Innovation meets simplicity

Intelligent lighting that revolutionizes high-bay illumination

February 2017

innovation you

PHILIPS

Greener, Smarter and Safer

Introducing Philips GreenPerform Highbay Intelligent lighting solutions

Seamlessly integrates state-of-the-art LED lighting with an easy-to-use and reliable wireless ZigBee control solution, GreenPerform Highbay G3 intelligent version provides a smart way to light up your business with maximum energy saving.

Easy to understand, easy to design-in, and easy to use. When the situation on the work floor changes, settings such as dimming levels and timing can be changed wirelessly by the end-users themselves. Luminaires can be combined in groups across the layout, and re-zoning them does not require a hardware change, thus minimizes the operation costs.

PHILIPS

Benefits and Features

Benefits

- Intelligent lighting provide additional energy saving (depends on usage behavior)
- Future-proof system: wireless adjustment of lighting settings and fast re-zoning if use of space changes
- Superb light quality

Features

- High efficacy: 130 lumens per watt
- Different lighting levels and timings can be set per sensor, group and ZigBee network of luminaires
- Advanced sensor technology for effective presence and daylight detection
- Low UGR (NB/20 ~WB/26) and accurate color (CRI>80)
- Lifetime 50Khrs @L70B50; IP54; IK07

Applications

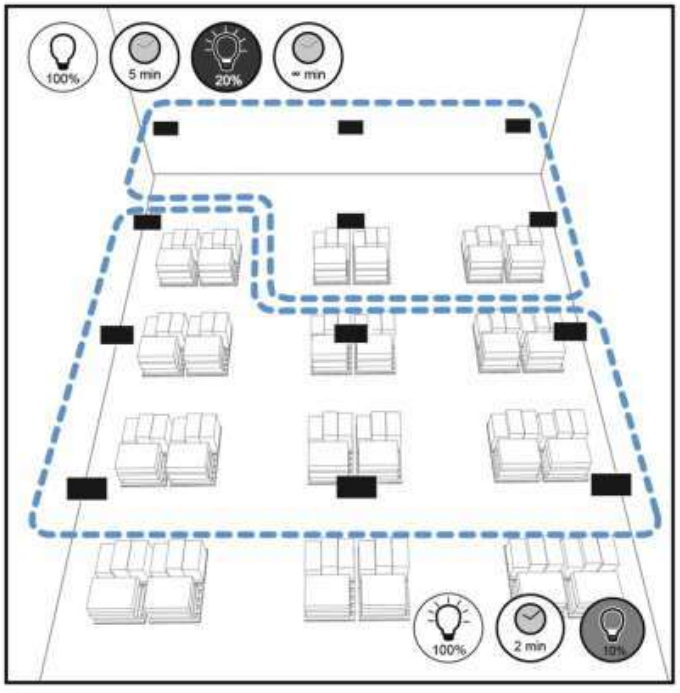
- General Industry Application: Factory, Warehouse, Distribution center
- Indoor sport hall
- Other high ceiling indoor applications

PHILIPS

Control your space

Smart lighting with mesh network and wireless zoning

- The size, shape and location of zones can be designed to match the occupation and routing density of people and forklift, allowing optimum balancing of comfort and safety with energy saving.
- Each zone allows up to 50 adjacent ZigBee devices, which enables optimal space design and utilization.
- Re-zoning is a breeze – it can be done via remote control without any need for specialized devices or technicians, thereby shortening design and planning periods and reducing overall cost of ownership.



IRT9090/01

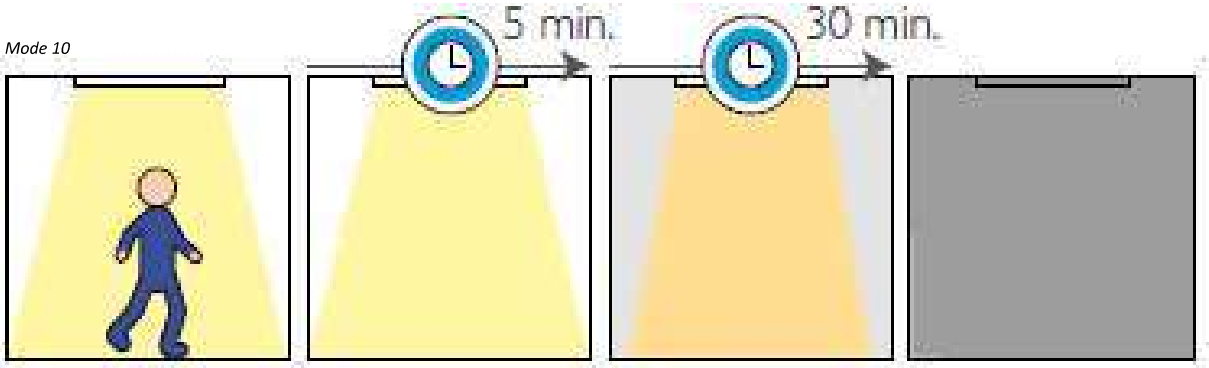
PHILIPS

Light as need

Occupancy and daylight detection

With the controller and sensor integrated into the luminaire, BY698X ACW offers a seamless, total mesh network solution that is reliable and easy to use. Adjustments to timing and dimming levels can be done wirelessly by the end-users. Better light quality means increased comfort; when people feel better, they work better and productivity levels increase.

- Occupancy sensor improves energy efficiency
- Daylight harvesting ensures a constant lux level, bringing greater comfort and reducing energy consumption
- Consistent light coverage enhances comfort, safety and work efficiency



Motion detected, luminaires go to 100%.

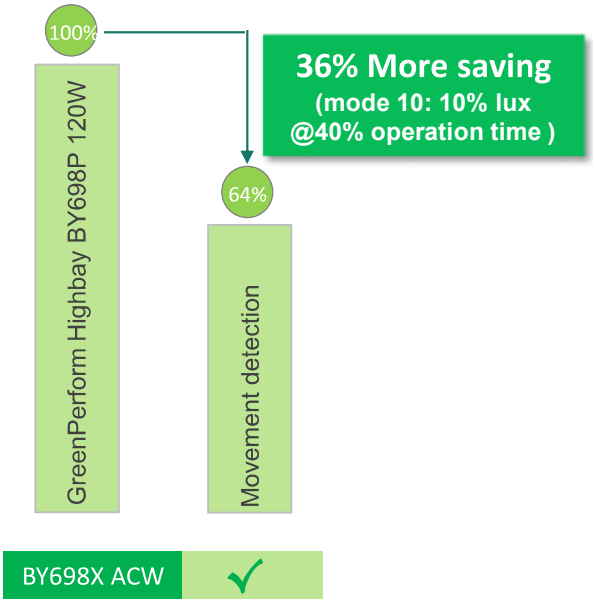
luminaires stay at 100% for 5 minutes.

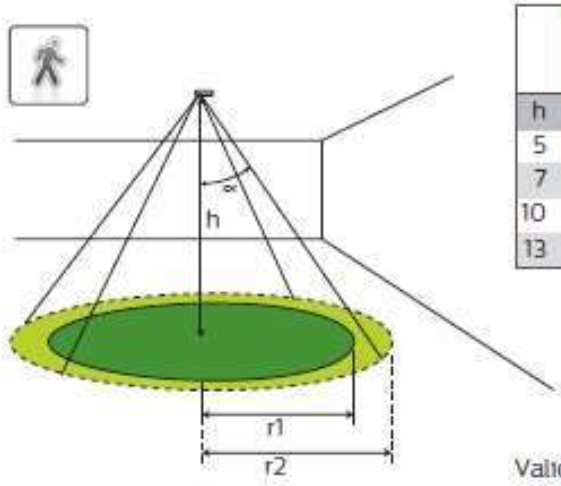
Luminaires dim to 10% and be switched off after a prolong time of 30 minutes if no motion detected

PHILIPS

Movement detection - 36% more saving

- Automatic dimming with motion detector.
- Max. height 13m, Max. detection diameter 10.8m, valid at 0-30°C.
- For application >30°C, recommended to create network instead of using as individual lighting.
- Max. distance between luminaires used as wireless network node is 8m.
- Default setting from the factory: mode 10.





Movement detection pattern diagram

h	r1	∝	r2	∝
5	1.8	20	2.7	28
7	2.7	21	3.3	25
10	x	x	4.5	24
13	x	x	5.4	23

x = no detection

Valid at +20°C

PHILIPS

Application and Installation

Installation and commissioning

1. Controls are built into the luminaire, eliminating the need for re-wiring. Installation is as easy as a plug-and-play luminaire installation.
2. System commissioning can be performed via IRT9090/01
3. Grouping can be set based on one single luminaire or a zone of networked luminaires.
4. Settings can be adjusted and programmed by users easily, without the need for on-site technicians' support

System installation

IR remote for commissioning

PC for wireless commissioning

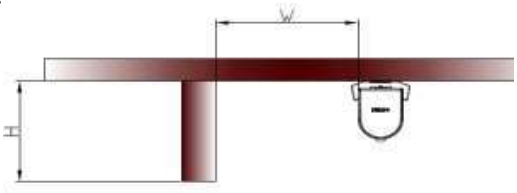
PHILIPS

Installation Recommendation

1. Max. distance between luminaires used as wireless network node is 8m.

2. The installation distance between luminaire sensor and heat source must be more than 2m.

3. The height of barrier between luminaires should be less than 0.5m, and the installation distance between luminaire and barrier must be more than 0.5m.



H<0.5m<W

4. Suspension mounted is preferred, wireless performance will be reduced when wall-mounted

Product Specification – ACW

Types	BY698P LED110	BY698P LED160	BY698P LED200	BY698P LED300
System Lumen	10000lm	16000lm	20000lm	29000lm
System Power	85W	120W	155W	225W
System efficacy	118lm/W	133lm/W	129lm/W	129lm/W
CCT	CW (6500K)/ NW (4000K)			
CRI / Color consistency	CRI > 80 ; Color consistency < 5 SDCM			
Beam Angle	NB; WB			NB WB (coming in Mar.'17) E-NB (optional)
UGR	NB:20;WB:25	NB:21;WB:26		E-NB:20; NB:22
IP/IK rating	IP54 (Lighting surface and Driver houses are IP65)			
IK rating	IK07			
Classification	Class I			
Power factor	PF: 0.95			
Input Voltage	220-240V, 50/60 Hz			
Surge	L,N 2KV; L,N-GND 4KV			
Driver	Dali dimming			
Controller	LLC1685/14 ActiLume Wireless DALI gen2			
Sensor	LRI1668 ActiLume G2 Indus Sensor H513 N			
Operation Temperature	-30°C to +45°C (Ta35°C)			
Lifetime L70B50(hrs)	50,000hrs@Ta35°C			
Material	Housing: die-cast aluminum Lens cover: polycarbonate, flat			
Color	Dark Grey (Pantone 8405C)			
Mounting / Installation	Pendant (hook, pole)			
Certificate	CB/EMC/ASNZ/CE/TISI			

PHILIPS

Product order information

12ncs	Designation	Lumen	CCT	Power	Driver	Connector	Cable	Supplier code
911401825697	BY698X LED110/NW NB ACW 4 L3000 EN	11000	4000K	85W	Dali	No	3m	266001
911401825597	BY698X LED110/NW WB ACW 4 L3000 EN	11000	4000K	85W	Dali	No	3m	266001
911401825897	BY698X LED110/CW NB ACW 4 L3000 EN	11000	6500K	85W	Dali	No	3m	266001
911401825997	BY698X LED110/CW WB ACW 4 L3000 EN	11000	6500K	85W	Dali	No	3m	266001
911401826897	BY698X LED160/NW NB ACW 4 L3000 EN	16000	4000K	120W	Dali	No	3m	266001
911401826997	BY698X LED160/NW WB ACW 4 L3000 EN	16000	4000K	120W	Dali	No	3m	266001
911401827197	BY698X LED160/CW NB ACW 4 L3000 EN	16000	6500K	120W	Dali	No	3m	266001
911401827297	BY698X LED160/CW WB ACW 4 L3000 EN	16000	6500K	120W	Dali	No	3m	266001
911401826697	BY698X LED200/NW NB ACW 4 L3000 EN	20000	4000K	155W	Dali	No	3m	266001
911401826597	BY698X LED200/NW WB ACW 4 L3000 EN	20000	4000K	155W	Dali	No	3m	266001
911401826797	BY698X LED200/CW NB ACW 4 L3000 EN	20000	6500K	155W	Dali	No	3m	266001
911401827597	BY698X LED200/CW WB ACW 4 L3000 EN	20000	6500K	155W	Dali	No	3m	266001
911401826197	BY698X LED300/NW NB ACW 4 L3000 EN	29000	4000K	225W	Dali	No	3m	266001
911401826297	BY698X LED300/CW NB ACW 4 L3000 EN	29000	6500K	225W	Dali	No	3m	266001
911401825797	BY698X LED110/NW NB ACW 4 EN	11000	4000K	85W	Dali	Yes	0.3m	266001
911401827097	BY698X LED110/NW WB ACW 4 EN	11000	4000K	85W	Dali	Yes	0.3m	266001
911401827397	BY698X LED160/NW NB ACW 4 EN	16000	4000K	120W	Dali	Yes	0.3m	266001
911401827897	BY698X LED160/NW WB ACW 4 EN	16000	4000K	120W	Dali	Yes	0.3m	266001
911401826397	BY698X LED200/NW WB ACW 4 EN	20000	4000K	155W	Dali	Yes	0.3m	266001
911401826497	BY698X LED200/NW NB ACW 4 EN	20000	4000K	155W	Dali	Yes	0.3m	266001
911401827497	BY698X LED300/NW NB ACW 4 EN	29000	4000K	225W	Dali	Yes	0.3m	266001

More options available on request:

- E-NB beam angle choice for 29000lm
- CW (6500K CCT) choice for IP65 connector version

Network Zoning

Combination of layout plans for network zoning

- **A** Flexible layout
- **B** Economical layout
- **C** Combinational layout

Solution A : Flexible layout

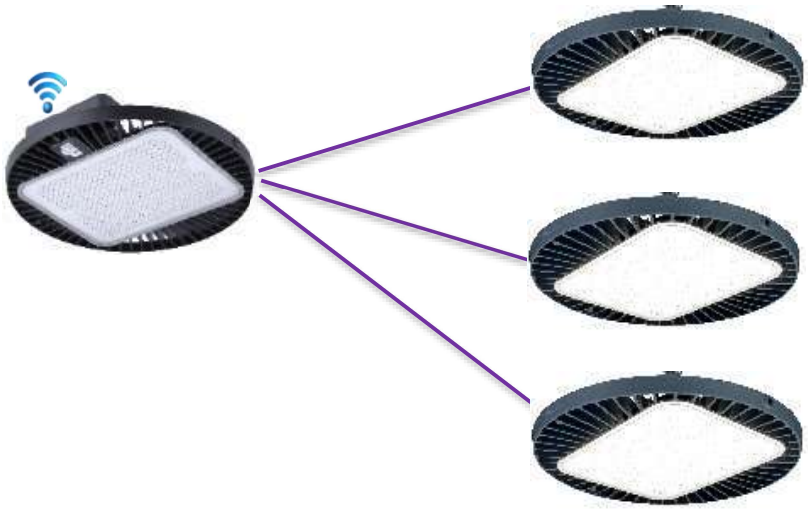
Grouping and connecting master luminaires

1. Each luminaire can function as a connected unit
2. All luminaires are the same model - BY698X ACW
3. Pairing or re-zoning by application can be done easily by users

PHILIPS

Solution B : Economical layout

1 master luminaire connected to slave luminaires



One master luminaire could be connected to maximum 3 slave luminaires

PHILIPS

Solution B : Economical layout

1 master luminaire connected to slave luminaires

1. Connects BY698X ACW and BY698P Dali with Dali cable
2. 1 set of BY698X ACW as master, and 1 to 3 sets of BY698P Dali as slave, forming a wireless connected unit
3. Grouping and re-zoning can be achieved without changing the physical connection between the units

PHILIPS

Solution C : Combinational layout

Master luminaire connected to slave luminaires, standalone sensor and wireless panels

PHILIPS

Solution C : Combinational layout

Master luminaire connected to slave luminaires, standalone sensor and wireless panels

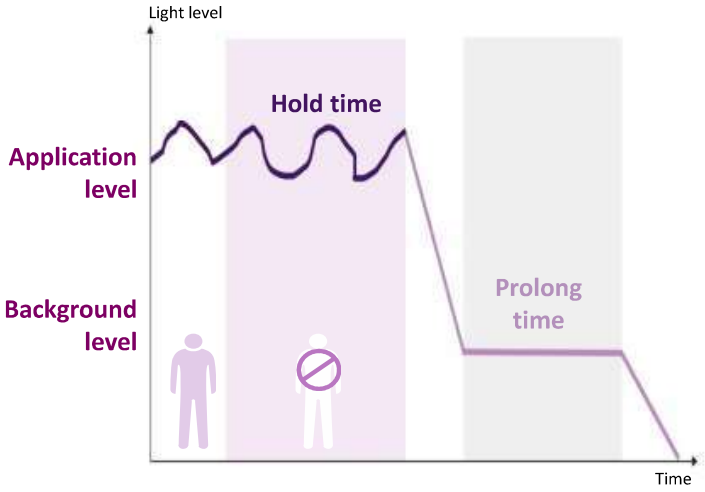
1. Incorporates wireless luminaires, standalone sensors, wireless terminals and ZigBee controls woven in a connected lighting network.
2. Grouping and re-zoning can be achieved without changing the physical connection between the units

PHILIPS

Application and Installation

Application mode

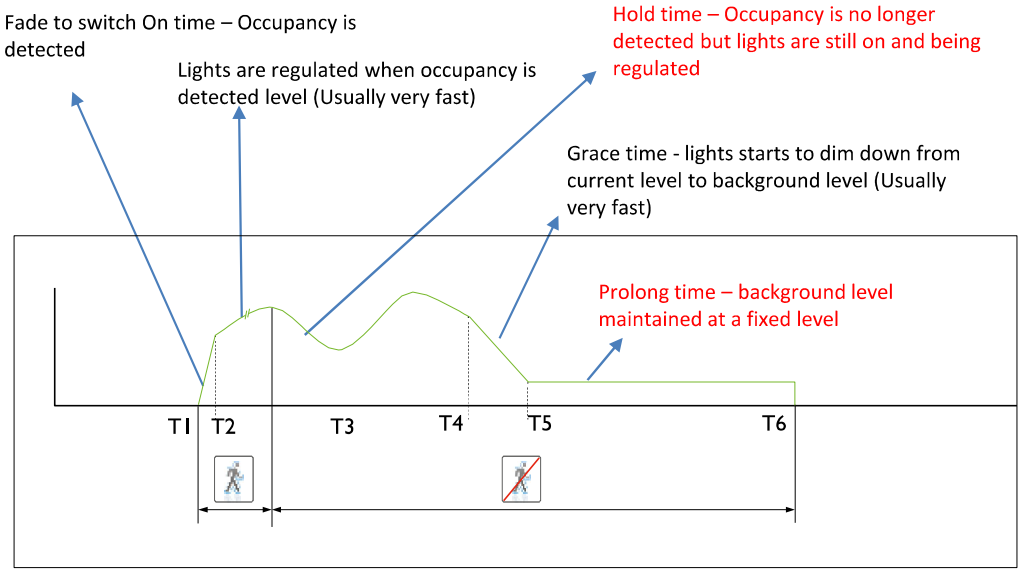
Upon powering up after initial installation, the system will be turned on automatically and ActiLume controller will run on OOTB mode. After programming the required zone(s), Actilume controller will run in OP mode, and the default settings (mode 10) will be triggered into normal operating mode.



OP mode	Economic		Comfort		Safe
Mode	06	08	07	09	10
Motion Detect	on	on	on	on	on
Daylight harvest	off	off	off	off	on
Hold time (min)	2	2	5	5	5
Background	10	10	20	20	10
Prolong time (min)	0	255	5	255	30
After powered on	off	on	off	on	on

PHILIPS

Sensor Behavior



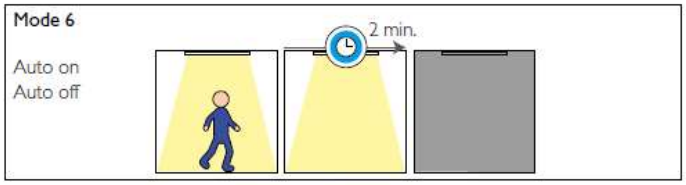
Mode	Description
Office are s	
Mode 1	Cell office - auto on
Mode 2	Open office - auto on comfort mode
Mode 3	Cell office - manual on
Mode 4	Open office - manual on comfort mode
Mode 5	Non-working area - always on
Industry areas	
Mode 6	Max savings – off when vacant
Mode 7	Comfort – off when vacant
Mode 8	Max savings – always on
Mode 9	Comfort – always on
Mode 10	Non-working area – off when vacant
Mode 11	Non-working area – manual on/auto off
Free for OEM	
Mode 12	(copy of Mode 1)
Mode 13	(copy of Mode 1)
Mode 14	(copy of Mode 1)
Mode 15	(Hold time is 5min. the rest similar to Mode 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
Power-up state	On	On	On	On	On	On	On	On	On	On	On	On	On	On	On
HoldTime [min]	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Background level [%]	20	20	20	20	20	30	30	30	30	30	20	20	20	20	20
Prolong Time [min]	15	15	15	15	15	∞	∞	∞	∞	∞	15	15	15	15	15

PHILIPS

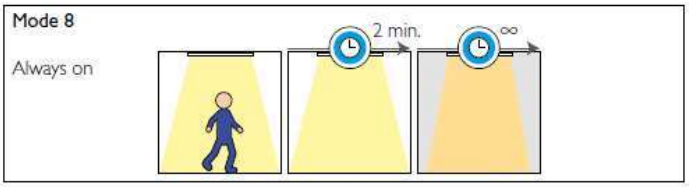
Application mode recommendation

Max savings – off when vacant



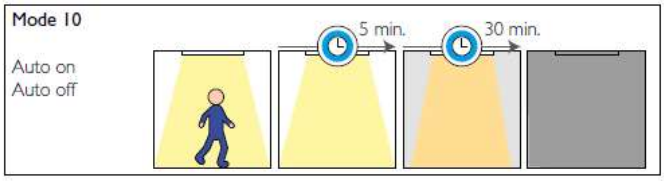
Mode 6 is designed for use in areas where there should be only light if there is someone in the area. This means that the lights will switch automatically on when the area is entered and will switch off after a hold time of 2 minutes. In this Mode DDR is disabled

Max savings – always on



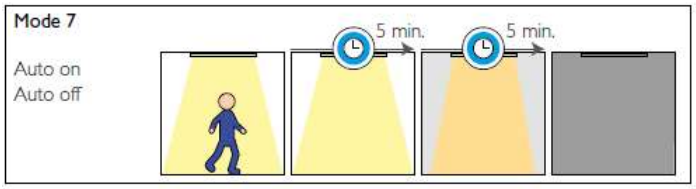
This mode gives a lot of savings by dimming back to background level as soon as there has been not presence detected for 2 minutes. On the other hand the lights will not be switched off but a very low light level will be maintained. In this Mode DDR is disabled.

Non-working area – off when vacant



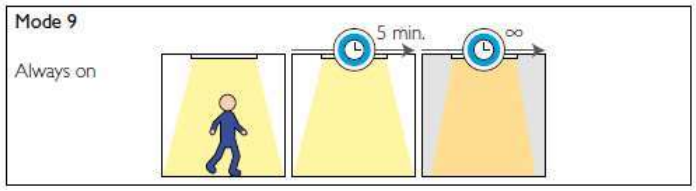
Mode 10 is an Auto on and Auto off Mode whereby DDR is enabled. Lights will be switched off after a prolong time of 30 minutes.

Comfort – off when vacant



Mode 7 is designed for use in areas where lights must switch on automatically, upon occupancy detection and stay on for the 5 minutes hold time after the area is unoccupied. After the hold time has expired the lights will go to background level during the 5 minutes prolong time before automatically being switched off. This mode creates a more comfortable feeling than Mode 6 but is less energy saving. In this Mode DDR is disabled.

Max savings – always on



This mode functions in the same way as Mode 8 only the hold time will be extended to 5 minutes and also here the lights will not be switched off but be maintained at a very low light level. In this Mode DDR is disabled.

PHILIPS