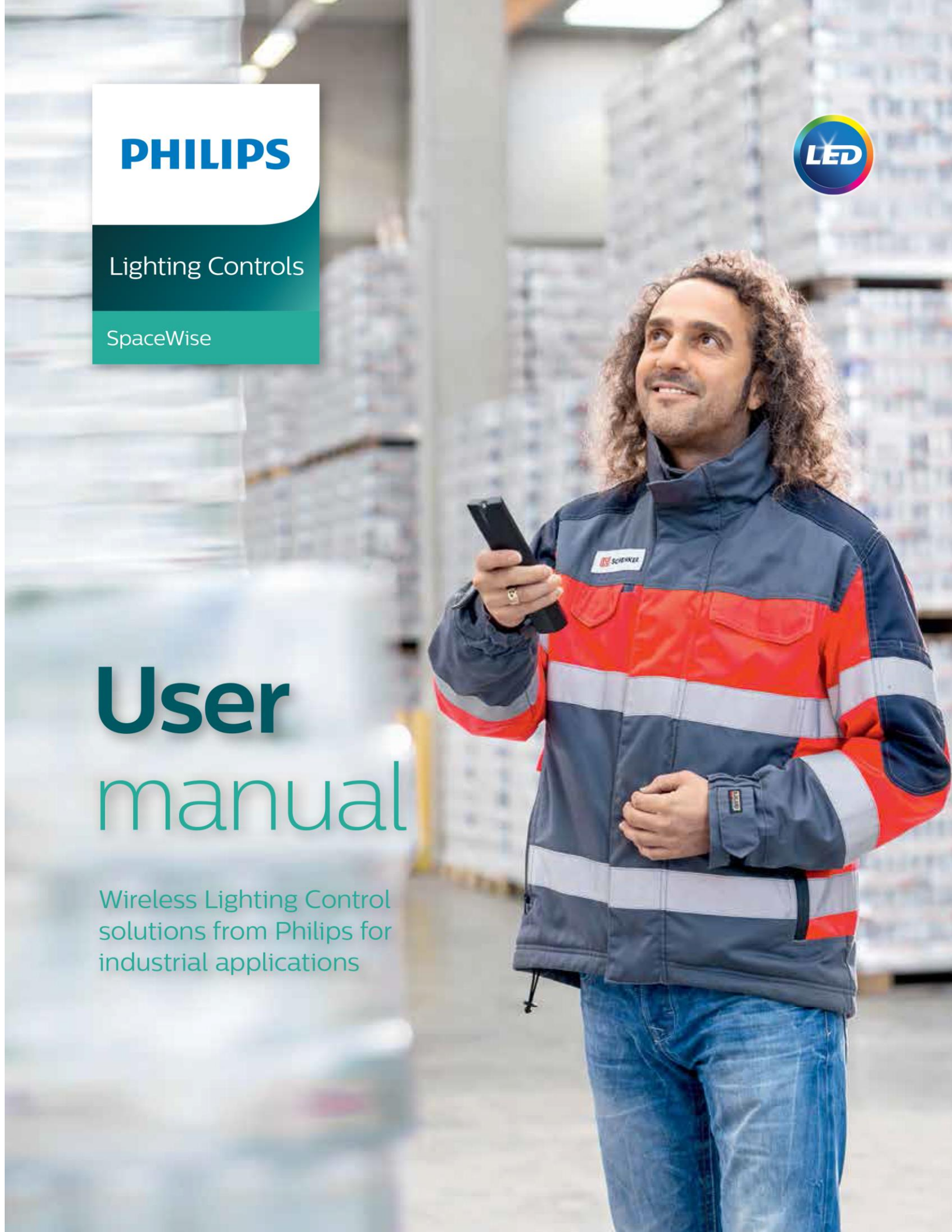
PHILIPS

Lighting Controls

SpaceWise

User manual

Wireless Lighting Control solutions from Philips for industrial applications



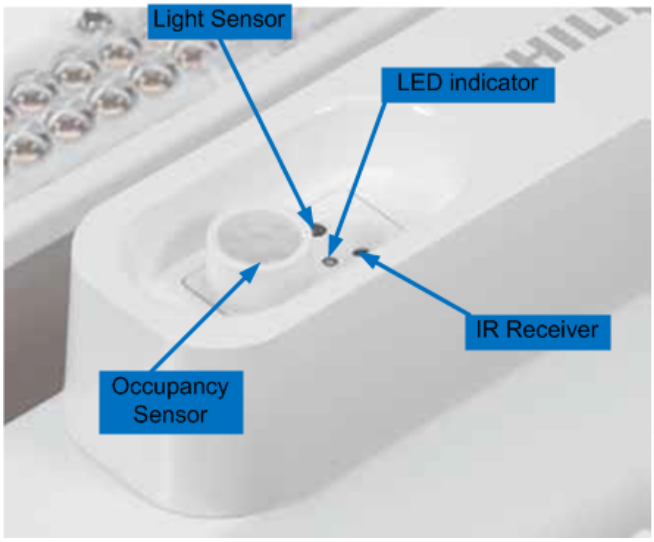
Contents

This document should only be used for commissioning a SpaceWise Industrial System with high bay luminaires. For office applications, please refer to the commissioning manual of SpaceWise for Office Applications.

1. SpaceWise Technology Industry Luminaire

Philips luminaires with wireless SpaceWise Technology are stand-alone LED lighting systems with integrated high bay occupancy sensing and daylight harvesting, designed specifically to meet the lighting control needs of an industrial space. With this technology, installers can group multiple luminaires and activate automated dimming behaviors using a SpaceWise remote control.

A SpaceWise Technology Luminaire contains an integrated MultiSensor which comprises of the following elements –



PIR based occupancy sensor: For detecting motion

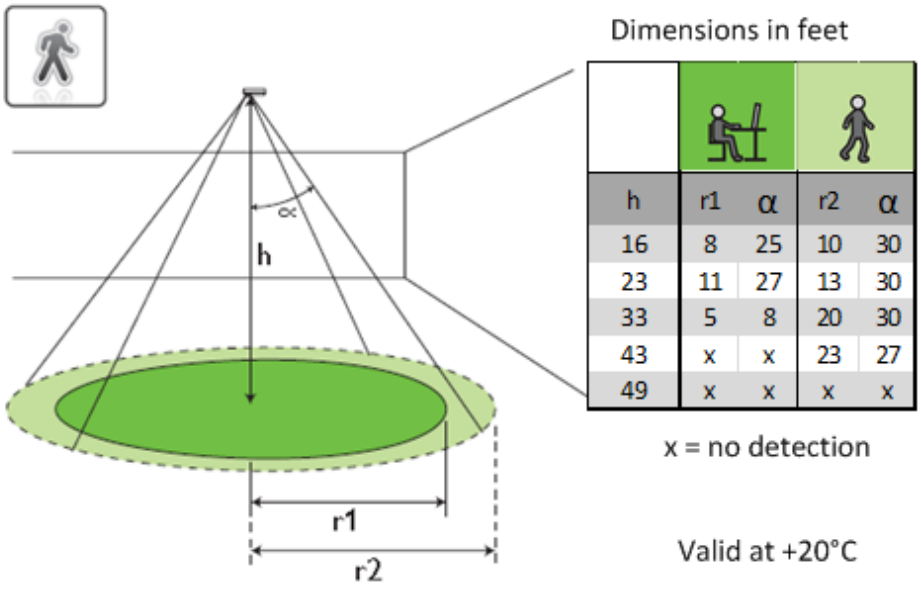
Light sensor: For daylight dependent light level regulation

LED indicator: Red indication when motion is detected or yellow indication when motion is not detected

IR receiver: For receiving signals from the commissioning remote (IRT 9090/01)

A maximum of 50 luminaires can be grouped together using the SpaceWise remote. Users can pick an application mode that best suits their lighting controls preference.

1.1 SpaceWise Technology Luminaire sensor coverage area

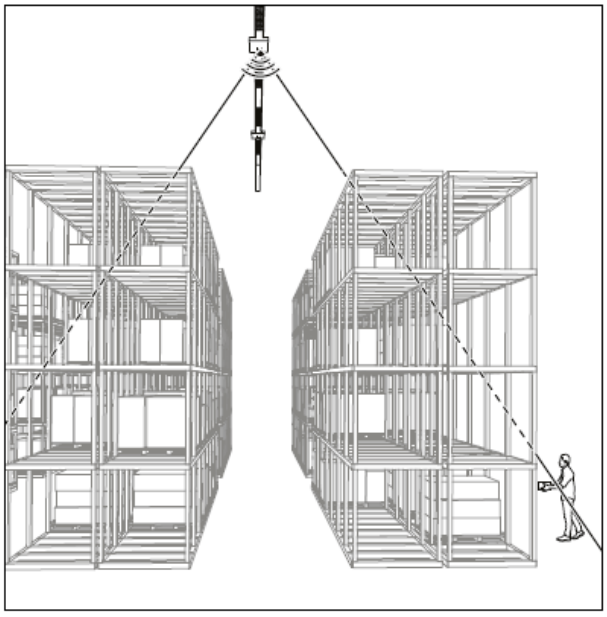


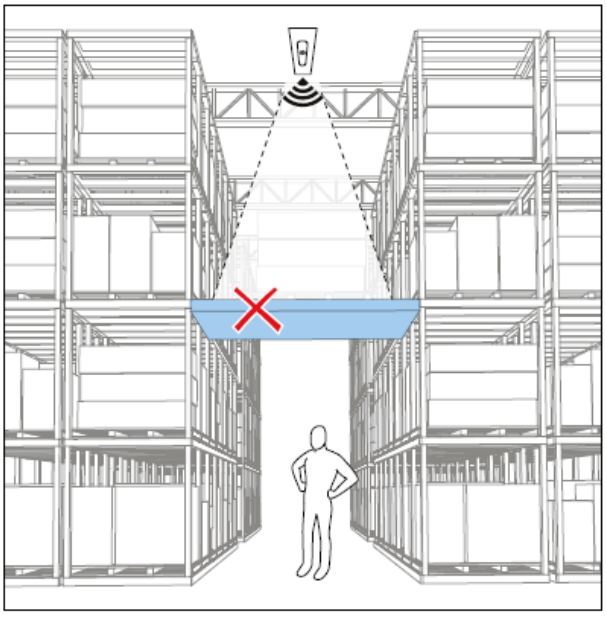
h	r1	α	r2	α
16	8	25	10	30
23	11	27	13	30
33	5	8	20	30
43	x	x	23	27
49	x	x	x	x

x = no detection

Valid at +20°C

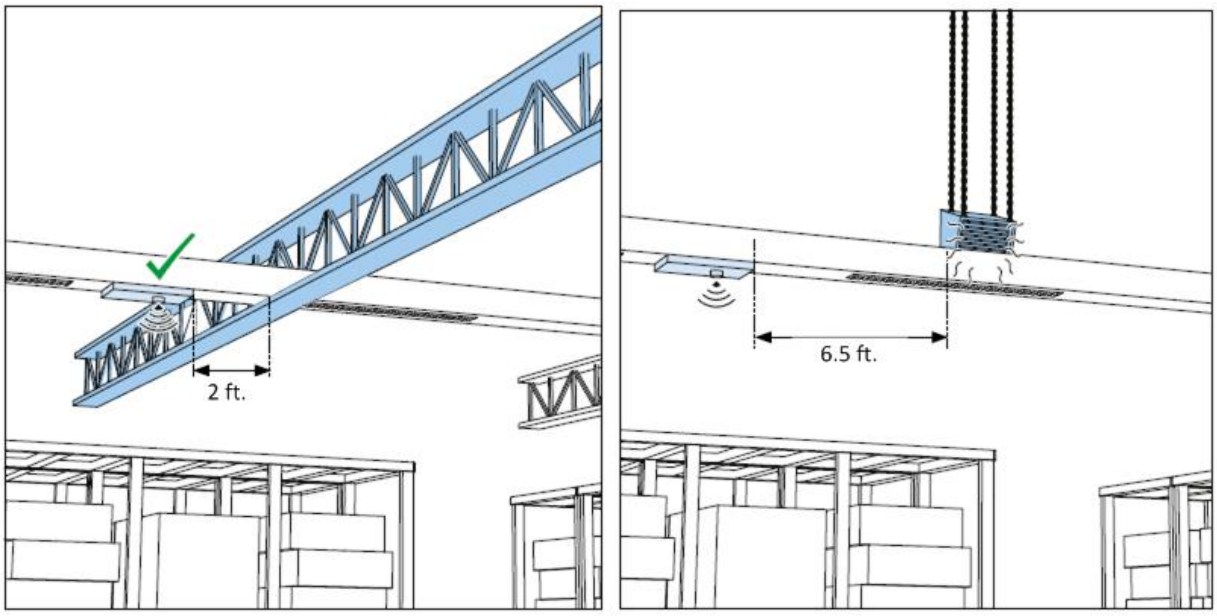
To limit unwanted motion detection, the coverage of the luminaire can be restricted by applying a cover. The cover is a plastic circular ring sticker that can be peeled and applied on the lens of the sensor. In any instance the view of the sensor should not be blocked with any obstructions.



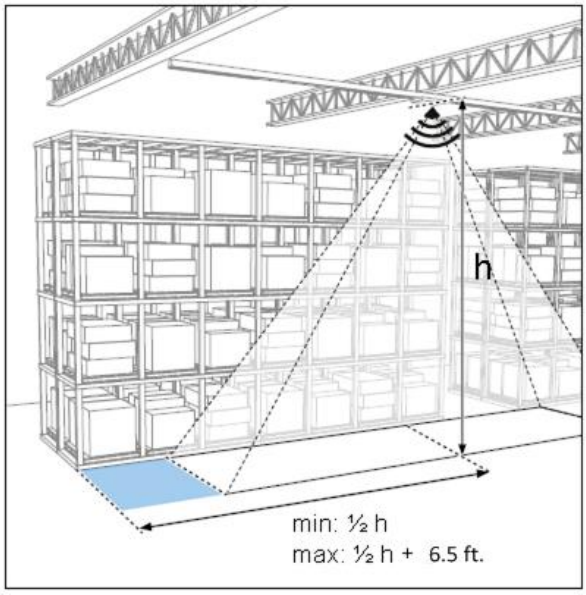


2. Layout

Do not install the luminaire close to steel or concrete constructions. A distance of at least 2 feet should be maintained in all directions. Installing the luminaire near heater fans and air-conditioning outlets will hamper the performance of the sensor and therefore it is important to have a minimum of 6.5 feet distance between air outlets and the luminaire.

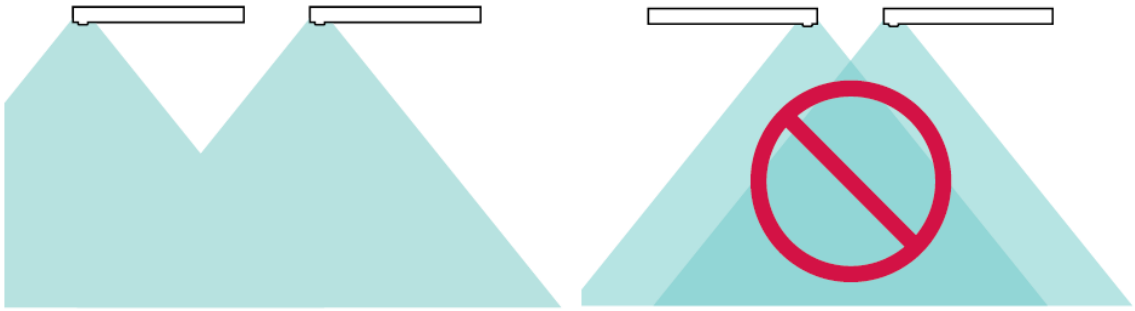


Also check that the first luminaire is in the right position and oriented correctly with respect to the edge of the isle. Refer to section 12 (walk test) for details on testing the coverage area of the sensor. Note the luminaire needs to be grouped before performing the walk test.



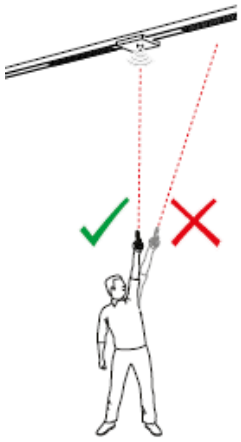
When configuring industrial spaces with SpaceWise Remote, large groups of 30-50 luminaires are recommended to maintain the lighting aesthetics of the space and improve reliability of the system. Smaller groups may turn off more frequently than desired.

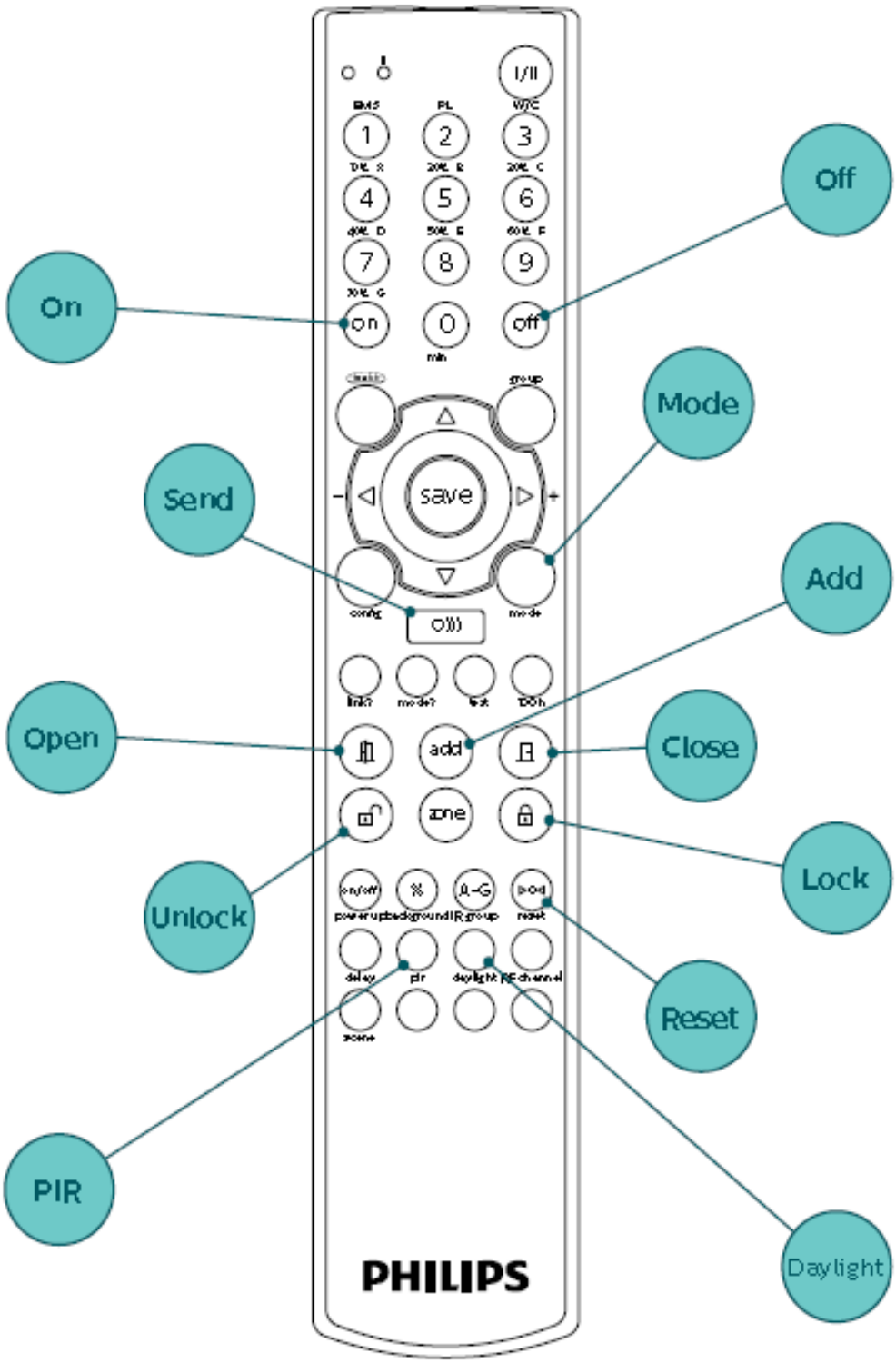
Install luminaires per manufacturer installation instructions and ensure sensors from adjacent luminaires are not positioned next to one another.



3. SpaceWise Remote (IRT 9090)

The SpaceWise remote is the only tool required by the installer to group the SpaceWise Technology Luminaires together and to change any default configuration settings. A set of 2 AAA batteries of 1.5V each are supplied with the remote. Before proceeding to the commissioning instructions, make sure that the batteries are correctly installed in the remote and the luminaires are powered. Also, while commissioning always aim the remote directly at the sensor.

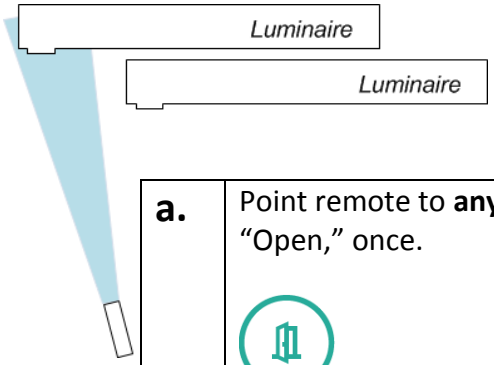


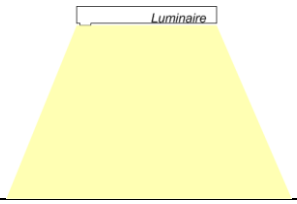
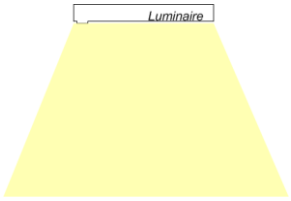
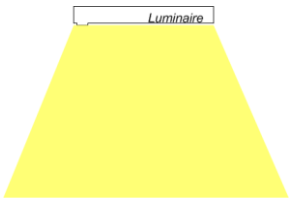

On
Off
Mode
Send
Add
Open
Close
Lock
Unlock
Reset
PIR
Daylight
save
add
zone
PHILIPS

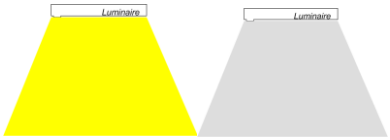
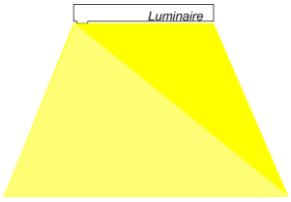
4. Grouping

Grouping is required to initiate system functionality and dimming behaviors.

The Luminaires have to be in a factory new state to group them together. If changes were previously made on the luminaires then perform a factory reset as per the instructions in section 12 "Troubleshooting" **before proceeding.**



a.	Point remote to **any** luminaire and press "Open," once.	Wait for the luminaire to dim down to 5%. 
	Make sure the button is pressed only once. Pushing multiple times can create multiple networks which can cause undesired operation.	
b.	Walk to the next luminaire to be added to the group, point to the luminaire and press "add."  Repeat step for adding all the luminaires in the group.	Added luminaire will dim down to 5%. 
c.	Point to **any** of the luminaires added in the group and press "close." 	All the luminaires in the group will go to 50% light level. 

d.	Verify the group by pointing to **any** of the luminaires in the group and pressing “on” and “off.” 	All the luminaires in the group will turn ON and OFF together. 
	**If any luminaires in the group do not turn ON/OFF, they are not part of the group. Go back to step “a” to add the luminaires back in to the group.**	
e.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” 	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 
	**Once the group is locked it will not accept any configuration changes. To make any changes the group has to be unlocked first. In order to save time, you can choose to lock the group after finishing all configuration changes such as max light level changes, scene customization, etc have been executed.** **Refer to the FAQ section for additional information on how to correct non responsive luminaires.**	

5. Application Modes

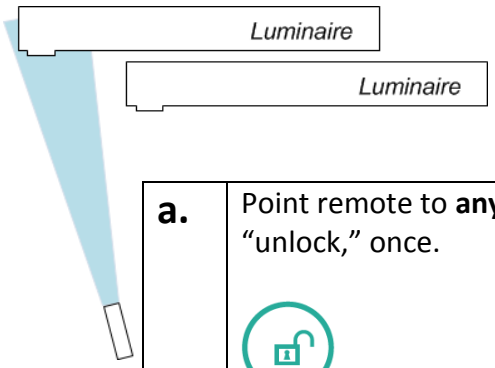
Various industrial application modes are supported within SpaceWise Technology. The default factory setting is set as the warehouse mode (mode# 6) and since the behavior varies for each mode, it is recommended to select the mode that closely reflects the installed application space. See the SpaceWise Design Guide (www.philips.com/spacewise) for details.

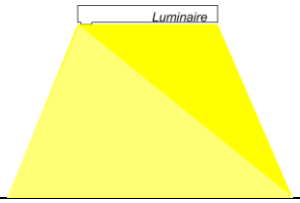
Application	ON/OFF behavior	Mode
Warehouse (Default)	Auto ON/Auto OFF	6
Sporting Area	Auto ON/Auto OFF	7
Warehouse Comfort	Auto ON/Auto DIM to Background Level	8
Manufacturing	Auto ON/Auto DIM to Background Level	9

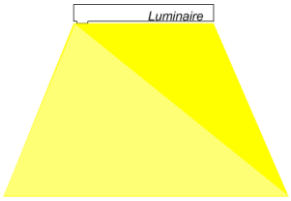
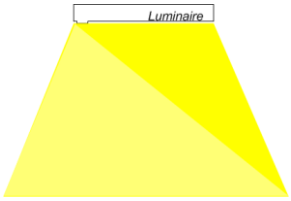
Application setting	Mode 6 (default): Warehouse	Mode 7: Gymnasium	Mode 8: Warehouse comfort	Mode 9: Manufacturing
Out of the box behavior	**Behavior of the luminaires before grouping or being altered via the commissioning remote.**			
Power-up state	On	On	On	On
Hold Time[1]	15 min	15 min	15 min	15 min
Background Level	30%	30%	30%	30%
Prolong Time[2]	Infinite	Infinite	Infinite	Infinite
Start-up and Dim behavior	**Behavior of the luminaires after grouping.**			
Switch ON Level[3]	60%	60%	60%	60%
Background Level	10%	20%	10%	20%
Hold Time	2 min	5 min	2 min	5 min
Fading to Switch ON Level	0s	0s	0s	0s
Fading to Background Level	10s	10s	10s	10s
Prolong Time	2 min	5 min	Infinite	Infinite
Switch OFF to 0%	Yes	Yes	No. Stays at background level	No. Stays at background level

[1] Hold time is the occupancy time out after which the luminaire dims from the task level to the background level.
[2] Prolong time is the time for which the luminaire stays at the background level before switching off.
[3] Level at which lights turn ON before ramping up to full output or the level determined by the daylight sensor.

6. Application Mode Selection



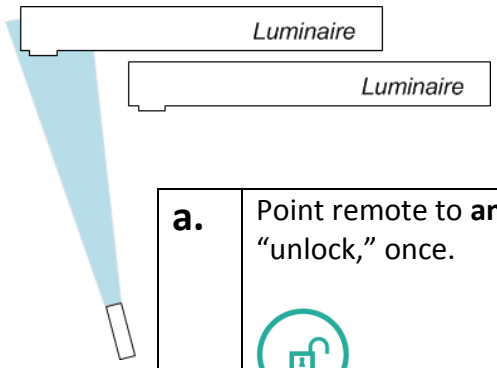
a.	Point remote to **any** luminaire and press “unlock,” once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press “send.” 	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  The luminaire will FLASH twice and group light level will go to 50%. 
b.	Point to **any** of the luminaires in the group and press “mode.”  While the LED is still blinking red, enter the number for the preferred mode (see list at step 5).	Red LED on remote will start blinking.  Red LED on remote will stop blinking. 

	Eg. Select “8” for warehouse comfort application mode. Point to **any** of the luminaires in the group, press “send.” o)))	The luminaire will FLASH twice and group light level will go to 50%. 
	**If unsure about mode selection or remote blinking status then wait for the remote blinking to stop and redo step “b.”**	
c.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” o)))	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

7. Maximum light output selection

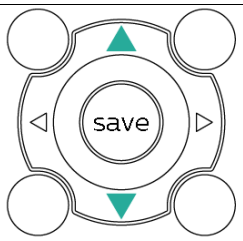
Choice of max light output per group will be influenced by existing conditions such as partition height, reflectances, light level preference and energy goals.

Light output setting	Percentage
High	100%
Medium (default)	88%
Low	77%
Minimum	66%



a.	Point remote to **any** luminaire and press “unlock,” once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press “send.”	Red LED on remote will start blinking. Red LED on remote will stop blinking. The luminaire will FLASH twice and group light level will go to 50%.

To select light output settings, use the up and down arrows to change between high, medium, low and minimum. Light level can be altered one step at a time. The daylight button must be pressed to initiate a new change after every end of step.

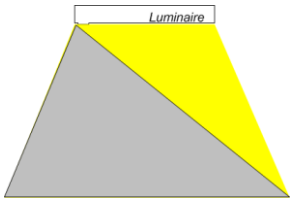


b.	*FOR EACH STEP UP OR DOWN:* Point to **any** of the luminaires in the group and press "daylight."  While the LED is still blinking red, select:  Then press "send."  *END OF STEP*	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  This will move the light output setting by one step. The luminaire may or may not flash at the end of the step depending upon firmware version.

Note that the default setting is Medium. To get to high, go one step up. To get to Minimum, go two steps down.

Medium to High: Will move light output setting from default of 88% to 100%.
Medium to low: Will move light output setting from default of 88% to 77%.
Low to minimum: Will move light output setting from 77% to 66%.

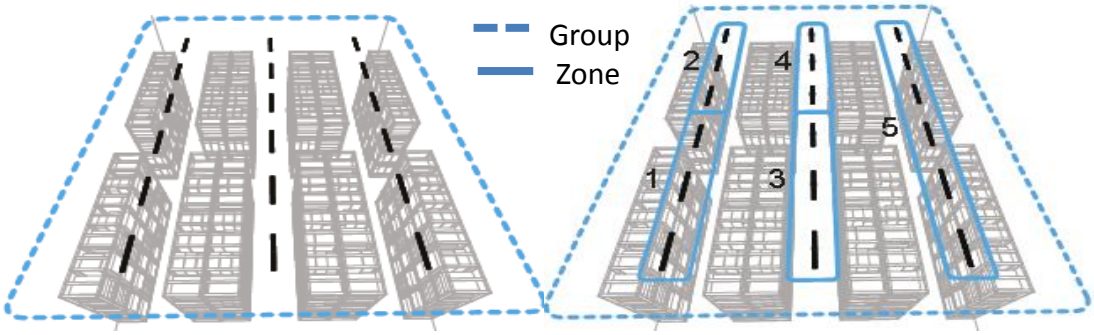
During programming, the fixture is temporarily at 50% (unlocked state). So, while changing the light level from default 88% to 77%, you will notice the fixture getting brighter because it is actually going from the temporary 50% light level to permanent 77% light level. If you repeat the step down sequence again then upon careful observation you will see the subtle change in light level from 77% to 66%.

c.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” 	Red LED on remote will start blinking.  The luminaire will FLASH twice and group is ready for normal operation. 

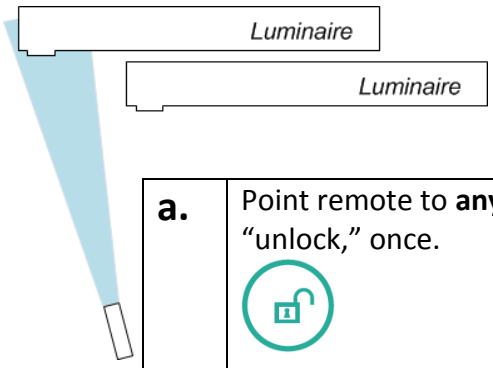
8. Creating zones in a group

Up to 16 zones can be created within a SpaceWise group and each luminaire can be part of just one zone.

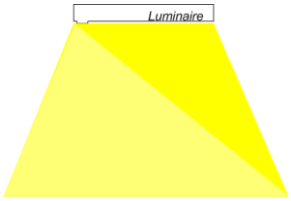
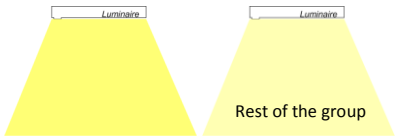
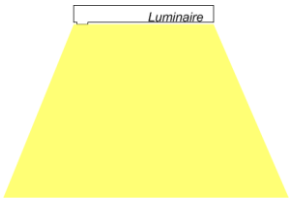
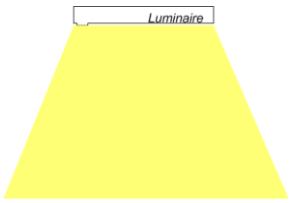
When a group is created with zones, occupancy detected by one SpaceWise luminaire is distributed across the zone and also across the whole group. All luminaires within the zone will react in the same way to any sensor in the zone. All other luminaires that are in the same group but in a different or no zone will react on the occupancy signal by going to background level.

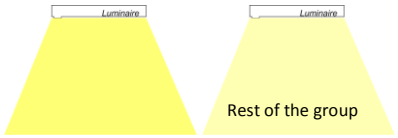
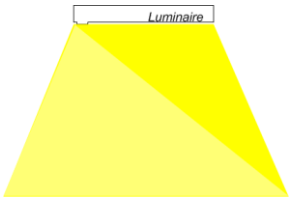


Zones can only be created within a group so a group should be created first as per the instructions in section 4.



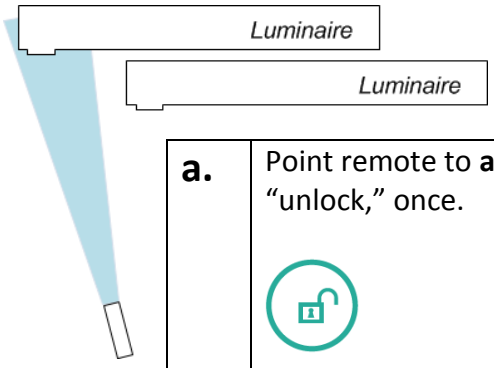
a.	Point remote to **any** luminaire and press “unlock,” once. Wait for LED to stop blinking (apx. 10 seconds).	Red LED on remote will start blinking. Red LED on remote will stop blinking.

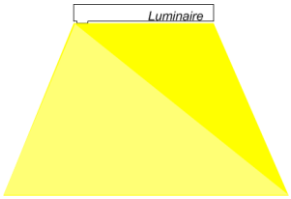
	Point remote to **any** of the luminaires and press “send.” 	The luminaire will FLASH twice and group light level will go to 50%. 
b.	Point remote to **any** luminaire that is going to be part of the zone and press “Zone,” once. 	The luminaire will go to 50% while the rest of the luminaires go to 5%. 
	**Make sure the zone button is pressed only once. Up to 16 zones can be defined and every time the zone button is pressed a new zone creation process is initiated.**	
c.	Walk to the next luminaire to be added to the zone, point to the luminaire and press “add.”  Repeat step for adding all the luminaires in the zone.	Added luminaire will go to 50%. 
	**To create new zones execute steps “b” and “c” again. Note that a luminaire can only be part of one zone.**	
d.	To stop the zone creation process, point to **any** of the luminaires added in the zone and press “close.” 	All the luminaires in the group will go to 50%. 

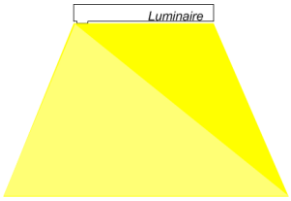
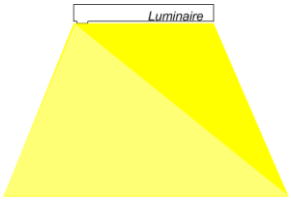
e.	To test the zone, point to any luminaire and press the “right arrow” key.  Press the right arrow key again to move to verify the next zone.	All the luminiare in the selected zone will go to 50% while the luminaires in the other zone will go to 5%. 
f.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” 	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 
g.	Alternately zones can also be re-tested after locking the group. Point remote to **any** of the luminaires in the created zone and press “zone”.  Point to the same luminaire and press “on” or “off.”  To stop the test process, point to the same luminaire and press “close.” 	The entire zone turns on or off accordingly.

9. Activate / Deactivate occupancy sensor

Occupancy sensor is active by default. Changes have to be performed on each luminaire in the group.

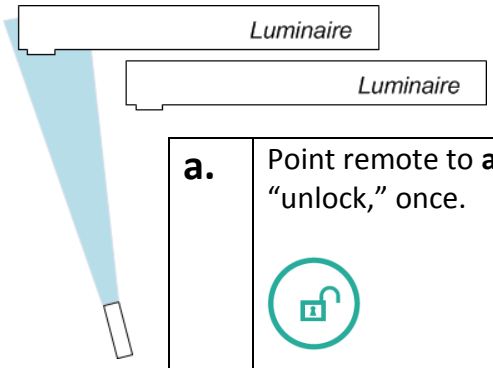


a.	Point remote to **any** luminaire and press "unlock," once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press "send." 	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  The luminaire will FLASH twice and group light level will go to 50%. 
b.	Press "pir" button.  While the LED is still blinking red, enter the numbers: "**10**": Enable occupancy sensing "**12**": Disable occupancy sensing (lights will stay at 100%)	Red LED on remote will start blinking.  Red LED on remote will stop blinking. 

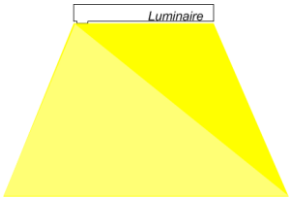
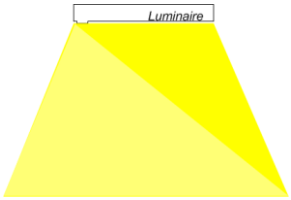
	Point to the luminaire that needs to be altered, press “send.” O)))	The luminaire will FLASH twice and group light level will go to 50%. 
	Repeat step “b” for all the luminaires that need to be reconfigured.	
c.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” O)))	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

10.Activate / Deactivate daylight sensor

Daylight sensor is active by default. Changes have to be performed on each luminaire in the group.

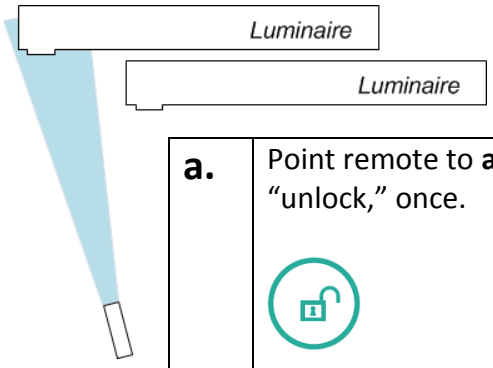


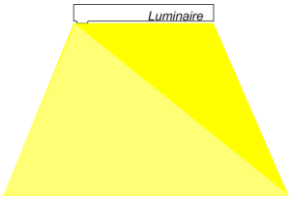
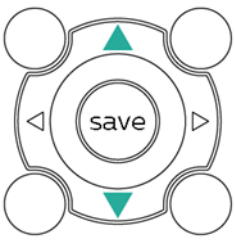
a.	Point remote to **any** luminaire and press "unlock," once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press "send." o)))	Red LED on remote will start blinking. Red LED on remote will stop blinking. The luminaire will FLASH twice and group light level will go to 50%. Luminaire
b.	Press "daylight" button. daylight While the LED is still blinking red, enter the numbers: "**1**": Disable daylight sensing "**2**": Enable daylight sensing	Red LED on remote will start blinking. Red LED on remote will stop blinking.

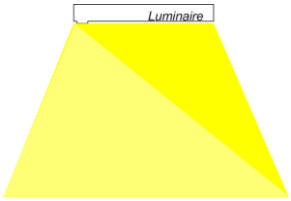
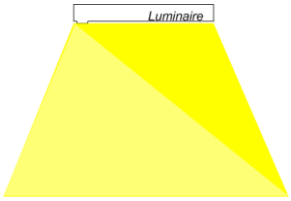
	Point to the **luminaire that needs to be altered**, press “send.” o)))	The luminaire will FLASH twice and group light level will go to 50%. 
	**Repeat step “b” for all the luminaires that need to be reconfigured.**	
c.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” o)))	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

11. Daylight Calibration

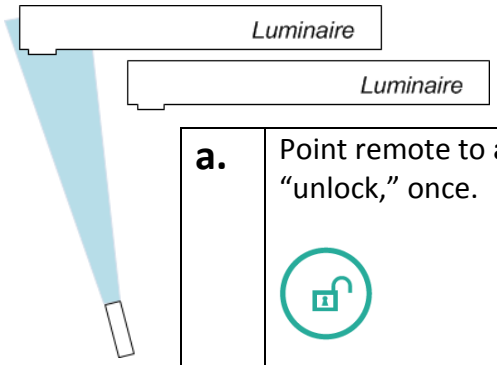
Daylight calibration should be performed during night time. Daylight calibration is set for all the luminaires in the group.

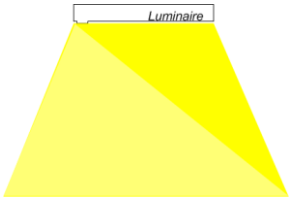


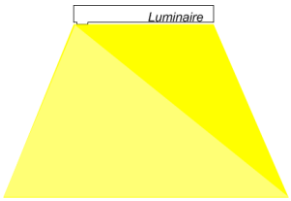
a.	Point remote to **any** luminaire and press “unlock,” once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press “send.” 	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  The luminaire will FLASH twice and group light level will go to 50%. 
b.	Point remote to any of the luminaires and adjust the group light level to the required level using the dimming “up” or “down” arrow keys 	When the arrow keys are pressed, red LED on remote will keep blinking.  The group will dim up or down accordingly.

c.	Press the “save” button, the light level is stored as a new daylight set-point. 	Red LED on remote will blink.  The entire group will FLASH twice and group light level will go to 50%. 
d.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” 	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

12. Test occupancy coverage area (walk test)



a.	Point remote to **any** luminaire and press “unlock,” once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press “send.” 	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  The luminaire will FLASH twice and group light level will go to 50%. 
b.	Point remote to **any** of the luminaires and press “test.”  To stop the test feature, press the “test” button again.	Test feature is activated; users can now walk in the space to estimate the occupancy coverage area.

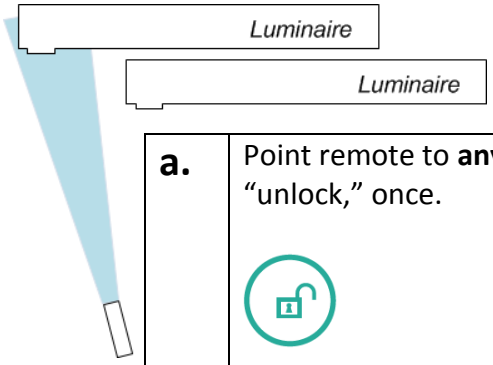
C.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” 	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

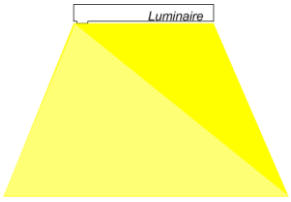
13. Path of egress mode for emergency applications

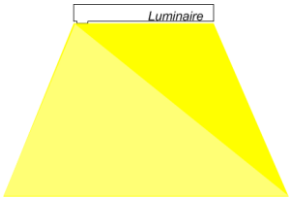
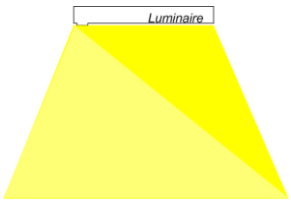
Luminaires that are part of egress lighting or powered by a backup generator or any other building wide emergency supply source, can be configured with the “path of egress” mode setting. In this setting, the luminaire behaves in accordance with the commissioned group and the only difference is that it never automatically turns off; instead, if the space is unoccupied then background light level of 27% will be delivered.

SpaceWise luminaires can also be ordered with a Philips emergency driver option. If this configuration is purchased then luminaires don’t have to be configured as “path of egress” because of the built in battery capability of the emergency driver and the non-reliance on the generator back up system. During emergency, the battery will bypass the sensors and therefore the luminaire will not shut off automatically. When normal power is restored the luminaire will behave like a standard SpaceWise system.

The “path of egress” luminaire should be powered on the emergency circuit. As long as the luminaire is powered an adequate light level will be delivered by the luminaire. The emergency circuit is usually regulated by the backup generator so the system relies on the generator’s ability to provide power for at least 90 minutes.

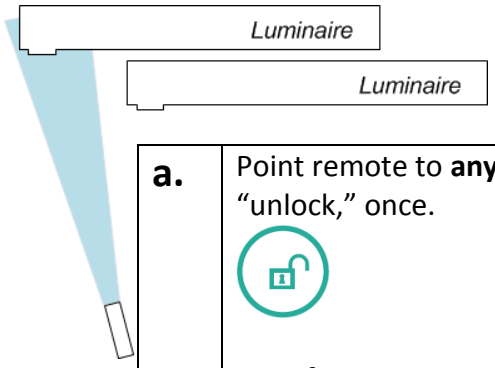


a.	Point remote to **any** luminaire and press "unlock," once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press "send." 	Red LED on remote will start blinking.  Red LED on remote will stop blinking.  The luminaire will FLASH twice and group light level will go to 50%. 
b.	Press "pir" button.  While the LED is still blinking red, enter the numbers: "**11**": Enable path of egress feature "**10**": Disable path of egress feature	Red LED on remote will start blinking.  Red LED on remote will stop blinking. 

	Point to the luminaire that needs to be altered, press “send.” O))) Repeat step on all the luminaires that need to be configured with the path of egress feature.	The luminaire will FLASH twice and group light level will go to 50%. 
c.	Point to any of the luminaires in the group and press “lock.”  Wait for LED to stop blinking (apx. 10 seconds) then press “send.” O)))	Red LED on remote will start blinking.  The luminaire will FLASH twice. Group is ready for normal operation. 

14. Troubleshooting

Factory reset will restore the luminaire to its default state and all the group configuration settings will be deleted. Reset operation can be used to bring any wrongly configured luminaire back to its original factory reset condition.



a.	Point remote to **any** luminaire and press "unlock," once. Wait for LED to stop blinking (apx. 10 seconds). Point remote to **any** of the luminaires and press "send."	Red LED on remote will start blinking. Red LED on remote will stop blinking. The luminaire will FLASH twice and group light level will go to 50%.
b.	Point to **any** of the luminaires in the group and press "reset." reset Once LED stops blinking, with remote still pointing to the luminaire in the group, press "send."	Red LED on remote will start blinking. Luminaire will turn OFF and then turn back ON to indicate reset.
	Repeat step "b" for all the luminaires that need to be reset.	

15. FAQs

A. *My luminaire group is at low light level and does not respond to SpaceWise remote buttons.*

Luminaire may be in an "open" group state. In this state, the luminaire level is at 5% and won't respond to ON/OFF or locking and unlocking commands. Press the close door button to close the group. The luminaire will now respond to normal commands.

B. *The luminaire light level is high but it is not responding to any commands. Sometimes it responds to ON/OFF commands. As a result, I cannot group the luminaires.*

Turn the luminaire OFF using the "OFF" button. Now test the other commands such as locking, unlocking, open door etc. If the luminaire responds to these commands then finish all the grouping steps.

If the luminaire is not responding to ON/OFF commands, then perform a power cycle on the luminaire either from a wall switch (non SpaceWise switch) or from the breaker panel – turn the power off for 5 seconds and then turn it back on. After a power cycle, the luminaire will take 30 seconds to stabilize. After these 30 seconds test the ON/OFF commands on the luminaire.

Please note that, if power cycle is performed or interrupted in between the grouping sequence, then those luminaires that were successfully grouped will be in a locked state while the remaining ones on that circuit will be in the factory state (unlocked). To continue grouping, unlock and open the successful group first.

C. *What is the recommended distance between two SpaceWise luminaires?*

Standard grid spacing must be maintained between luminaires. It is recommended to keep the distance as short as possible but it can be extended up to 20 ft. if other physical parameters of the space are conducive for wireless transmission.

D. *Do my luminaires forget their settings after power is lost or interrupted?*

No, all settings are retained as long as the luminaires have not been factory reset or there has been a hardware failure.

16. FCC Compliance Statement

The luminaire complies with the part 15 of the FCC rules. Operation is subject to the following two conditions:

- This luminaire may not cause harmful interference, and
- This luminaire must accept any interference received, including interference that may cause undesired operation

Any changes or modification not expressly approved by Philips could void the user's authority to operate this equipment. This product is intended for commercial use only.

17. Warranty

A detailed product warranty statement can be found on the Philips website http://www.lighting.philips.com/us_en/connect/tools_literature/warranties.wpd.

18. Technical support

For technical support on this product contact 1-800-372-3331 and select the controls prompt option.

SpaceWise user manual (industrial) 09/15 philips.com/luminaires

Philips Lighting
North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd,
Markham, ON, Canada L6C 2S3
Tel. 800-668-9008