

Fall Prevention Sensor Beam

A very clever fall prevention idea.

Falls are one of the largest causes of harm in health care and are a national safety and quality priority. The [Australian Commission on Safety and Quality in Health Care](#) assists health services to reduce the number of falls, and the resulting patient harm, through a number of national initiatives.

mouseover for larger image



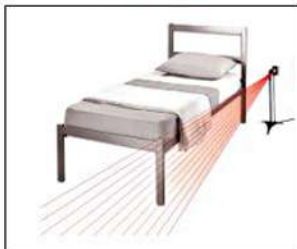
Sensor Beam for sitting up in bed
(in horizontal mode)



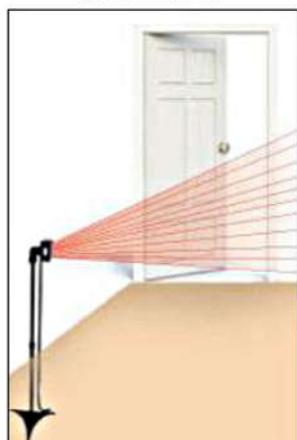
Sensor Beam for leaving chair
(in horizontal mode)



Sensor Beam for leaving bed
(in horizontal mode)



Sensor Beam for leaving bed
(in vertical mode)



Sensor Beam for leaving room
(in vertical mode)

Adjustable Sensor Beam

The invisible 'curtain' area of motion detection can be set with a horizontal or vertical beam or anywhere in between, including forwards and backwards tilting. Staff are alerted via the nurse call system, when the resident's movement 'breaks' the invisible curtain / beam.

The Sensor unit is a fully adjustable and portable unit that provides flexibility in both location and area of sensitivity to suit a range of requirements.

It is important to note that the sensor works best when detecting motion across the beam – i.e. when using the beam in the horizontal mode it works best with a resident moving in an up or down motion. When using the beam in the vertical mode it works best it works best with a resident moving in an left or right motion.

Understanding the area that the beam covers is key to it working well for you and you residents.

Area of detection

The area of motion detection is about 40 degrees getting wider as it leaves the sensor unit as pictured right. Within 2 metres of the beam is ideal for detecting hand sized objects (or larger) between 2 metres and 6.5 metres is ideal for body sized detection.

The beam is designed to be 1.5 metres wide and 30cm high measured 2 metres from the sensor unit.

The beam is designed to be 4.5 metres wide and 90cm high measured 6.5 metres from the sensor unit.

In the horizontal mode the bottom of the beam runs dead flat and the top of the beam rises as it gets further away. This is important to remember when using the sensor unit in the vertical mode, especially along side a bed – you want the bracket side closest to the bed so that you have a truly straight line running adjacent to the bed.

All sensor unit cables are extra low voltage – 12 volts or less. Several plug types available to ensure proper connection to your nurse call system.



Sensor Beam set for horizontal beam



Sensor Beam set for vertical beam



There are two points of adjustment on the sensor unit. Point A is for the adjustment of angle or pivoting between vertical and horizontal modes, Point B is for height adjustment.

Sensor Beam horizontal setup suggestions

Depending on the level of care of the resident and the type of resident movement you are aiming to monitor there are a number of different ways you can set up the sensor unit.

For the earliest detection of a resident attempting to get out of bed the sensor unit can be set in the horizontal position raised over the bed, set just above the height of the resident in the sleeping position. The sensor unit casts a beam over the bed so when the resident sits up they interrupt the beam and trigger an alarm.

To detect a resident attempting to exit a chair the sensor unit should be set horizontally with the beam adjusted so the sensor unit is a little bit higher than the residents head in the sitting position. When the resident attempts to exit the chair they will interrupt the beam and raise an alarm.

Sensor Beam vertical setup suggestions

To detect a resident leaving the bed the sensor unit can be set to cast a beam along side the bed. It is important that the side of the sensor unit that has the bracket is the side closest to the bed as pictured above. One side of the beam is very flat and runs in a perfect straight line from the sensor unit, the other side of the beam gets wider as it gets further away.

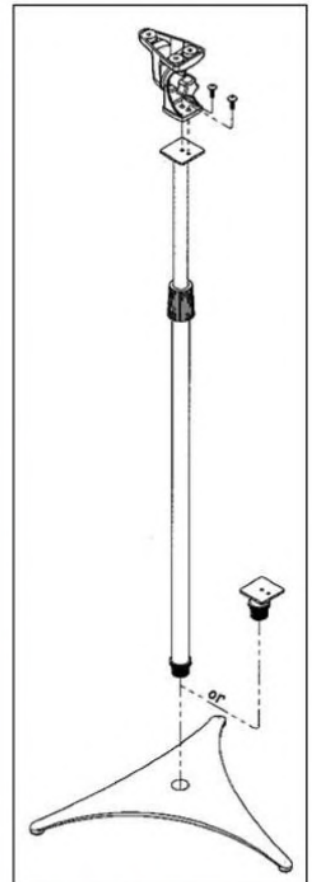
To detect a resident leaving the room / entering a room the sensor unit should be set in the vertical position so as to cast a vertical curtain across the doorway. The beam has an approximate 6.5 metre range so this can be achieved from across the other side of the room, it is ideal to keep the sensor unit against the wall wherever possible to avoid a trip hazard from the cables. This one can be a little more difficult to set up as you have to set it in such a way that the staff can set up the sensor unit, switch it on and then exit the room without creating an alarm. Staff will need to be on the door side of the beam when switching it on.

To detect a resident at risk of sliding down out of the chair the sensor unit can be set in the lowered vertical position just past the feet so if they were to slide down and forward it would interrupt the beam.

Summary of options for use include but are not limited to:

- set up beside the bed, just above the height of a sleeping resident to alert staff when they sit up.
- placed to alert staff when resident exits the bed.
- positioned to alert staff if the resident exits a room.
- set up to detect a resident attempting to exit a chair.

Set up and care instructions are provided and give clear descriptions including pictures and diagrams, to show options for set up to detect a variety of movement.



A short mount pole can replace the long adjustable pole allowing the sensor unit to be mounted directly to the base.

In this mode the sensor will create an invisible 'carpet' beam across the floor.

Install this sensor unit under the bed or in such a way as not to create a trip hazard.