

# PIR Motion Sensor (EKMB, EKMC, AMN2, 3)

## 2) NaPiOn series

### a) Digital output

| Items                                      | Symbol | Specified value            | Measuring conditions                                                                 |
|--------------------------------------------|--------|----------------------------|--------------------------------------------------------------------------------------|
| Rated consumption current (Stand by) Note) | Iw     | 170μA ave.                 | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Iout = 0                |
| Rated operating voltage                    | Vdd    | 3.0VDC min.<br>6.0VDC max. |                                                                                      |
| Output current (When detecting)            | Iout   | 100μA                      | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Vout ≥ Vdd-0.5V         |
| Output voltage (When detecting)            | Vout   | Vdd-0.5V                   | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Open when not detecting |
| Circuit stability time                     | Twu    | 30s max.                   | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V                            |

Note: The current which is consumed during detection consists of the standby consumed current plus the output current.

### b) Analog output

| Items                         | Symbol   | Specified value                     | Measuring conditions                                                                                            |
|-------------------------------|----------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Consumption current           | Iw       | 170μA ave.                          | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Iout = 0                                           |
| Operating voltage             | Vdd      | 4.5VDC min.<br>5.5VDC max.          |                                                                                                                 |
| Output current                | Iout     | 50μA                                | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V                                                       |
| Output voltage range          | Vout     | 0V min.<br>VDD max.                 | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V                                                       |
| Output offset average voltage | Voff     | 2.3V min.<br>2.5V ave.<br>2.7V max. | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Steady-state output voltage when not detecting     |
| Steady-state noise            | Vn       | 155mVpp ave.<br>300mVpp max.        | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V                                                       |
| Detection sensitivity         | Vh or Vl | 0.45V                               | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V<br>Temperature difference with background: 4°C 39.2°F |
| Circuit stability time        | Twu      | 45s                                 | Ambient temperature = 25°C 77°F<br>Operating voltage = 5V                                                       |

Note: To set the same detection performance as the digital output type, set the output voltage (2.5V) ±0.45V.

## 3. Detection performance

### 1) WL series VZ series

| Items                                   | Standard type | Long distance detection type | Measuring conditions                                                                                                                                                                                            |
|-----------------------------------------|---------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detection distance                      | 5m 16.404ft   | 12m 39.3696ft                | 1. Detectable difference in temperature between the target and background is more than 4°C 7.2°F.<br>2. Movement speed 1.0m/s<br>3. Detection object: human body (size is 700mm × 250mm 27.559inch × 9.843inch) |
| Detection range (Horizontal × Vertical) | 94° × 82°     | 102° × 92°                   |                                                                                                                                                                                                                 |
| Detection zone                          | 64 zones      | 92 zones                     |                                                                                                                                                                                                                 |

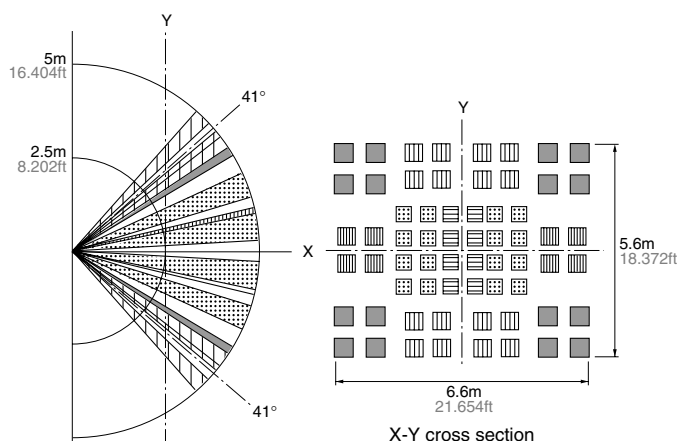
### 2) NaPiOn series

| Items                                   | Standard type | Slight motion detection type | Spot detection type | 10m detection type | Measuring conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|---------------|------------------------------|---------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detection distance                      | 5m 16.404ft   | 2m 6.562ft                   | 5m 16.404ft         | 10m 32.808ft       | 1. Detectable difference in temperature between the target and background is more than 4°C 7.2°F.<br>2. Movement speed<br>1) Digital output type<br>Standard type/Spot type/10m detection type: 0.8 to 1.2m/s<br>Slight motion detection type: 0.5m/s<br>2) Analog output type<br>Standard type/Spot type/10m detection type: 0.5 to 1.5m/s<br>Slight motion detection type: 0.3 to 1.0m/s<br>3. Detection object: human body (size is 700mm × 250mm 27.559inch × 9.843inch) (for the slight motion detection type, 200mm × 200mm 7.874inch × 7.874inch) |
| Detection range (Horizontal × Vertical) | 100° × 82°    | 91° × 91°                    | 38° × 22°           | 110° × 93°         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Detection zone                          | 64 zones      | 104 zones                    | 24 zones            | 80 zones           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

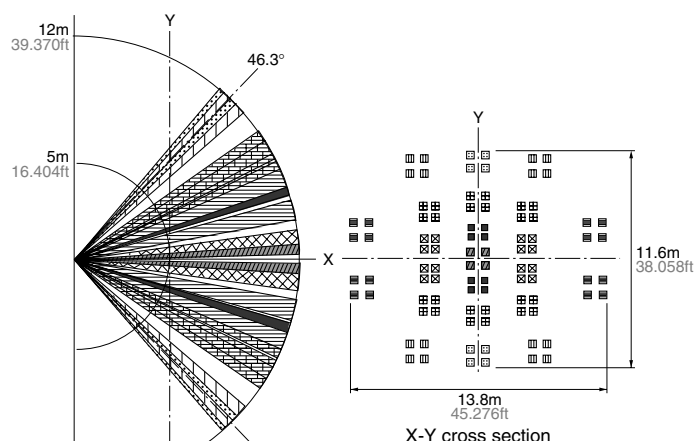
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## DETECTION PERFORMANCE

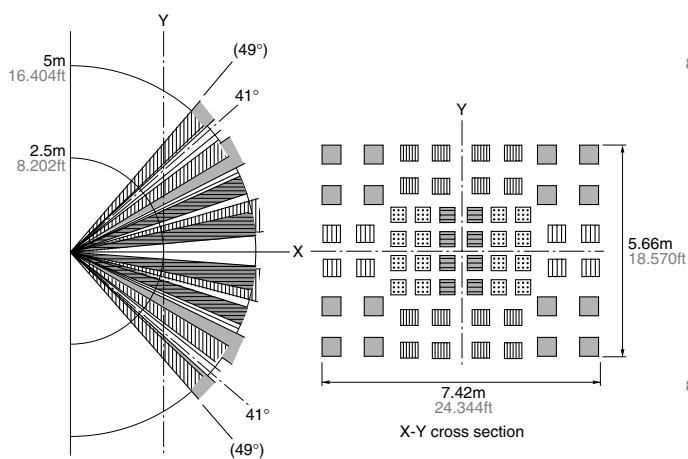
### 1. WLseries VZ series Standard type



### 2. WL series VZ series Long distance 12m detection type



### 3. NaPiOn series Standard type



### 4. NaPiOn series Slight motion detection type

