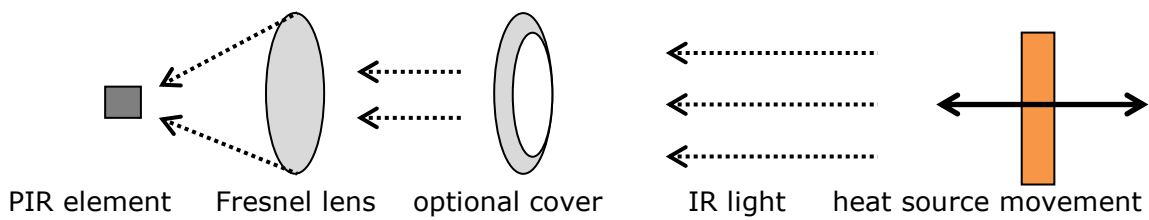


Lens Covers – Range Adjustment for EOSC and EPAC

### 1. Basic Principal

The ceiling mounted sensors EOSC and EPAC do have a PIR (passive infrared) element and a Fresnel lens to focus infrared light to the sensing element. The PIR sensor detects movement of heat sources like warm bodies.

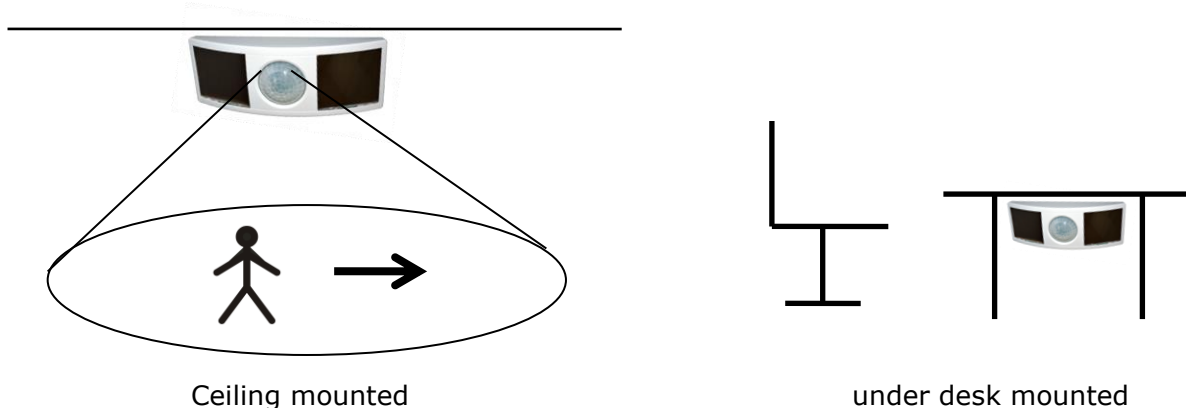
The sensing range can be adapted by the mounting high or via an optional lens cover:



### 2. Use Cases

EOSC and EPAC both are designed as solar powered sensors for ceiling installation. If it is mounted in typically 3m (10 ft) high it has a round detection spot with a detection diameter of 10m (32ft). For details see EOSC and EPAC user manuals at [www.enocean.com](http://www.enocean.com)

EOSC can also be used for under desk mounting to detect presence at office places. In this use case an optional CR2032 battery is recommended to power the sensor at this typically low light place.



## Lens Covers – Range Adjustment for EOSC and EPAC

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### 3. Sensing range without Lens Cover

EPAC and EOSC have a detection range diameter of around 10m if mounted on ceiling in 3m high. Detection range is reduced by lowering the mounting position. The following tables provide an overview:

Ceiling mounted:

Mounting High (m)	2.0	2.2	2.4	2.6	2.8	3.0
Range Diameter (m)	6.0	6.8	7.6	8.4	9.2	10

For under desk mounted:

Mounting High (m)	0.7	0.8	0.9
Range Diameter (m)	2.2	2.4	2.6

### 4. Lens Cover with round openings

To achieve a smaller detection area, a lens cover can be used as follows:

No Lens Cover



Lens Cover 19 mm



Cover with 19mm round opening, ceiling mounted:

Mounting High (m)	2.0	2.2	2.4	2.6	2.8	3.0
Range Diameter (m)	2.2	2.4	2.8	3.2	3.4	3.6

Cover with 13mm round opening, ceiling mounted:

Mounting High (m)	2.0	2.2	2.4	2.6	2.8	3.0
Range Diameter (m)	1.6	1.8	2.0	2.2	2.4	2.6

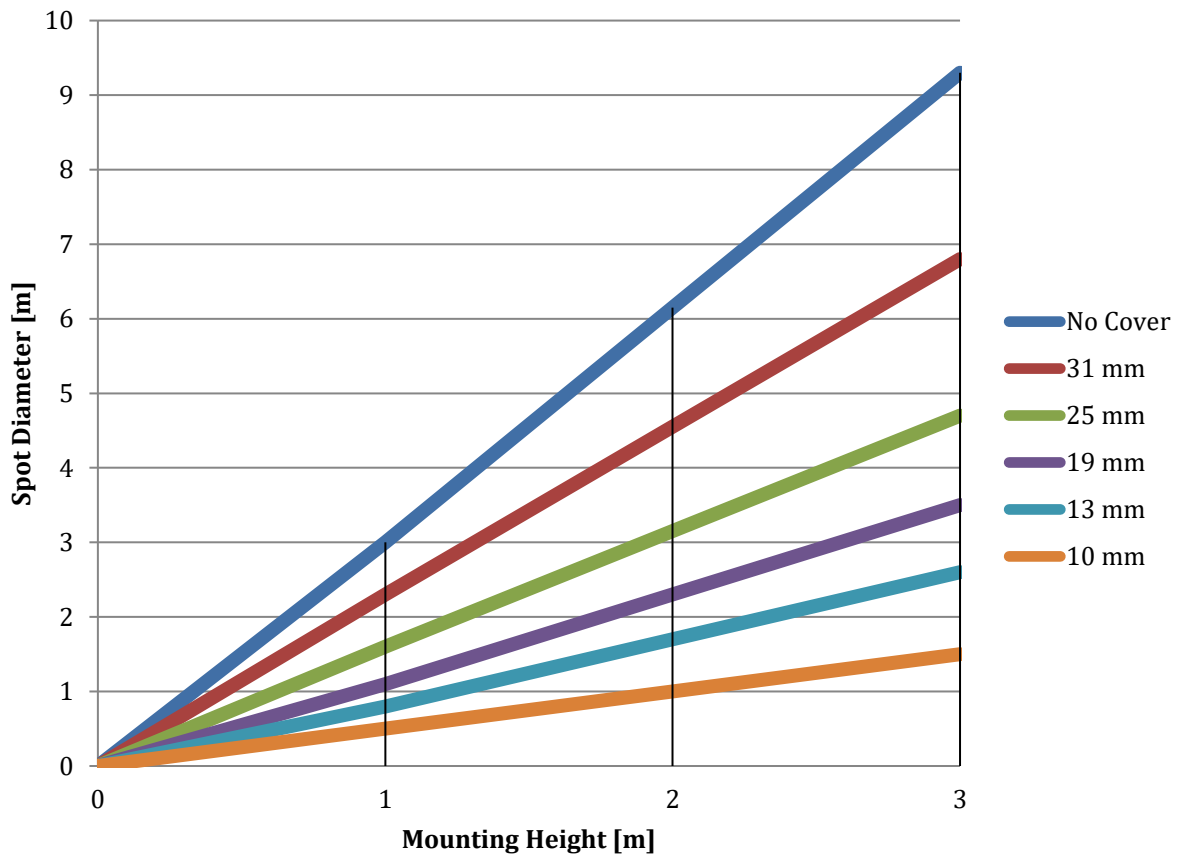
Lens Covers – Range Adjustment for EOSC and EPAC

Cover with 10mm round opening, ceiling mounted:

Mounting High (m)	2.0	2.2	2.4	2.6	2.8	3.0
Range Diameter (m)	1.0	1.1	1.2	1.3	1.4	1.5

Cover with 19mm round opening, under desk mounted:

Mounting High (m)	0.7	0.8	0.9
Range Diameter (m)	0.8	0.9	1.0



Sensing Range Diagram for round lens openings

## Lens Covers – Range Adjustment for EOSC and EPAC

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### 5. Lens Cover with other openings

For dedicated use cases you can also achieve another detection shape by using lens covers as follows:



Lens cover with half-moon shape



Lens cover with aisle shape

Please note: Generally, you need to test the real use case. The spot at the ground will vary through the distance from the ceiling and by the coverage of the individual Fresnel sections of the detector lens.

## Lens Covers – Range Adjustment for EOSC and EPAC

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### 6. 3D Printing Data

3D data for printing the mentioned cover lenses (diameter 19 mm, 13 mm, 10 mm, half moon shape and aisle shape) can be downloaded at the relevant product pages of EPAC and of EOSC at [www.enocean.com](http://www.enocean.com).

With this 3D data, the lens covers can then be easily printed by any 3D printer or ordered from any 3D online printing shop.

### 7. Lens Cover Mounting

For lens testing purposes: If you want the lens cover to be removable (e.g. with a small screwdriver), then use small strips of double-sided adhesive tape or a few drops of liquid general-purpose household adhesive (non-vulcanizing).

For final lens fixation: Use liquid superglue (that is vulcanizing) in the appropriate amount so that the glue is not squeezed out sideways.

**Please note: These are only hints to enable special use cases. EnOcean does not accept any liability for such product modifications! The user must perform their own suitable tests (mainly glue type and handling).**