SMART PRESENCE DETECTION GUIDE

The Thorlux Smart system uses a passive infra-red (PIR) movement sensor built into each luminaire. Infra-red sensing is a commonly used technology for lighting control, but it is important to consider a few factors in order to get the best performance from the luminaires.

PRESENCE DETECTION OF THE SENSOR

There are two different sensors available:

For internal use
Standard Smart Sensor – for use up to 8m
High Level Smart Sensor – for use up to 18m

MOTIONLINE

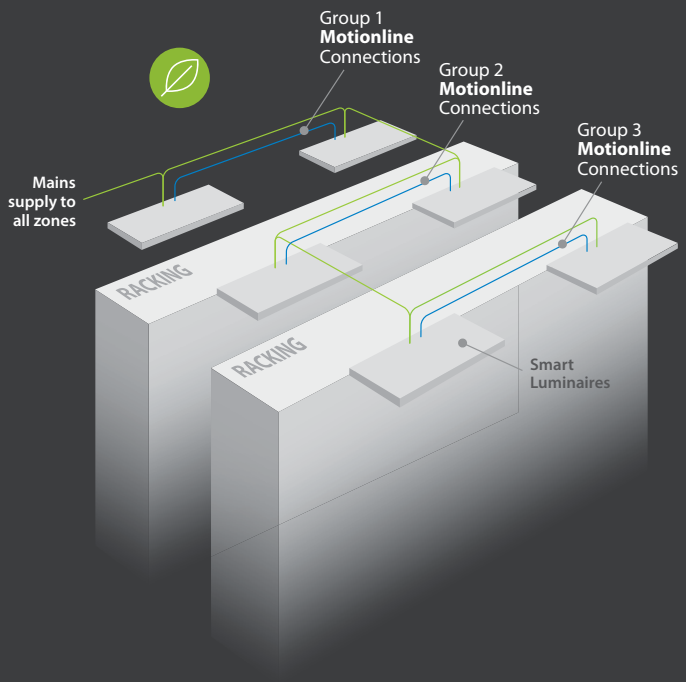
It is strongly recommended Smart luminaires are connected using the "Motionline" two-core low voltage bus. If one luminaire detects movement, a signal is passed to all of the luminaires in the group triggering all luminaires to illuminate. This ensures effective group control and extends presence detection coverage. SmartScan luminaires utilise wireless "mesh" technology to replace the wired Motionline - particularly helpful in retro-fit and external applications.

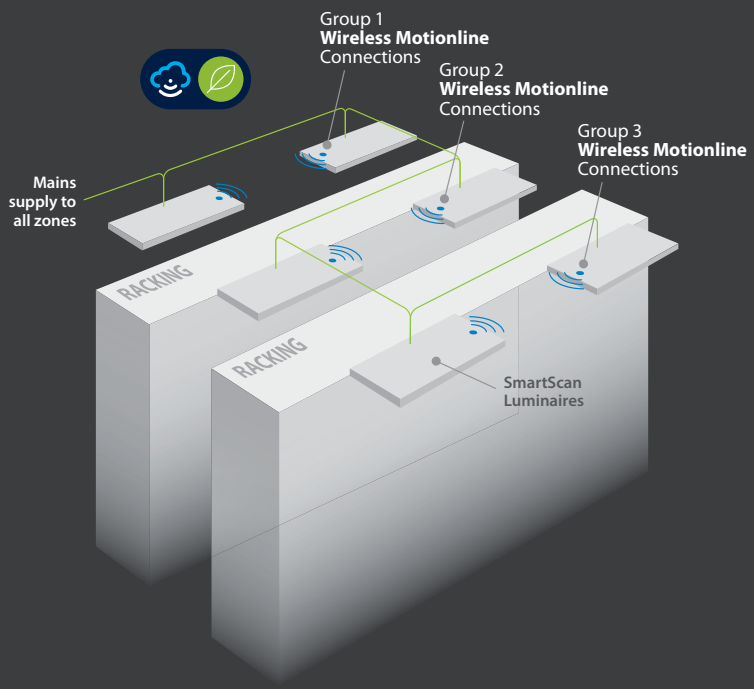
MOUNTING HEIGHT

As the mounting height increases, so does the amount of movement needed to trigger the sensor. Hand movement may not be sufficient for sensors mounted higher than 6m therefore the person may need to be walking to be detected.

POSITIONING OF THE SENSORS

Where possible, Smart luminaires should be positioned in such a way that the detection areas overlap. The Smart system has a sensor in each luminaire ensuring that the optimum detection level is easily achieved using conventional spacing.





STANDARD SMART SENSOR

MOUNTING HEIGHTS UP TO **8m**

AMBIENT TEMPERATURE SENSOR

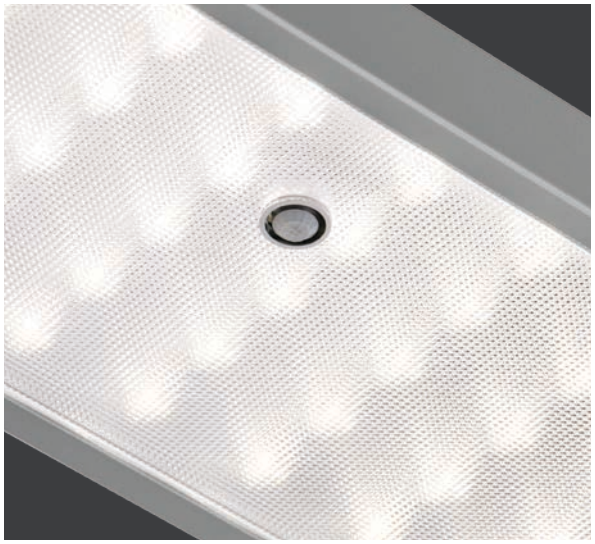
In order for movement to be detected, the PIR sensor requires the moving object to have a temperature differential of at least 4°C from the surrounding area. In a typical indoor application there is sufficient difference between a person, with a typical external skin temperature of 32°C (measured on the head or hands), and the surrounding ambient temperature of 20°C. However, as the ambient temperature rises or falls there are certain factors to consider:

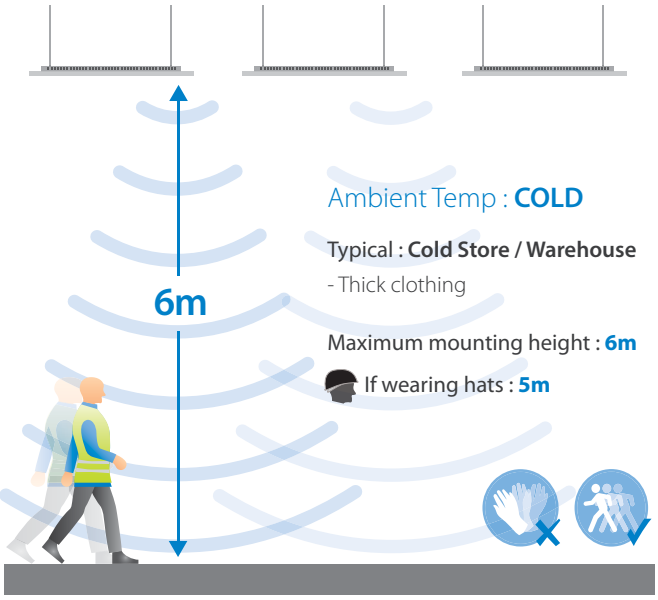
LOW AMBIENT TEMPERATURE

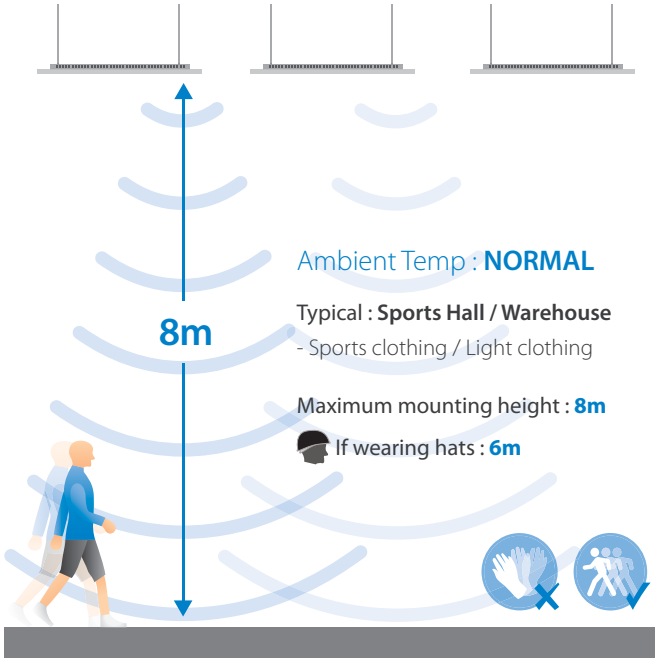
In low temperature applications personnel often wear insulating clothing. This can reduce the thermal image presented to the sensor reducing its effectiveness.

HIGH AMBIENT TEMPERATURE

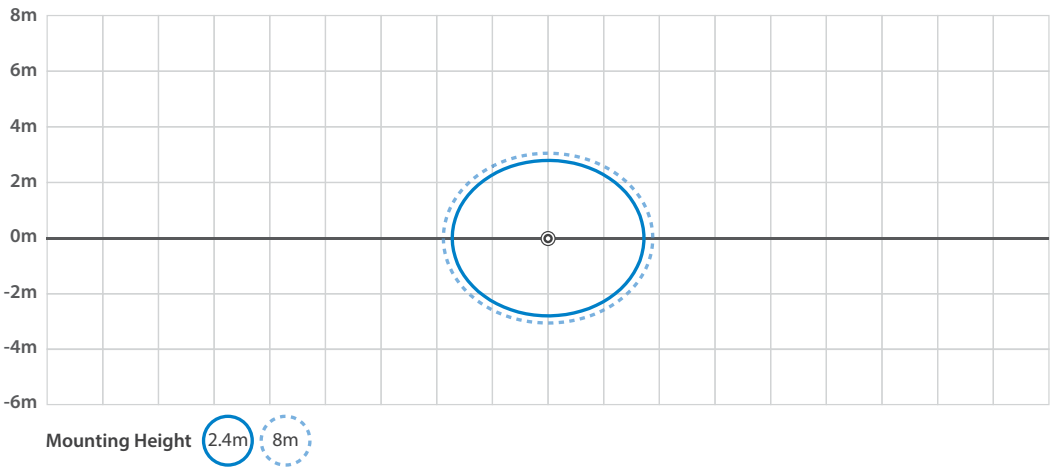
In higher ambient temperature applications (>30°C) the sensitivity may be reduced as the differential between ambient and body temperatures is reduced.







Smart Sensor - Detection Area



HIGH LEVEL SMART SENSOR

MOUNTING HEIGHTS UP TO **18m**

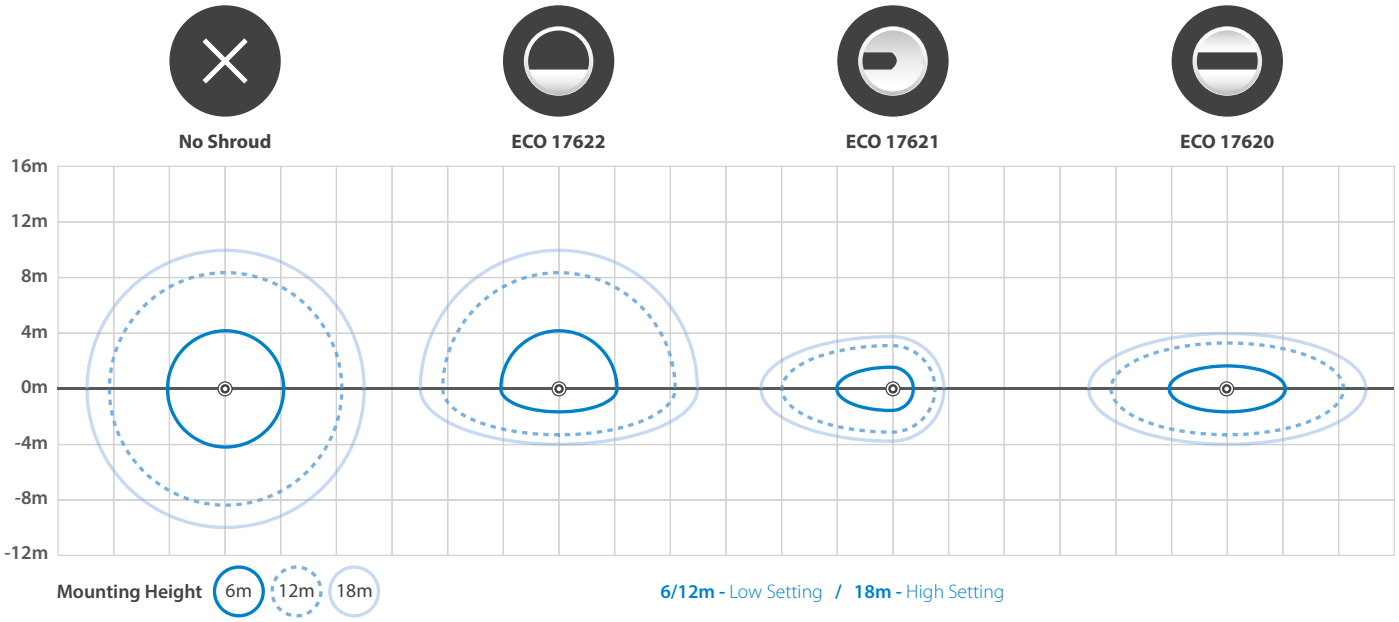
The High Level Smart Sensor is optimised for mounting heights up to 18m. An adjustable lens allows for the detection area to be tuned to suit the application perfectly, with the lens at the "high" setting for all applications above 12m. All Smart settings can be configured from ground level using the Smart Programmer.

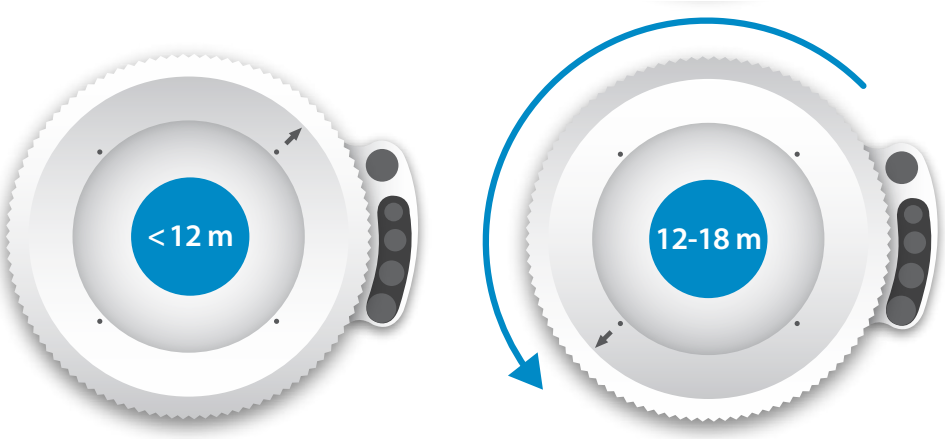
Optional shrouds can be fitted to the High Level Smart Sensor to restrict the detection area if required. For example, ECO17620 could be used in racking areas to avoid detecting movement in adjacent aisles.

For best presence detection it is recommended that luminaires are grouped using Motionline. In retrofit applications SmartScan provides a wireless Motionline signal so removes the need for any additional cabling.

For more information see **www.thorlux.com/smart**

High Level Smart Sensor - Detection Area





HIGH LEVEL SMART SENSOR

MOUNTING HEIGHTS UP TO **18m**