environment (offices, corridors, meeting rooms, etc.) in normally heated and ventilated areas. ActiLume DALI has no protection against aggressive chemicals or water (pollution degree 2). The sensor is normally mounted inside a Class I luminaire and is optimized for a ceiling height of 2.5 to 3 meter. The mounting height can reach up to 3.5 meter but the sensitivity patterns of the sensors will change accordingly.

2.1.1 IR receiver

The infrared receiver serves as a communication portal for the commissioning tools IRT8097, IRT8098 and IRT8099 and also for the following user interfaces:



Figure 4

- ▶ IRT8010
- ▶ IRT8030
- ▶ IRT8050
- ▶ UID8510

The angle under which the IR receiver will receive RC5 codes is a 55° angle.

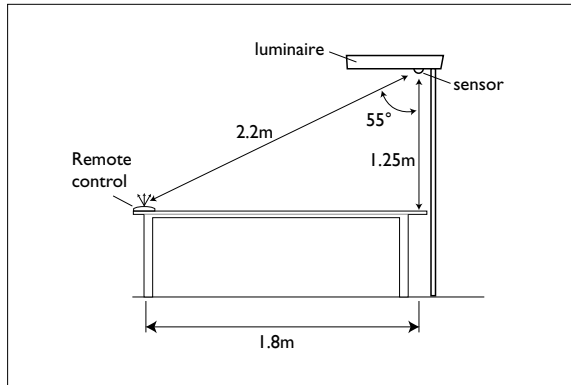


Figure 5

2.1.2 Light sensor



Figure 6

The (day)light sensor is a photo diode that reads actual average illuminance in Candela per m² captured under an angle of approximately 72°. The intensity of the illuminance depends on the amount of artificial and/or natural light supplied in the office as well as how well this light is reflected towards the ceiling/sensor. The light reflection depends highly on the colors chosen to furnish the office, and can vary between 0.1 for pure dull black to 0.5 for a complete glossy white furnished office. In an average office the reflection factor is 0.3.

The illuminance signal is sent continuously to the ActiLume DALI Gen 2 controller. The ActiLume DALI Gen 2 controller translates these signals into dimming commands in order to get a constant light level on the desk of approximately 600 lux (factory default value).

The daylight sensor should be installed with a minimum distance of 0.6 meter to the window to avoid the sensor looking outside.

When the sensor is mounted too close to the window it will look partly outside. Sun reflection from a car bonnet or a window of a car or snow can reflect directly into the sensor. The sensor will then measure such high illumination levels that it will drive the artificial light to its minimal level or even switch off the artificial lights. The optimum distance [Y] from the window to the ActiLume Gen 2 Multi-Sensor can be obtained from the graph. This graph shows the relation between the distance from the window to the sensor [Y] and the height [H] of the sensor.

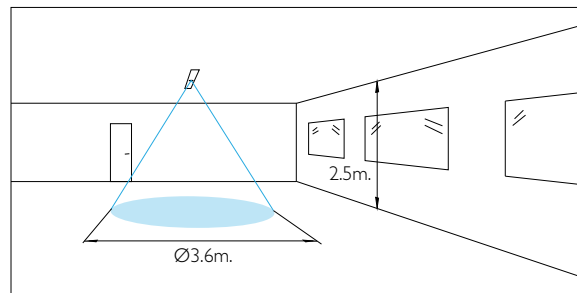


Figure 7

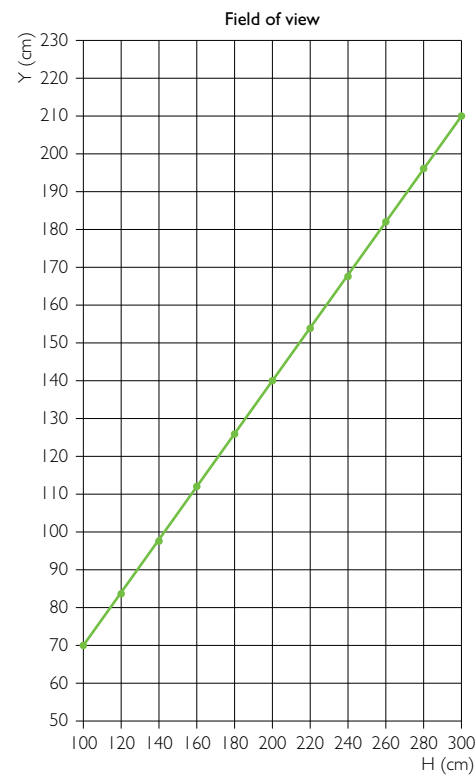


Figure 8

2.1.3 Movement detector



The occupancy sensor is a PIR (Passive Infra-Red) sensor that detects movement with an X-Y cross-area under an angle of $X = 72^\circ$ and $Y = 85^\circ$. When installed in a typical office ceiling at 3 meter height, it is sensitive for small movements within a 4 by 5 meter area. It will cover small movements down to a few centimeters at the task area of a desk and is sensitive to large movements within a range of 6 by 8 meter.

Figure 9

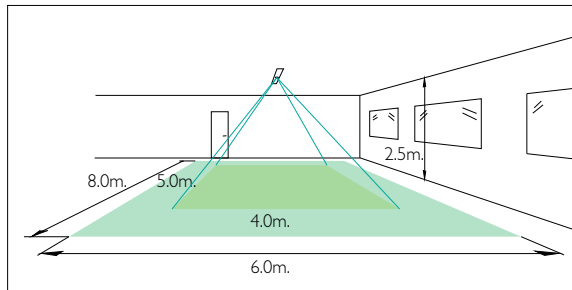


Figure 10

Though the sensor has a radial reach of 5 meter, the maximum recommended height to place the sensor in the ceiling is 3 meter to assure movement coverage and detection. The PIR sensor reacts on movement, by means of a temperature difference such as the human body temperature versus its surrounding temperature. A car that just starts its engine is not seen by the PIR, nor does it see people sitting within the car or a forklift truck. Therefore, it is recommended not to use this ActiLume DALI system in outdoor, parking or industrial applications. The LRM8118 and LRM8119, which are extension sensors and part of the ActiLume DALI system, are used to increase the movement detection range. They have approximately the same viewing specifications as the standard sensor (LR11663). More info on these sensors can be found in chapter chapter 13.2 - Extension sensor LRM8118 and LRM8119".

2.1.4 Service button



The service button can be pressed with a pen or small screwdriver. It can be used for:

- ▶ changing between Mode 1 and Mode 2
- ▶ for light calibration
- ▶ switching on and off of the indicator light behind the service button

Figure 11

How to use the service button is described in chapter 6.1.3, "Using the Service button on sensor".

To switch the light behind the service button on or off, press the service button for approximately 10 seconds (8 to 12 seconds).

The color of the light of the service button has the following function:

- Steady red : presence/movement detected
- Steady yellow : Sensor is working but no presence/movement detected
- No color : LED indication is disabled by service button or malfunction

2.1.5 Other sensor specifications

The ActiLume sensor (LR11663) has an RJ10 (4P4C) connector fixed to a cable. The length of the cable is 100 centimeters. The sensor housing (casing) material is Polycarbonate UL94V-0 and the color is dark grey (5 NC 10714 which is close to RAL 7024 "Graphite grey"). The housing is resistant to the glow wire test 850 °C / 5 seconds and has a basic insulation ≥ 1500 V. The dimensions of the sensor are as given below.

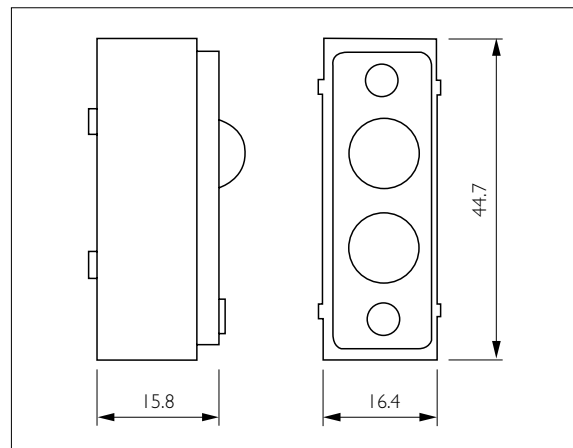


Figure 12

2.2 ActiLume DALI Gen 2 LLCI663

The LLCI663 is the heart of the system. It will take care of all the communication to the ballasts / drivers connected in a way that is freely programmable or in a standard way by selecting a specific mode. In contradiction to the LLCI653 ActiLume, this LLCI663 ActiLume DALI 2nd generation all functions can be programmed freely like switching on or off the daylight sensor independently of the PIR sensor. Furthermore the LLCI663 can be set into 3 different configurations with each of them their own application area.



Figure 13

More on these configurations can be found in the various chapters below.

- ▶ Window / Corridor configuration. In this configuration the ActiLume DALI Gen 2 will function in exactly in the same way as the LLCI653.
- ▶ Parallel Linking configuration. In this configuration various ActiLume DALI Gen 2 devices can be connected together and work together and share their occupancy information.
- ▶ BMS configuration. In this configuration various ActiLume DALI Gen2 devices can be connected together and be connected to a gateway of the Building Management System (BMS). The ActiLume DALI Gen 2 offers the possibility to forward HVAC commands to the BMS system. A list of HVAC commands is given in Chapter 16, “HVAC commands”.

2.3 Dimensions ActiLume DALI Gen 2

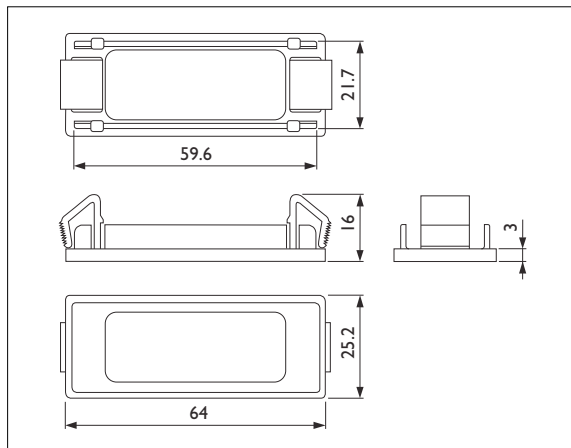


Figure 14

2.4 Electrical characteristics

Some of the most important electrical characteristics that have to be kept in mind are the following:

- ▶ Both DALI ports have only basic insulation with respect to the mains. Since it is only basic insulation, a mains rated cable should be used when one or both DALI lines are brought outside the luminaire in which the ActiLume DALI Gen 2 is placed. Also a strain relief on the DALI line(s) is mandatory in this case. This is to ensure safety under all conditions
- ▶ The Touch and Dim input is mains voltage and should be treated as such, according to local standards and regulations. The usage of a strain relief and mains rated cable is mandatory
- ▶ The front of the sensor ensures double insulation. Nevertheless, if the sensor is used outside the luminaire or in a different luminaire then the ActiLume DALI Gen 2 is placed, mains rated extension cables and strain reliefs must be used.

Furthermore, the DALI connections will be powered by the ActiLume itself, so there is no need for any external power supply. Please check the table below for guaranteed supply current ratings of both DALI connections.

Configuration	Port 1	Port 2
Window / Corridor	68 mA	24 mA
Parallel Linking	68 mA	3mA
BMS	68 mA	Not powered

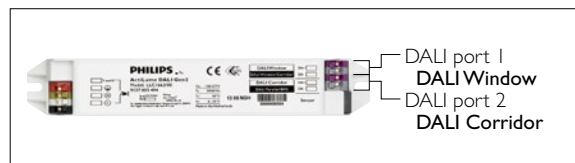


Figure 15

The absolute maximum rating for Port 1 and Port 2 is for all configurations 250mA.

2.5 Ballast recovery feature (self-healing)

When one ballast fails and is replaced by a new one, the system will automatically notice when this ballast is replaced will configure the new ballast according to the original ballast. This means that with self-healing a complete re-commissioning of all ballasts is no longer needed.

During commissioning the ActiLume DALI Gen 2 knows which device is set into which Group and what address it has. Of course, allowing the ActiLume DALI Gen 2 to have this data means it needs to be commissioned (using the DALI button on the IRT8099 – see also chapter 6.10, “Grouping of ballasts/drivers”). The ActiLume DALI Gen 2 keeps in constant contact with all ballasts connected by sending every now and then, a DALI query to each address. As soon as one of the devices is not reacting anymore to the query sent, this is a sign that the device is not there anymore and it will start searching for a “virgin” device. If this defective device is now exchanged by a new device without an address, this will be noticed. The ActiLume DALI Gen 2 will assume this is a replacement for the “not responding” address. The ActiLume DALI Gen 2 will program the new device in the same way as the defective/removed device.

Of course, it goes without saying that if 2 or more devices spread over 2 or more groups, are defect and being replaced, the ActiLume DALI Gen 2 does not know which one should replace which removed/defective device. Unfortunately, in this case the system needs to be re-commissioned (using the DALI button on the IRT8099 – see chapter 6.10, “Grouping of ballasts/drivers”). Therefore it is of great importance that if a device connected to the ActiLume DALI Gen 2 is defect, it is being replaced as soon as possible to prevent this situation.

2.6 Night mode

Night mode is only applicable for BMS network and if supported by the BMS gateway. BMS will send the night mode command to the controller via a gateway to force the ActiLume DALI Gen 2 to enter the night mode.

During night mode,

- ▶ There is no light level regulation (no DDR)
- ▶ Once received night mode command, controllers will first dim down to background level when there is no occupancy in the areas for 5 minutes
- ▶ Controllers will switch off the lights after 5 minutes of background dimming period if no occupancy during that period
- ▶ The controller switches ON light in its own controlled area when it detects presence in its range (such as office cleaners movement)

To stop the night mode the BMS has to send the stop command to the ActiLume DALI Gen 2. As soon as the ActiLume DALI Gen2 receives this command it will resume its standard tasks.

The commands to be sent by the BMS in order to activate or deactivate the night mode are given in the next table.

Step	Action	Description
1	Set DATA TRANSFER REGISTER 1 (DTR1) to 0x64	Select memory bank 100
2	Set DATA TRANSFER REGISTER 2 (DTR2) to 0x02	Select sub bank 2
3	Set DATA TRANSFER REGISTER (DTR) to 0x02	Select address Lock byte
4	ENABLE WRITE MEMORY	Enable write operations
5	ENABLE WRITE MEMORY	Enable write operations
6	WRITE MEMORY LOCATION (- NO REPLY) with value 0x55	Unlock the memory bank
7	Set DATA TRANSFER REGISTER (DTR) to 0x0A	Select address Enable / Disable
8	ENABLE WRITE MEMORY	Enable write operations
9	ENABLE WRITE MEMORY	Enable write operations
10	WRITE MEMORY LOCATION (- NO REPLY) with value 0x00 (disable) or 0x01 (enable)	Indicates that the night mode should be disabled or enabled
11	WRITE MEMORY LOCATION (- NO REPLY) with value 0x05 (night mode)	Feature 5 is selected (night mode)
12	WRITE MEMORY LOCATION (- NO REPLY) with value 0x01 (Set Feature)	Selects the Set Feature command
13	WRITE MEMORY LOCATION (- NO REPLY) with the Control Device Checksum Enable Checksum = 0xF9 Disable Checksum = 0xFA	Stores the control device checksum. This will be the trigger for the ActiLume DALI Gen 2 to execute the Enable/Disable Night-Mode command.

Table 1

3 System startup behavior at power up

This chapter is about how the system will start up when powered for the first time and/or after a power interrupt has taken place.

3.1 No light after mains power is interrupted

ActiLume DALI is preferably never disconnected from the mains and soft-switched by means of movement detection or manually via the Touch and Dim push button or IR remote control. When ActiLume DALI Gen 2 is hard-switched or if the power supply is interrupted, the ActiLume movement sensor requires a circuit stability time of 30 seconds after switching on the mains. During this stabilizing period, the luminaires are depending on the mode setting switched on or off. This is to avoid a complete building from being lit, after a power cut during the night or every morning when a complete building or floor is being switched on. This behavior is called “power-up-state”. The “power-up-state” can be changed using the IRT8099 commissioning tool and is described in chapter 6.4, “Changing Power-Up-State”.

3.2 Timing sequence

Depending on which mode is selected with full or partial automatic behavior, one of the following timing sequences are selected which is based on presence detection.

For example, in the cell office mode (Mode 1) during presence detected, there will be DDR. If for a certain time (delay time) no presence has been detected, there is no need to have the lights at a background level so they will fade down and be switched off. The picture below gives a graphical representation of the behavior.

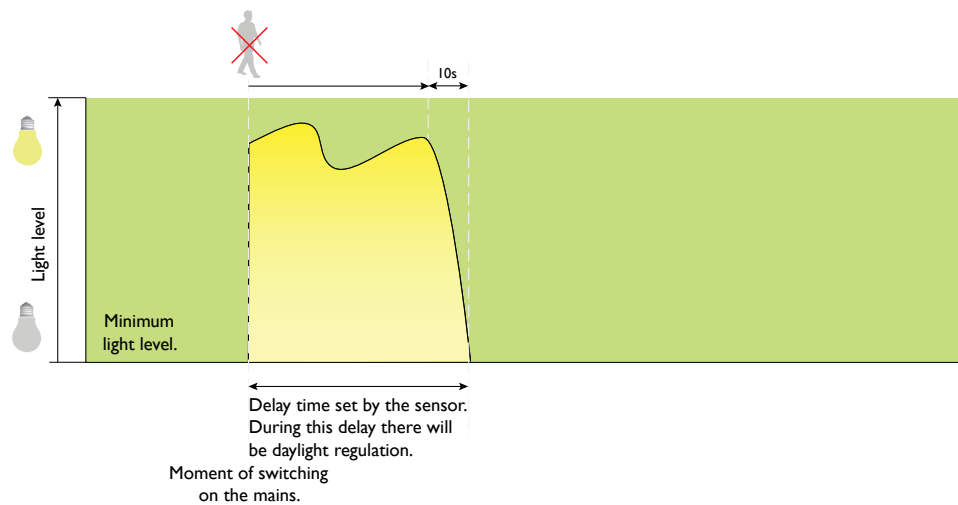


Figure 16

In an open plan office (Mode 2 and if not in parallel linking situation) it is of great importance that the lights will stay on for a certain amount of time after no movement has been detected. This is to prevent that people who sit in a different area of that same open plan office do not sit in a well-lit area but look into the dark when they are the last one working in the open plan office. This time that the lights are at a low dim level is called Prolong time and this low light level is called background level. The picture below gives a graphical representation of the behavior.

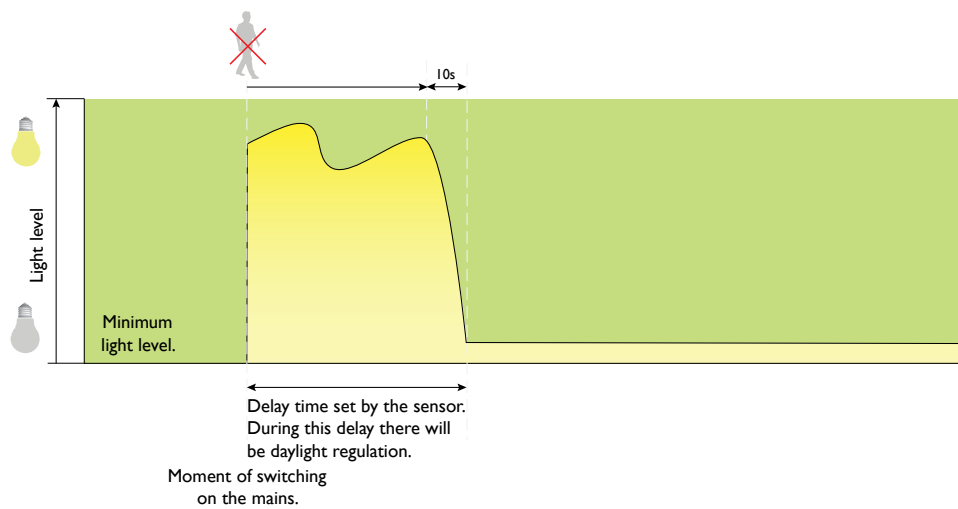


Figure 17

In other applications a reduced light level is needed even if there is nobody present, but switching lights off is not wanted or even allowed. Therefore the prolong time is can be set to infinite and it will stay in its background level. This situation is often used if mains switching is done for the lighting.

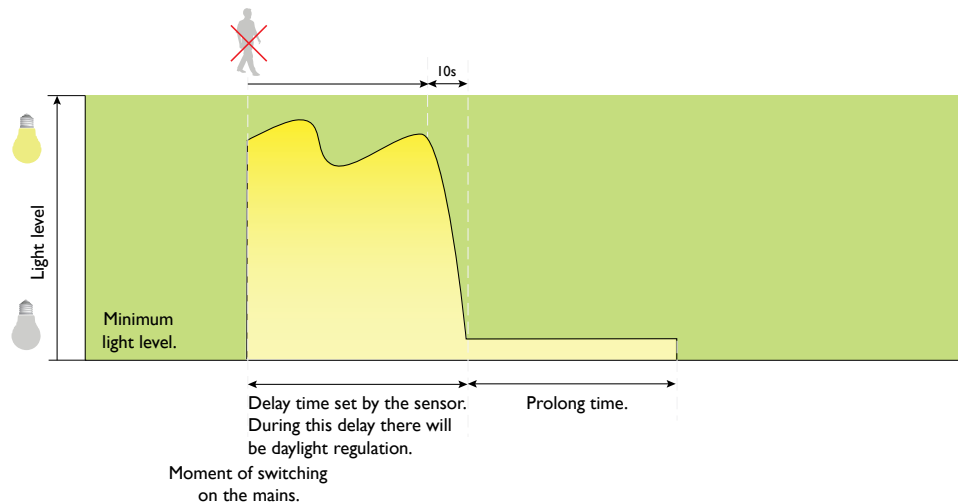


Figure 18

3.3 Default values for various timings

In the ActiLume DALI Gen 2 there are several timers for when to do something after last movement has been detected. Within the various different modes these timers can have a different default value. The timers used throughout this document are:

- ▶ Hold time
- ▶ Grace time
- ▶ Prolong time
- ▶ Retention time

As soon as no movement has been detected anymore, all timers start in the following sequence.

Hold time is the time (T1 to T2) from the point at which the last movement has been detected until grace time starts. This is 15 minutes for all modes by default. The possible values are 1, 5, 10, 15, 20, 25, 30 and 35 minutes.

Grace time is the time from T2 to T3 during which the lights are being dimmed down from the current light level to the background level. By default this is 10 seconds for all modes. Possible values are 0, 5, 10, 15, 20 and 25 seconds.

Prolong time is the time from T3 to T4 at which the background level is maintained at a fixed level. Modes have different prolong times. The following prolong times are the default values:

- ▶ 0 min for Mode 1, 3, 4, 8, 11, 13, 14 and 15
- ▶ 15 min for Mode 7 and 10
- ▶ 60 min for Mode 6
- ▶ 120 min for Mode 2, 5 and 12
- ▶ Infinite for Mode 9 (meaning the lights are not switched off)

Possible values for grace time are 0, 15, 30, 60, 90, 120, 150 and infinite.

Retention time (T2 to T5) is a specific timer during which the active light situation at T2 is remembered. If the ActiLume DALI Gen 2 is in automatic mode (auto on /auto off) and the light level has been manually changed to a certain fixed level, this timer will be active. If the room becomes unoccupied, the above mentioned timers will sequentially start running and take their actions when needed. As soon as the hold time has expired and lights are the lights start to dim down, the retention timer starts to run. For a certain period of time the ActiLume DALI Gen 2 will remember the last light level at timer position T2. To prevent that the person has to re-override the light level time after time when entering the room again after (for example) being away for a meeting, the ActiLume DALI Gen 2 will during the retention timer remember the light level and when the room is entered again, the ActiLume DALI Gen 2 will continue with its light level as if the room was not left unoccupied. The default setting of the retention timer for all modes is 15 minutes. Possible values for the retention timer are 0, 15, 30, 60, 90, 120, 150 and 180 minutes.

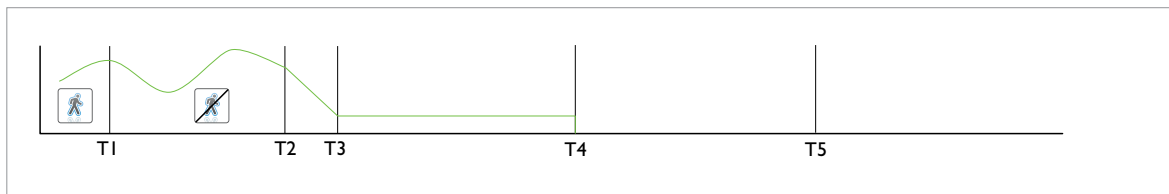


Figure 19

3.4 Daylight regulation and dynamic offset

In order to have an evenly spread light distribution across a cell office or open plan office, the ActiLume DALI Gen 2 has the ability to use a dynamic offset between the different groups or Window and Corridor connection. When using the ActiLume DALI Gen 2 as a standalone device in combination with the Window and Corridor connections, at first the lights will be dimmed down together from 100% to 80%. When dimming deeper because of excess of daylight, the corridor row will dim more slowly than the window row. When the Window row reaches 1% the corridor row will be at 30%. When there is still access of light, the corridor row will dim deeper until it also reaches 1%.

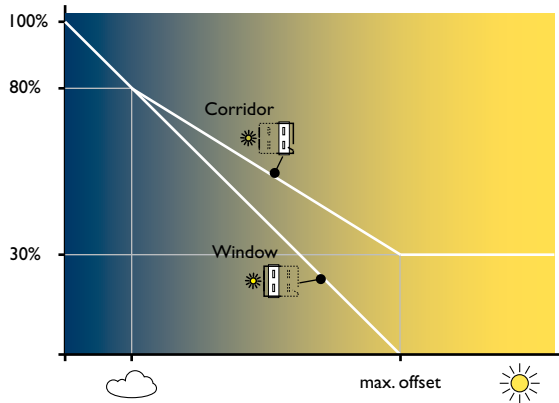


Figure 20

When the ActiLume DALI Gen 2 is configured into Parallel Linking or into BMS configuration, Group 1 will represent the Window row, Group 2 the Corridor row and Group 3 the Middle row. In this case, the Middle row can enhance the dimming behavior because the light level created by the middle row is in between the window and the corridor row. This means that if the Window row reaches its minimum dim level, the middle row will be at 15% and the corridor row at 30%.

See also picture below for the comparison between the two situations.

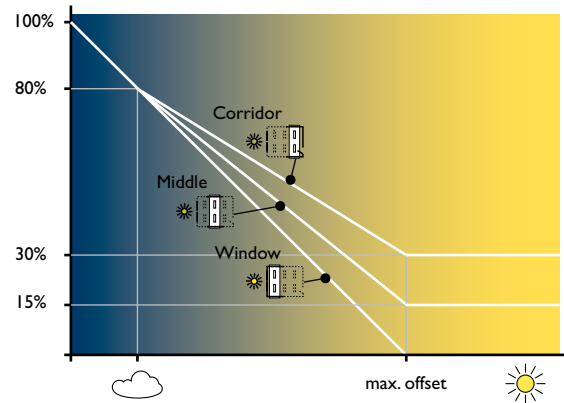


Figure 21

4 ActiLume DALI Gen 2 application and user modes

ActiLume has 15 pre-programmed application Modes in which a group of luminaires can be controlled according to the Table below.

Mode	Description
Mode 1	Cell Office Window / Corridor (& Decorative)
Mode 2	Open plan Window / (Middle /) Corridor
Mode 3	School/Classroom (& Decorative)
Mode 4	Cell Office Task / Workspace (& Decorative)
Mode 5	Open plan Task / Workspace (& Decorative)
Mode 6	Corridor / staircase
Mode 7	Toilet
Mode 8	Meeting Room (& Decorative)
Mode 9	Open plan Task / (middle /) Workspace & mains switching
Mode 10	Free floor standing luminaire
Mode 11	Adjacent Cell Office Window / Corridor (& Decorative)
Mode 12	Free for OEM (copy of Mode 2)
Mode 13	Free for OEM (copy of Mode 8)
Mode 14	Free for OEM (copy of Mode 8)
Mode 15	Free for OEM (copy of Mode 11)
Mode 16	Free for OEM (only available via MultiOne2Controls)

Table 2

This chapter explains for which application which Mode is best suited or which lighting design requires which Mode.

4.1 Mode 1 - Cell Office Window / Corridor (& Decorative)

For cell office applications ActiLume DALI Gen 2 has 3 dedicated Modes. From these Modes, Mode 1 is the basic and most applied mode. Mode 1 is the default mode in which the ActiLume DALI Gen 2 is supplied. The functioning of Mode 1 is described in the graph below.

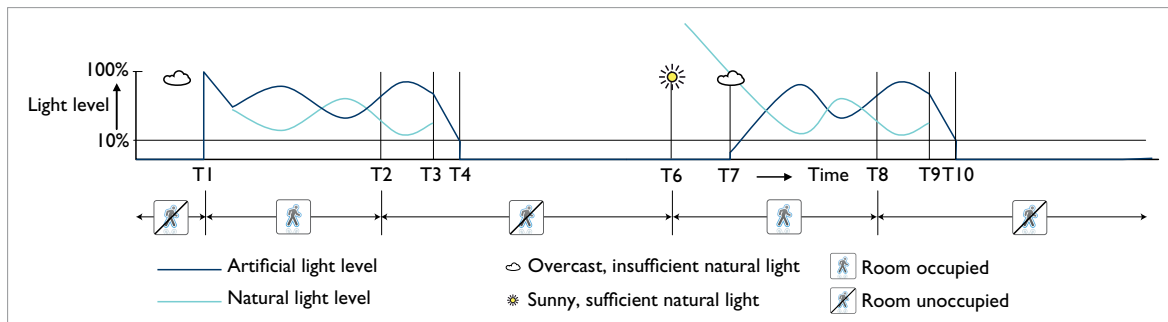


Figure 22

Before T1 no one is in the office, so the lights are off. At T1 someone enters the office, the artificial light will go to 100% and then immediately start DDR (Daylight Depending Regulation) to regulate according to the amount of natural daylight coming through the windows. At T2 the person is leaving the cell office and the hold time starts. During the grace time of 10 seconds (from T3 to T4) the lights will be dimmed down to their minimum level and at T4 the lights will be switched off. At T6 the person comes back into the office but the lights will stay off because the sun is shining and the light level is sufficient. This is called a DDO (Daylight Depending Override). At T7 it becomes cloudy again. The natural light level drops so the artificial light turns on automatically to compensate the lack of light. At T8 the person is leaving the office again. The light level continues to be regulated for another 15 minutes and at T9 it starts fading down again. Finally the lights will be switched off at T10.

If, during the grace time (T3 to T4 or T9 to T10) movement is detected, the hold time will be extended by 10 minutes. This will be done once only.

Mode 1 is designed for a classic luminaire arrangement. The master luminaire is implemented at the window side. In Window/Corridor configuration, the luminaires alongside the windows are connected to the Window connection of the controller and the others are connected to the Corridor side. The corridor side will follow the window side with an offset.

For cell offices designed around the indoor lighting norm EN12464, or when using direct/indirect lighting, Mode 5 is advised. See chapter 4.5, “Mode 5 - Open plan Task / Workspace (& Decorative)”.

When in Parallel Linking or BMS configuration, all luminaires are to be connected to the Window connection and commissioning of the luminaires is needed as described in chapter 6.10, “Grouping of ballasts/ drivers”. When using the ActiLume DALI Gen 2 in Parallel Linking or BMS configuration, there is also a possibility of having a third group of luminaires intended for decorative lighting.

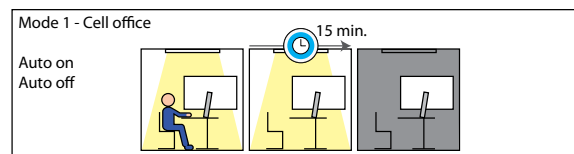


Figure 23

4.2 Mode 2 - Open plan Window / (Middle /) Corridor

Mode 2 functions in principle in the same way as Mode 1 but with the difference that in Mode 2, the lights do not turn off after the hold time (15 minutes) but are set to a background light level. This is to avoid that in parts of an open plan office where no one is present people are not looking into a completely dark area.

Background level

15 minutes after the last movement has been detected (T3), the lights will fade down to 20% during Grace time (T3 to T4). This light level (background level) will be maintained for 120 minutes (T4 to T5) before the lights will be turned off. If needed, the background level can be altered to 1%, 10%, 20%, 30%, 40%, or 50%. This is described in chapter 6.3, “Setting the background level”.

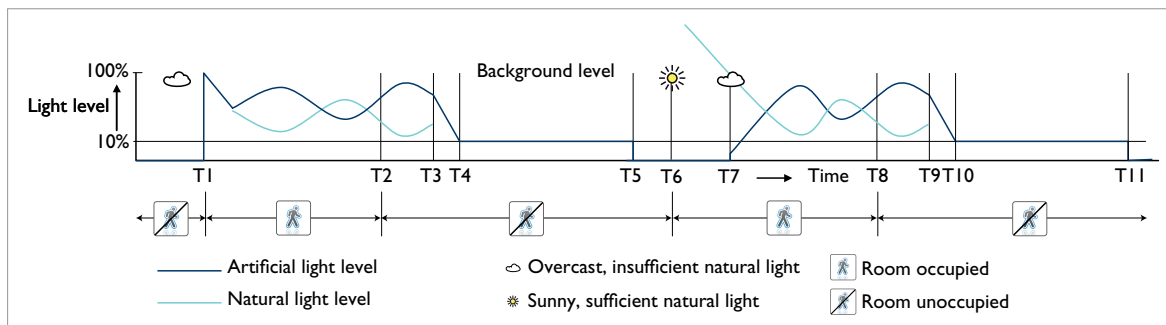


Figure 24

In Window/Corridor configuration, the luminaires alongside the windows are connected to the Window connection of the controller and the others are connected to the Corridor side. The corridor side will follow the window side with an offset. For open plan offices designed around the indoor lighting norm EN12464, or when using direct/indirect lighting Mode 5 is advised. See chapter 4.5, “Mode 5 - Open plan Task / Workspace (& Decorative)”.

When in Parallel Linking or BMS configuration, all luminaires are to be connected to the Window connection and commissioning of the luminaires is needed as described in chapter 6.10, “Grouping of ballasts/ drivers”. When using the ActiLume DALI Gen 2 in Parallel Linking or BMS configuration, there is also a possibility of having a third group of luminaires intended for a middle row (row between window and corridor row) lighting.

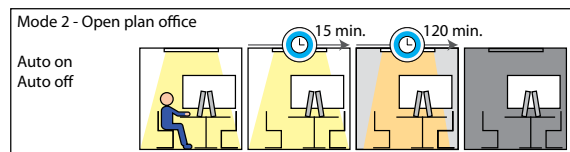


Figure 25

4.3 Mode 3 – School/Classroom (& Decorative)

Mode 3 is a dedicated mode for classrooms. This mode functions approximately the same as Mode 1 though in this mode the lights must always be switched on manually when entering the classroom. When the last person has left the classroom, the lights will be turned off automatically after the delay time (15 minutes, like in Mode 1) or can be switched off manually.

Manual switch on/off

The manual switch on function is to prevent that lights switch on when people are just passing as many classrooms have opened doors towards the schools corridors. For this application an IRT8050 remote control can be used, or a wall switch, with a push-to-make contact. It is advised, as being a more robust solution than a remote control, to use this wall switch connected to the Touch and Dim input of the ActiLume DALI Gen 2.

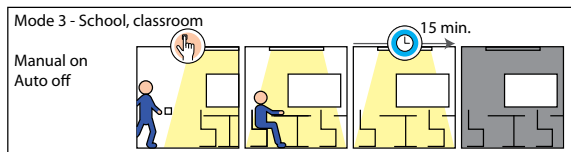


Figure 26

Extension sensor

Most classrooms exceed the maximum area coverage (5 by 6 meter) of the ActiLume movement sensor. Since the sensor is always close to the window to capture the daylight the classroom entrance is often not reached or covered. Therefore it is advised to use the LRM81 I8 and/or LRM81 I9 movement extension sensor to ensure full coverage.

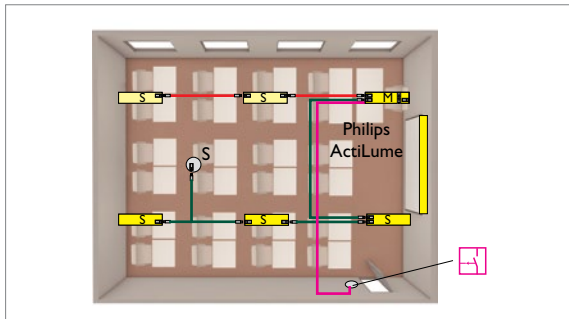


Figure 27

4.4 Mode 4 - Cell Office Task / Workspace (& Decorative)

Mode 4 functions in a similar way to Mode 1 except in this mode the Window and Corridor lights are replaced by Task and Workspace lights. For the workspace light, the daylight regulation is disabled and kept at 100%. This allows the use of low power sources that bring just the required minimum of 200 Lux in the working environment using up- or down-lighters or wall washers. This does not only create a different atmosphere but also saves energy compared to a classic luminaire arrangement.

Direct/indirect

To apply direct and indirect lighting, the direct lights must be connected to the luminaire containing the Philips ActiLume with a connector labeled "Window". Of course for the direct and indirect lights, separate ballasts have to be used.

The indirect lights must be connected to the luminaire containing the Philips ActiLume using the connector labeled "Corridor". It must be noted that in this configuration the indirect light is always at 100% lamp power and the direct lighting is functioning according to Chapter 3.2 Day light regulation. When the 100% lamp power for indirect is not preferred from a design point of view then Mode 2 can be used as well. The indirect light should be connected to the Corridor. The indirect light then will follow the direct light level with + 30% offset (read: more light output).

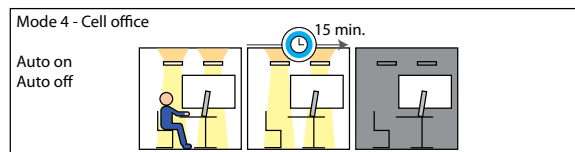


Figure 28

4.5 Mode 5 - Open plan Task / Workspace (& Decorative)

Mode 5 functions just like Mode 2 except in this Mode the Window and Corridor light are replaced by Task and Workspace light. For the workspace light the daylight regulation is disabled and kept at 100%. This allows the use of low power sources that bring just the required minimum of 200 Lux in the working environment using down lighters or wall washers. This does not only create a different atmosphere but also saves energy compared to a classic luminaire arrangement.

Direct/indirect

To apply direct and indirect lighting the direct lights must be connected to the luminaire containing the Philips ActiLume with a connector labeled “Window”. The indirect lights must be connected to the luminaire containing the Philips ActiLume controller using the connector labeled “Corridor”. It must be noted that in this configuration the indirect light is always at 100% lamp power and the direct lighting is functioning with DDR.

When from a design point of view the 100% lamp power for indirect is not preferred, then Mode 2 can be used as well. The indirect light should than be connected to the Corridor. The indirect light will then follow the direct light level with + 30% offset.

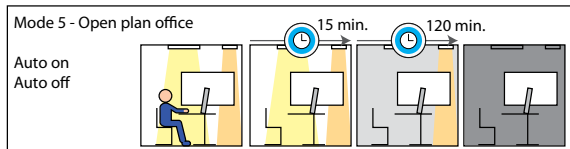


Figure 29

4.6 Mode 6 - Corridor / staircase

Mode 6 is designed for use in corridors. The daylight switching is disabled. Only presence detection functions according to the figure below. The delay times cannot be altered. If needed the background level can be altered to 1%, 10%, 20%, 30%, 40%, 50%, 60% or 70% of the light level as described in chapter 6.3, “Setting the background level”.

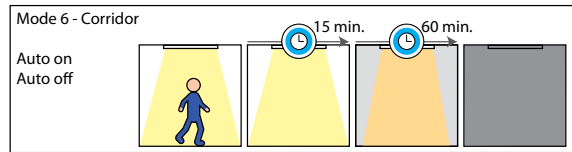


Figure 30

If a corridor is designed with one ActiLume DALI Gen 2, additional movement detection coverage is advised as soon as the corridor is longer than 6 meters. With one ActiLume DALI Gen 2 controller and a maximum of 2 extension sensors a corridor of up to 18 meters can be configured. However it is more economical to make several small groups in combination with mode based linking.

4.7 Mode 7 - Toilet

The restroom application Mode is programmed as follows. When enough daylight enters the restroom, the amount of artificial light will be automatically reduced at the entrance. The amount of artificial light in the cabinets will stay at a predetermined level. If required, it is possible to change these settings at a later stage.

Maximum comfort

The Philips ActiLume DALI Gen 2 system switches the lights automatically on and off on occupancy and regulates the artificial lights down at the entrance when enough daylight is detected. Lights at the entrance will be switched off 15 minutes after occupancy was last detected. The lights in the cabinets will be switched off 15 minutes after the entrance lights have been switched off.

Entrance lights must be connected to the Philips ActiLume DALI Gen 2 luminaire connector labeled “Window”. Cabinet lights must be connected to the Philips ActiLume DALI Gen 2 luminaire connector labeled “Corridor”.

If in the above configuration the master luminaire is situated more than 3 meters from the cabinets, an extension sensor should be used for full coverage.

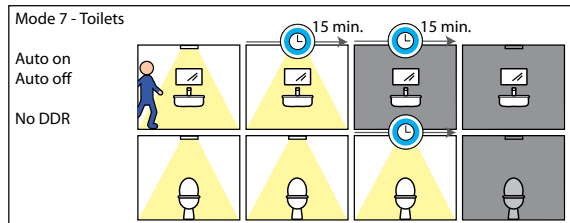


Figure 31

4.8 Mode 8 - Meeting Room (& Decorative)

In the meeting room application lights will always need to be switched on by means of a push-to-make button or an infrared transmitter. Lights will be switched off automatically 15 minutes after the last movement has been detected. When switched on, there is daylight regulation. The Philips ActiLume DALI Gen 2 system allows four different scenes with up to 4 groups of luminaires when in parallel linking mode. A scene is a combination of different light levels for each of the two outputs (Window and Corridor) of the Philips ActiLume DALI Gen 2 system. By using the infrared transmitter IRT8030, the combination can be stored in the ActiLume DALI Gen 2 luminaire and selected later on. How to use the IRT8030 can be found in chapter 7.3.2, “Using the IRT8030”.

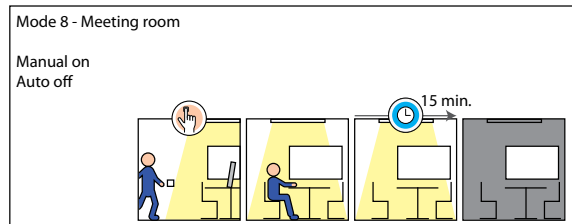


Figure 32

4.9 Mode 9 - Open plan Task / (middle /) Workspace & mains switching

Mode 9 is a variation on Mode 2 with daylight regulation as described in chapter 4.2, “Mode 2 - Open plan Window / (Middle /) Corridor”. In Mode 9 the lights do not turn off after 15 minutes but are set to a background light level and will not switch off. This is to avoid that in parts of an open plan office where no one is present, people in other areas are looking into a complete dark area. This Mode is also useful for areas where, due to safety regulations, a minimum light level is always required (cameras), or if a floor or building switch is used to turn off the lights as well as other electric equipment after office hours. To turn off the lights, a building or floor switch is required.

Background level

15 Minutes after the last movement has been detected, the lights will fade down to the background level of 20% (factory setting). The background light level can be adjusted to 1%, 10%, 30%, 40%, 50%, 60% or 70% of the light level as described in chapter 6.3, “Setting the background level”.

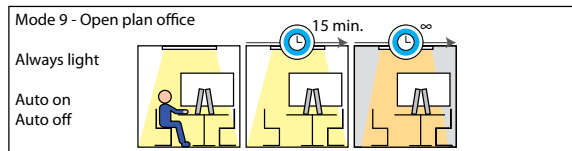


Figure 33

4.10 Mode 10 - Free floor standing luminaire

Mode 10 is a variation on Mode 1 with daylight regulation as described in chapter 4.1, “Mode 1 - Cell Office Window / Corridor (& Decorative)”. In Mode 10 the lights will go into background level after no occupancy has been detected for 15 minutes. Furthermore the difference with Mode 1 is if mains is switched on, the lights will be switched on (Power up state is lights on).

Background level

15 Minutes after the last movement has been detected, the lights will fade down to the background level of 10% (factory setting). The background light level can be adjusted to 1%, 20%, 30%, 40%, 50%, 60% or 70% of the light level as described in chapter 6.3, “Setting the background level”.

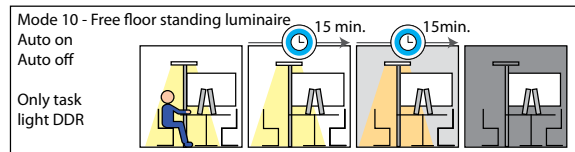


Figure 34

4.11 Mode 11 - Adjacent Cell Office Window / Corridor (& Decorative)

Mode 11 is a copy of Mode 1. It is created to be able to have different cell offices beside one another in which the lights should react on one another when in Mode Based Linking.

In the example below you see 2 offices. If presence is detected in Office 1, then Office 2 should be in background level if no presence is detected in Office 2. Also if in Office 2 presence is detected and in Office 1 there is no presence, than Office 1 will be switch on in background level.

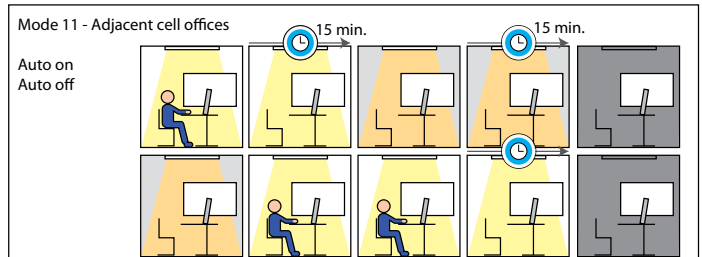


Figure 35

4.12 Mode 12 - Free for OEM

Mode 12 is an exact copy of Mode 2. It is created to be able to have different open plan offices beside one another in which the lights should react on one another when in Mode Based Linking.

If the ActiLume DALI Gen 2 is reset as described in chapter 6.8, “Resetting the ActiLume DALI Gen 2” these settings will not be influenced and will stay as they are.

4.13 Mode 13 - Free for OEM

Mode 13 is an exact copy of Mode 8. It is created to be able to have different meeting rooms within the same network in which multiple ActiLume DALI Gen 2 are available and the lights within one meeting room should react to one another but should not react on the ActiLume DALI Gen 2 of the adjacent meeting rooms when in Mode Based Linking.

If the ActiLume DALI Gen 2 is reset as described in chapter 6.8, “Resetting the ActiLume DALI Gen 2” these settings will not be influenced and will stay as they are.

4.14 Mode 14 - Free for OEM

Mode 14 is an exact copy of Mode 8. It is created to be able to have different meeting rooms within the same network in which multiple ActiLume DALI Gen 2 are available and the lights within one meeting room should react to one another but should not react on the ActiLume DALI Gen 2 of the adjacent meeting rooms when in Mode Based Linking.

If the ActiLume DALI Gen 2 is reset as described in chapter 6.8, “Resetting the ActiLume DALI Gen 2” these settings will not be influenced and will stay as they are.

4.15 Mode 15 - Free for OEM

Mode 15 is by default an exact copy of Mode 11. In this way it is possible to have, in a network of multiple ActiLume DALI Gen 2, the possibility of having 2 situations of adjacent offices.

If the ActiLume DALI Gen 2 is reset as described in chapter 6.8, “Resetting the ActiLume DALI Gen 2” these settings will not be influenced and will stay as they are.

4.16 Mode settings- overview (1)

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15	
Start-up and Dimbehaviour		Range															
Power-up state	lights OFF																
	lights ON																
Background level during Prolong time when Occupancy elsewhere and group is "Auto-on" (When "manual-on BL =0%)	1%																
	10%																
	20%																
	30%																
	40%																
	50%																
	60%																
Delay and Switching-off behaviour	Range																
	Hold Time	1 min															
		5 min															
		10 min															
		15 min															
		20 min															
		25 min															
30 min																	
Smart Time extension (once) when occupancy detected during gracetime	0 min																
	5 min																
	10 min																
	15 min																
Grace Fading	Disable																
	Enable																
Grace Time	0 s																
	5 s																
	10 s																
	15 s																
	20 s																
	25 s																
PrologTime applied only for Groups that have Occupancy Control AutoOn-AutoOff (so not applc for Manual on - Auto Off Groups)	0 min																
	15 min																
	30 min																
	60 min																
	90 min																
	120 min																
	150 min																
	infinite																
Manual Control Functions		Range															
Reacting on PBU Signalling with same mode adress received via Paralel Link Bus.	Yes																
	No																
Retention time MO settings (start when delay time ended)	0 min																
	15 min																
	30 min																
	60 min																
	90 min																
	120 min																
	150 min																
180 min																	

Table 3

4.17 Mode settings- overview (2)

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15
Group 1 (Window)	Range															
Occupancy Control	Auto On-Auto Off															
	Manual On-Auto Off															
	Manual On-Man Off															
Daylight Override	Disable															
	Enable															
Daylight Regulation	Disable															
	Enable															
Daylight Switching	Disable															
	Enable															
Daylight Regulation/ Switching @ manual	Disable															
	Enable															
Daylight Regulation Offset	0%															
	10%															
	15%															
	20%															
	30%															
	40%															
	50%															
	60%															
Group 2 (Corridor)	Range															
Occupancy Control	Auto On-Auto Off															
	Manual On-Auto Off															
	Manual On-Man Off															
Daylight Override	Disable															
	Enable															
Daylight Regulation	Disable															
	Enable															
Daylight Switching	Disable															
	Enable															
Daylight Regulation/ Switching @ manual	Disable															
	Enable															
Max Dynamic Daylight Regulation Offset	0%															
	10%															
	15%															
	20%															
	30%															
	40%															
	50%															
	60%															

Table 4a

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15
Group 3 (Middle / Decorative)	Range															
Occupancy Control	Auto On-Auto Off															
	Manual On-Auto Off															
	Manual On-Man Off															
Daylight Override	Disable															
	Enable															
Daylight Regulation	Disable															
	Enable															
Daylight Switching	Disable															
	Enable															
Daylight Regulation/ Switching @ manual	Disable															
	Enable															
Max Dynamic Daylight Regulation Offset	0%															
	10%															
	15%															
	20%															
	30%															
	40%															
	50%															
	60%															
Group 4 (Blackboard)	Range															
Occupancy Control	Auto On-Auto Off															
	Manual On-Auto Off															
	Manual On-Man Off															
Daylight Override	Disable															
	Enable															
Daylight Regulation	Disable															
	Enable															
Daylight Switching	Disable															
	Enable															
Daylight Regulation/ Switching @ manual	Disable															
	Enable															
Max Dynamic Daylight Regulation Offset	0%															
	10%															
	15%															
	20%															
	30%															
	40%															
	50%															
	60%															

Table 4b

5 Occupancy sharing

The ActiLume DALI Gen 2 has the possibility to share its occupancy status with other ActiLume DALI Gen 2 or with the OccuSwitch DALI.

5.1 Mode based linking

When the ActiLume DALI Gen 2 is in Parallel Linking configuration, up to 64 ActiLume DALI Gen 2 can be connected together via the DALI 2 Port. In this system setup all ActiLume DALI Gen 2 connected can communicate with one another and share their occupancy status.



Important

In Parallel Linking configuration, this interconnection is polarity sensitive. This means that D+ and D- have to be connected in the correct way, all D+ together and all D- together.

5.1.1 How does it work

When an ActiLume DALI Gen 2 system is built up of various ActiLume and they are all connected together via the parallel linking configuration each ActiLume DALI Gen 2 can communicate about which mode it is operating in, and if local occupancy is detected, send this message onto the parallel linking connection. Other ActiLume DALI Gen 2 operating in the same or in a different mode can react on this signal in three different ways namely:

- ▶ Treat the signal as if the occupancy was detected by itself
- ▶ Go into background level
- ▶ Do not react and ignore the signal

Example

Given a part of a floor plan below there are several different areas each with their own specific Mode setting. In each room there is a setup of luminaires with one ActiLume DALI Gen 2, and in the corridor there are a few ActiLume DALI Gen 2. Some of the areas are occupied and others are not but will react to the

occupancy signals from these areas. The corridor, for example, will always be on or in background level as long as one of the other areas is occupied. The secretary's office will stay in background as long as the director is in his office. In the open plan office the lights will be at DDR in the area where occupancy is detected and at background level in the rest of the open plan office.

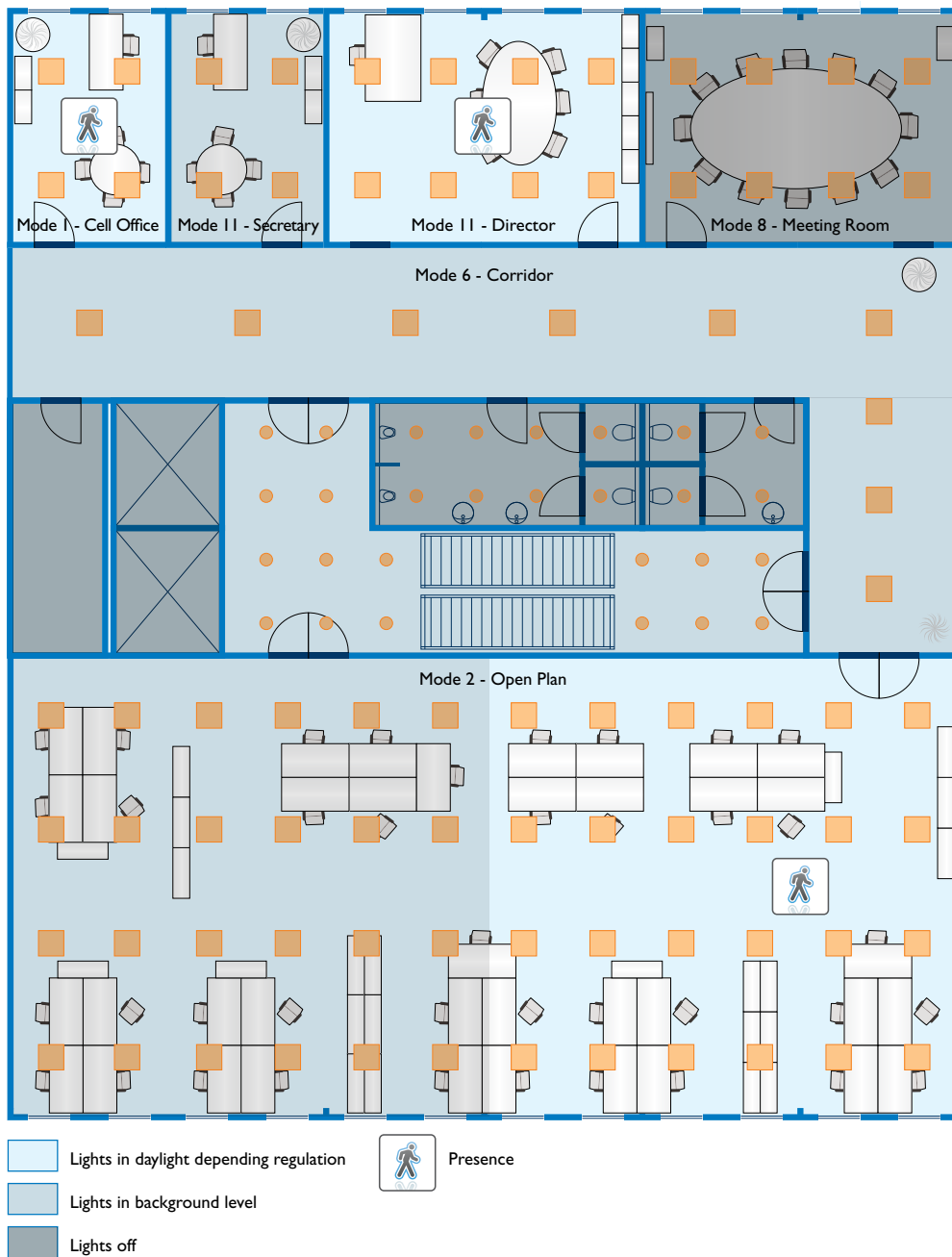


Figure 36

An overview of how all the different Modes react on each other is given in the next chapter.

5.1.2 Mode based linking overview

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15
Mode based Occupancy Linking	Range															
Reaction to occupancy Mode 1	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 2	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 3	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 4	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 5	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 6	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 7	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 8	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 9	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 10	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 11	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 12	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 13	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 14	Local occupancy															
	Background level															
	Ignore															
Reaction to occupancy Mode 15	Local occupancy															
	Background level															
	Ignore															

Table 5

5.2 Simple occupancy sharing

To be able to combine the ActiLume DALI Gen 2 with the OccuSwitch Advanced, there is an option to decrease the occupancy sharing functionality. The ActiLume DALI Gen 2 will, in this case, react to the occupancy signals without taking into account in which mode the transmitter is functioning. The reaction to the signal however, is fixed and depends on the mode the ActiLume DALI Gen 2 is in. The short table below demonstrates how the ActiLume DALI Gen 2 will react to the occupancy signal.

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15
Mode based Occupancy Linking	Range															
Not depending on senders mode	Local occupancy															
	Background level															
	Ignore															

Table 6

5.3 Group based linking

Group based linking is sharing occupancy information and each ActiLume DALI Gen 2 will react on it in its own way.

Example

See drawing below of an office plan. In the corridor there are several ActiLume DALI gen 2 and each office has an ActiLume DALI Gen 2. All ActiLume DALI Gen 2 have a Group programming as given in the drawing. All ActiLume DALI Gen 2 in the corridor will act as one since they all have the same group numbers (Group 1, 2, 3 and 4). For all ActiLume in the corridor mode, the lowest group number is "1". This is called the Base Group

Number. The other Group numbers (2, 3 and 4) are called Secondary Group Numbers. If someone is present in the most left office where the ActiLume DALI is assigned to Group 2, the other cell office which also is assigned to Group 2 will act in the same way since they have the same group number. The ActiLume DALI Gen 2 that are in the corridor will act on this presence because they also have been assigned to Group 2. Since Group 2 is not their lowest group number they will act on this presence in a different way. The way all ActiLume DALI Gen 2 will act on one another also depends in which mode they are. The reaction to Base Group Number and Secondary Group Number in relation to the various modes is given in the table below.

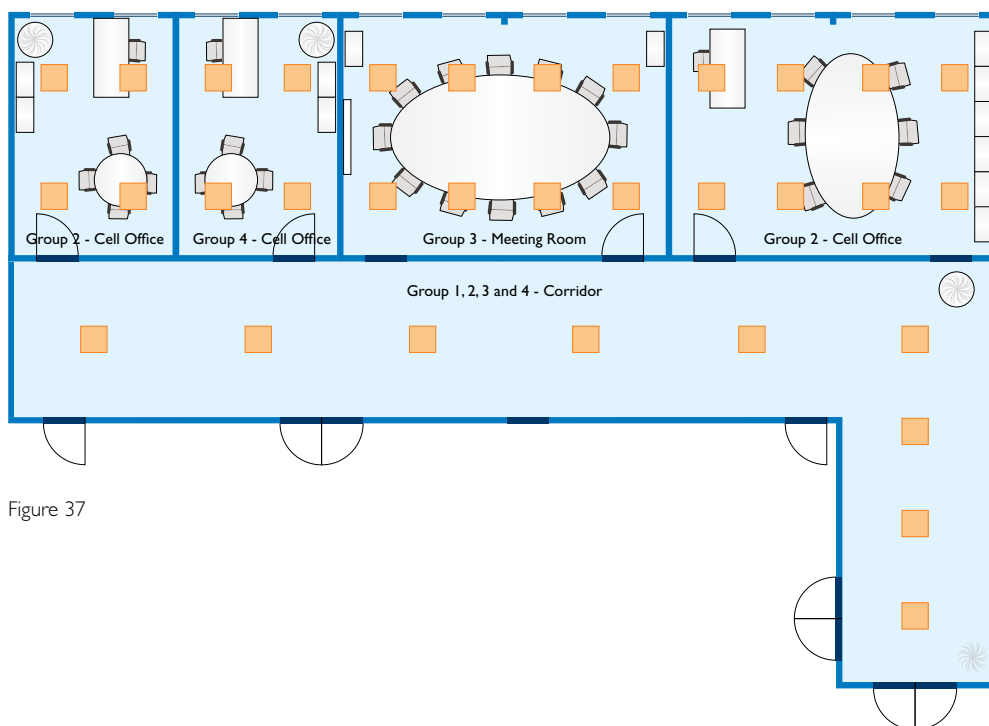


Figure 37

		Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6	Mode 7	Mode 8	Mode 9	Mode 10	Mode 11	Mode 12	Mode 13	Mode 14	Mode 15
Group based Occupancy Linking	Range															
Base Group Nr (Lowest group number)	Local occupancy															
	Background level															
	Ignore															
Secondary Group Nr (Successive no)	Local occupancy															
	Background level															
	Ignore															

Table 7

6 Changing default settings (commissioning)

During commissioning and configuring, every now and then, the lights will blink as a confirmation that the programming sequence done is executed by the ActiLume DALI Gen 2.

If the lights were off when starting this commissioning or configuring of the ActiLume DALI Gen 2 system, the system will always end with all lights on, except when the mode in which the ActiLume DALI Gen 2 is, is based on the “manual on / auto off” principle. In that case the lights will always be turned off after the blinking.



Figure 38

Various default settings of the ActiLume DALI Gen 2 can be changed by means of a remote control (IRT8099/20) or by using the MultiOne2Controls software package in combination with the LCN6800 interface. The usage of this software package and interface will be explained in a separate chapter 14, “MultiOne 2 Controls”.

In this chapter it will be explained how to make changes using the remote control IRT8099/20. In the subchapters below there will be references to the red LED and green send button. In the picture above you can see where they are located.

6.1 Changing the mode

The default active mode is Mode 1 – Cell Office. There are 3 possible ways to change the active mode.

6.1.1 Using the IRT8099

Follow the next steps:

- 1: Press “1-15”
- 2: Select your mode to be made active
For Mode 1 press “1” or “0” followed by “1”
For Mode 14 press “1” followed by “4” etc
- 3: Wait until the red LED stops blinking
- 4: Point the front of the remote to the multi sensor LR11663 and press the green send button



Figure 39

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.

6.1.2 Using the IRT8098

When using the IRT8098, only Mode 1 or 2 can be selected. Follow the following steps to either select Mode 1 or Mode 2.

By pressing the button “cell office” or “open plan” the ActiLume DALI Gen 2 the related Mode will be activated. During transmission a red LED on the IRT8098 will light up. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.



Figure 40

6.1.3 Using the Service button on sensor

Even without any remote control a selection can be made between Mode 1 and Mode 2. In this way it is possible to toggle between Mode 1 and Mode 2. By pressing the service button for less than 1 second, the mode setting is changed and there will be a confirmation from the ActiLume DALI Gen 2 by blinking of the lights.

- ▶ Mode 1 = 1 flash
- ▶ Mode 2 = 2 flashes



Figure 41

6.2 Request active Mode

If there is uncertainty about the selected mode number, the ActiLume DALI Gen 2 can be requested to acknowledge which mode is active.

- 1: Press "Mode ?" while pointing the remote to the multi sensor LRI1663
- 2: All lights will go to minimum level.
- 3: The number of flashes have to be counted and represents the mode number.
- 4: The lights will go back to their previous situation



Figure 42

6.3 Setting the background level

By default the background level is set to 10% or 20% depending on the active mode. To change the background level, by means of the IRT8099, follow the next steps:

- 1: Press "%"
- 2: Press "1" for 10%
"2" for 20%
"3" for 30%
"4" for 40%
"5" for 50%
"7" for 60%
"8" for 70%



Figure 44

- 3: Wait until the red LED stops blinking
- 4: Point the front of the remote to the multi sensor LRI1663 and press the green send button

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.

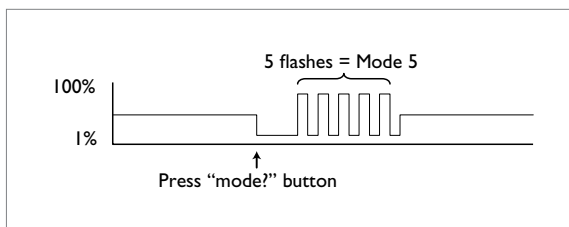


Figure 43

6.4 Changing Power-Up-State

By default the power-up state depends on the active mode. To change the power-up state, using the IRT8099, follow the next steps:

- 1: Press “on/off”
- 2: Press “on” or “off”
“on” for power-up state on
“off” for power-up state off
- 3: Wait until the red LED stops blinking
- 4: Point the front of the remote to the multi sensor LRI1663 and press the green send button



Figure 45

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.

6.5 Switching between configurations

There are 3 different configurations possible: BMS, Parallel Linking and Window/Corridor. By default Parallel Linking is active. To change the configuration using the IRT8099, follow the next steps:

- 1: Press “Config”
- 2: Select your configuration
“1” = BMS
“2” = Parallel linking
“3” = Window/Corridor
- 3: Wait until the red LED stops blinking
- 4: Point the front of the remote to the multi sensor LRI1663 and press the green send button



Figure 46

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.



Important

The Port 2 configuration change will only be effectuated after a mains cycle.

6.6 Request active Configuration

If there is uncertainty about the active configuration, the ActiLume DALI Gen 2 can be requested to acknowledge which configuration is active.

- 1: Press “Link ?” while pointing the remote to the multi sensor LRI1663
- 2: All lights will go to minimum level
- 3: The number of flashes have to be counted and represents the active configuration
- 4: The lights will go back to their previous situation



Figure 47

- 1 Flash means BMS configuration.
- 2 Flashes means Parallel Linking configuration.
- 3 Flashes means Window/Corridor configuration.



Important

The number of flashes is the *active* configuration. This means if a different configuration is programmed without a mains cycle, the “old” configuration is still active.

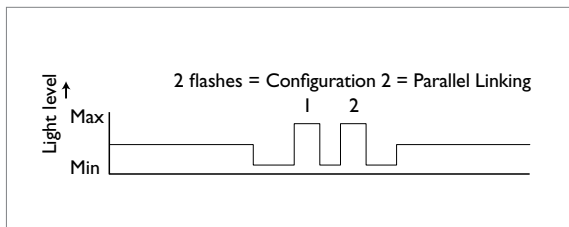


Figure 48

6.7 Setting the IR group

When using more than 1 ActiLume DALI Gen 2, each with their own remote control, it is very well possible that they will disturb one another. In order to prevent this, a different IR group can be defined for each ActiLume DALI Gen 2. By default the IR group is “A”. To change the IR group using the IRT8099, follow the next steps:

- 1: Press “A-G”
- 2: Select your IR group
 “1” for IR group A
 “2” for IR group B
 “3” for IR group C
 “4” for IR group D
 “5” for IR group E
 “6” for IR group F
 “7” for IR group G
- 3: Wait until the red LED stops blinking
- 4: Point the front of the remote to the multi sensor LRI1663 and press the green send button



Figure 49

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink as a confirmation that the transmission is received correctly and the requested change has been made.

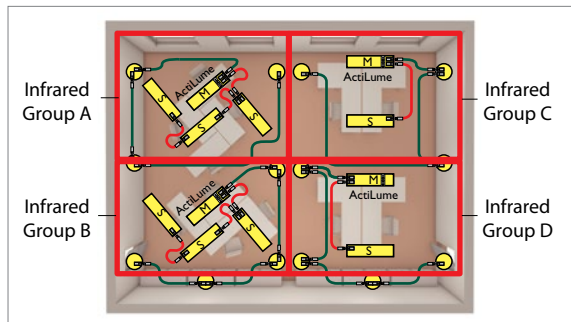


Figure 50



Note

In order to have the remote controls used by the end user set to the correct IR channel, please refer to the datasheets of the relevant remote control unit on how to change the IR group setting of the remote. This is mostly done by means of dipswitches or a rotary switch which is located in the battery compartment.



Note

Changing the IR channel has no influence on the remote controls used for commissioning. These remotes use a broadcast signal which is accepted independently from the IR channel the ActiLume DALI Gen 2 is in.

6.8 Resetting the ActiLume DALI Gen 2

If it is needed to reset the ActiLume DALI Gen 2, this can be done using the IRT8099, following the next steps:

- 1: Press “>0<”
- 2: Point the front of the remote to the multi sensor LRI1663 and press the green send button



Figure 51

During transmission the red LED on the IRT8099 will blink. After transmission the lights connected to the ActiLume DALI Gen 2 will blink twice as a confirmation that the transmission is received correctly and the requested reset has been made.



Note

This reset will set all variables back to default level for all Modes and will make Mode 1 active.

6.9 Walk test

It is very important to have sufficient coverage of the presence detection so people are detected and the lights will react on that in the correct way. The walk test function is used to check the coverage area of the movement detector. By pressing the button on the remote control, the ActiLume DALI Gen2 will flash the lamps once as an acknowledgment that the walk test mode has been entered. After this all lamps will go to lowest light level to indicate that it is ready to do the walk test.

When entering the walk test mode, the PIR sensor either from the multi sensor or from the extension sensor can execute the walk test. However, the response however will be different. This is mainly due to the unique detection algorithm inside the extension sensor.

Behavior of the multi sensor

In the walk test mode the lighting is set to 1% and every time movement is detected, the light goes to 100% for 1 second and returns to 1%. It can immediately detect the next movement.

If the coverage of the standard multi sensor LRI1663 is insufficient, the coverage can be extended using an extension sensor. There are 2 types available, namely the luminaire based version (LRM8119) and the ceiling mounted version (LRM8118).

Behavior with extension sensor

In the walk test mode the lighting is set to 1%. Once movement is detected by the extension sensor, the light goes up to 100% and will stay at that level for up to a maximum of 60 seconds, even when there is no movement detected. Then it will return to 1% indicating it is ready for the next movement detection. These 60 seconds are due to the settings inside the extension sensor - this time period cannot be adjusted.

In walk test mode, DDR, DDS DDO will be disabled.



Figure 52

Exiting the walk test mode

The ActiLume DALI Gen 2 will automatically recover from the walk test situation, and return into active state, 60 seconds after last movement detection of the complete system so including possible detection by extension sensors. At this point it will flash all connected lights twice.

The alternative way to exit the walk test mode is to press the button on the remote control again. The controller will exit the walk test mode by flashing all connected lights twice.

6.10 Grouping of ballasts/drivers

When using the ActiLume DALI Gen 2 in a Parallel Linking or BMS configuration, all ballasts/drivers have to be connected to the DALI 1 Port (Window). In order to make a distinction between which luminaires are on the window side, which ones on the corridor side, etc, it is possible to place the luminaires into 4 different DALI groups each with their own specific functionality depending on the selected Mode.

- Group 1 = Window row
- Group 2 = Corridor row
- Group 3 = Middle row/decorative lighting
- Group 4 = Blackboard lighting

To start the process, press the “DALI address” button, while pointing the remote to the related multi sensor. The ActiLume DALI Gen 2 will first set all lights to maximum light output and start searching for connected devices. This can take some time depending on how many devices are connected. Each time a device is found, the device will be set to minimum level. When all devices are found, the ActiLume DALI Gen 2 will put all devices to minimum level. One device will start flashing and the system needs to be informed into which Group this light point should be placed by pressing the corresponding button on the remote (1 = Group 1, 2 = Group 2, etc). As soon as the luminaire is assigned to a certain group, the next, randomly chosen, luminaire will start flashing and the luminaire should be assigned to a Group in the same way. This sequence will continue until all luminaires are assigned to a specific group.



Figure 53

As soon as the last luminaire is assigned, the full system will flash two times as an acknowledgement that the programming has succeeded after which all luminaires will return to their default setting related to the selected mode of the ActiLume DALI Gen 2.

6.11 DALI addressing of the ActiLume DALI Gen 2

The ActiLume DALI Gen 2 itself can also have a DALI short address when in Parallel Linking mode or in BMS mode. This can be done by connecting a tool to the Parallel Linking line that does the randomization according to the DALI standard. How this sequence is going depends on the software package used to have this done. Another way to do it is to force a DALI address onto the ActiLume DALI Gen 2 by using the IRT8099.

First you should consider which address to give to which ActiLume DALI Gen 2.

To start the sequence press two times “9” (wait for the LED to stop flashing before pressing “9” for the second time). Now press the address you want to give to the ActiLume DALI Gen 2. For address 24 press “2” (wait for the LED to stop flashing) and press “4”. The ActiLume DALI Gen 2 will acknowledge the addressing by flashing its lights. For addresses “0” to “9”, an extra “0” should be pressed to complete the addressing. For example if address “2” is needed, the following sequence should be pressed while pointing the IRT8099 to the multisensor: “9”, “9”, “0” and “2”.

6.12 Group addressing of the ActiLume DALI Gen 2

Apart from giving the ActiLume DALI Gen 2 a short address it is also possible to give it a DALI Group address. This can be very handy when a network of several ActiLume DALI Gen 2 is connected to a BMS. The group address can be given to the ActiLume DALI Gen 2 by pressing the “group” button on the IRT 8099 followed by a DALI group number. The DALI group number can be from 0 to 15. By default it is set to 255 which means no group address.



Figure 54

Example

The ActiLume DALI Gen 2 should get Group address 8. In this case, while pointing the IRT8099 towards the multi sensor of the related ActiLume DALI Gen 2:

- The button “group” is pressed
- Wait until the LED stops flashing
- The button “8” is pressed
- Wait until the LED stops flashing
- The lights will blink as a conformation the group addressing has succeeded

6.13 Fast mode

In order to save time during testing and/or demonstration, the ActiLume DALI Gen 2 provides a special mode, some timer related settings will be drastically reduced resulting in fast response from the ActiLume DALI Gen 2.

To enter this feature, the following sequence of buttons on the IRT8099 have to be pressed while pointing the remote control the related multi sensor: “1”, “3”, “7”, “9”. The ActiLume DALI Gen 2 will response by blinking the lights once to indicate the fast mode had been entered.

Parameter changes under fast mode: Several time-related parameters are reduced to 0.1 of their setting and it affects the following timers:

- ▶ Hold Time
- ▶ Prolong Time
- ▶ DDS Measure Time
- ▶ Smart Time
- ▶ Retention Time

To exit fast mode again press the sequence of buttons (“1”, “3”, “7”, “9”) on the IRT8099 while pointing the remote control to the related multi sensor.

To acknowledge the ActiLume DALI Gen 2 has exited the fast mode, it will blink all connected lights twice.



Figure 55

6.14 100 hour burn-in

Many fluorescent lamp manufacturers state that prior to normal use, fluorescent lamps should not be dimmed. First these lamps should be “burned in” for 100 hours in order to maintain light quality and lifetime also at low dimming level. In order to enable this, the ActiLume DALI Gen 2 has the option to activate the 100 hours burn in feature. During these first 100 hours, all connected lights are not dimmed. The ActiLume DALI Gen 2 uses a burning hour counter based on the status of what is connected to the Window/DALI 1 port.



Figure 56

It is possible to enable and disable the 100 hour burn mode by means of the remote control. By default the 100 hour burn mode is disabled.

To start the 100 hours burn in sequence, press the “100 h” button on the remote control followed by pressing the send button while pointing the remote to the related multi sensor.

If it is needed to stop and reset the timer, this can be done by sending the 100h again as described above or by using the MultiOne2Controls software + interface or send a factory reset as described in Chapter 6.8 - Resetting the ActiLume DALI Gen 2.

Be aware that all other settings and changes that have been made will be reset to factory defaults when doing this and re-commissioning is needed.

During this 100 hour burn in time, all devices connected to the Window/DALI 1 Port and Corridor/DALI 2 Port will not be dimmed.

Only for set point calibration and commissioning, the 100 hour burn mode will temporarily be overridden.

6.15 Some general default settings

In the following table you will find an overview on some general default settings that are valid for a new ActiLume DALI Gen 2.

Mode based Occupancy Linking	Range	Default
Region	EU/APR	
	US	
Application Mode	Mode 1	
	Mode 2	
	Mode 3	
	Mode 4	
	Mode 5	
	Mode 6	
	Mode 7	
	Mode 8	
	Mode 9	
	Mode 10	
	Mode 11	
	Mode 12	
	Mode 13	
	Mode 14	
	Mode 15	
DALI grouping of luminaires	Broadcast	
	Group 1	
	Group 2	
	Group 3	
	Group 4	
Configuration	Window/Corridor	
	Parallel Link	
	BMS	
Occupancy Sharing	Simple Occupancy Linking	
	Group based Occupancy Linking	
	Mode based Occupancy linking	
Assigning DALI Short adress	0 - 63	
	Clear (99)	
Light Level Setpoint	200 to 1000 lux	600 lux *

Table 8

* = Approximate lux level at the table

Mode based Occupancy Linking	Range	Default
Assigning DALI Group address	0 - 15	
	Clear (255)	
IR Group Address	A	
	B	
	C	
	D	
	E	
	F	
	G	
100H burn-in	Disable	
	Enable	
Walk test	On	
	Off	
Fade Time	0 sec.	
	0.7 sec.	
	1 sec.	
	1.4 sec.	
	2 sec.	
	2.8 sec.	
	4 sec.	
	5.7 sec.	
	8 sec.	
	11.3 sec.	
	16 sec.	
	22.6 sec.	
	32 sec.	
	45.3 sec.	
	64 sec.	
	90.5 sec.	
HVAC/Sunblinds Key pass through	Enable	
	Disable	

Table 9

7 Manual control

The ActiLume DALI Gen 2 is the perfect system to keep the light at a constant level without interference. If, however, the light level needs to be changed, this can be done by using a Touch and Dim switch or by remote control, for example.

7.1 Touch and Dim (Push button) control

The Touch and Dim functionality of the ActiLume DALI Gen 2 works in the same way as it is implemented in many other Philips Lighting products. The “T and D” input is used for this application. The push button used must be of the “retractive push to make” type, meaning the contact is closed when the push button is operated, otherwise the contact is open.

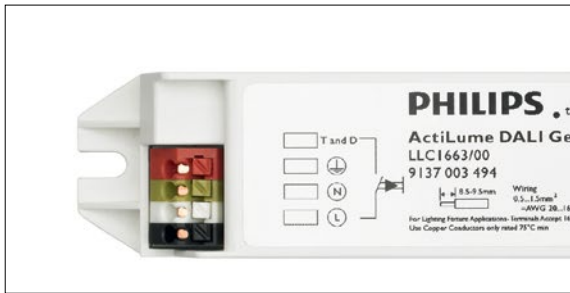


Figure 57

The usage of the Touch and Dim is very intuitive. When pushing the button the lights will react immediately depending on their previous situation. In the table below the different sequences are given.

Action	Duration	Reaction
Very short push	< 0.04 s	Will be ignored
Short push	0.04 - 0.5 s	Switch on/off opposite to previous situation
Long push	0.5 - 10 s	Dim up/down opposite to previous direction

7.2 Wiring

The connection diagram should be as follows:

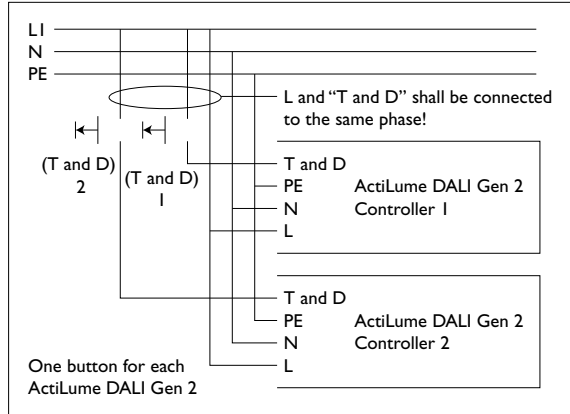


Figure 58

Always take care that the “T and D” connection is connected to the same phase as the L connection. If this is not respected then, when pushing the Touch and Dim button, the voltage going into the controller will be too high and this will adversely damage the controller.

7.3 Infrared (IR) control

There are different IR remote controls for different purposes. These IR remote controls can be categorized into two groups:

- ▶ IR remotes controllers for daily use
- ▶ IR remotes controllers for (re-)programming the ActiLume DALI Gen 2 controller.

The following remotes are for (re-)programming the ActiLume DALI Gen 2

- ▶ IRT8097
- ▶ IRT8098
- ▶ IRT8099

How to use these remotes is explained throughout this document.

The following remote controls are for daily use when needed:

- ▶ IRT8010
- ▶ IRT8030
- ▶ IRT8050
- ▶ UID8510

7.3.1 Using the IRT8010

The IRT8010/00 is a two-key handheld transmitter, suitable for the infrared remote control of lighting installations in point-and-shoot applications. The IRT8010/00 can be used to switch on and off as well as dim up and down a single lighting control circuits (one IR channel control). The infrared group address can be set by means of a rotary switch within the remote control unit itself. For the exact location of the rotary switch see chapter 15.2 – “Data sheet IRT8010”.



Figure 59

Recommended Applications

IRT8010 is mainly used as hand held transmitter to enable manual override of the ActiLume DALI Gen 2 automatic control system. For 1-channel “semi-automatic” (manual on – automatic off) applications it is recommended to use the IRT8010 in combination with IRT8050. The IRT8050 is then used as a “wall switch”, and the IRT8010 provides handheld control. See chapter 15.2 – “Data sheet IRT8010” for more information of the IRT8010.

7.3.2 Using the IRT8030

The IRT8030 is a 4 preset/scenes remote control unit and can be used for wall mounting or tabletop operation (wall holder included). The IRT8030 can be used to select or program light presets (scenes) 1, 2, 3 or 4. The infrared group address can be set by means of 3 dipswitches on the unit itself. See chapter 15.3 – “Data sheet IRT8030” for the exact location of the dipswitches and other information on the IRT8030.



Figure 60

Programming presets (light scenes) with the IRT8030

Since this remote control (IRT8040) is also used for other control systems, a conversion from channels to groups has to be made. Selecting a group has the following meaning for the ActiLume DALI Gen 2:

- Channel 1 = all Groups
- Channel 2 = Group 1
- Channel 3 = Group 2
- Channel 4 = Group 3
- Channel 5 = Group 4

For creating a preset, first the required group must be selected, and then the light level can be set for that particular group. By setting the light level for each group required, store operation can be executed after which the preset can be re-called.

Step 1: select the infrared channel

Group selection is achieved with the “Select Channel” key. A LED indicates the selected group. When the “Select Channel” key is momentarily pressed (less than 1/2 second) the LED shows the (last) selected channel. When the key is pressed continuously or repeatedly, the next channel is selected. This action can be continued or repeated until the required channel has been selected. The selection LED stays on for 5 seconds after last key release.

Step 2: off/down – on/up control

With the “Channel On/up” and “Channel Off/down” keys the selected group can be switched and/or dimmed up or down. During the actual transmission of infrared signals, the LED flashes for verification of the selected channel. After transmission the LED is switched off.

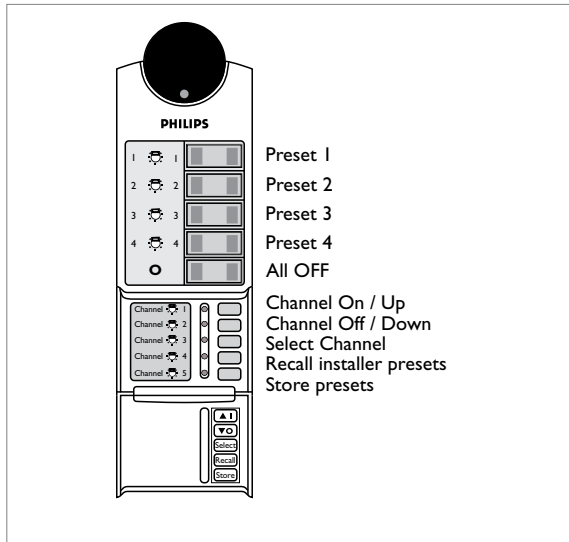


Figure 61

Programming presets

The procedure to be followed is as follows:

- Step 1: Adjust individual control circuits as described before
- Step 2: Press the “Store presets” key
- Step 3: Press the for example the “Preset 2” key to store the setting as Preset 2

Recall factory presets

At any time the user can revert to the pre-programmed presets as set in the factory, by pressing the “Recall factory presets” key. When doing so, the lights will flash twice and Preset 1 will be recalled.



Note

Preset 1 cannot be set to a fixed level because it activates DDR. If a fixed level needs to be programmed, then first deactivate DDR by means of the MultiOne tool (see chapter 14.5 - Feature-tab Scene).

7.3.3 Using the IRT8050

The IRT8050 is suitable for wall mounting or tabletop operation. However, the infrared radiation pattern has been optimized for wall-mounted operation.

The IRT8050 can operate in two types of control Modes:

- ▶ Group control (on/up – off/down)
- ▶ Scene control (also called preset control)



Figure 62

The control Mode can be set by means of 5 dipswitches on the unit itself.

The infrared channel address can be set by means of another 3 dipswitches on the unit itself.

See chapter 15.4 – “Data sheet IRT8050” for more information on the settings and location of the dipswitches.

7.3.4 Using the UID8510

The UID8510 is in fact approximately the same remote control as the IRT8050 with slightly reduced functionality. It is suitable for wall mounting or tabletop operation. However, the infrared radiation pattern has been optimized for wall-mounted operation.



Figure 63

See chapter 15.5 – “Data sheet UID8510” for more information on the settings and location of the dipswitches.

8 DDR set point calibration

Although the ActiLume DALI Gen 2 is set to create a light level of 600 lux by default underneath the light sensor, this can be insufficient or incorrect in some cases. If a different light level is measured than what is expected this is mostly due to the fact that the ActiLume DALI Gen 2 expects certain environment conditions like a reflection factor of 0.3 and a ceiling height of 3 meter.

If the light level is not what it is expected to be, the light level can be calibrated and set to a different level. The daylight depending regulation will use as of that point forward this new set point.

The reason for wanting a different light level can be:

- ▶ The user doesn't like the light level
- ▶ A light level of 600 lux is not according to the design
- ▶ Different environment than expected (different reflection factor)

8.1 Calibration methods

There are 3 ways to calibrate the light level:

- ▶ Auto calibration
- ▶ Calibration by using IR remote controls
- ▶ Calibration by using Touch and Dim

8.1.1 Auto calibration

Press the service button on the LRI1663 for 5 seconds: (3 – 7 seconds) and the ActiLume DALI Gen 2 will enter the automatic set point calibration mode.

- ▶ When releasing the button, any ladder or other items that will not be there during normal operation need to be taken away
- ▶ The lights will be switched off
- ▶ 10 seconds after the lights are switched off, the ActiLume DALI Gen 2 will read the light level
- ▶ Lights will be set to 100% output
- ▶ 10 seconds after the lights are at 100%, the ActiLume DALI Gen 2 will read the light level
- ▶ A calculation will be done and calibration set point will be set to 100% light output level – 0% light output level
- ▶ Lights will blink twice to indicate the set point is stored



Figure 64

8.1.2 Calibration by using IR remote controls

The second way to calibrate the light is by using a remote control (IRT8099) and a lux meter. By following the steps below, the light level can be set to any specific level.

- ▶ Place the lux meter at the desk underneath the sensor
- ▶ Dim the lights up/down by means of the remote until the correct light level is reached
- ▶ Press the save button on the remote
- ▶ Lights will blink twice to indicate the set point is stored



Figure 65

This calibration method can also be done by using the up/down and save keys of the IRT8097 and/or IRT8098



Figure 66

8.1.3 Calibration by using Touch and Dim

The third option for setting a different default light level is by using the Touch and Dim (or the up/down keys of any of the remotes) in combination with the service button on the LRI1663 multi sensor.



Figure 67

After the last up/down dimming action done by the Touch and Dim or the up/down keys of any of the remotes, the service button on the sensor will have a store function for 30 seconds. If pressed briefly (less than 1 second), the ActiLume DALI Gen 2 will store the light level as a new set point for DDR. If the service button is not pressed within these 30 seconds, the function of the service button will be switched back to its default behavior.

9 Built in requirements

9.1 Wiring inside the luminaire

The wiring inside a luminaire is of the same type as that used for connecting lamps to ballasts/drivers and for the mains connections. The LR11663 multi sensor on the other hand has its own cable on one side attached to the sensor and on the other side a RJ10 (4p4c) connector. This RJ10 connector can be pushed/clicked into the ActiLume DALI Gen 2 and is in this simple way connected.

9.2 Wiring outside the luminaire

In many cases the DALI line(s) have to be brought outside the luminaire in order to connect the DALI line to other luminaires or to a gateway of a BMS. Since the DALI line(s) have only basic insulation towards the mains, these cables should be treated as mains cables and therefore must be mains rated cables to be used in combination with strain relief at the place where the DALI line(s) enter/leave the luminaire.

9.3 Mounting

The sensor and ActiLume DALI Gen 2 controller each have their own way of being mounted inside a luminaire. These devices are not meant to be placed on the outside of a luminaire or being to be treated as independent devices.

9.3.1 Sensor LR11663

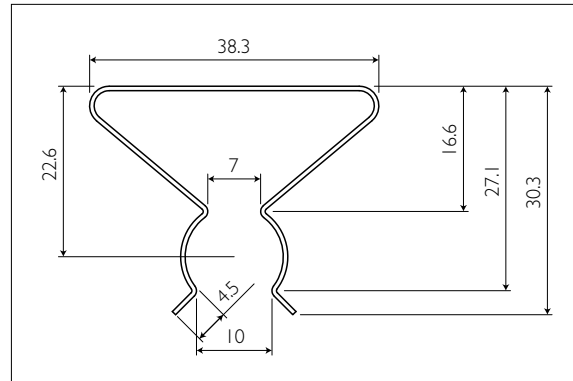


Figure 68

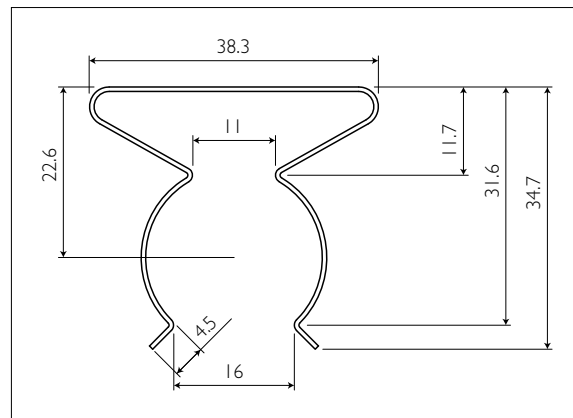
The sensor can be mounted into a luminaire in different ways. The following options are the most commonly used ways of mounting the sensor.

The most simple way of mounting the sensor into the luminaire is by using a metal clip. The clip can be mounted on the backside of the sensor and then it can be clipped onto the lamp.

There are 2 different clips available, one for TL-D (T8) lamps and one for TL5 (T5) lamps. The TL5 version is called the LCA8002. The TLD version of the clip is called the LCA8003. Both types can be ordered separately and are packed in boxes of 50 pieces.



LCA8002/00



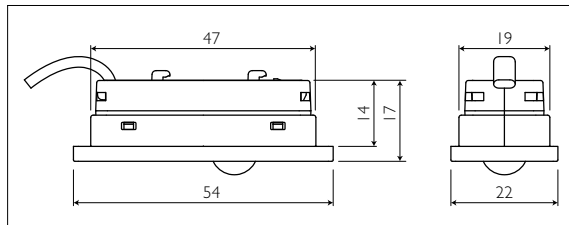
LCA8003/00 Figure 69

When a sensor is clipped on the lamp (or attached to optics) and the distance between sensor and lamp is less than 8cm, then the sensor should be located at the cold side of the lamp. The cold side of the lamp is the side where the wiring towards the ballast is the longest.

In order to increase the front size of the sensor so it will fit better between the lamella, a ring is available that can be clicked onto the front side of the sensor. The ring model number is LCA8001/00 and can be ordered in boxes of 100 pieces.



Figure 70



LCA8001/00 Figure 71

A second ring/clip, called LCA8005, can also be used but is meant for mounting the sensor directly into the metal of the luminaire. A rectangular hole of 60 x 22 mm must be made in the luminaire so the clip (including the sensor) can be put into the hole.



Figure 72

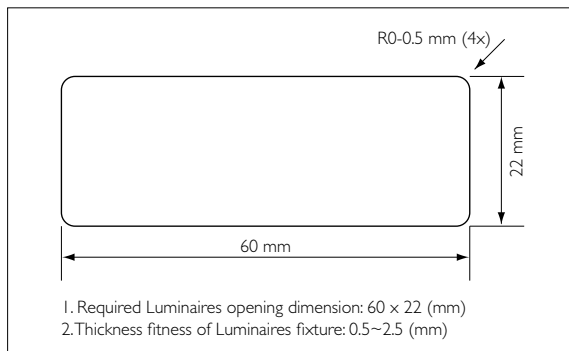


Figure 73

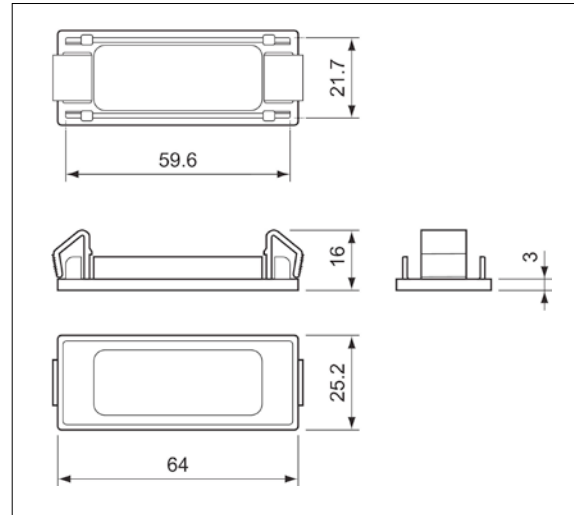


Figure 74

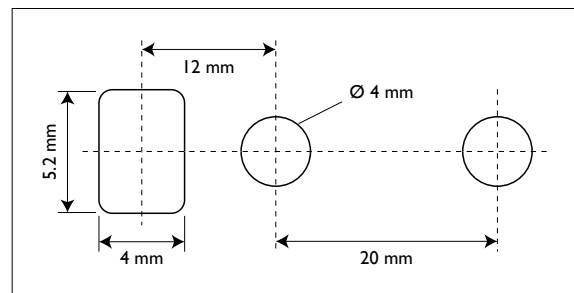


Figure 75

Another possibility is to use the latching rills on the back of the sensor. To use this way of mounting, 2 holes of 4 mm diameter have to be drilled 20 mm apart. A third hole is needed for the sensor wire go through the material. The thickness of the material can be up to maximum of 0.7 mm.

If the sensor is placed within the luminaire, a distance of at least 8 cm should be kept between sensor and sensor wiring and the “warm” side of the lamp. The warm side of the lamp is the side where the wiring from the ballast to the lamp(s) is the shortest.

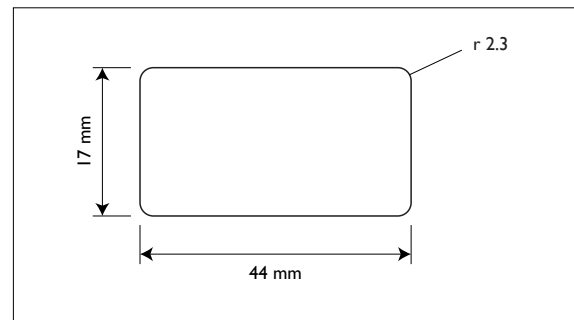


Figure 76

Another way of mounting the sensor is to punch a hole in the luminaire (e.g. in the infill panel) and push the sensor from the inside into the rectangular hole so only the front part of the sensor will be visible on the outside of the luminaire. Also here, a distance of at least 8 cm should be kept between sensor and sensor wiring and the “warm” side of the lamp. The warm side of the lamp is the side where the wiring from the ballast to the lamp(s) is the shortest.

Please contact your local sales representative for more info on ordering these rings or other accessories.

9.3.2 Sensor cable

The sensor has a PVC-free 300V rated 4-core cable. One end is connected to the sensor and on the other end an RJ10 (4p4c) connector is attached.



Important

The sensor wire can be extended with a male-female RJ10 (4p4c) 4 wire cable of up to 5 meter. The system can handle this extension and will function as expected. EMI behavior however, might be influenced by this extension.

9.3.3 Sensor position

If multiple luminaires are used in the same area, the distance between the different sensors should be at least 1.5 meter. This to prevent a sensor from “seeing” the light variation of the other luminaire and trying to act on it.

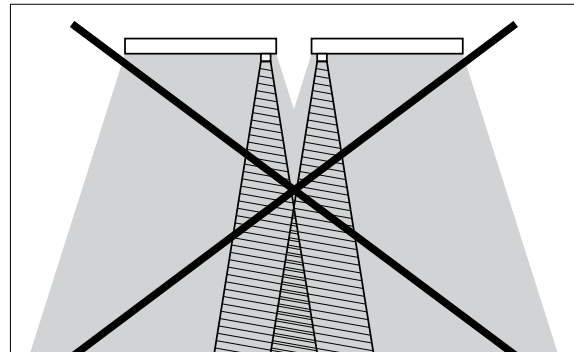
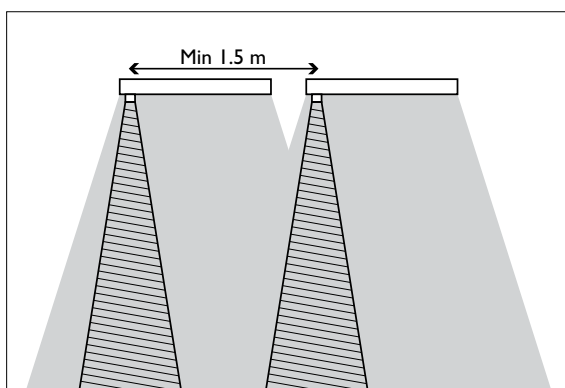


Figure 77

9.3.4 Controller LLC1663

It is easy to mount the ActiLume DALI Gen 2. Just 2 holes are needed in the following pattern.

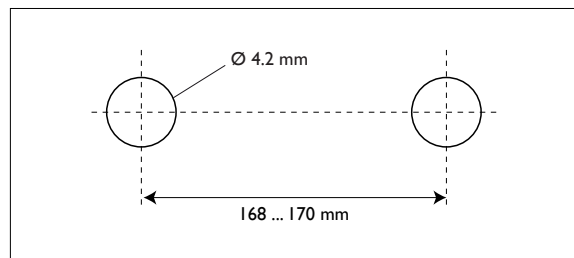


Figure 78

The ActiLume DALI Gen 2 can be mounted by means of 2 screws and nuts and using these holes.

9.3.5 Wiring to and from the controller

The ActiLume DALI Gen 2 has WAGO 250 connectors and a RJ10 receptacle. The WAGO 250 is a connector that accepts a wide range of wire diameters from 0.5 mm² to 1.5 mm² (16 ... 20 AWG) and a strip length of 8.5 ... 9.5 mm. This makes it easy to have the ActiLume DALI Gen 2 fit into any luminaire without having to use special wiring. The RJ10 receptacle connects and locks the cable of the LRI1663 multi sensor.

9.4 System capabilities and limitations

Under all conditions a maximum of 2 PBU's and a maximum of 2 extension sensors are allowed to be connected to the ActiLume DALI Gen 2. Furthermore the maximum supply current of Port 1 and Port 2 has to be respected when connecting peripherals. PBU's can only be connected to Port 1 whereas the extension sensors can be connected to Port 1 as well as Port 2.

When Port 2 configuration is switched, see also chapter 6.5, "Switching between configurations", a visual feedback will be received by blinking of the lamps:

- ▶ Port 2 switched to BMS configuration, all the lamps connected to Port 1 port will blink once
- ▶ Port 2 switched to Parallel Linking configuration, all the lamps connected to Port 1 port will blink twice
- ▶ Port 2 switched to Corridor configuration, all lamps connected to Port 1 and Port 2 will blink three times



Important
The Port 2 configuration change will only be effectuated after a mains cycle

When in Parallel or BMS configuration, a maximum of 64 ActiLume DALI Gen 2 can be connected in parallel.

The limits on how many ballasts/drivers in combination with PBU's and extension sensors are given below. In these tables you will find the absolute maximum numbers. Less is, of course, no problem.

In BMS or Parallel Linking configuration the absolute maximum limitations are as follows:

BMS/Parallel linking configuration		
PBU	Ext sensors	ballasts
2	2	22
2	1	23
2	0	24
1	2	27
1	1	28
1	0	29
0	2	32
0	1	33
0	0	34

Table 11

In Window/Corridor configuration the absolute maximum limitations are as follows:

Window/corridor configuration					
Window			Corridor		
PBU	Ext sensors	ballasts	PBU	Ext sensors	ballasts
2	2	22	0	0	12
2	1	23	0	1	11
2	1	23	0	0	12
2	0	24	0	2	10
2	0	24	0	1	11
2	0	24	0	0	12
1	2	27	0	0	12
1	1	28	0	1	11
1	1	28	0	0	12
1	0	29	0	2	10
1	0	29	0	1	11
1	0	29	0	0	12
0	2	32	0	0	12
0	1	33	0	1	11
0	1	33	0	0	12
0	0	34	0	2	10
0	0	34	0	1	11
0	0	34	0	0	12

Table 12



Important
PBU's can only be connected to the Window (Port 1) connection of the ActiLume DALI Gen 2.

10 Scenes

The ActiLume DALI Gen 2 controller supports 4 different presets/scenes from Preset 1 to Preset 4. Preset 1 is the factory default scene. In this scene the Daylight Dependent Regulation (DDR) is active and the corridor row luminaires operate with an offset which is predefined. Depending on which Mode is chosen, the Middle row/decorative lighting will go to DDR or 100% depending on the active mode and Extra Manual-On remains will stay in its current state. It is possible to recall 4 different scenes via a remote controller (IRT8030 and IRT8050). The fading time will be determined by the DALI fade-time setting and is by default 0.7 s. There will be no Daylight Dependent Regulation for Preset 2, 3 and 4.

Default scene values:

	Group #	Preset 1 ¹	Preset 2	Preset 3	Preset 4
Window row	1	DDR	100%	50%	10%
Corridor row	2	DDR ²	100%	50%	10%
Middle row/decorative	3	100%	100%	50%	10%
Extra Manual-on row	4	Unchanged	100%	50%	10%

¹ By factory default DDR is enabled for Group 1 and 2 as described in this table for all modes.

If DDR is disabled by using the MultiOne tool, Scene 1 can be set to a fixed level.

² Group 2 in Mode 10 has no DDR but is fixed to 100%.

Table 13

11 BMS network interface

ActiLume DALI Gen 2 can be connected to a Building Management System (BMS) via a gateway that converts the BMS protocol into DALI and vice versa. This interface uses the standard DALI commands to control the ActiLume DALI Gen 2. The BMS protocol can be for example LON, EIB/KNX, Ethernet, BACnet etc.

Under BMS configuration mode, the ActiLume DALI Gen 2 controller will act in the following way:

- ▶ It will behave as a DALI slave (like a ballast/driver) and respond to the DALI commands sent by the gateway. It is not possible to program and interact via the ActiLume DALI Gen 2 with individual ballast/driver connected to the ActiLume DALI Gen 2.
- ▶ Presence commands will be passed through onto the DALI BMS bus so other systems can act on that
- ▶ A set of BMS commands (e.g. for HVAC and Sunblind) received from IR remote controls will be transferred to the DALI BMS (Up/down heating/ventilation/ sun blinds)
- ▶ Night mode (-Enable / -disable and set parameters) can be enabled and disabled via the BMS system

12 Parallel Linking

Multiple ActiLume DALI Gen 2 can be connected together to form a large control area. The interlinking of the various ActiLume DALI Gen 2 is done by connecting them to the same DALI network by means of the DALI Port 2 (Parallel port) connection. In this way the ActiLume DALI Gen 2 can share its occupancy status. The ActiLume DALI Gen 2 can also form a parallel network together with the OccuSwitch Advanced but since the occupancy sharing protocol of the OccuSwitch Advanced is a simple protocol, the ActiLume DALI Gen 2 must be told that one or more OccuSwitch Advanced are in the system. This can only be done by means of the MultiOne2Controls software and interface.



Important

Since all ActiLume DALI Gen 2 connected together are supplying a small current onto the Parallel Linking line, all “DA+” connections must be connected together and “DA-” connections must be connected together. This is because these connections are polarity sensitive.

13 Peripheral devices

The Window and Corridor connection (DALI port 1 and 2) of the ActiLume DALI Gen 2 can support some extra input devices in addition to the ballasts/drivers. The ActiLume DALI Gen 2 controller is designed to support 2 types of other devices, namely push button units and extension sensors. These devices will use a Philips Lighting proprietary protocol instead of DALI when communicating with ActiLume DALI Gen 2 controller, although they are sharing the same DALI connection (Window or Corridor) with ballasts/drivers.

13.1 Push Button Units



Figure 78 LCU2070 Push-button unit

The PBUs (Push Button Units) give the opportunity to enhance the system with some extra functionality without having the restriction of choice for components. The PBU is a device that has 8 flying leads and can support up to 4 pushbuttons. Each pushbutton will have its own predefined functionality. There are 2 different types of PBUs, namely the LCU2070 and the LCU2071. They can be used separately or can be combined with one another. In the table below the functionality of the PBUs is given.

PBU	Switch	Group #	Action
LCU2070	A1	1, 2, 3	On / Dim up
	B1	1, 2, 3	Off / Dim down
	C1	4	On / Dim up
	D1	4	Off / Dim down
LCU2071	A2	1, 2	On / Dim up
	B2	1, 2	Off / Dim down
	C2	3	On / Dim up
	D2	3	Off / Dim down

Table 14

If multiple ActiLume DALI Gen 2 are connected together via parallel linking or BMS configuration, the instructions send by a PBU, will be communicated to other ActiLume DALI Gen 2.

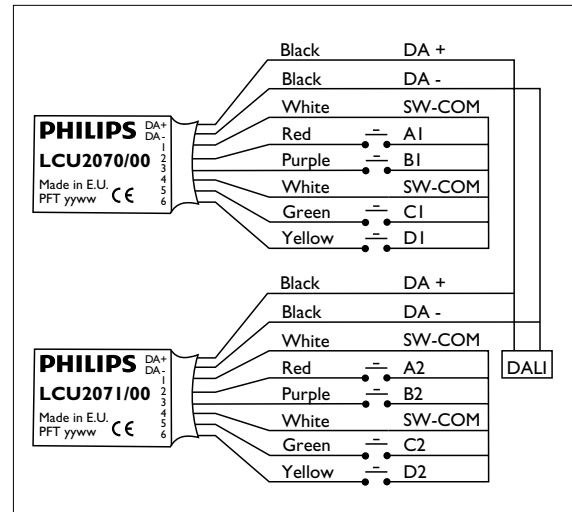


Figure 79 LCU207x/00 wiring



Important

PBU's can only be connected to the Window (Port 1) connection of the ActiLume DALI Gen 2.

13.2 Extension sensor LRM8118 and LRM8119



Figure 80



Figure 81

If the PIR coverage of the standard multi sensor is insufficient, up to 2 extra extension sensors can be connected to one ActiLume DALI Gen 2. The LRM8118 is an extension sensor to be mounted into the ceiling and the LRM8119 is a sensor to be mounted into a luminaire. Both sensors are connected directly onto one of the DALI connections and they will be powered via the DALI line, so no extra wiring/connection to the mains is needed.

If an extra cover (LCA8004) is placed on the LRM8119, it has the same look and feel as the multi sensor and will have the same dimensions and therefore fits in/on the same brackets and clips as described above.

The LRM8118 however is a ceiling mounted version. To mount this extension sensor, a hole must be drilled in the ceiling in which the sensor fits.

Both extension sensor LRM8118 and LRM8119 have a viewing angle restrictor. This shield can be extracted from the LRM8118 extension sensor at any time.

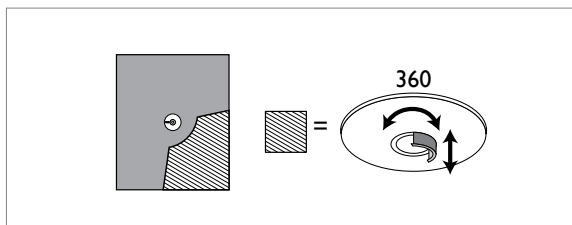


Figure 82

For the LRM8119 there is a cover (LCA8004) available that has the same type of shield and will give the same result as for the LRM8118.



Figure 83

If a ceiling mounted extension sensor needs to be used and there is no possibility to mount the sensor into the ceiling (for example a concrete ceiling) there is always the possibility to mount the sensor against the ceiling. To make this possible there is a special adapter available - the LRH8100.



Figure 84

14 MultiOne 2 Controls

This chapter is a small introduction on how to commission and configure the ActiLume DALI Gen 2 using the MultiOne2Controls software. If you are using the standard MultiOne software you will only get part of the functionality as described below. How to use the software itself is explained in the “Quick start guide” and “Manual” that accompanies the MultiOne software. This will not be explained in this application guide.



Figure 85

Apart from the MultiOne2Controls software also an interface is needed (the LCN8600/00 MultiOne interface USB2DALI) to be able to make a connection between your computer and the ActiLume DALI Gen 2 system.

14.1 Connecting the interface and startup of the software

The interface can only be used if the ActiLume DALI Gen 2 is in parallel configuration (which is the default configuration) or in BMS configuration. Furthermore it is important to respect the polarity of the wiring by which the parallel linking is done. If one ActiLume DALI Gen 2 is connected incorrectly, it is impossible to communicate with the system.

If two or more ActiLume DALI Gen 2 are connected correctly together, the interface can be connected to the (DALI Corridor) Port 2 of one of the ActiLume DALI Gen 2. After this connection has been made the USB cable (which is supplied together with the interface) can be used to connect the interface to your computer after which the software can be started. Select “All” when selecting the application mode in the software. After scanning the network or using the Commission button, all ActiLume DALI Gen 2 will be displayed in the Network tree.

14.2 Reading settings from the ActiLume DALI Gen 2

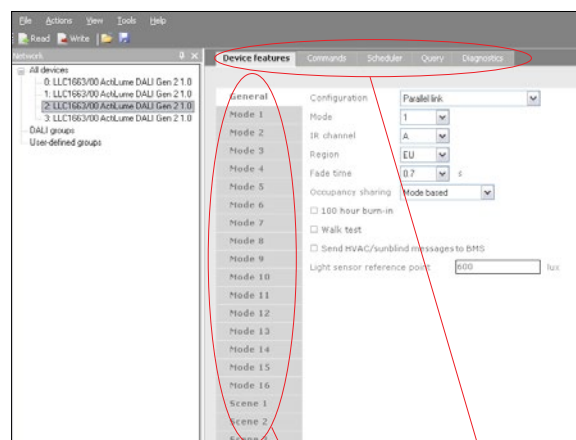


Figure 86

Feature-tabs

Tabs

When selecting an ActiLume DALI Gen 2 in the Network screen by clicking on it and on the right hand side selecting the “Device features” tab, you will find a listing of data. On the left side you will find feature-tabs called General, Mode 1 to Mode 16 and Scene 1 to Scene 4. The setting values that are displayed are NOT the actual values. To see the actual values of the ActiLume DALI Gen 2, the Read button has to be used by clicking on it. A popup will appear (“Read feature configuration”), in which feature -tabs can be (de)selected that have to be read. By default all feature-tabs are selected. If only Mode 1 needs to be read, than choose “(De)select all” and select Mode 1 only.

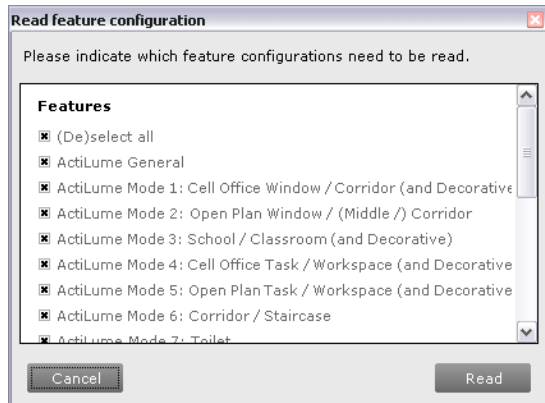


Figure 87

It is advised to select only those feature-tabs that are needed to be read/changed because a full read cycle of all feature-tabs will take approximately 6 minutes.

14.3 Feature-tab General

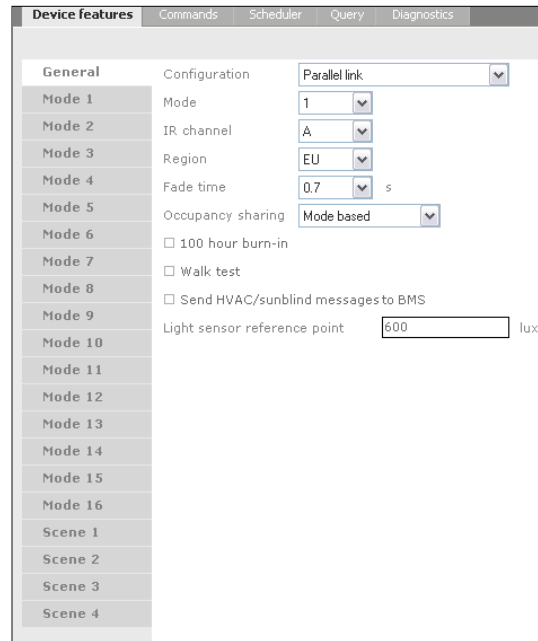


Figure 88

This feature-tab contains general information of the ActiLume DALI Gen 2 that is used as overall setting regardless which mode is active.

Op this feature-tab you will find some selectable / changeable features.

In the table below you can find the default settings and the range in which it can be changed.

The fade time that can be set in this feature tab is the fade time used when changing from one scene to another scene.

Item	Default value	Range	Units
Configuration	Parallel link	Window / Corridor - Parallel link - BMS	
Mode	1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	
IR channel	A	A, B, C, D, E, F, G	
Region	EU	EU, US	
Fade time	0.7	0, 0.7, 1, 1.4, 2, 2.8, 4, 5.7, 8, 11.3, 16, 22.6, 32, 45.3, 64, 90.5	seconds
Occupancy sharing	Mode based	Simple, Mode Based, Group Based	
100 hour burn-in	disabled	disabled - enable	
Walk test	disabled	disabled - enable	
Send HVAC/sunblind messages to BMS	disabled	disabled - enable	
Light sensor reference point	100	4 ... 15000	Lux [1]

[1] = This is the lux level on the light sensor

Table 15

I4.4 Feature-tab Mode

Mode	Parameter	Value	Unit	Other
General	Hold time	15	min	
Mode 1	Prolong time	0	min	
Mode 2	Smart time	10	min	
Mode 3	Grace time	10	s	<input checked="" type="checkbox"/> Fade during grace period
Mode 4	Light status on power up	Lights off		
Mode 5	Background level	10	%	
Mode 6	Retention time	15	min	
Mode 8	Occupancy mode	Auto on / auto off		
Mode 10	Daylight dependent override	<input checked="" type="checkbox"/>		
Mode 11	Activate regulation/switching	<input type="checkbox"/>		
Mode 12	Daylight dependent switching	<input checked="" type="checkbox"/>		
Mode 13	Daylight dependent regulation	<input checked="" type="checkbox"/>		
Mode 14	Daylight regulation offset	30	%	
Mode 15	Mode based linking			
Mode 16	Reaction to mode:	1: Ignore		
Scene 1		2: Ignore		
Scene 2		3: Ignore		
Scene 3		4: Ignore		
Scene 4		5: Ignore		
		6: Ignore		
		7: Ignore		
		8: Ignore		
		9: Ignore		
		10: Ignore		
		11: Ignore		
		12: Ignore		
		13: Ignore		
		14: Ignore		
		15: Ignore		
		16: Ignore		
	Group based linking			
	Base group	Local occupancy		
	Secondary group	Local occupancy		

Figure 89

This feature-tab is a very extensive tab that is the heart of the behavior of the ActiLume DALI Gen 2. In this picture and in the table below you will find the default settings for Mode 1. Mode 2 up to and including Mode 16 are variations in these settings making it simple and easy to have the ActiLume DALI Gen 2 change its functionality so it will fit into a different application by a simple press of a button on the IRT8099/20 IR remote control.

Some of the Features can be enabled or disabled by respectively checking or unchecking the tick boxes. This can be done by a simple mouse-click on the tick boxes.

Item	Default value	Range	Units
Hold time	15	1, 5, 10, 15, 20, 25, 30	minutes
Prolong time	10	0, 15, 30, 60, 90, 120, 150, infinite	minutes
Smart time	10	0, 5, 10, 15	minutes
Grace time	10	0, 5, 10, 15, 20, 25	seconds
Fade during grace period	Enabled	Enable, Disable	
Light status on power up	Lights off	Lights on, Lights off	
Background level	10	1, 10, 20, 30, 40, 50, 60, 70	%
Retention time	15	0, 15, 30, 60, 90, 120, 150, 180	minutes
Occupancy mode	Auto on / auto off,	Auto on / auto off, Manual on / auto off, Manual on / manual off	
Daylight dependant override	Enabled	Enable, Disable	
Activate regulation/switching	Disabled	Enable, Disable	
Daylight dependant switching	Enabled	Enable, Disable	
Daylight dependant regulation	Enabled	Enable, Disable	
Daylight regulation offset	[1]	0, 10, 15, 20, 30, 40, 50, 60	%
Reaction to mode	[2]	Local occupancy, Background level, Ignore	
Base group	Local occupancy	Local occupancy, Background level, Ignore	
Secondary group	Local occupancy	Local occupancy, Background level, Ignore	

[1] = Group depending and not available for Group 1

[2] = Mode depending

Table 16

On this feature tab you also find a button called “Reset to factory defaults” which will reset all features on this feature-tab only. This in contradiction to the “Basics” function on the IRT8099, which will reset all features in the General, Model ... 16 and Scene 1 ... 4 tabs. See also Chapter 6.8 - Resetting the ActiLume DALI Gen 2.

I4.5 Feature-tab Scene

ActiLume Scene 1				
General				<input type="button" value="Reset to factory defaults"/>
Mode 1				
Mode 2		Group 1	Group 2	Group 3
Mode 3	Enable for daylight based control	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mode 4	Dim level	<input type="text" value="100"/> %	<input type="text" value="100"/> %	<input type="text" value="100"/> %
Mode 5	Override daylight based dim level	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mode 6				
Mode 7				
Mode 8				
Mode 9				
Mode 10				
Mode 11				
Mode 12				
Mode 13				
Mode 14				
Mode 15				
Mode 16				
Scene 1				
Scene 2				
Scene 3				
Scene 4				

Figure 90

Scene 1 to 4 can be recalled by means of the IRT8030.

In the table below the ranges of the settings can be found for each feature.

Item	Default value	Range	Units
Enable for daylight control	[1]	Enable, Disable	
Dim level	[1]	0 ... 100	%
Override daylight based dim level	[1]	Enable, Disable	

[1] = Group depending

Table 17

14.6 Writing settings to the ActiLume DALI Gen 2

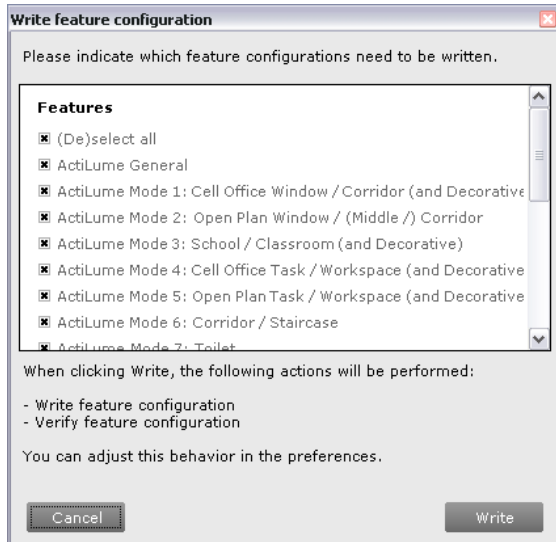


Figure 91

After having set all features to the correct values it is time to write all these features back into the ActiLume DALI Gen2.

This is done in almost the same way as when reading the data from the ActiLume DALI Gen 2 only now the "Write" button on the top left hand corner of the screen is used.

When clicking on this "Write" button, a popup will appear ("Write feature configuration") where a selection can be made in the same way as in the "Read feature configuration" described above.

After selecting the features that need to be written back into the ActiLume DALI Gen 2, the Write button in the "Write feature configuration" popup can be clicked.



Figure 92

At this a warning popup will appear with the information that if the Configuration is changed from "Parallel linking" to "BMS" or "Window/Corridor", the ActiLume DALI Gen 2 will change that particular setting after a mains cycle when this has been programmed. This popup also gives the possibility to suppress this popup for the future by checking the tick box "Don't show this message again".

Remember that when the BMS configuration is activated after the mains cycle, the DALI line will become unpowered and power must be supplied another device / PSU. There is a possibility by switching on the internal power supply of the MultiOne tool by selecting from the top navigation "Tools" – "Power supply" – "Enable Power supply". On the MultiOne tool a red LED (located alongside the mini-USB connector) will be turned on as a sign that the power supply is turned on. The DALI line will now be powered via the USB connection up to 220mA on the DALI line if needed and supported by the computer connected. This means that if a laptop without mains connection could result in short battery life of the laptop. Therefore it is advised to have the laptop connected to the mains if possible.



Figure 93

It is advised to select only those feature-tabs that are needed to be written back into the ActiLume DALI Gen 2 because a full write cycle of all feature-tabs will take approximately 18 minutes.

In the following chapters the various datasheets of several of the used products are available.

15.1 Datasheet ActiLume DALI Gen 2



ActiLume DALI Gen 2 system

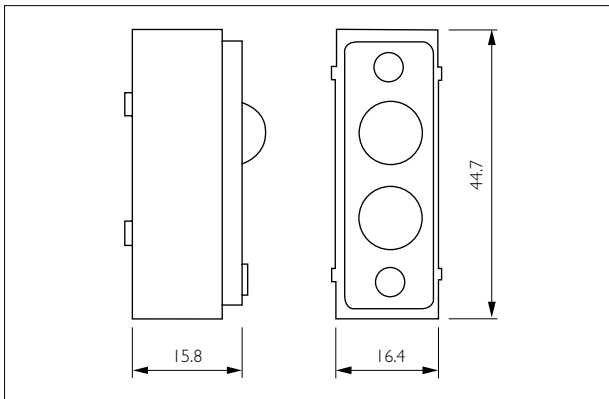
Product description

The Philips ActiLume DALI Gen 2 lighting control system consists of a small, lightweight multisensor and a controller, designed for easy integration into luminaires.

ActiLume DALI Gen 2 is a true Plug and Play solution for offices, corridors etc. where as much as 34 drivers, divided over 4 groups (named Window, Corridor; Middle/Decorative and Blackboard), can be controlled. In addition to this ActiLume DALI Gen 2 systems can be connected in the so called "parallel linking" mode, whereby occupancy information is shared, creating a network. Furthermore it can be configured to function within a BMS network.

The system is easy to install and use, not only initially, but also when expansion is required.

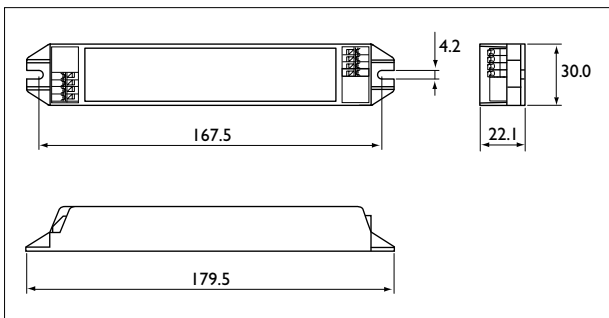
An application guide is available to help specify and apply the system in an optimal way.



Multisensor LRI1663 dimensions in mm

Features and benefits

- Philips ActiLume DALI Gen 2 is a DALI based lighting control system designed for maximum comfort and energy savings up to 75%.
- ActiLume DALI Gen 2 is a Plug and Play system; no specific lighting control training is needed. Moreover, the system is supported with simple, dedicated application and installation sheets.
- The ActiLume DALI gen 2 system consists of three state of the art miniature sensors (combined into the LRI1663) in combination with a controller containing a series of pre-programmed modes. In total 15 modes of operation can be selected/configured with the optionally available IRT8099/20 tool.
- The two most applied modes, cell and open plan office, can be selected via a short push on the service button of the LRI1663.
- The light sensor is sensitive for visible radiation (matching the human eye) providing automatic savings with daylight depending regulation, without any visible discomfort for the user.
- The movement detector is very sensitive to human movements and contains a 15 minutes delay timer to provide optimal functionality whilst maximizing energy saving during absence.
- Personal control solutions can be created by connecting a mains rated spring-back switch to the controller; a Push Button Unit (PBU) or by using an infrared remote control unit.
- The ActiLume DALI Gen 2 controller has two DALI outputs. These outputs are pre-programmed (factory setting) as DALI output and parallel linking output.
- The system can be extended with a maximum of 2 optionally available movement detectors, LRM8118 and/or LRM8119 to maximize movement coverage. This will reduce the number of drivers per controller by 1 for each connected extension sensor.
- Factory light level setting is at 600 lux at a reflection factor of 0.3



Controller LLC1663 dimensions in mm

Applications

The ActiLume DALI Gen 2 system is designed for office applications, from open plan to cell offices, lobbies or toilets, and from corridor to small meeting rooms.

It offers dedicated modes, e.g. for schools and direct/indirect lighting concepts.

Plug and Play control regimes

- Mode 1: Cell office, offering daylight regulation and switching lights off when no presence is detected.
- Mode 2: Open plan office, offering daylight regulation and switching lights off when no presence is detected with extended timings. Maintaining a background lightlevel in unoccupied areas when another area is occupied and occupancy is shared through parallel linking.
- Next to the modes the following functions can be changed independently:
 - Power up behavior
 - Default lightlevel
 - Background level
- Mode switching, between mode 1 and 2, can be achieved with the service button on the multisensor LRI1663.
- When one connected driver fails and is replaced by a new one no re-commissioning is needed as the controller will program the new driver with the setting of the driver that has failed. This is the so called driver recovery feature.

Commissioning and everyday use tools

The ActiLume DALI Gen 2 system can, once it is installed and has been commissioned, work stand alone.

For commissioning an extensive infrared user interface (remote control) is available and for everyday use four infrared user interfaces:

- IRT8099 extensive commissioning tool
- IRT8030 extensive user tool
- IRT8010, IRT8050 and UID8510 simple user tools

To override the automatic behavior without having to use one of the user remotes the ActiLume DALI Gen 2 system can also be controlled by a maximum of two Push Button Units PBU7020 and/or PBU7021. Each PBU will decrease the amount of connectable drivers by 5.

Philips quality

This ensures quality with respect to:

- System supplier
- As manufacturer of lamps, electronic control gear and lighting control equipment, Philips ensures that, from the earliest development stage, optimum performance is maintained.
- International standards
- Philips lighting control equipment complies with all relevant international rules and regulations.

Compliances and approvals

RFI 9kHz to 30MHz	EN 55015
RFI 30MHz to 1000MHz	EN 55022 A
Immunity	EN 61547
Safety	EN 61347-1
	EN 61374-2-11
Quality standard	ISO 9001
Environmental standard	ISO 14001
Approval marks	ENEC
CE marking	

Technical data for installation

Controller LLC1663:

Mains input voltage	
nominal range	120 ... 277V _{AC}
performance range	110 ... 294V _{AC}
safety range	108 ... 305V _{AC}
Mains frequency	50 ... 60Hz.
Input power:	≤ 700mW
	(at 230V _{AC} 50Hz)

Additional required input power per driver	250mW
Environmental conditions operating	
ambient temperature range	0 ... 55° Celsius
relative humidity range	20 ... 85% (no condensation)
maximum case temperature T _{CASE}	65° Celsius
Environmental conditions storage	
temperature range	-25 ... 85° Celsius
relative humidity range	10 ... 95% (no condensation)

Connector type mains, T and D and DALI ports	WAGO 250
wire size	0.5 ... 1.5mm ²
AWG wire size	20 ... 16
stripping length	8.5 ... 9.5mm.
Connector type multisensor port	RJ-10 (4P4C)
Dimensions (length, width, height)	179.5 x 30.0 x 22.1mm.
Weight	70 grams
Maximum number of drivers	34
DALI ports	2
DALI port-1 (Window) config.	Window/Corridor
DALI port-2 (Corridor) config.	Corridor/Parallel/BMS
DALI port-1 maximum nominal load	68mA.
DALI port-2 maximum nominal load	
Window/Corridor configuration	24mA.
Parallel linking configuration	3mA.
BMS configuration	not powered
DALI ports absolute maximum load	≤ 250mA.
Touch and Dim input (mains rated)	1

Multisensor LRI1663:

Viewing angle	
light sensor (daylight spectrum)	72° (circular)
movement sensor	
(passive infra red)	72° x 85° (rectangular)
infra red sensor	
(RC5 code from remotes)	110° (circular)
Service pushbutton/light:	
toggle between	Mode-1/2 and Sensor light On/Off
activate	automatic lightlevel calibration
Cable length	1.00m
Connector type	RJ-10 (4P4C)
Extension of cable allowed	No
Dimensions (length, width, height)	44.7 x 16.4 x 15.8mm.
Weight	28 grams

Controller LLC1663 and Multisensor LRI1663

Housing	
outer material	polycarbonate UL94V-0
glow wire test	850° Celsius for ≤ 5sec.
insulation for safety	≥ 1500V

Detection patterns of the sensors

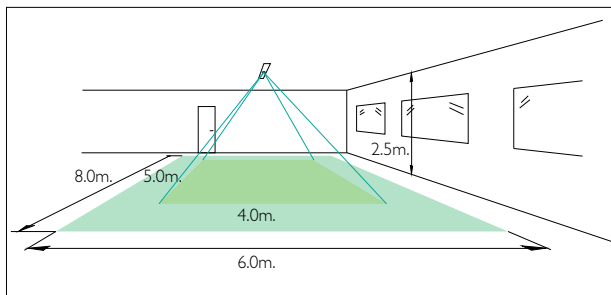


Movement sensor

The detection area for the movement sensor can be roughly divided into two parts:

- 4.0 by 5.0m. for small movements (at a desk)
- 6.0 by 8.0m. for large movements (walking)

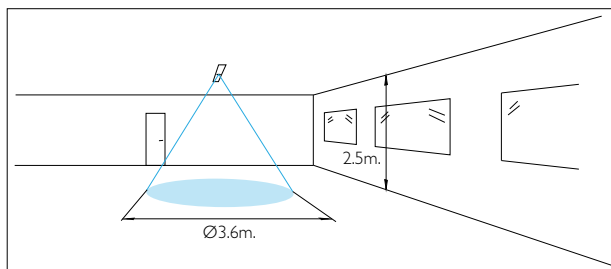
Mentioned values are applicable when the sensor is mounted at a height of 2.5m.



Light sensor

The light sensor measures the total amount of light in circular field of approximately Ø3.6m. when mounted at a height of 2.5m. The following aspects should be observed during installation:

- Minimum distance from the window 0.6m.
 - Prevent light reflections from outside entering the sensor (for example sunlight reflection on a car bonnet) as this will lead to incorrect light regulation.
- As a guideline the formula $0.72 \times H$ can be used to calculate the minimum distance between the window and sensor whereby H is the height from the bottom of the window to the ceiling.



Infrared sensor

The infrared sensor (receiver) will react to signals from any of the IR remotes when the signal is transmitted under an angle of up to 55°.

Service button



The service button has three functions. One function is to toggle between the two most commonly used application modes Mode-1 (Cell office) or Mode-2 (Open plan office). The second function is to calibrate the lightlevel. The third function is visible indication of movement (red indicates movement and yellow no movement). It also has switchable integrated light source.

Mode switching:

When the service button is pressed for ≤ 1 sec. the mode is changed. Acknowledgement is indicated by flashing of the connected luminaires. One flash indicates the Mode-1 (Cell office) application and two flashes indicate the Mode-2 (Open plan office) application.

Light calibration:

When pressing the service button for ≥ 3 sec. and ≤ 7 sec. the lights will be switched off to indicate that the lightlevel calibration cycle is initiated. After this all items underneath the sensor that are not there during normal operation, but have influence on the calibration, need to be removed. Approximately after 10sec. a sample of the lightlevel is recorded (X) and the lights are switched on with 100% output. After another 10sec. the lightlevel is recorded again (Y) and a calculation is made $Y-X =$ new calibration set point. This value is stored in the controller and the connected luminaires flash twice to acknowledge this.

Integrated light switching:

When pressing the service button for ≥ 10 sec. the integrated light source is either switched on or off.

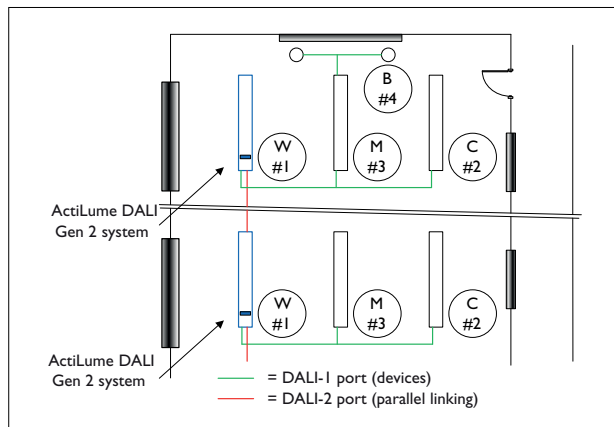
Parallel linking/BMS and DALI groups

When the ActiLume DALI Gen 2 system is used in a parallel linking or BMS configuration than all drivers (luminaires or other devices) need to be connected to DALI port 1, which is identified as DALI Window. DALI port 2, identified as DALI Corridor; is interconnected to the other DALI port 2 of the rest of the system with a maximum of 64 connections (connection is polarity sensitive).

To be able to make a distinction between how the connected drivers react they need to be assigned to 1 of the 4 DALI groups:

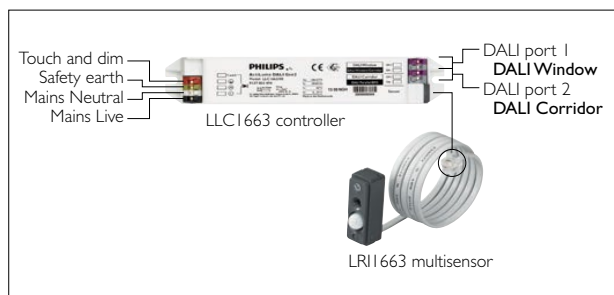
- group #1 = Window
- group #2 = Corridor
- group #3 = Middle or Decorative
- group #4 = Blackboard

Assigning the luminaires to these groups needs to be done during the commissioning phase making use of IRT8099/20 tool.



Example of Parallel linking configuration

ActiLume DALI Gen 2 system connection overview



Multisensor mounting

The sensor has latching rills on the back so it can be mounted easily. There are several methods of mounting available:

- directly onto the lamp by means of an additional clip LCA8002 (TL-5) or LCA8003 (TL-D).
- inside the luminaire housing using the additional clip LCA8005. To use this clip a hole needs to be cut according to the dimensions as indicated in figure a.
- directly inside the luminaire housing whereby a hole needs to be cut (punched) according to figure b.

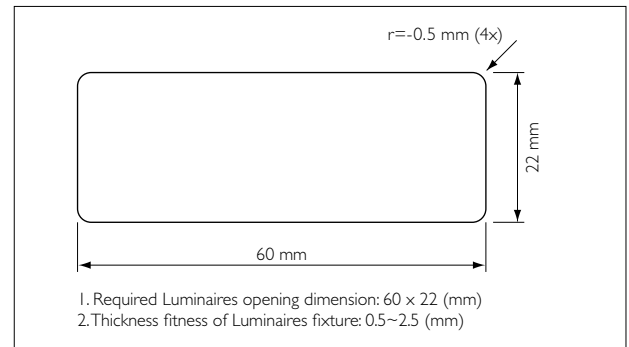


Figure a: Cutout pattern when using with clip LCA8005

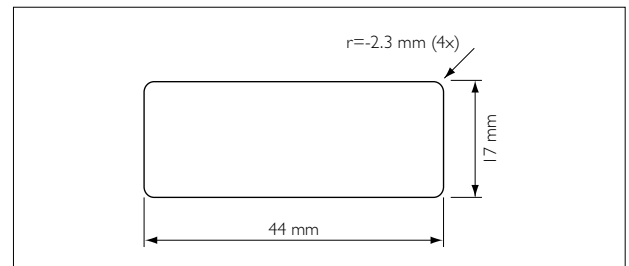
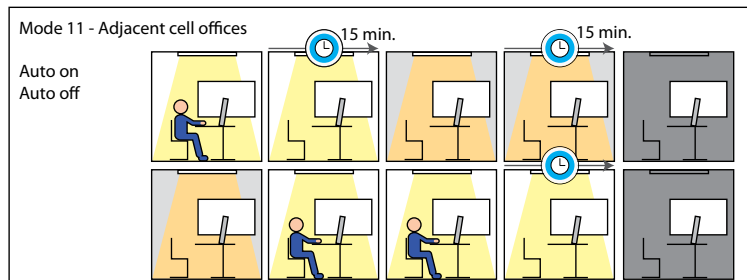
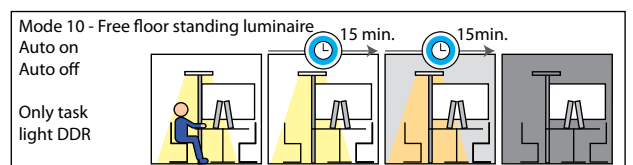
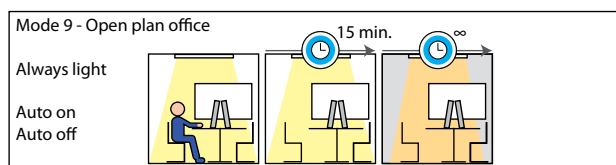
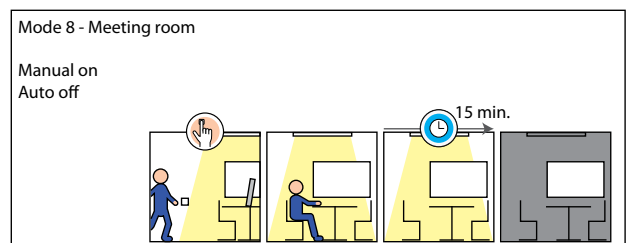
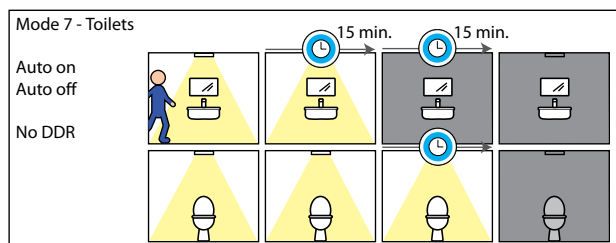
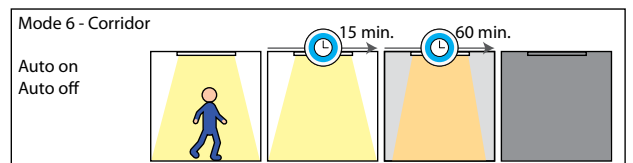
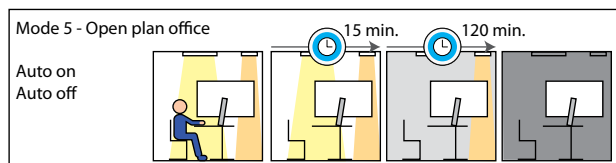
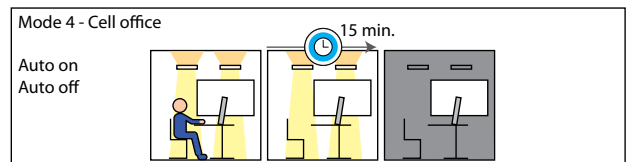
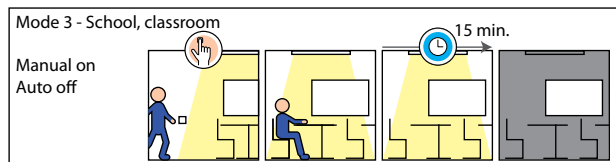
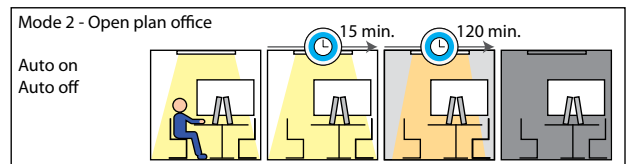
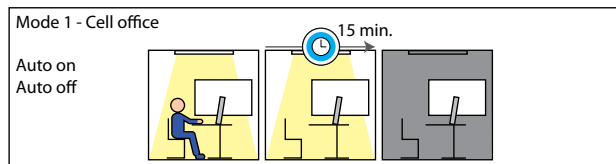


Figure b: Cutout (punch) pattern when using with cover LCA8006

Mode	Description
1	Cell office Window/Corridor + Decorative
2	Open plan office Window/(Middle)/Corridor
3	School/Classroom + Decorative
4	Cell office task area + Decorative
5	Open plan office task area + Decorative
6	Corridor and/or staircase
7	Toilet

8	Meeting room + Decorative
9	Open plan office task area (Middle) with mains switching
10	Free floor standing luminaire
11	Adjacent cell office Window/Corridor + Decorative
12	Free for OEM (copy of mode 2)
13	Free for OEM (copy of mode 8)
14	Free for OEM (copy of mode 8)
15	Free for OEM (copy of mode 11)





LLC1663/00 ActiLume DALI Gen 2
The controller from the ActiLume DALI Gen 2 system. The ActiLume system is a DALI-based plug and play control system which fulfills the basic needs in offices with maximum energy saving options by daylight harvesting and presence detection.



LR11663/00 ActiLume Gen 2 multisensor
The multisensor from the ActiLume DALI Gen 2 system. Color of the product is ultra dark grey (similar to RAL7024)



LCA8006/00 Cover for ActiLume multisensor
Cover for the ActiLume multisensor to obtain the same outer dimensions as the ActiLume MicroLuxSense and the ActiLume I-10V sensor. Color of the product is light grey (similar to RAL7035)



IRT8099/20 Advanced mode selection tool
Commissioning tool for ActiLume DALI Gen 2 system and luminaires with ActiLume. Easy to use and inexpensive tool to adjust the functionality, perform an installation test and/or calibrate lightlevel. Batteries are included.



LRM8118/00 Extension sensor
Compact movement detector to be used to expand the detection area for ActiLume and ActiLume DALI solutions. The sensor is connected to the DALI line from the controller (luminaire) and does not require external power. The sensor is suitable for both recessed and surface mounting (in combination with the LRH8100). Mounting height is between 2.5 and 3.5 m. Color of the product is white (similar to RAL9010)



LRH8100/00 Surface mount adaptor
Surface mounting box for the LRM8118 extension sensor. Comes with cut-out holes for most common cable trunking systems. Color of the product is white (similar to RAL9010)



LRM8119/00 ActiLume movement extension sensor, luminaire based
Compact luminaire based movement detector to be used to expand the detection area for ActiLume and ActiLume DALI solutions. The sensor is connected to the DALI line from the controller (luminaire) and does not require external power. Mounting height is between 2.5 and 3.5 m. Color of the product is ultra dark grey (similar to RAL7024)



LCA8004/00 Cover ActiLume extension sensor
Cover for the ActiLume multi sensor to obtain the same outer dimensions as the ActiLume MicroLuxSense and the ActiLume I-10V sensor. Color of the product is light grey (similar to RAL7035)



LCA8001/00 Ring for ActiLume sensors
Ring around the cover of the ActiLume multisensor + cover; ActiLume luminaire based extension sensor + cover; ActiLume I-10V sensor or ActiLume MicroLuxSense to fit in the micro-optics of a luminaire. Color of the product is light grey (similar to RAL7035)



LCA8002/00 ActiLume sensor clip for TL-5
Clip to be used for ActiLume multisensor; ActiLume Luminaire based extension sensor; ActiLume I-10V sensor and the ActiLume MicroLuxSense. With this clip the sensor can be directly clicked on the TL-5 lamp.



LCA8003/00 ActiLume sensor clip for TL-D
Clip to be used for ActiLume multisensor; ActiLume Luminaire based extension sensor; ActiLume I-10V sensor and the ActiLume MicroLuxSense. With this clip the sensor can be directly clicked on the TL-D lamp.



LCA8005/00 ActiLume mounting clip for use in luminaire
Clip to be used for ActiLume multisensor; ActiLume Luminaire based extension sensor; ActiLume I-10V sensor and the ActiLume MicroLuxSense. With this clip the sensor can be mounted in the luminaire housing. Color of the product is light grey (similar to RAL7035)



IRT8010/00 Hand-held two-key transmitter
Hand-held two-key transmitter; for infrared control of various lighting control systems. ActiLume can also dim the lights (by pressing a button > 0.5 sec). The unit is supplied with batteries. A wall holder is separately available. This transmitter is not designed to be operated from the wall holder. The IR group address selector switch is situated in the battery compartment. Color of the product is white (similar to RAL9010)



LRH8010/00 Wall holder
Wall holder for the IRT8010 hand-held two-key transmitter. Color of the product is white (similar to RAL9010)



IRT8030/00 Four-preset hand-held transmitter

Four-preset hand-held transmitter; suitable for infrared control of the ActiLume system specifically when using Mode 8 (Meeting room). It has 4 keys for presets and one key for "all off". Keys for individual control and preset programming are located under a hinged cover at the bottom of the transmitter. The IR group address selector switches are also situated behind the hinged cover. The unit is supplied complete with wall holder and batteries. Color of the product is white (similar to RAL9010)



IRT8050/00 Two-key infrared remote control

Two-key infrared remote control transmitter for wall mounting and table-top use. The unit can be used in combination with ActiLume. The actual function of the two large keys can be selected with a dip switch in the battery compartment. A dip switch is also used to select the IR group address. Batteries are included. Color of the product is white (similar to RAL9010)



UID8510/00 ToBeTouched IR

The UID8510 IR user interface panel provides intuitive on/off and dimming functionality. It connects via infrared to the ActiLume system. Batteries are included. Color of the product is white (similar to RAL9003)

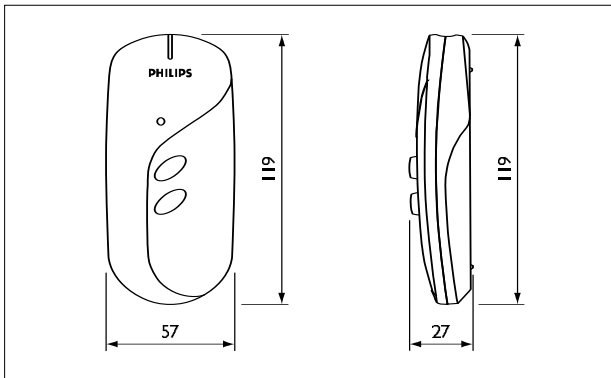
Packing data

Type	Box dimensions (mm)	Qty/Box	Material	Weight (Kg)	
				net	gross
LLC1663/00	188 x 188 x 66	12	Cardboard	0.840	1.000
LR11663/00	200 x 175 x 110	12	Cardboard	0.300	0.504
LRM8118/00	80 x 72 x 40	1	Cardboard	0.076	0.083
LRH8100/00	80 x 80 x 40	1	Plastic bag	0.027	0.033
LRM8119/00	200 x 175 x 110	12	Cardboard	0.030	0.507
IRT8099/20	155 x 40 x 17	1	Cardboard	0.030	0.100
LCA8001/00	216 x 93 x 70	100	Cardboard	0.155	0.221
LCA8002/00	216 x 93 x 70	50	Cardboard	0.450	0.455
LCA8003/00	216 x 93 x 70	50	Cardboard	0.450	0.455
LCA8004/00	216 x 93 x 70	50	Cardboard	0.186	0.218
LCA8005/00	220 x 97 x 71	50	Cardboard	0.780	0.810
LCA8006/00	220 x 97 x 71	50	Cardboard	0.120	0.160

Ordering Data

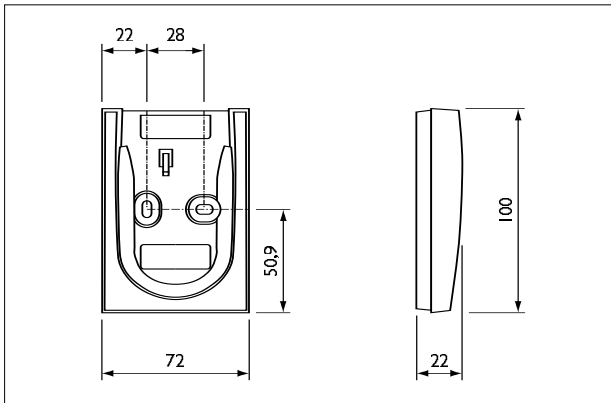
Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
LLC1663/00 ActiLume DALI Gen 2	12	9137 003 49403	8718291 659839	8718291 659846	659839 00
LR11663/00 ActiLume Gen 2 multisensor	12	9137 003 56703	8718291 680925	8718291 680932	680925 00
LRM8118/00 Extension sensor	1	9137 003 24703	8711559 730783	8711559 730790	730783 99
LRH8100/00 Surface mount adaptor	1	9137 003 18903	8711559 519203	8711559 519210	519203 99
LRM8119/00 ActiLume movement extension sensor	12	9137 003 43703	8718291 139461	8718291 139478	139461 00
IRT8099/20 Advanced configuration tool	1	9137 003 34203	8711559 732565	8711559 732572	732565 99
LCA8001/00 Ring for ActiLume sensors	1	9137 003 38303	8727900 882780	8727900 882797	882780 00
LCA8002/00 ActiLume sensor clip for-TL-5	1	9137 003 40803	8727900 952940	8727900 952957	952940 00
LCA8003/00 ActiLume sensor clip for-TL-D	1	9137 003 40903	8727900 952988	8727900 952995	952988 00
LCA8004/00 Cover for ActiLume extension sensor	1	9137 003 43803	8718291 139386	8718291 139393	139386 00
LCA8005/00 Clip for mounting in luminaire housing	1	9137 003 48803	8718291 196242	8718291 196259	196242 00
LCA8006/00 Cover for ActiLume Gen 2 multisensor	1	9137 003 55503	8718291 653752	8718291 653769	653752 00

15.2 Data sheet IRT8010



IRT 8010 transmitter

Dimensions in mm



LRH 8010 wall holder

Dimensions in mm

Description

- The IRT 8010/00 is a hand held two-key transmitter, suitable for the infrared remote control of lighting installations in point-and-shoot applications. The IRT 8010/00 can be used to switch and/or dim up/down a single lighting control circuits. N.B. Occuswitch IR can only switch the lights.
- The unit contains an integrated "teach mode" which can be used to program the Infra-Red group A-G and channel "I" addresses of the individual controllers.
- The IRT 8010/00 can also be used with WireMaster and LightMaster when the rotary switch in the battery compartment is set to position 8.

Features

- Hand held
- Point and shoot
- Distance max. 8 m
- 2 buttons
- Red indicator LED
- Channel "I" only
- Integrated teach mode
- Rotary switch for group address A-G/general and selection of WireMaster/LightMaster functionality.
- Battery saving > 10 seconds use then auto cut off
- 2 LR03; AAA batteries included
- Battery life time with Philips Powerlife batteries - 1050 mAh (normal use) \geq 2.5 years
- Optional: Wall holder to place next to the entrance of the room

Related equipment

- LRH 8010/00 Wall holder

Applications

- The unit is optimised for use in small control areas like standard cellular offices, small presentation rooms etc.
- The IRT 8010/00 is primarily intended for controlling the infrared versions of the "Occuswitch".
- The IRT 8010/00 is a point-and-shoot transmitter. Its main application is to override the "Presence" version of the Occuswitch or to switch (on) the "Absence" version of the Occuswitch.
- The IRT 8010/00 can also be used as a point-and-shoot transmitter in Trios, Helio, WireMaster and LightMaster applications.
- The IRT 8010/00 can also be used in combination with the IRT 8050/00 and the absence detection type of the Occuswitch. In this application the IRT 8050/00 is used as a 'wall switch', and the IRT 8010/00 provides top table remote control.
- Up to seven IRT 8010/00 transmitters (group address A-G) can be used in larger rooms together with one (or more) IRT 8050/00 transmitters at the entrances, to switch the lighting circuits individually, see figure 1.

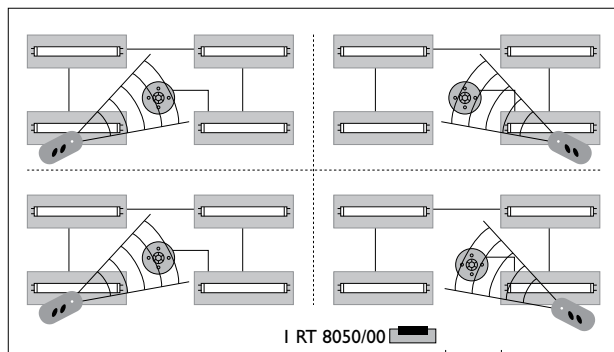


Figure 1 Possible application

Use with WireMaster and LightMaster

The IRT 8010/00 can also be used with WireMaster and LightMaster to control the lights. In this case the rotary switch in the battery compartment has to be set to position 8. Exception: when the combined head LRI 2364/10 is used the rotary switch has to be set to position 0 (see the table below and Figure 4). For WireMaster and LightMaster the two buttons of the IRT 8010/00 have the same function: the upper button can be used to switch the lights on, and also to switch them off. With LightMaster a single button can be used to switch on/off and dim.

Technical data.

Number of keys	2
Number of indicator LED's	1
Number of IR_LED's	2
Carrier frequency	36 KHz*
Protocol	RC 5*
Battery type	LR03, AAA Power life (1050 mAh)
Number of batteries	2

*When rotary switch set to position 8 the carrier frequency and protocol are different: 20 μ s pulse at 1 KHz.

Environmental conditions

Operating conditions	Operating temperature +5°C...+50°C Relative humidity 20%...85% (non condensing)
Storing conditions	Storage temperature -25 °C...+70°C Relative humidity 10%...95%

EMC

Immunity	In accordance with EN 61000-4-3
Radiated interference	In accordance with EN 61000-4-3

Mechanical specifications

Dimensions (l x w x h)	119 x 57 x 27 mm
Weight (with batteries)	78 grams
Housing material	ABS
Housing colour	RAL 9010 (White)

Reliability

Call rate:	0.2 - 0.5% per year (estimated)
Lifetime:	10 years (estimated)

Installation

Battery handling

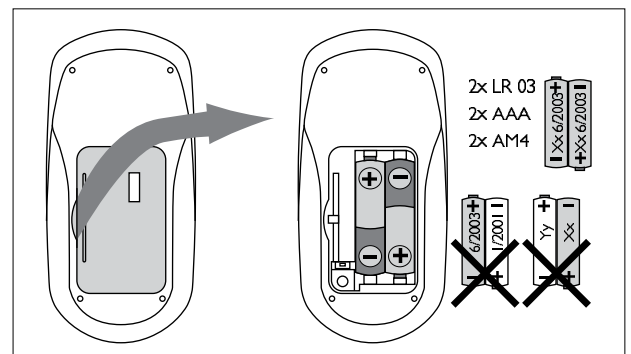


Figure 2 opening the battery compartment

In order to insert or replace the batteries, the battery compartment must be opened according to figure 2. Batteries must be replaced separately. Always use a set of 2 batteries from the same brand with the same production date. Please make sure that the batteries are inserted with the correct polarity. Inverted batteries might cause damage to the transmitter. Disposal of batteries must be in accordance to local regulations.

Positioning

The transmitter has an infrared radiation pattern as shown in figure 3. The maximum distance to the receiver is approximately 8 meters.

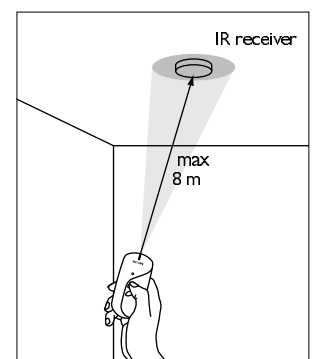


Figure 3 IR radiation

Selection of infrared groups *

In order to avoid that all lighting circuits in one room are switched unintentionally, the transmitters present in one room and their respective receivers can be given a different infrared group address. The group address of the transmitter can be changed by using the rotary switch in the battery compartment, see figure 4.

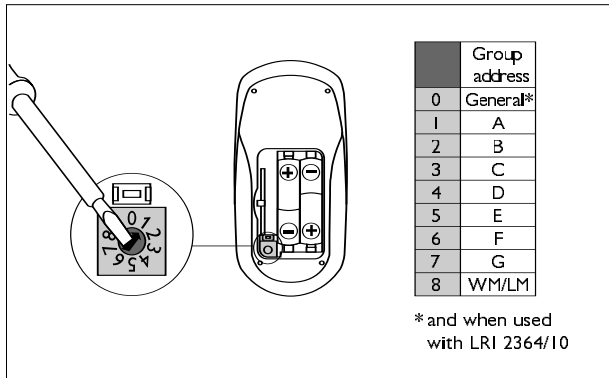


Figure 4 rotary switch

Note: teach commands are always transmitted in the "general" address code, so each controller will react regardless it's actual programmed group address. To avoid this, take care of a IR transmitter – IR receiver/controller distance of 1.5 m.

Teaching of infrared groups *

In order to adjust the group address of the controller to that of the corresponding transmitter, the next procedure should be followed:

1. Set the rotary switch in the desired group address position, see figure 4.
2. Bring the IRT 8010/00 into the teach mode by pressing the teach mode button for more than two seconds, see figure 5. The red LED will blink.
3. Press button 1 followed by button 0.
4. Bring the IRT 8010/00 back into normal operation:
 - press the teach mode button for (0.5 seconds),
 - or
 - automatically when no buttons are pressed during 15 seconds,
 - or
 - turn the rotary switch.

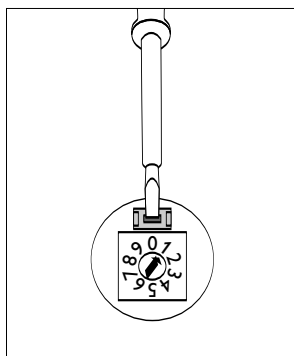


Figure 5 teach mode button

* Not for use with WireMaster and LightMaster.

Teaching the Occuswitch

In order to teach the "Presence" or "Absence" mode of the Occuswitch, the next procedure should be followed:

1. Set the rotary switch in the group address position "general" (=0).
2. Bring the IRT 8010/00 into the teach mode by pressing the teach mode button for more than two seconds, see figure 5. The red LED will blink.
3. Press button 1 for "Presence" mode or button 0 for "Absence" mode.
4. Bring the IRT 8010/00 back into normal operation:
 - press the teach mode button for (0.5 seconds),
 - or
 - automatically when no buttons are pressed during 15 seconds,
 - or
 - turn the rotary switch.

Mounting

The IRT 8010/00 can be stored in the separately available wall holder, see figure 6.

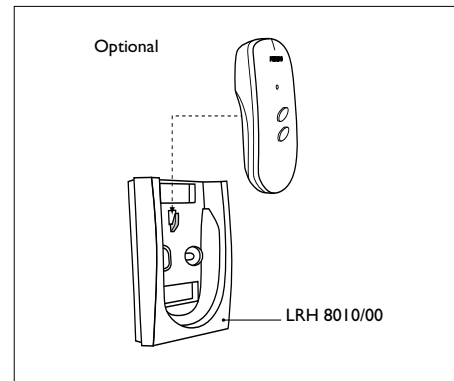


Figure 6 LRH 8010 wall holder

Red indicator LED

Transmission of infrared signals is indicated by a red LED. In teach mode the red LED is blinking 0.5 sec on and 0.5 sec off, see figure 7.

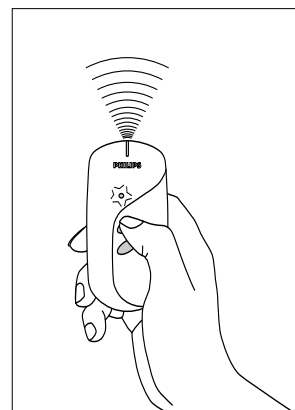


Figure 7 indicator LED

Packing data

Transmitter

Type	Box dimensions (mm)	Qty	Material	Weight (kg) net	gross
Unit box	131 x 58 x 87	1	card board	0.06	0.097
Outer box	240 x 135 x 87	12	card board	1.20	1.270

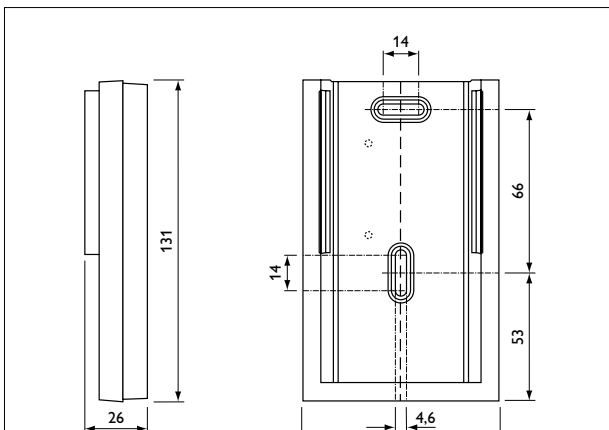
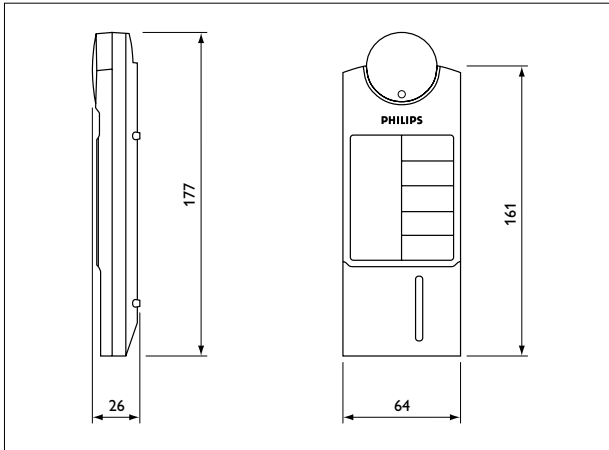
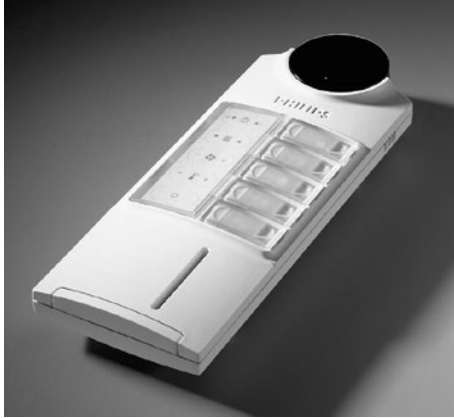
Wall holder

Type	Box dimensions (mm)	Qty	Material	Weight (kg) net	gross
Unit bag		1	plastic	0.034	0.04
Outer box	240 x 135 x 87	12	card board	0.5	0.57

Ordering data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3
IRT 8010/00	12	9137 003 14203	87 11559 517 490	87 11559
LRH 8010/00	12	9137 003 16303	87 11559 517 971	517 711

15.3 Data sheet IRT8030



Product details

- The IRT8030 is a 4 preset handheld transmitter complete with wall holder, suitable for the infrared remote control of lighting installations equipped with Helio or Trios control systems.
- It can be used to switch and/or regulate 5 individual lighting control circuits, and to program and select 4 lighting presets (scenes).
- Five large double sided keys at the top are used for the main functions (preset selection and "all off"). Less frequently used functions (individual control and preset programming) are located under a hinged cover at the bottom of the unit.
- The transmitter has an integrated "teach mode" so it can be used as a programming tool for group, channel addresses and operational modes of TRIOS controllers.
- The group address of the transmitter itself can be selected with DIP switches (behind the text plate under the hinged cover).
- A red LED on the front of the unit indicates the transmission of infrared signals and gives a warning when the unit is in "teach mode".

- The unit is delivered complete with wall holder, batteries and installation instructions.

Applications

- The IRT8030 is primarily intended for the infrared remote control of lighting installations in offices. Its main function is the selection of pre-programmed values (called "presets") and the "all off" command. Control of individual control circuits and the adjustment and storage of these presets (or lighting scenes) are other important functions. Additionally the transmitter can be used in "teach mode" to set addresses and operational modes of lighting controllers.
- The IRT8030 can be used in combination with HELIO, and TRIOS. It replaces the IRC2130 and IRT1090.
- Although designed for handheld or tabletop operation, the unit will frequently be used from a fixed position, i.e. in the wall holder. The Infrared radiation pattern has been optimised for this application.

Functionality

Four presets can be selected with the four large keys on the front of the transmitter. The fifth large key is the "all off" button. Buttons behind the hinged cover can be used to program the Presets or to select the "Teach mode". These buttons are not used during normal use of the IRT8030.

For incidental changes of system parameters, the transmitter can be switched temporarily into a "teach mode". The IRT8030 can then be used as a TRIOS programming tool, thus offering the same (programming) functionality as the TRIOS programming tool IRT1090 and as included in the remote control transmitter IRT8050.

For an overview of the key allocation refer to figure 1: key functions of the IRT8030

For an overview of the key allocation in "teach mode" refer to figure 2: key functions of the IRT8030 in "teach mode"

Operating instructions

General information

The allocation of keys is such that the most common functions can be operated with the large upper keys and the less common functions with the keys under the hinged cover.

Dimming and switching of individual control circuits and the programming functions in "teach mode" require a "two-step" operation: First the

required channel or parameter must be selected, then the required operation can be executed or the selected value entered.

The following paragraphs give a short description of the various control functions. Obviously these descriptions are only relevant provided that this function is supported by the corresponding control system. For details on specific functions please refer to the documentation on the relevant control system.

Selecting presets (light scenes)

One out of four presets can be selected directly using one of the four large keys on the front of the transmitter. Lights can be switched off simultaneously with the fifth large key.

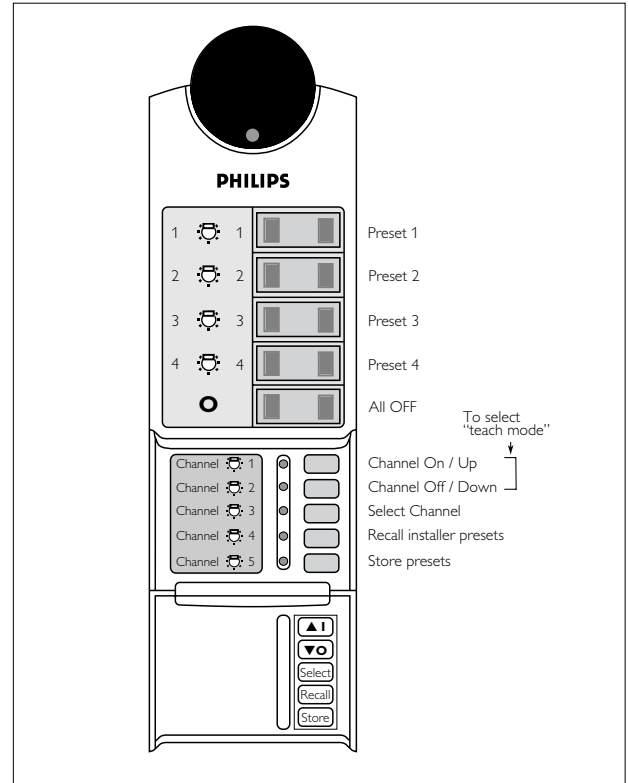


Figure 1: Key functions of the IRT8030

Controlling individual lighting control circuits in Helio and Trios (Figure 1)

First the required channel must be selected, then the required operation can be executed. Channel selection is achieved with the "Select Channel" key. An LED indicates the selected channel. When the "Select Channel" key is momentarily pressed (less than 1/2 sec.) the led shows the (last) selected channel. When the key is pressed continuously or repeatedly, the next channels are selected. This action can be continued or repeated until the required channel has been selected. If no further keys are pressed the LED's stay on during 5 seconds after the last key release.

With the "Channel On / Up" and "Channel Off / Down" keys the selected channel can be switched and /or regulated, as allowed by the corresponding controller(s). During the actual transmission of infrared signals, the LED flashes for verification of the selected channel. After transmission the LED is switched off.

Programming presets

The procedure to be followed is:

1. adjust individual control circuits as described before
2. press the "store" key
3. press the wanted preset key

Recall installer presets

At any time the user can revert to the pre-programmed presets as set by the installer, by pressing the "Recall" key.

Programming Operational Mode, Group Address and Channel Address.

For programming the group, or channel, addresses or the operational mode of a controller, the transmitter must be set in the "teach mode". This is done by pressing the "Channel On / Up" and "Channel Off / Down" keys (under the cover) simultaneously until (after about 3 seconds) a flashing LED (2 flashes per second) indicates the "teach mode". The functions of the keys in "teach mode" are shown in figure 2.

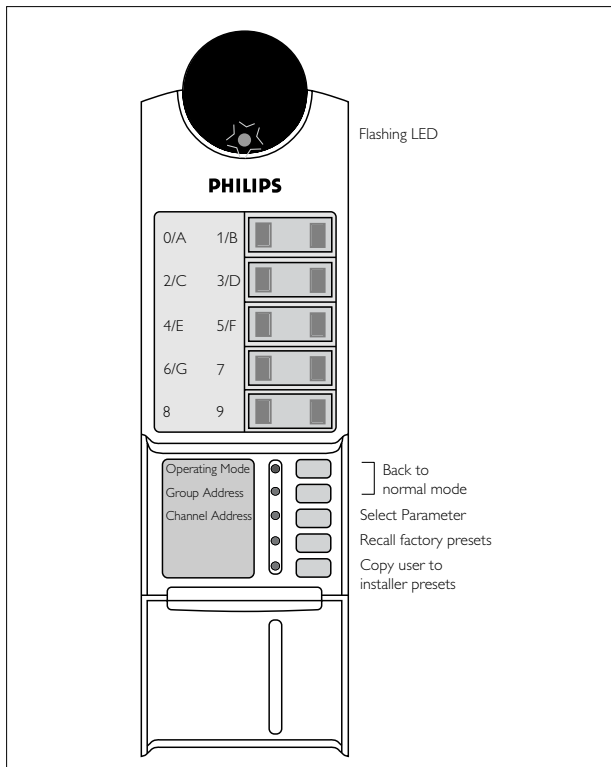


Figure 2: Key functions of the IRT8030 in "teach mode"

First the parameter to be programmed (group, channel or mode) must be selected, and then the required value can be entered. Parameter selection is done with the "Select" key. An LED indicates the selected parameter. When the "Select Parameter" key is momentarily pressed (less than 1/2 sec.) the led shows the (last) selected parameter. When the key is pressed continuously or repeatedly, the next parameters are selected. This action can be continued or repeated until the required parameter has been selected. If no further keys are pressed the LED's stay on during 5 seconds after the last key release. The value required is programmed by pressing the appropriate upper key (0-9 / A-G). The transmitter sends the codes that set the appropriate address or mode of the controller.

During the transmission of the programming instructions, the infrared indicator LED will flash rapidly. When finished it returns to slow flashing. Also the function indicator LED will flash, thus showing the actual function. After programming is completed, the transmitter can be reset to normal operation by pressing the "Back to normal mode" keys again until the LED's will switch off. The transmitter will revert to normal operation automatically 1 minute after the last key press.

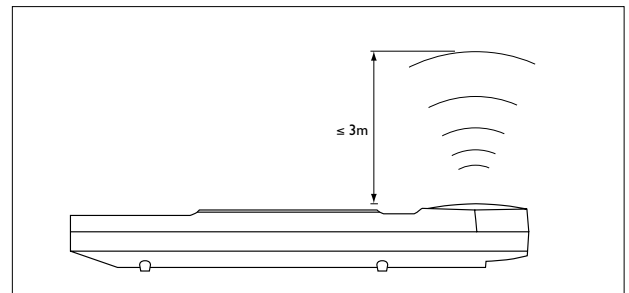


Figure 3: Radiation pattern in "teach mode"

Notes:

1. When transmitting in "teach mode", the infrared radiation pattern of the IRT8030 is reduced to a narrow beam, in order to achieve selective programming of luminaires or controllers. Therefore the transmitter must be pointed directly at the receiver and the distance from transmitter to receiver must be less than 3 meters. (See figure 3)
2. All commands of the IRT8030 "teach mode" are transmitted in the "general" group, in order to assure proper reaction regardless the group address of TRIOS.

Related equipment

Lighting Management Systems

Helio	Room controllers:	LRC5040	LRC5042	LRC5048
	Multisensor	LRI5133		

Stand-alone controls

Trios installer	Room controllers:	LRC1010	LRC1015	
		LRC1020	LRC1025	
		LRC1030	LRC1035	LRC1620

Trios infrasense Luminaire controller LLC1120

Trios multisense Luminaire controller LLC1130

Multisensor LRI 1110

General Purpose Components

IR receivers IRR1224 IRR8124 IRR8125

Multisensor LRI8133 LRI8134

Technical data

Number of keys	: 15
LED indicators	: 1 Red LED for indication of IR transmission and "teach mode" 5 Red LED's for indication of selected channel or parameter
Number of IR-LED's	: 5 (in "teach mode" only one active)
Carrier frequency	: 36 kHz. (RC5 standard)
Supply voltage	: 6.0 V nominal
Number of batteries	: 4 each 1.5 V nominal
Battery type	: LR03, AAA Power Life (1050mAh)
Battery life	: over 4 years (calculated with Philips Powerlife batteries -1050mAh- and 50 commands per day)
Environmental conditions	
- Operating	
Temperature	: 5...50°C
Relative humidity	: 20...85 % Condensation not allowed The IRT8030 should not be exposed to direct sunlight or to high temperatures and should not be used in damp rooms such as bathrooms
- Storage conditions	
Temperature	: -25...85°C
Relative humidity	: 5...95 %
Dimensions	: transmitter: 177x 64 x 26 mm (max. height x width x depth) wall holder: 131 x 81x 26 mm
Weight	: 0.119 Kg (without batteries) 0.164 Kg (with batteries) 0.212 Kg (with batteries and wall holder)
Housing transmitter	
- Material	: ABS
- Colour	: White (Bayer 0177 - close to RAL 9010)
- Mounting	: in wall holder (loose or fixed)
- Fixation in wall holder	: two Parker screws in battery compartment. (see figure 5b)
Housing wall holder	
- Material	: ABS
- Colour	: White (Bayer 0177 - close to RAL 9010)
- Mounting	: with screws or double-sided tape. (see figure 5a)
EMC	
- Immunity	: in accordance with EN 50082-1
- Radiated interference	: in accordance with EN 50081-1
Reliability	
- Call rate	: 0.2 - 0.5% per year (estimated)
- Lifetime	: 10 years (estimated)

Installation

Positioning

The transmitter IRT8030 is suitable for wall mounted operation, handheld operation and for tabletop operation. For details see figure 4: positioning.

Mounting

The transmitter can be placed in a wall holder. If necessary the transmitter can be locked in the wall holder. For details see figure 5a and 5b: mounting the transmitter.

Battery handling

The transmitter is powered by 4 batteries, type LR03 or AAA. Batteries must be replaced simultaneously. Always use a set of 4 batteries from the same brand with the same production date. Please make sure that batteries are inserted with the correct polarity. Inverted batteries may cause damage to the transmitter! For details see installation instructions.

Disposal of batteries must be in accordance to local regulations.

Note: it is recommended not to use rechargeable nickel cadmium batteries, in view of their limited performance.

Setting of group address

The infrared group address of the transmitter (itself) can be set by DIP switches located behind the text plate under the hinged cover. The DIP must be operated carefully using a pencil, a paperclip or other pointed device. For the exact settings see figure 6: DIP switch settings, and refer to installation instructions.

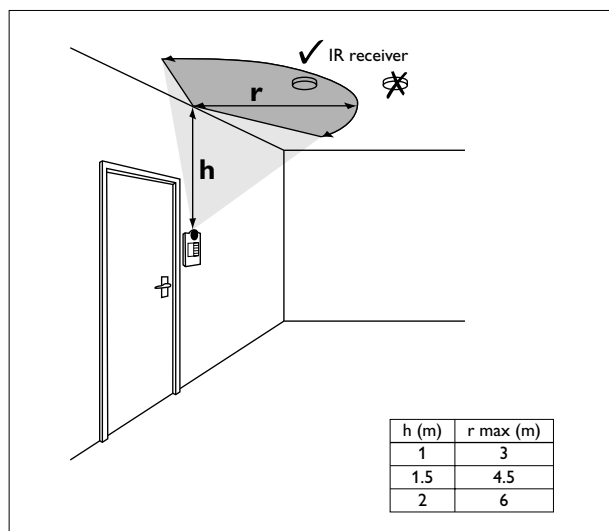


Figure 4: Positioning

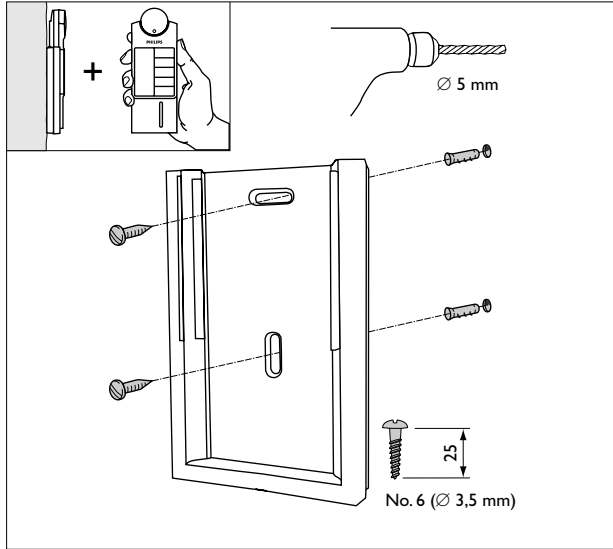


Figure 5a: mounting the wall holder

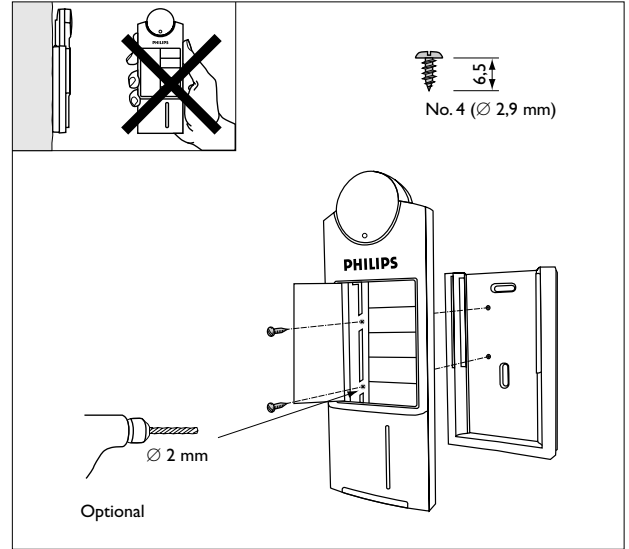


Figure 5b: locking the transmitter in the wall holder

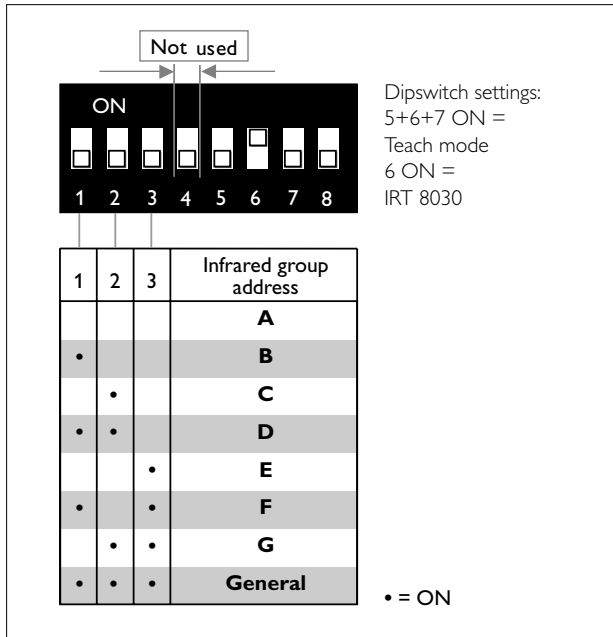


Figure 6: Setting of infrared group address

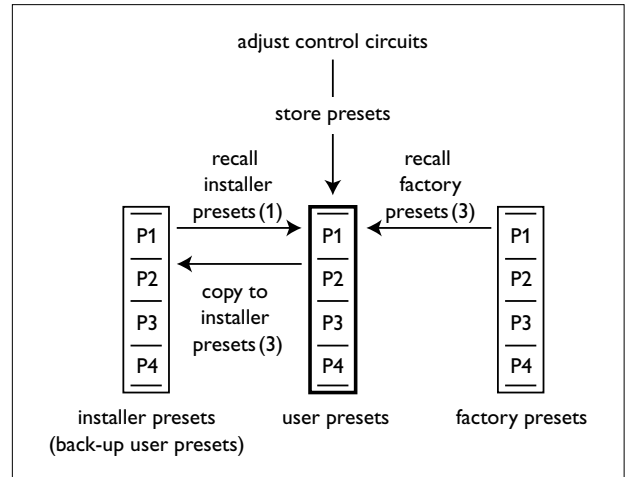


Figure 7: Relationship between categories of presets

- (1) press "Recall installer presets"
- (2) press "Copy user to installer presets" in teach mode
- (3) press "Recall factory presets" in teach mode

Indications and diagnostics

1 Red LED, located in the infrared window, indicating:

- OFF : transmitter not used
- fast flashing : infrared transmission takes place
- slow flashing : transmitter in "teach mode"

5 Red LED's, located behind a window in the hinged cover of the transmitter, indicating:

- fast flashing:
 - in normal mode : channel for which control commands are being transmitted
 - in "teach mode" : parameters for which programming commands are being transmitted
- slow flashing:
 - in normal mode : selected channel
 - in "teach mode" : selected parameter (programming function)

Packing data

Type	Box dimensions (mm)	Quantity	Material	Weight (Kg)	
				net	gross
Unit box	220 x 95 x 50	1	card board	0.215	0.285
Outer box	230 x 200 x 210	8	card board	1.720	2.580

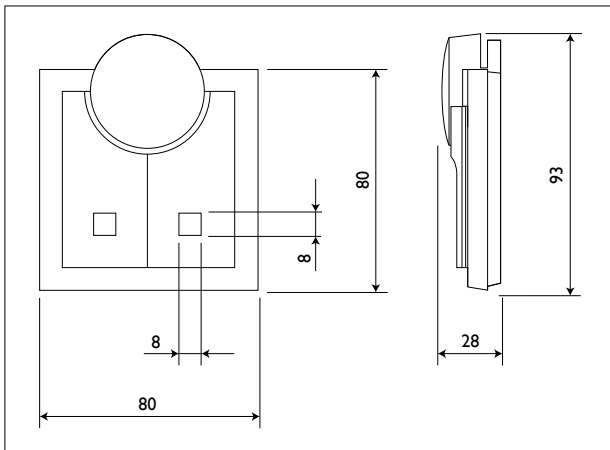
Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3
IRT8030/00	8	9137 003 14403	87 11559 517636	87 11559 517643

Related documentation

Installation Instructions	3222 636 40081
HELIO Handbook (English)	3222 636 49000
UNILON Handbook (English)	3222 636 49010
TRIOS system handbook (English)	3222 636 49030
TRIOS luminaires handbook (English)	3222 636 49040

15.4 Data sheet IRT8050



Dimensions in mm

Product details

- The IRT 8050 is a multi-purpose two-key transmitter suitable for the infrared remote control of lighting installations and other building-related equipment.
- The IRT 8050 can be used to switch and/or regulate lighting in individual control circuits, select lighting presets, operate sun blinds and switch HVAC (heating, ventilation airconditioning) systems to comfort or standby.
- The two large keys can have 27 different sets (combinations) of control functions and 5 programming functions (for operational modes).
- The unit is suitable for wall mounting and for tabletop operation. The Infrared radiation pattern, however, has been optimized for wall-mounted operation.
- As a special feature it offers the possibility to operate two different control circuits using the "toggle key" principle. Toggle keys alternately send two different codes, i.e. the code changes each time the key is pressed. Thus two functions can be controlled with one key, e.g. "Circuit 1 ON - Circuit 1 OFF" or "Blinds UP - Blinds STOP".
- The transmitter has an integrated "teach mode" and can thus be used as programming tool for group and channel addresses.
- The actual function is selected by 5 dip switches in the battery compartment. Table 3, in the section "Miscellaneous", shows the setting of the dip switch for the 27+ 5 possible sets of key functions.
- The group address of the transmitter can be selected with 3 dip switches in the battery compartment. Table 2, in the section "miscellaneous", shows the exact settings.
- The key function can be selected and batteries can be exchanged without removing the unit from the wall.
- Transmission of infrared signals and the teach mode / normal mode is indicated by a red LED on the front of the unit.
- Battery life-time (with Philips Power Life batteries - 1050 mAh) has been calculated at over 5 years for an average of 50 normal key-operations per day.

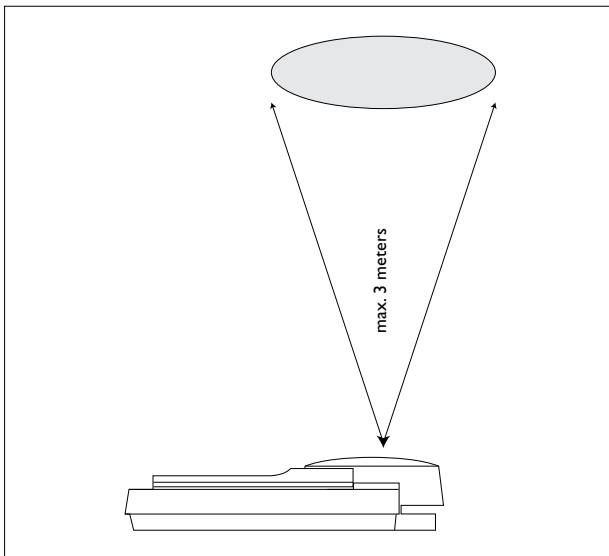
Applications

- The IRT 8050 is primarily intended for the infrared remote control of individual lighting control circuits and for control of sun blinds in systems with combined lighting and non-lighting building functions.
- Selection of presets is possible using "multiple-touch" operation, i.e. a sequence of 1, 2, 3 or 4 short key presses.
- It offers an easy to find, fixed point control to switch on basic lighting.
- The IRT 8050 can be used in combination with LMM and TRIOS. It may serve as the replacement of the IRC 2310 and the IRT 8060.
- The IRT 8050 can be used as programming tool, thus offering the same functionality as the TRIOS programming tool IRT 1090. For programming of group and channel addresses of a controller; the transmitter must be set in the "teach mode" by pressing both keys simultaneously for more than 2 seconds. A flashing LED indicates the teach mode.

When the left key is pressed, the transmitter sends the codes that set the group address of the controller to the same group address as the transmitter. If the transmitter is set to the "general" address, no group addressing codes are generated.

When the right key is pressed, the transmitter sends the codes that set the controller to the channel address that corresponds to the actual function of the transmitter.

Channel addressing is only possible when the actual functionality of the transmitter includes channel commands. For instance, if the transmitter is set to call a preset or to operate sun blinds, no channel programming codes can be generated. If the transmitter is set to operate two channels (with toggle keys), the channel addressing codes in teach mode correspond to the left key (i.e. the lowest channel address, except for the ch5/ch1 combination). After programming has been completed, the transmitter can be reset to normal operation by pressing both keys again, until the LED lights up. The operational mode of a controller can be changed by setting the dip-switches in the transmitter to the required operational mode and pressing one of the keys.



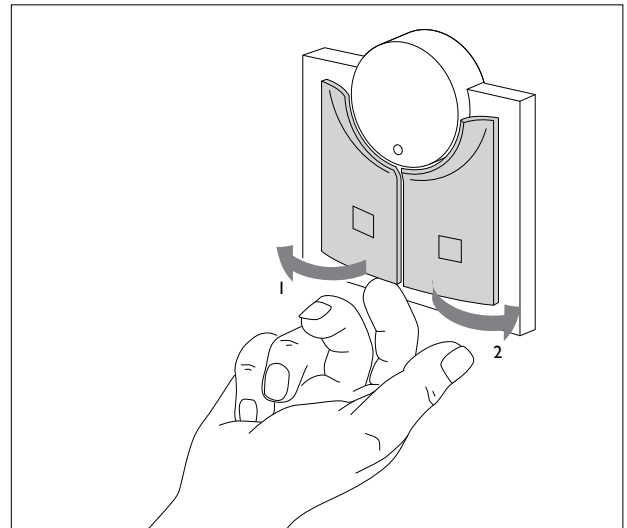
Dimensions in mm

Note: When transmitting addressing codes and operational mode commands, the infrared radiation pattern of the IRT 8050 is reduced to a narrow beam, in order to facilitate selective programming of luminaires or controllers. Therefore the transmitter must be pointed at the receiver. The maximum distance is 3 meters. The beam of radiation is perpendicular to the front of the transmitter (see also figure 1). The red LED can be used as reference for directing the transmitter to the receiver:

Installation

Opening the unit

In order to reach the mounting holes, set the function and address dip-switches and insert the batteries, the unit can be opened using the keys as "doors". This can be done without any tool by lifting first the left key and then the right key from the bottom centre part.

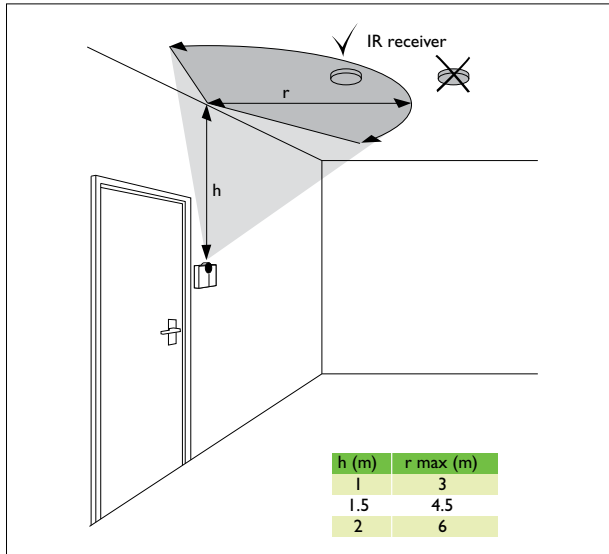


Opening the unit

Positioning

The transmitter IRT 8050 is suitable for wall-mounted operation and for tabletop operation. When mounted on the wall, the unit must be located between 1 and 2 meters from the ceiling.

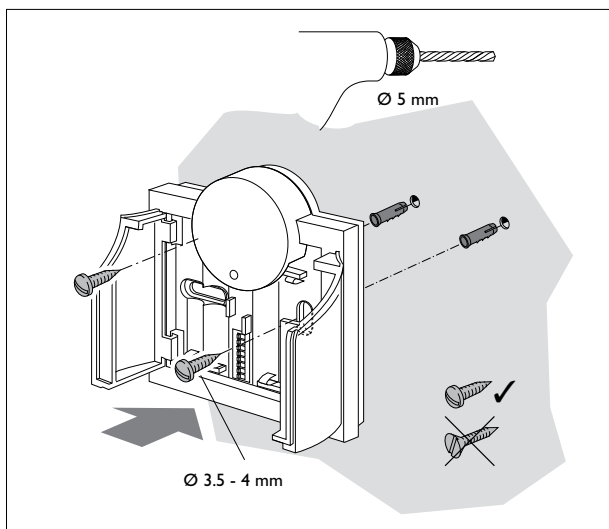
The corresponding receiver must be located in the ceiling, within a circle around the transmitter, with a maximum radius of between 3 and 6 meters respectively (see figure 3).



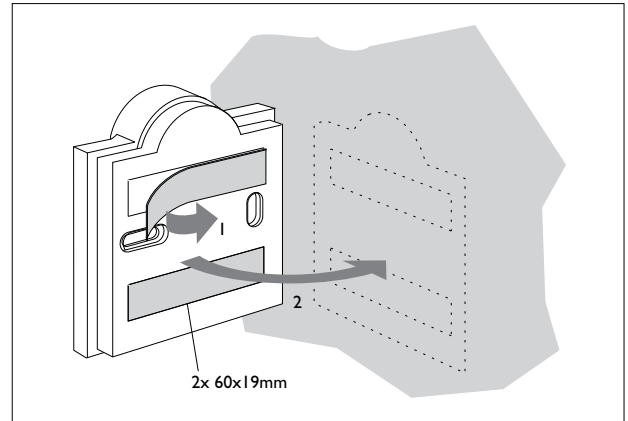
Positioning

Mounting

The transmitter can be fixed to the wall using round-headed screws of 3.5 to 4.0 mm diameter or with two pieces of double-sided sticking tape. (60 x 19 mm). See figure 4.



Fixing to a wall with screws



Fixing to a wall with double-sided adhesive tape

Battery handling

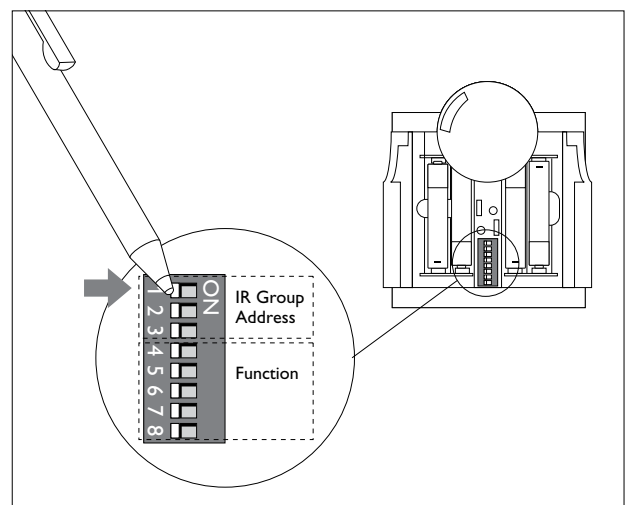
Batteries must be replaced simultaneously. Always use a set of four batteries from the same brand with the same production date. Please make sure that batteries are inserted with the correct polarity. Inverted batteries may cause damage to the transmitter (see installation instructions).

Disposal of batteries must be in accordance with local regulations.

Miscellaneous

Group address selection

Dip switch position			Helio - Trios group address	Scenio group address
1	2	3		
			A	1
•			B	
	•		C	
•	•		D	2
		•	E	
•	•	•	F	
	•	•	G	
•	•	•	General	



Setting the Dip switch position

Functions of the keys

DIP Switch Position					Left key function	Right key function
4	5	6	7	8		
					Ch 1 Off / Down	Ch 1 On / Up
•					Ch 2 Off / Down	Ch 2 On / Up
	•				Ch 3 Off / Down	Ch 3 On / Up
•	•				Ch 4 Off / Down	Ch 4 On / Up
		•			Ch 5 Off / Down	Ch 5 On / Up
•		•			All Off	Preset 1
	•	•			All Off	Preset 2
•	•	•			All Off	Preset 3
			•		All Off	Preset 4
•			•		Blinds Down	Blinds Up
	•		•		Ch 1 On - Ch 1 Off	Ch 2 On - Ch 2 Off
•	•		•		Ch 2 On - Ch 2 Off	Ch 3 On - Ch 3 Off
		•	•		Ch 3 On - Ch 3 Off	Ch 4 On - Ch 4 Off
•		•	•		Ch 4 On - Ch 4 Off	Ch 5 On - Ch 5 Off
	•	•	•		Ch 5 On - Ch 5 Off	Ch 1 On - Ch 1 Off
1)	•	•	•	•	All Off	Preset 1 - Preset 2
1)				•	All Off	Preset 1 - Preset 3
1)	•			•	All Off	Preset 1 - Preset 4
1)	•	•		•	All Off	Preset 4 - Preset 3
1)	•	•		•	All Off	Preset 4 - Preset 2
1)		•	•	•	All Off	Preset 4 - Preset 1
4)	•		•	•	All Off	P1, P2, P3, P4
4)	•	•	•	•	All Off	P4, P3, P2, P1
	•	•	•	•	Absent + All Off	Setpoint 0 + Preset 1
2)			•	•	Blinds Down - Stop	Blinds Up - Stop
3)	•		•	•	Light Level Down - Stop	Light Level Up - Stop SCENARIO ONLY
	•	•	•	•	All Off (1+2)	Preset 1 SCENARIO ONLY
	•	•	•	•	Operational Mode 1	Operational Mode 1
		•	•	•	Operational Mode 2	Operational Mode 2
	•	•	•	•	Operational Mode 3	Operational Mode 3
	•	•	•	•	Operational Mode 4	Operational Mode 4
	•	•	•	•	Operational Mode 5	Operational Mode 5
teach mode					group addressing codes	channel addressing codes

Remarks:

In order to avoid unexpected and inconsistent system reactions, the lighting "toggle functions" can be used for switching only!

Do not use toggle keys;

- with multiple transmitters in one room
- in combination with a movement detector
- in centrally-controlled systems.

Channel commands are not applicable for Scenio.

- 1) In all code sets of the type Px <-> Py ("toggle key") and all off, the all off key resets the other key to the Px command. Thus the lighting will always be switched on at Px, regardless the status before switch off.
- 2) For the window blinds "toggle functions" up <-> stop and down <-> stop, both keys reset the other to the first command. (i.e. only the last operated key will generate a stop command). Additionally, both keys are automatically reset to the first command 1 minute after the last key press. Thus a consistent operation is maintained, even with centrally controlled window blinds.
- 3) For the SCENARIO "toggle functions" up <-> stop and down <-> stop, both keys reset the other to the first command. (i.e. only the last operated key will generate a stop command). Additionally, both keys are automatically reset to the first command, 1 minute after the last key press. Thus the correct operation of the up and down keys is maintained when for some reason the stop command was not given (e.g. after dim up to maximum or dim down to minimum).
- 4) Multiple touch keys: A sequence of 1, 2, 3, or 4 short key presses will call different presets. Time between two subsequent presses must be less than approx. 0.5 seconds.

Memo card

Memo cards are printed at the rear side of the keys. These cards show the address setting (left key) and the 12 most common key functions (right key). Space has been reserved to mark the settings used.

ON				
GROUP ADDRESS				
• = ON				
	1	2	3	✓
A				
B	•			
C		•		
D	•	•		
E			•	
F	•		•	
G		•	•	
*	•	•	•	

ON							
✓	4	5	6	7	8	Σ= ON	
	•			•		Ch 1	
		•				Ch 2	
	•	•	•	•		Ch 1 - 2	
						P1	
	•			•	•	P4	
		•			•	P1/P4	
	•	•			•	P4/P1	
	•	•	•		•	P1,2,3,4	
	•			•	•	SCENIO	
				•	•	LUX ▼▲	
	•	•	•	•	•	⏪ ⏩	

Memo cards at rear side of keys

Indications and Diagnostics

- teach mode
A flashing LED indicates that the teach mode has been selected.
- normal mode
a constant LED when the two keys are pressed indicates that the transmitter reverted to normal mode. After key release, the LED is switched off.
- transmission indication
A fast flashing LED during key press indicates that infrared radiation is taking place.

Technical Data

Number of keys	2
Number of indicator LEDs	1
Number of IR-LEDs	5
Carrier frequency	36 KHz. (RC5 standard)
Supply voltage	6.0 V nominal
Number of batteries	4 each 1.5 V nominal
Battery type	LR03, AAA Power Life (1050mAh)

Environmental conditions	
operating conditions	
temperature	5 to 50°C
relative humidity	20 to 85 %
condensation	not allowed
storage conditions	
temperature	-25 to 85°C
relative humidity	5 to 95 %

Note: The IRT 8050 should not be exposed to direct sunlight or to high temperatures and should not be used in damp rooms such as bathrooms.

Dimensions	93 × 80 × 28 mm (max. height × width × depth)
Weight	0.070 Kg (without batteries) 0.115 Kg (with batteries)
Housing	
Material	ABS
Colour	White (Bayer 0177 - close to RAL 9010)
Mounting	screws 3.5 to 4.0 mm. diameter; through mounting holes in battery compartment
EMC	
immunity	in accordance with EN 50082-1
radiated interference	in accordance with EN 50081-1
Reliability	
call rate	1% per year (estimated)
life time	10 years (estimated)

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
Unit box	124 × 92 × 50	1	cardboard	0.115	0.160
Outer box	205 × 192 × 133	8	cardboard	0.92	1.380

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
IRT 8050/00	8	9137 003 10703	87 11559 517070	87 11559 517087	517070 xx

15.5 Data sheet UID8510



General description

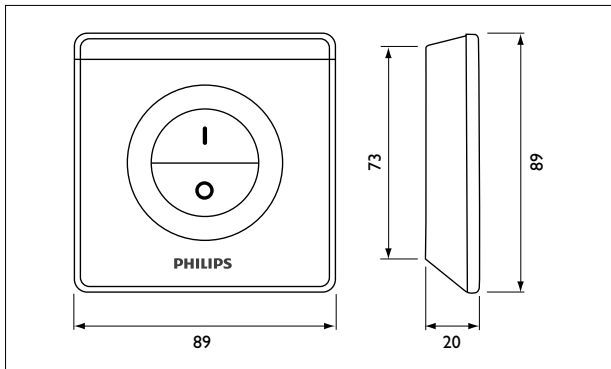
The ToBeTouched UID8510 IR user interface panel provides intuitive on/off and dimming functionality. It connects wirelessly to infrared RCS protocol on lighting control systems.

Building upon the iconic design as applied in LivingColors, the ToBeTouched range of intuitive user interfaces brings the same style and ease of interaction to professional lighting applications.

The ToBeTouched range comprises various models. These range from a simple on/off switch, plus a version with dimming, through to a cool/warm-white controller and a full-color model. Assisting the user with light, sound and color feedback*, these easy-to-install interfaces make operating a lighting system straightforward – and fun!

* Not applicable on the UID8510

Product details



Dimensions in mm

- The UID8510 is a multi-purpose two-key transmitter suitable for the infrared remote control of lighting installations and other building-bound equipment.
- The UID8510 can be used to switch and/or regulate lighting in individual control circuits, to select lighting presets, to operate sun blinds and to switch HVAC (heating, ventilation, air-conditioning) systems to comfort or standby.
- The two large keys can have 25 different sets (combinations) of control functions and 5 programming functions (for operational modes).
- The unit is optimized for wall-mounted operation.
- As a special feature it offers the option of operating two different control circuits using the "toggle key" principle. Toggle keys send two different codes alternately, i.e. the code changes each time the key is pressed. This means that two functions can be controlled with one key, e.g. "Channel 1 ON - Channel 1 OFF" or "Blinds UP - Blinds STOP"

Applications

- The UID8510 is primarily intended for the infrared remote control of individual lighting control circuits and for control of sun blinds in systems with combined lighting and non-lighting building functions.
- Selection of presets is possible using "multiple-touch" operation, i.e. a sequence of 1, 2, 3 or 4 short key presses.
- It offers an easy-to-find, fixed-point control for switching on basic lighting.
- The UID8510 can be used in combination with LMM, TRIOS, Actilume and the 'Occu' family.

The operational mode of a controller can be changed by setting the dip switches on the back of the transmitter to the required operational mode.

Related equipment

Lighting management systems:

- LMM

Stand-alone and Luminaire based controls:

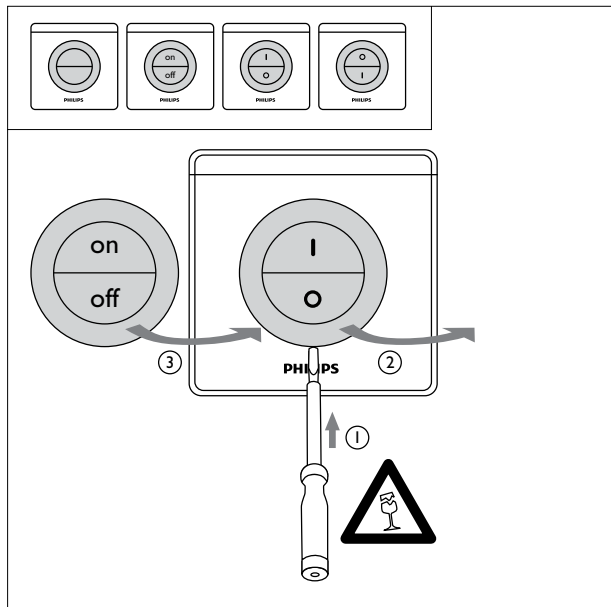
- Actilume
- OccuSwitch
- OccuPlus
- Trios

Sensors:

- Infrared receivers
- Multi-sensors

Switch Caps

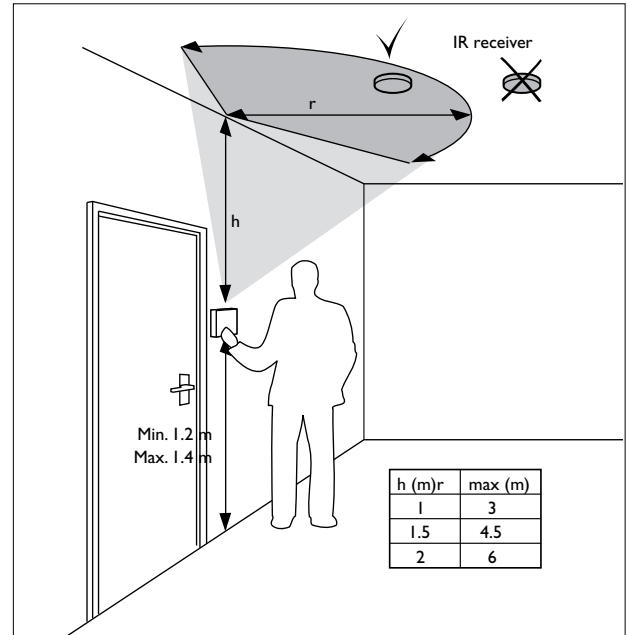
Three switch caps are provided with the UID8510 to customize the look of the device to the user's own preference. By rotating the caps, multiple configurations are available, providing total flexibility. The caps can easily be changed using a small screwdriver; as shown in the picture below.



Positioning

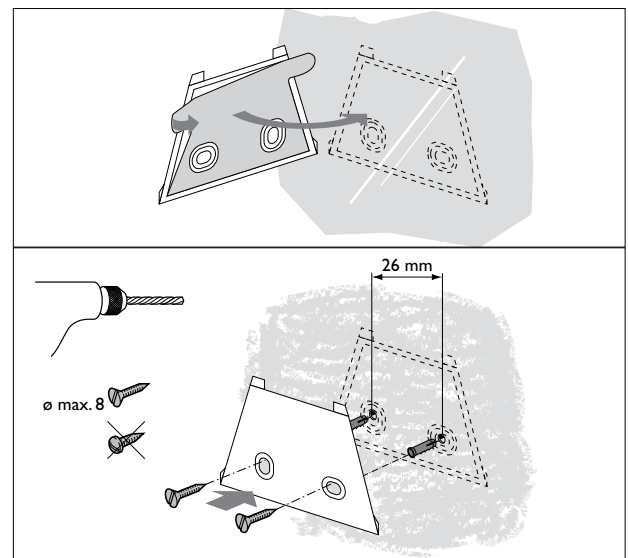
The UID8510 transmitter is suitable for wall-mounted operation. When mounted on the wall, the unit must be located between 120 cm and 140 cm above the floor.

The corresponding receiver must be located in the ceiling, as shown below.

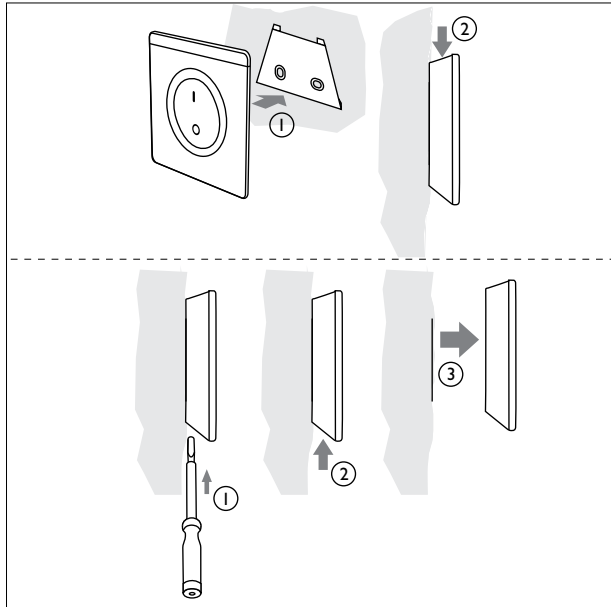


Mounting

The dock can be fixed to the wall by means of flat (countersunk) screws with a maximum diameter of 8mm or by means of double-sided adhesive tape.



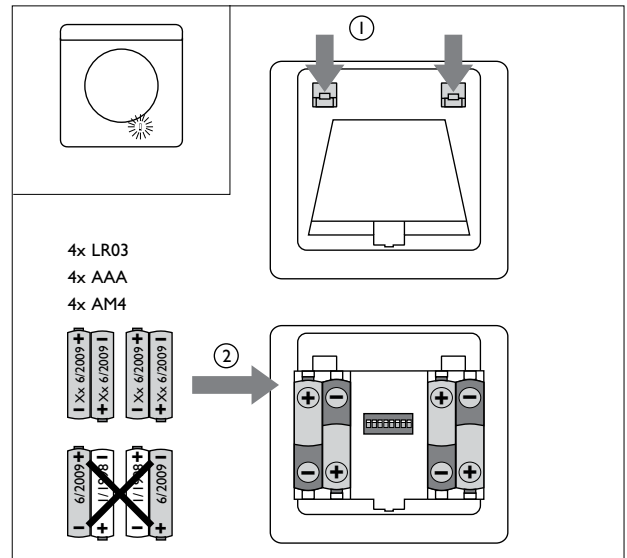
Attach the transmitter to the dock as shown below.



To undock the transmitter; a small screwdriver is required to unlock the device, also shown in the picture above.

Battery handling

Batteries must be replaced as soon as the battery low indicator starts blinking.



Always use a set of 4 batteries from the same brand with the same production date. Please make sure that batteries are inserted with the correct polarity. Inverted batteries may cause damage to the transmitter (See installation instructions).

Disposal of batteries must be in accordance with local regulations.

Included in the package

- UID8510 IR user interface device
- Wall plate with double-sided tape
- 3 x switch caps
- 4 x AAA batteries
- Quick user guide
- Installation instructions

Technical data

Number of IR LEDs	8
Carrier frequency	36 kHz (RC5 standard)
Supply voltage	6.0V nominal
Number of batteries	4, each 1.5V nominal
Battery type	LR03, AAA Power Life (1050mAh)

Environmental conditions

Storage conditions	
Temperature	-25 to +85°C
Relative humidity	5 to 95%; no condensation

Operating conditions	
Temperature	+5 to +50°C
Relative humidity	20% to 85%; no condensation
IP	20

The UID8510 should not be exposed to direct sunlight or to high temperatures and should not be used in damp rooms such as bathrooms.

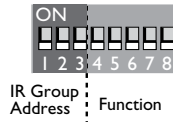
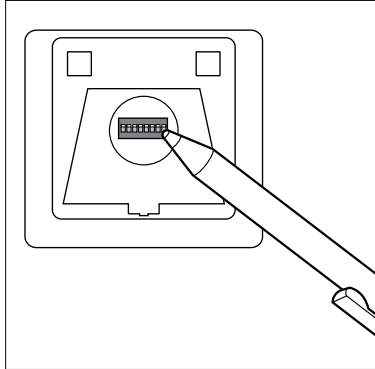
Dimensions	90x90x21mm
Weight	0.125 kg
Without batteries	0.073 kg

Housing	
Material	PC Lexan *8M7D024X STD
Grade	FXD121R CMR#53577
Color	White (RAL 9003)
Mounting	Double-sided tape (included) or flat head screws, max. 8mm diameter (not included)

EMC	
Immunity	in accordance with EN 55022
Radiated interference	in accordance with EN 55024

Reliability	
Call rate	1% per year (estimated)
Life time	10 years (estimated)

DIP switch settings



Helio, LMM, Trios

	1	2	3
A			
B	ON		
C		ON	
D	ON	ON	
E			ON
F	ON		ON
G		ON	ON
ALL	ON	ON	ON

		4	5	6	7	8
Ch1 off/down	Ch1 on/up					
Ch2 off/down	Ch2 on/up	ON				
Ch3 off/down	Ch3 on/up		ON			
Ch4 off/down	Ch4 on/up	ON	ON			
Ch5 off/down	Ch5 on/up			ON		
All off	P1	ON		ON		
All off	P2		ON	ON		
All off	P3	ON	ON	ON		
All off	P4					ON
Blinds down	Blinds up	ON				ON
Ch1 on/off	Ch2 on/off		ON			ON
Ch2 on/off	Ch3 on/off	ON	ON			ON
Ch3 on/off	Ch4 on/off			ON		ON
Ch4 on/off	Ch5 on/off	ON		ON		ON
Ch5 on/off	Ch1 on/off		ON	ON		ON
All off	P1/P2	ON	ON	ON		
All off	P1/ P3					ON
All off	P1/P4	ON				ON
All off	P4/ P3		ON			ON
All off	P4/P2	ON	ON			ON
All off	P4/ P1			ON		ON
All off	P1, P2, P3, P4	ON		ON		ON
All off	P4, P3, P2, P1		ON	ON		ON
Absent + All Off	Setpoint 0 + Preset 1	ON	ON	ON		ON
Blinds down/stop	Blinds up/stop					ON

Packing data

Type	Box dimensions (mm)	Qty	Material	Weight (Kg)	
				net	gross
UID8510TBT IR	113x113x61	1	cardboard	0.073	0.195

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3	EOC
UID8510TBT IR	1	9137 003 35203	8727900873467	8727900 873474	873467 00

16 HVAC commands

The following HVAC commands received via IR can be forwarded to the BMS when the ActiLume DALI Gen 2 is in BMS configuration.

Sunblinds	
Command	Action
E0 10000	Blinds stop
EC 10110	Blinds Rotate step down
E4 10010	Blinds down
EA 10101	Blinds Rotate step up
E2 10001	Blinds up

Ventilation	
Command	Action
D8 01100	HVAC fan off/down
DA 01101	HVAC fan on/up

Sunblinds	
Command	Action
CE 00111	HVAC 3 steps up
CC00110	HVAC 2 steps up
CA00101	HVAC 1 steps up
C2 00001	HVAC on/steps 0
D2 01001	HVAC 1 steps down
D4 01010	HVAC 2 steps down
D6 01011	HVAC 3 steps down

Table 18

Q1: How many ActiLume DALI Gen 2 can I connect together when I use Parallel Linking?

A1: 64 since this is the limit of DALI addressing.

Q2: How many ActiLume DALI Gen 2 can I connect together when I use BMS mode?

A2: 64 since this is the limit of DALI addressing.

Q3: How many extension sensors can I connect to one ActiLume DALI Gen 2?

A3: The maximum number of extension sensors that can be connected is 2. More will introduce data collision on the DALI line resulting in bad or a non-functioning system. See also chapter 9.4, "System capabilities and limitations" for a more detailed explanation.

Q4: How many PBU's can I connect to one ActiLume DALI Gen 2?

A4: The maximum number of PBU's that can be connected is 2. More will introduce data collision on the DALI line resulting in bad or a non-functioning system. See also chapter 9.4, "System capabilities and limitations" for a more detailed explanation.

Q5: How many ballasts/drivers can I connect to one ActiLume DALI Gen 2?

A5: This is difficult to answer because it depends on the configuration the ActiLume DALI Gen 2 is in. For more detailed information including numbers, see chapter 9.4, "System capabilities and limitations".

Q6: Which Groups are dimming when using the Touch and Dim button?

A6: Group 1, 2 and 3 will be dimmed up/down or switched on/off.

Q7: Is daylight regulation still active when using the Touch and Dim button?

A7: No, daylight regulation will be switched off?

Q8: What is the maximum length of the cable between the PBU and the button/switch?

A8: The wires from the PBU to the switches can be extended up to 1 meter maximum.

Q9: Can I have Touch and Dim functionality when using a PBU?

A9: No, the PBU has no Touch and Dim functionality. In this is needed, the Touch and dim input of the ActiLume DALI Gen 2 should be used.

Q10: Do we have a description of all the commands to control the ActiLume DALI Gen 2 when it is connected to a BMS?

A10: The connection from the BMS to the ActiLume DALI Gen 2 is a standard DALI connection. This ensures that the ActiLume DALI Gen 2 can be controlled via standard DALI commands.

Q11: Can I just put DALI commands on the parallel linking or BMS connection to control the ActiLume DALI Gen 2?

A11: It is advised not to do so since this connection is also being used by all ActiLume DALI Gen 2 for communicating with one another about their occupancy status. There is a big chance that there will be a data collision and commands will get lost. This communication can be stopped by sending 2 times the DALI command "Initialise" (DALI command 258).

After these commands all ActiLume DALI Gen 2 will stop communication and the DALI line will be free for communication from the BMS or other devices that needs control. If all is done, the DALI command "Terminate" (DALI command 256) should be send 2 times as an indication to all ActiLume DALI Gen 2 connected that they can continue with sharing there occupancy status.

Q12: It is possible to recall scenes when using PBU's?

A12: No, this is not possible. For recalling scenes, the IRT8030 is needed.

Q13: How can you switch between "Decorative lighting" and "middle row"?

A13: This depends on what mode is selected and what functionality is given to Group 3. The best way to go is to do the DALI grouping by means of the IRT8099/20 and then make the needed changes in settings to Group 3 by means of the MultiOne interface and software.

Q14: Do we have a maximum length of the Touch and Dim button to the ActiLume DALI Gen 2 controller?

A14: There is in principle no max length defined but, if the line gets too long it is possible that disturbances will be picked up by this line giving unwanted actions taken by the ActiLume DALI Gen 2. To prevent this, the following R/C filter can be used to eliminate these disturbances where Ls is connected to the Touch and Dim input of the ActiLume DALI Gen 2. See Figure 94.

Q15: Can I connect 2 or more ActiLume DALI Gen 2 in parallel to one Touch and Dim button?

A15: No, this is not possible since the ActiLume DALI Gen 2 has no synchronization implemented.

Q16: Can I connect 2 or more Touch and Dim buttons in parallel to one ActiLume DALI Gen 2?

A16: Yes, this is possible, but keep in mind the length of the Touch and Dim line. See also Q14/A14.

Q17: Where can I find all ins and outs about the “MultiOne” software?

A17: In this Application guide there is a part (chapter 14) about the MultiOne tool. The basics of the MultiOne tool will not be explained within this chapter. For learning how to work with MultiOne please use the “User manual” and “Quick start guide” that is available within the MultiOne software. You can find it under the pulldown at the top navigation “Help”.

Within this application guide only those items related to the ActiLume DALI Gen 2 are explained

Q18: Is it possible to deactivate the day light sensor and the movement detector separately?

A18: Yes, it is possible to (de)activate the PIR and light sensor independently from one another. By selecting “Auto on / auto off” or “Manual on / auto off” in the mode feature the PIR detection is enabled. By selecting “Manual on / manual off” in the mode feature, the PIR detection is disabled. The same goes for DDR, DDO and DDS, they can be enabled or disabled separately, by means of the tick boxes as described in chapter 14.4.

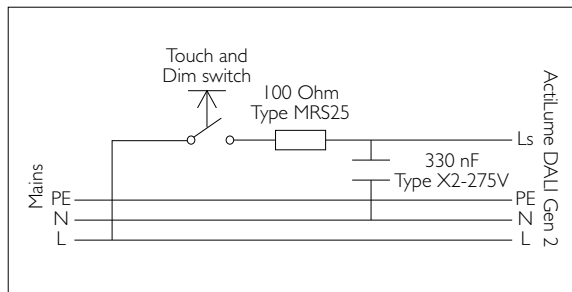


Figure 94

18 Abbreviations

Abbreviations used throughout this document are in alphabetical order:

DALI = Digital Addressable Lighting Interface

DDO = Daylight Dependent Override. Block auto on if sufficient daylight.

DDR = Daylight Dependent Regulation

DDS = Daylight Dependent Switching. If sufficient light, than switch off.

BMS = Building Management System

PBU = Push Button Unit (LCU2070 and/or LCU2071)

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