

# Proteus Wi-Fi Sensors

## Understanding the types of motion sensors

### Types of motion sensors.

Proteus uses the NaPiOn series of motion sensors from Panasonic®.

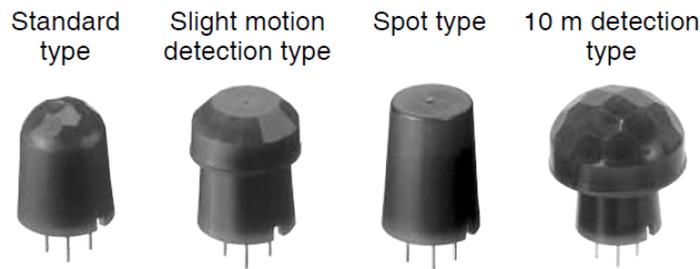


Image courtesy: NaPiOn® Sensor Datasheet

### Principle of operation

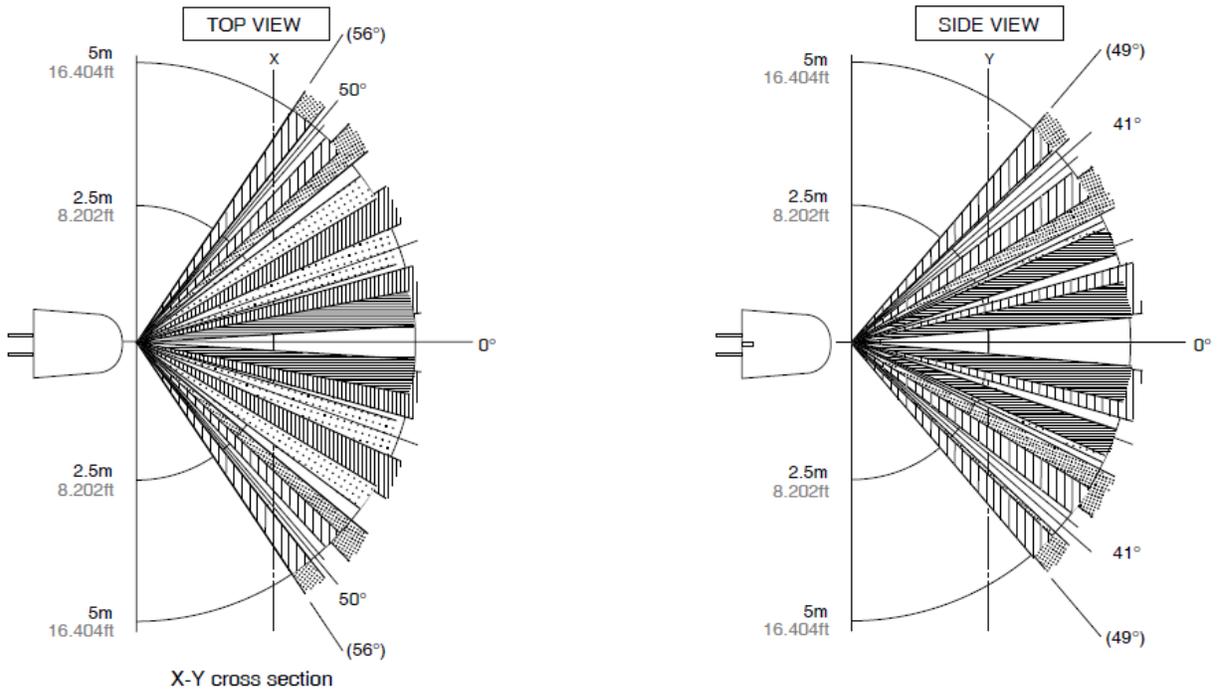
The NaPiOn series motion sensors from Panasonic® are high performance infrared human detection sensors, ideal for variety of sensing applications. Main features of NaPiOn sensors include

1. High performance design in small packages allowing compact designs
2. Uses Quad type pyro electric sensors with precise detection zones
3. Excellent noise resistance, and reduced false alarms
4. Detects even small temperature differences (down to 4°C / 7.2°F)

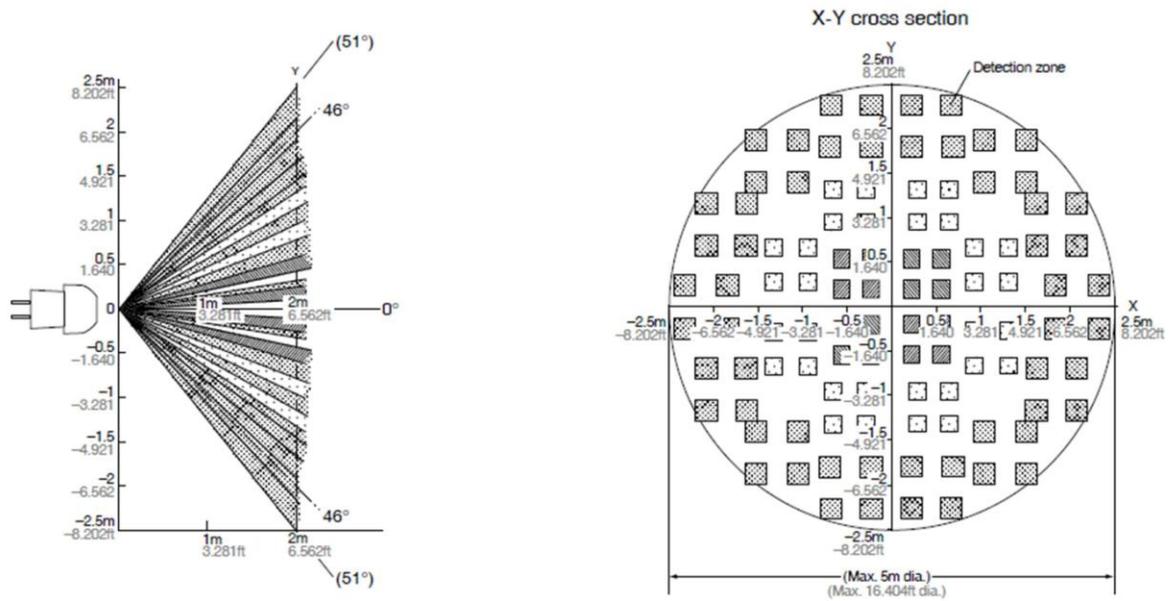
### Understanding the different types.

To better understand the sensor types and their performance, relevant illustrations from the manufacturer datasheet are provided below. Please note the sensing distances and angle of detections for each sensor. All images are courtesy of NaPiOn sensor datasheet by Panasonic.

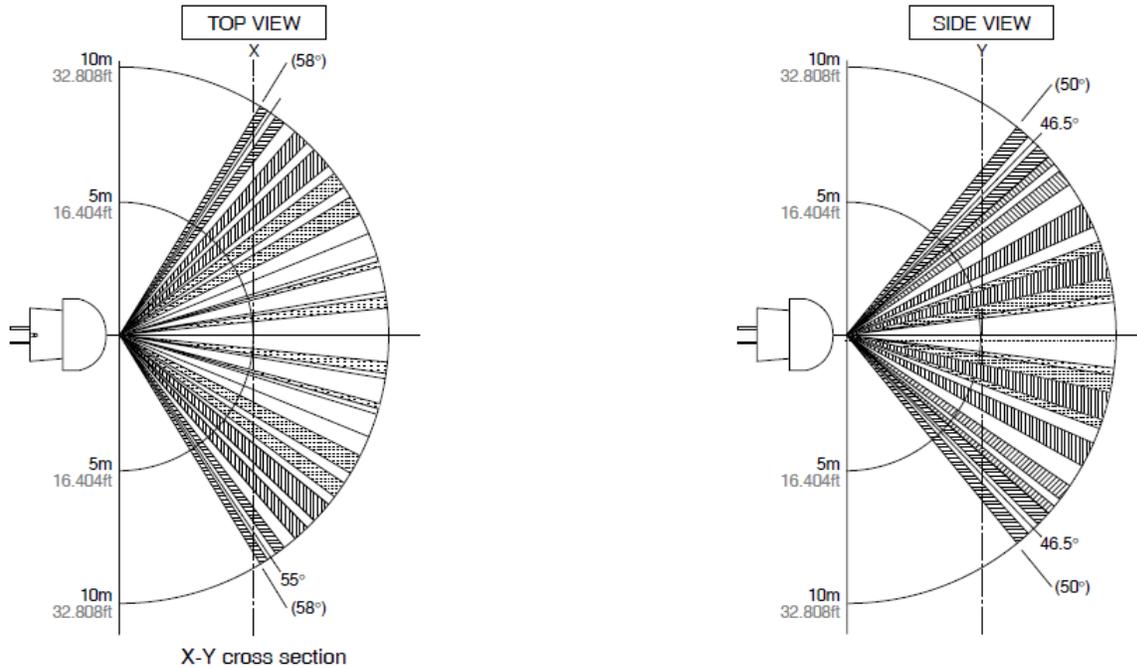
1. Standard Detection Type.



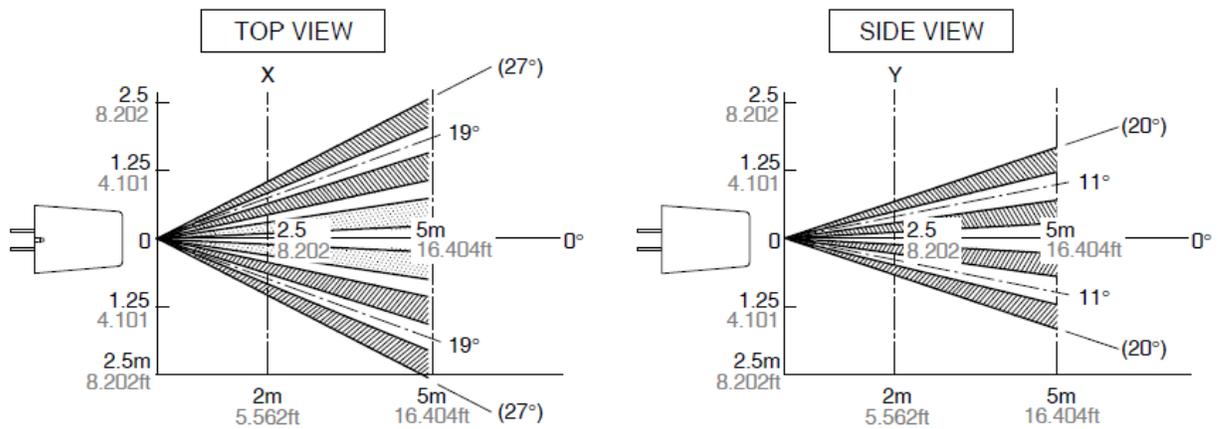
2. Slight Motion Detection type.



### 3. 10 meter detection type



### 4. Spot Detection type



### Important notes from the manufacturer

1. NaPiOn motion sensors are passive infrared sensors which detect changes in the infrared rays. This may fail to detect successfully if a heat source other than a human being is detected or if there are no temperature changes in or movement of a heat source. Care must generally be taken in the following cases. The performance and reliability of the sensors must be checked out under conditions of actual use.

- a. Cases where a heat source other than a human being is detected
  - i. When a small animal enters the detection range
  - ii. When the sensor is directly exposed to sunlight, a vehicle's headlights, an incandescent light or some other sources of far infrared rays
  - iii. When the temperature inside the detection range has changed suddenly due to the entry of cold or warm air from air-conditioning or heating unit, water vapor from a humidifier, etc.
- b. Cases where it is difficult to detect the heat source
  - i. When an object made of glass, acrylic or other materials which far infrared rays have difficulty passing through is located between the sensor and what is to be detected.
  - ii. When the heat source inside the detection range hardly moves or when it moves at high speed.
- c. When detection area becomes larger
  - i. When the difference between the ambient temperature and body temperature is large ( more than 20<sup>0</sup>C/68<sup>0</sup>F), detection may occur in isolated areas outside the specified detection range.

For a complete version of the NaPiOn Motion sensor datasheet, please visit

<http://pewa.panasonic.com/assets/pcsd/catalog/napion-catalog.pdf>

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