



www.theorylight.com



MID Version

PID Version

Theorylight

TLSD07SmartSensor

MID: Microwave Motion Sensor + Infrared Daylight Sensor

PID: PIR Motion Sensor + Infrared Daylight Sensor



ZigBee Mesh
Network Control



Motion Sensor



Daylight Sensor



Theorylight
Remote Control



Zoning & Grouping



Dimming Control



ON/OFF

CE

RoHS

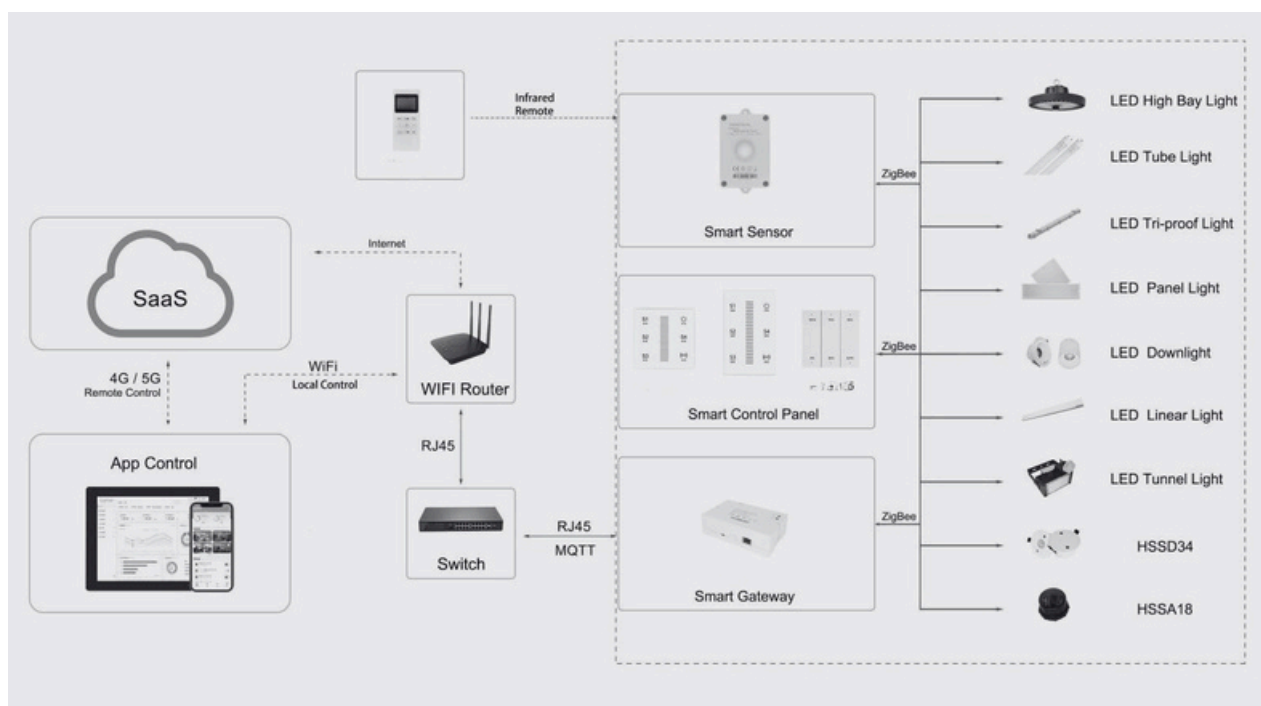
Applications

- Warehouse
- Production Workshop
- Parking Area
- Shopping Malls
- Schools
- Corridor

Features

- TLSD07-TLZ is a ZigBee.
- DC sensor with a 12V DC input and a 0-10VPWM dimming output.
- The sensor operates with a 12V DC power supply.
- A 0-10VPWM output for controlling the brightness of lights
- Built-in ZigBee3.0WirelessModule.
- Infrared remote control.
- Motion Sensor Infrared Daylight Sensor.
- Pluggable hardware interface.
- IP65 Protection.
- Supports OTA upgrades.

System Diagram



Product Data

Warranty	5 Years
IEC Protection class	IP 65

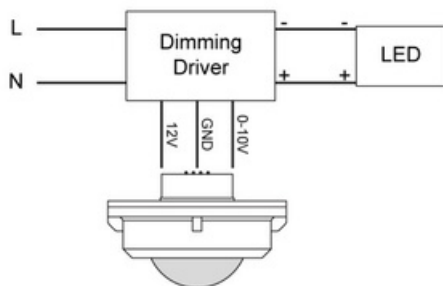
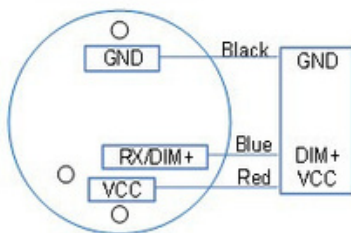
Application Conditions

Operating Temperature (MID)	-20°C ~55 °C
Operating Temperature (PID)	-20°C ~40 °C

Mechanical and Housing

Structural materials	PC V0
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Wiring Diagram



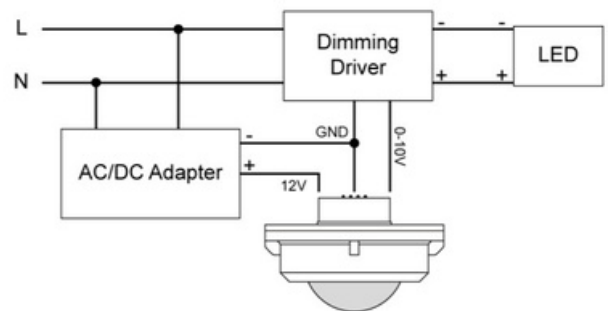
When the 0-10V dimmable power supply is equipped with an auxiliary source

Operating and Electrical

Input voltage	DC12V((power ripple requirement<200mV)
Input current	>200mA
Output signal	0-10V 10mAMAX
Microwave power(MID)	1TL MAX 5.
Microwave frequency(MID)	8GHz ±75M hz

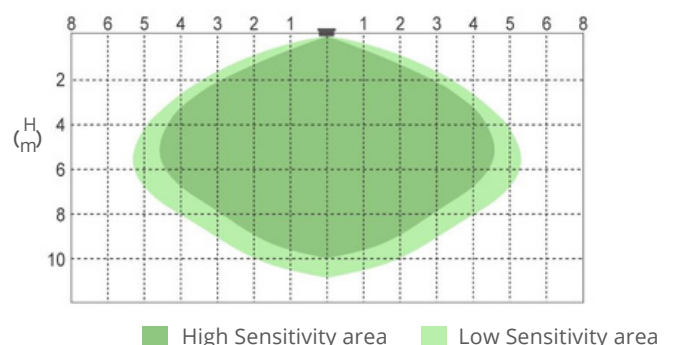
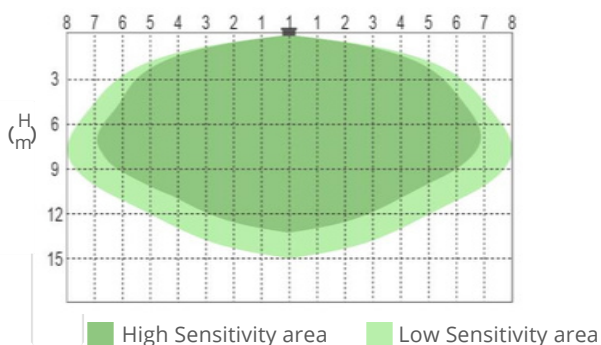
Controls and Dimming

Dimmable	0-10V PWM
Intelligent Control	ZigBee / Microwave motion sensor /PIR Motion Sensor / Infrared Daylight Sensor

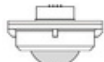
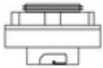


When the 0-10V dimmable power supply is not equipped with an auxiliary source

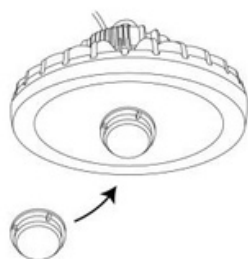
Detection Range



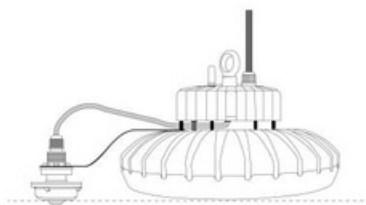
Sensor Component

Product Type	Model	Note	
Sensor	TLSD07-TLZ-MID-OTA-3.0	0-10V ZigBee+ microwave motion sensor and infrared illuminance sensor (can be installed in the middle of the light fitting)	 
	TLSD07-TLZ-PID-OTA-3.0	0-10V ZigBee+ infrared motion sensor and infrared illuminance sensor (to be installed on the edge of the light fitting)	 
Connector	TLNA04-PCB	square PCB connector	 
	TLNA04-PCBRL	round PCB 8mm tTLeaded connector	 
	TLNA04-PCBRH	round PCB 8mm tTLeaded connector	 
	TLNA04-3PC	circular 3-pin female connector	
Cover Plate	TLNA04-COV	When sensors are not in use	 

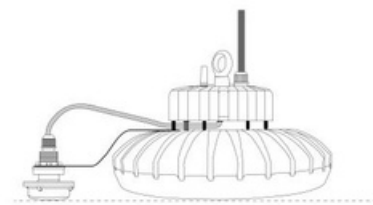
Installation Method



MID Sensor installed in the middle of the light fitting



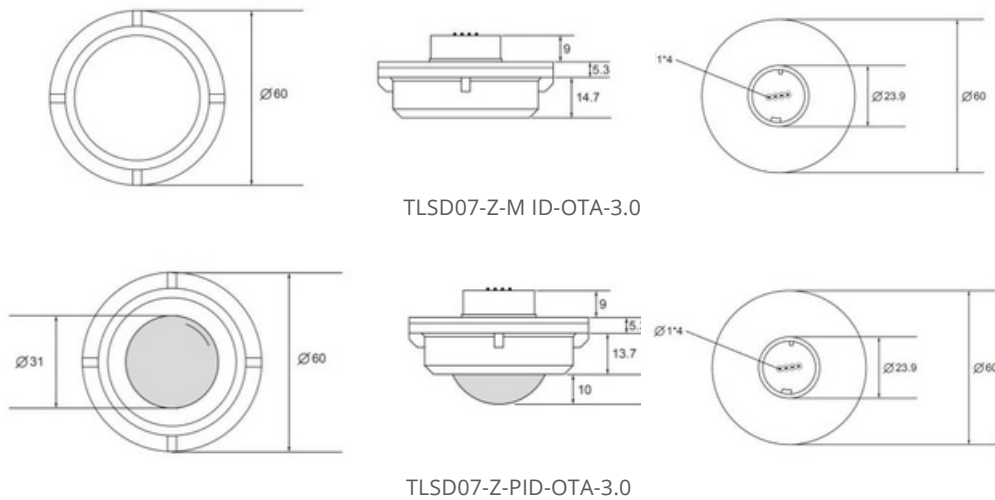
PID Sensor installed on the edge of the light fitting



MID Sensor installed at the edge of the light fitting

Drawing

Unit: mm



Setup Operation

For detailed operation, please refer to the "TLCD01 Infrared Remote Control Operation User Manual.pdf".

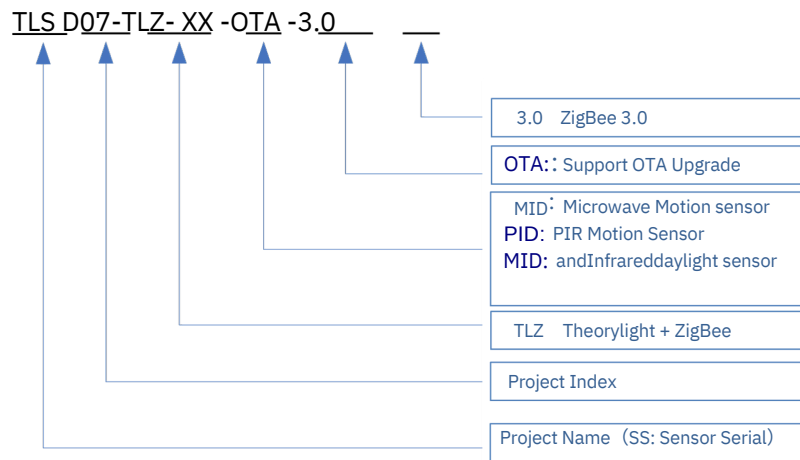
Device Reset

You can use the TLCD01 remote control to perform a device reset. Press the Reset button briefly, and the lights on the fixture will flash 5 times to indicate a successful reset.

Notes

- The sensor should be installed by a professional electrician, and the power should be disconnected before installation.
- Installing the sensor inside plastic or glass lamp shades will reduce sensitivity. For every 3mm increase in thickness, the sensitivity will decrease by 20%. The infrared motion sensor version should not be built-in inside the fixture.
- PIR sensors are sensitive to temperature changes. When installing in the middle of the fixture, be aware that higher power fixtures may emit more heat, which can cause false triggering. Sensitivity settings may need to be adjusted accordingly.
- The detection distance can be affected by the sensor's installation height, the size and speed of the objects being detected, and the installation environment.
- The parameters of the sensor may require reconfiguration in different installation environments.
- This sensor is for indoor use only. Outdoor use may result in false triggering due to wind, rain, and nearby moving objects.
- The distance between any two sensors should be at least 2m.
- When installing the sensor inside metal fixtures, metal reflectors, or confined spaces, microwave signals may be reflected multiple times, causing false triggering. To prevent this, adjust the sensitivity level or relocate the sensor.
- Ensure that the sensor is not placed near high-density objects such as metal, glass, or concrete walls, as this may cause false triggering.
- Make sure there are no moving signals around the sensor, such as fans, DC motors, drainpipes, or air vents, as they may cause false triggering.
- Microwaves cannot penetrate metal, so avoid installing the sensor inside fully enclosed or partially enclosed metal fixtures. The sensor's front side should not be obstructed by metal.
- This product requires a 0-10V dimmable LED driver to achieve dimming functionality. Different 0-10V dimmable power supplies may have varying dimming effects.

Part No.



Product Parameter

Model Number	Smart Modules	Input voltage	Output Signal	Remote control distance	Wireless communication distance	Maximum detection range	Illuminance detection range
TLSD07-TLZ-MID-OTA-3.0	MID: Microwave motion sensor + Infrared Daylight Sensor	DC12V (Power ripple requirements < 200mV)	0-10V 10mA MAX	15m	30m	13m	0-600Lux
TLSD07-TLZ-PID-OTA-3.0	PID: PIR Motion Sensor + Infrared Daylight Sensor					10m	

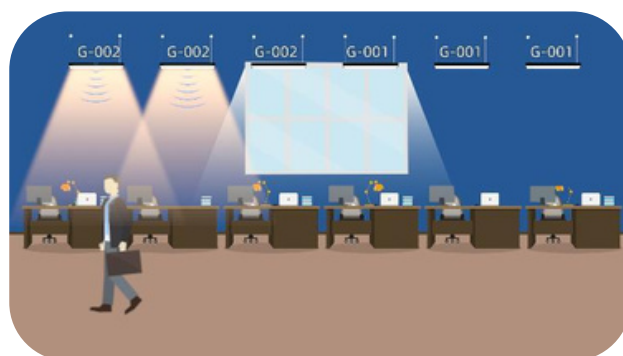
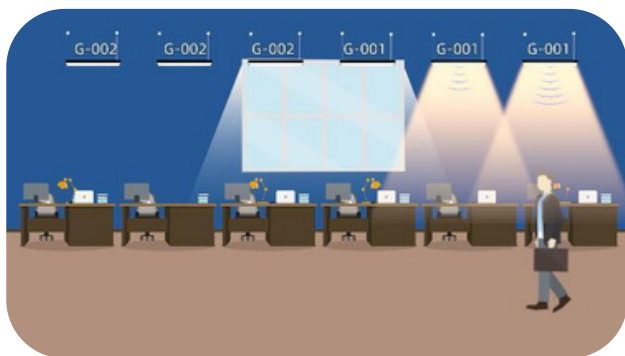
Package

Model Number	NetWeight (g)	Gross Weight(g)	Package Size (mm)	Package
TLSD07-TLZ-MID-OTA-3.0	28.8	40.3	63*63*45	1pce/box
TLSD07-TLZ-PID-OTA-3.0	33.4	44.9	63*63*45	1pce/box

Typical Working Scenarios



The “Theorylight” smart lamps are embedded with motion sensor and daylight sensor, using a “Theorylight” remote control, users can set grouping and parameters very fast and convenient. By adopting the standard ZigBee technology, “Theorylight” has the inborn advantages like long transmission distance, multiple channels and mesh network.



Users can set the sensor parameters of one group or individual lamp with one button, and change lamp brightness. In one group, the motion sensors work together to control these grouped lamps, and the daylight sensors control the individual lamps on/off according to the ambient brightness.

The Theorylight serial include panel, linear light, tri-proof light, high bay, LED tube. This kind of smart lamps can be used for industrial and commercial area, example offices, warehouses, factories, parking and others.