ZNCL10 PIR Lens Series

Product Specification

PS041201-0222

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Revision History

Each instance in this document's revision history reflects a change from its previous edition. For more details, refer to the corresponding page(s) or appropriate links furnished in the table below.

Date	Revision Level	Description	Pages
Feb. 2022	01	Original issue.	All

Overview

Zilog's Passive Infrared (PIR) lenses are designed to deliver high performance for the most demanding motion detection applications. Each lens is manufactured from high density polyethylene ensuring maximum IR transmissivity with well-defined beam patterns.

The ZNCL10 series are standard 9mm lenses that clip directly on to a TO-5 package PIR sensor, greatly simplifying the mechanical design.

Each lens has 2 orientations (Tab-A or Tab-B) and works with either dual element or quad element PIR sensors providing multiple beam patterns and detection areas.

Features

- High density polyethylene construction
- Simple mounting – clips directly on to TO-5 package PIR sensor
- Works with dual, circular dual or quad element PIR sensors
- Multiple beam patterns to choose from, with same mechanical dimensions

Applications

- General purpose motion detectors
- Lighting and HVAC control
- Entrance detection
- Product displays, vending machines, and kiosks
- Directional detection

Figure 1 - ZNCL10IL

Figure 3 - ZNCL10R

Figure 2 - ZNCL10S

Ordering Information

Part Number	Features	Typical Applications
ZNCL10IL	9mm Wall Mount Array 80°x30° Detection area 6 beams (X); 2 beams (Y) 7m range Recommended PIR Sensor: Dual, Quad Element	**Wall mount for power management** Proximity or entrance detection Kiosks Vending Product display's
ZNCL10R **ZNCL10RB**	9mm Wall/Ceiling Mount Array 360° circular pattern with 90° cone 14 detection zones 5m range/height ZNCL10RB is black color Recommended PIR Sensor: Dual, Circular Dual or Quad Element	**Room Occupancy and Proximity Sensing** Lighting and HVAC control Kiosk/Display control Vending/Appliance power management Product display's
ZNCL10S	9mm Wall Mount Array Narrow 7° x 7° Detection area 2 beams (X); 1 beam (Y) 12m range Recommended PIR Sensor: Dual, Quad Element	**Barrier or entrance detection** Kiosk/Display Counters Vending HVAC Directional detection

Len Material

High Density Polyethylene (HDPE)

Lens Color

ZNC10IL – Natural
ZNCL10R – Natural
ZNCL10RB – Black
ZNCL10S – Natural

Environmental Characteristics

1) Operating temperature: -20°C to +70°C
2) Storage temperature: -25°C to +75°C

Mechanical Dimensions

The figure below shows the mechanical dimensions for all ZNCL10 lens series devices. All dimensions are in mm.

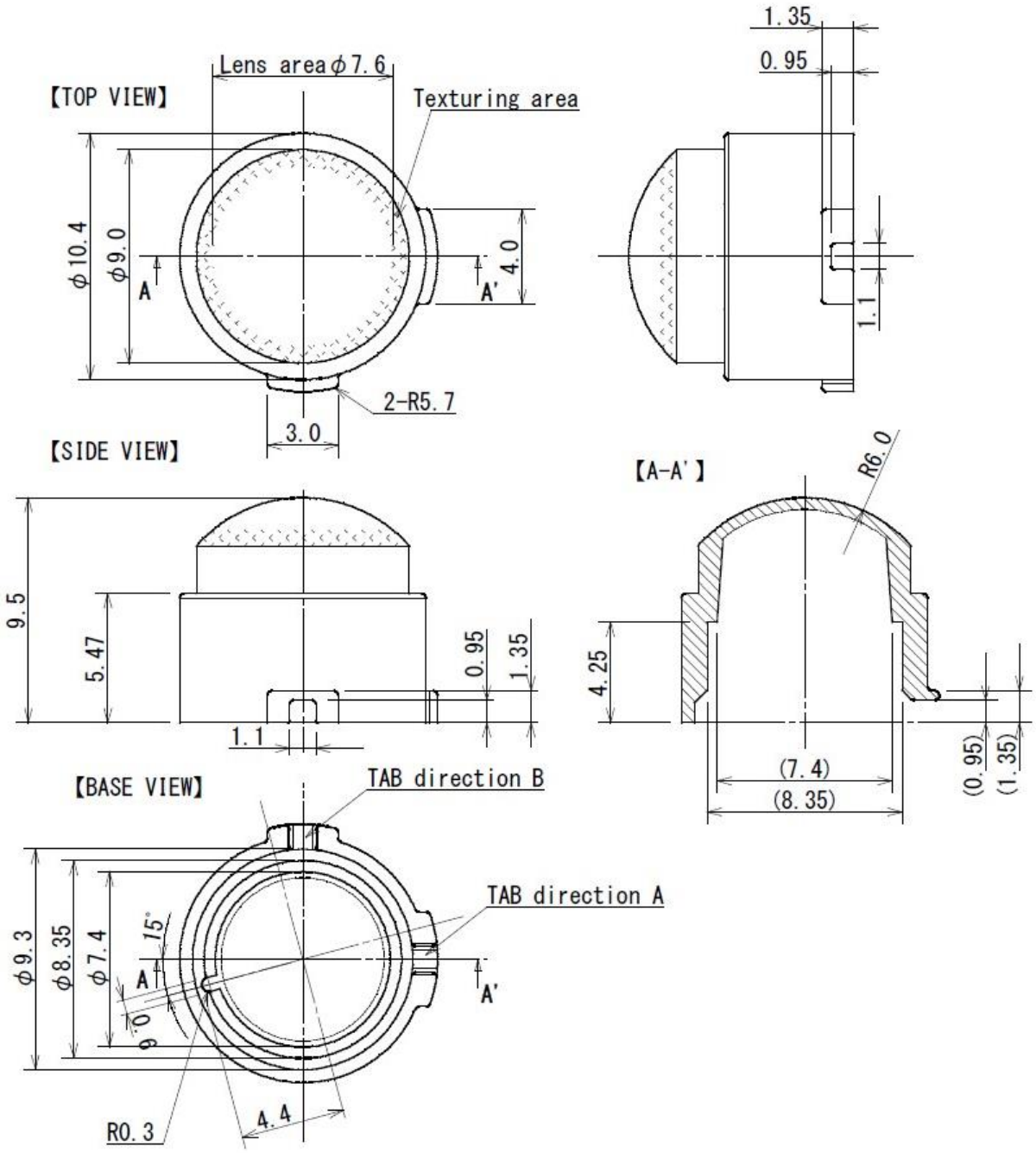

Figure 4 - ZNCL10 Dimensions

Beam Patterns

ZNCL10IL

ZNCL10IL beam patterns are shown in the following figures using dual and quad element PIR sensors in tab position A (Tab-A) and tab position B (Tab-B) lens orientations. All dimensions are in meters.

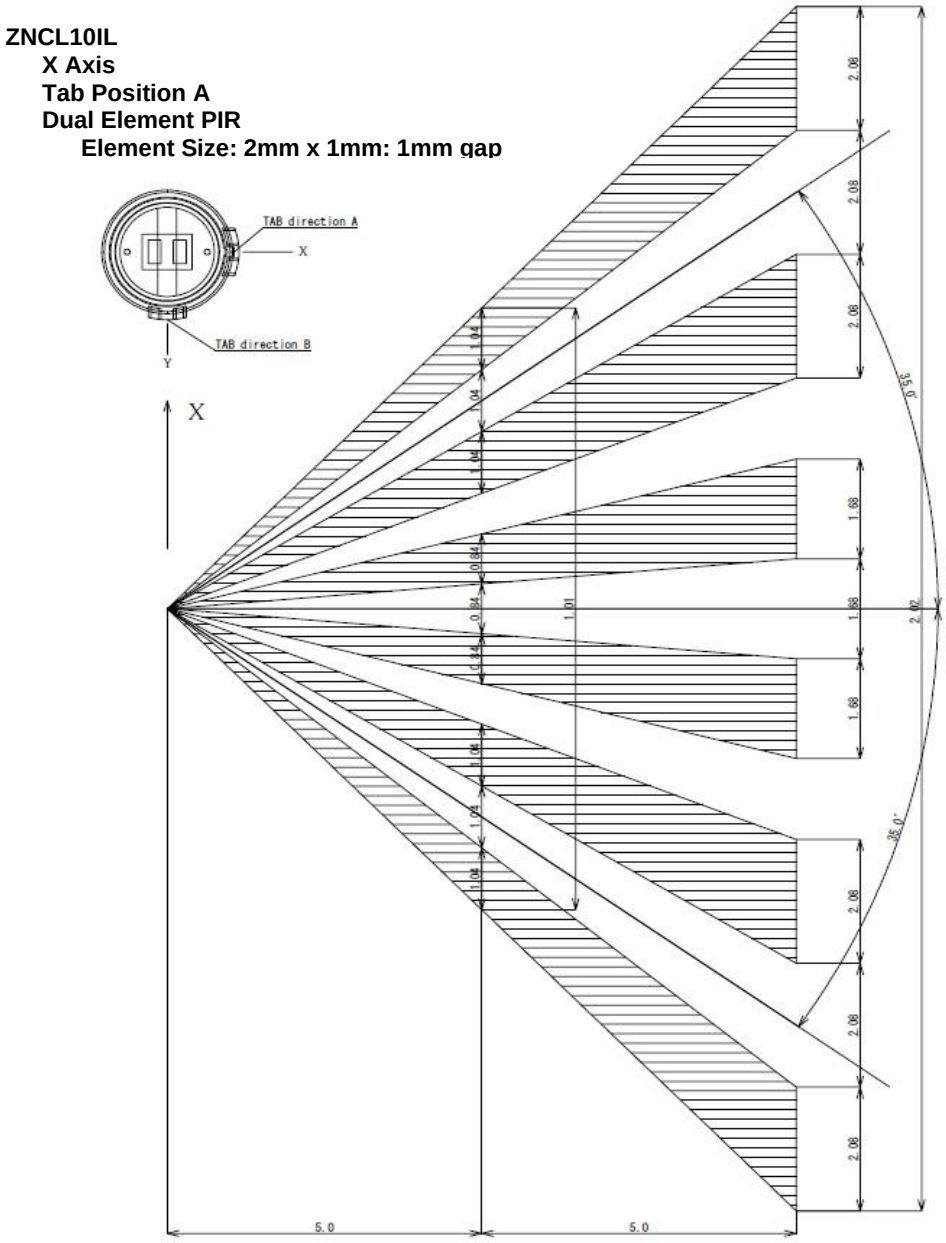

Figure 5 - ZNCL10IL; X Axis; Dual Element; Tab-A

ZNCL10IL
Y Axis
Tab Position A
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

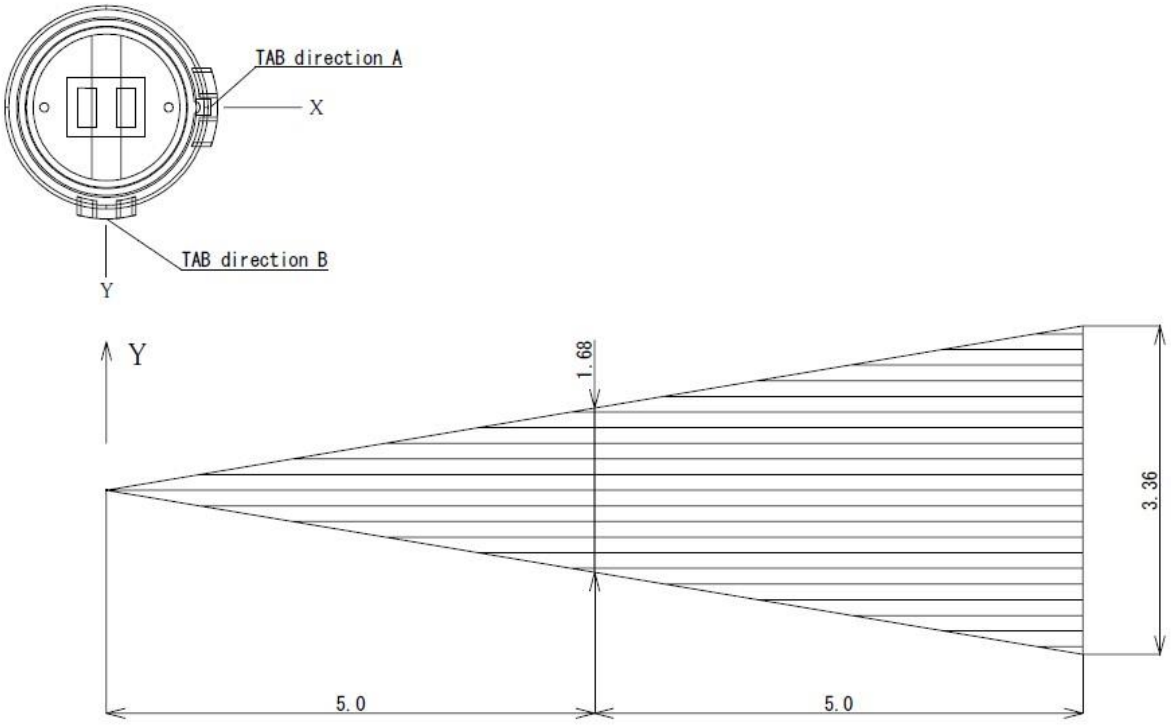

Figure 6 - ZNCL10IL; Y Axis; Dual Element; Tab-A

ZNCL10IL
X Axis
Tab Position B
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

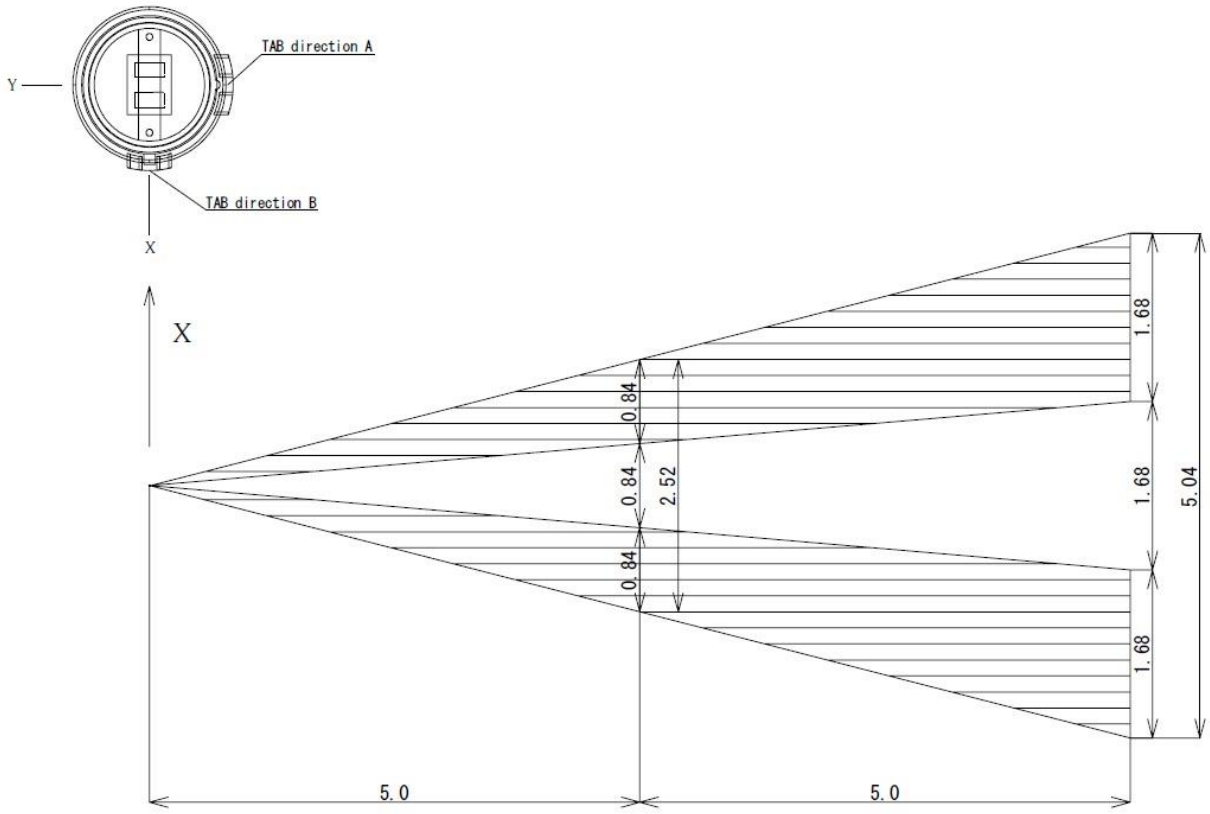

Figure 7 - ZNCL10IL; X Axis; Dual Element; Tab-B

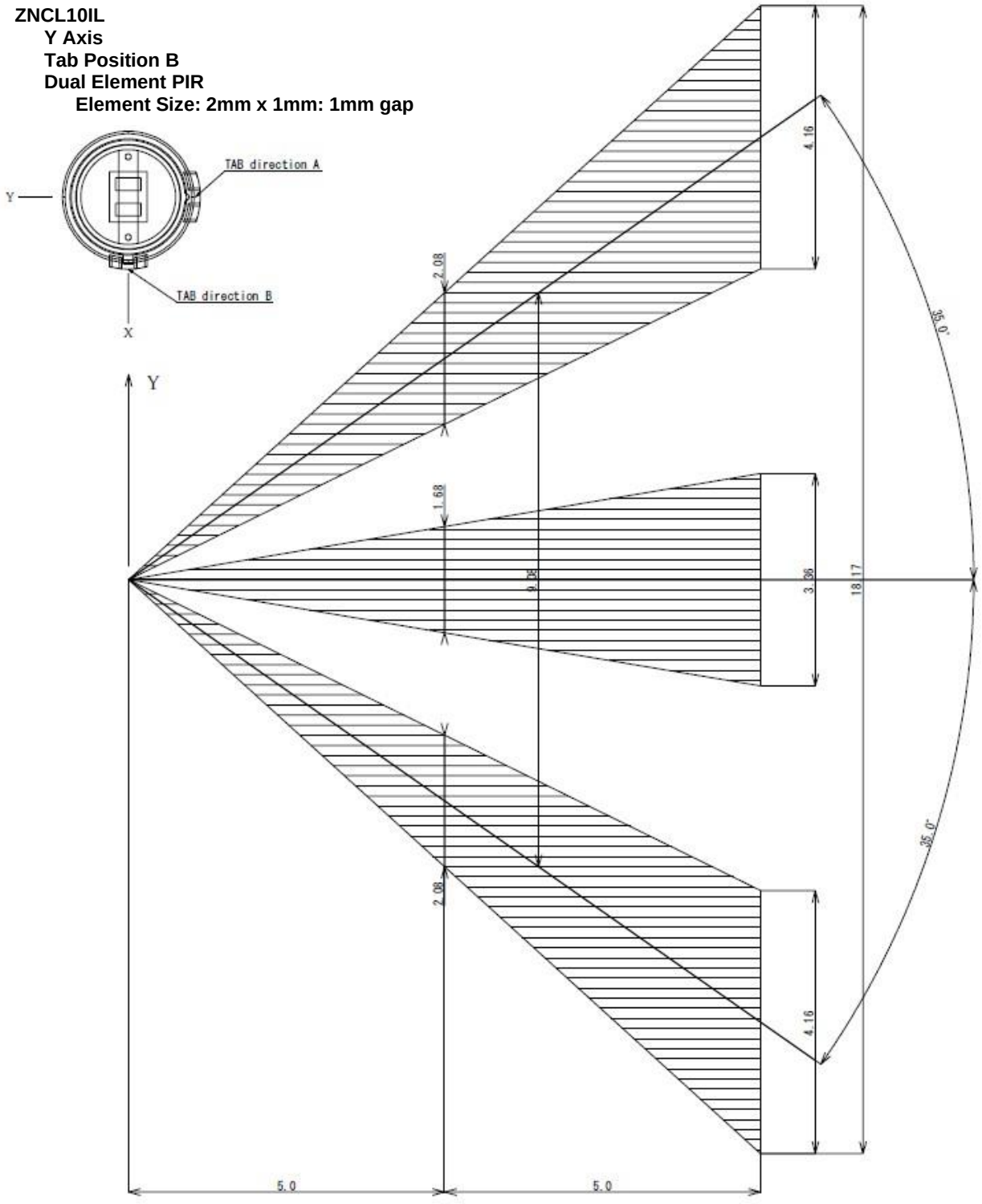

Figure 8 - ZNCL10IL; Y Axis; Dual Element; Tab-B

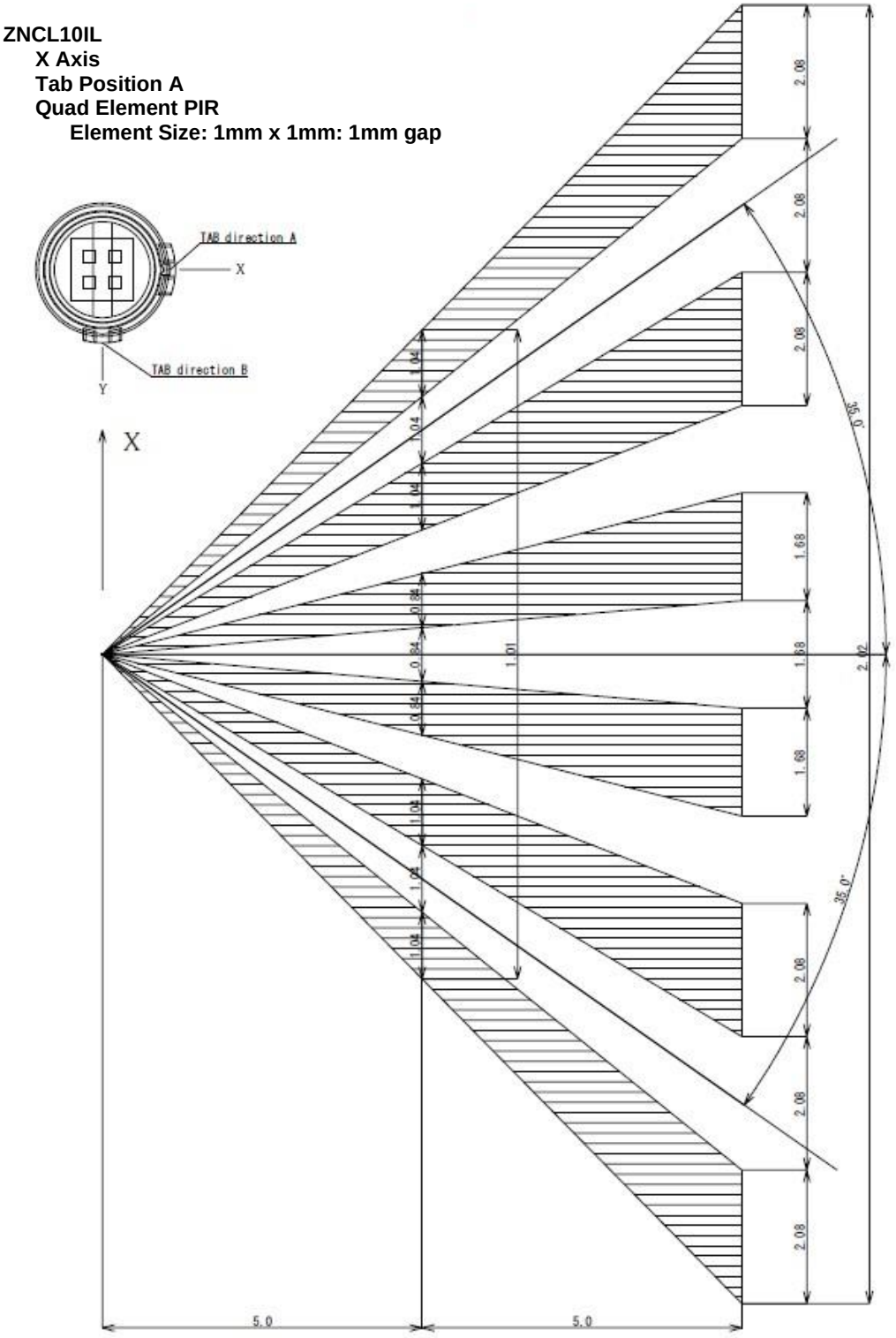

Figure 9 - ZNCL10IL; X Axis; Quad Element; Tab-A

ZNCL10IL
Y Axis
Tab Position A
Quad Element PIR
Element Size: 1mm x 1mm: 1mm gap

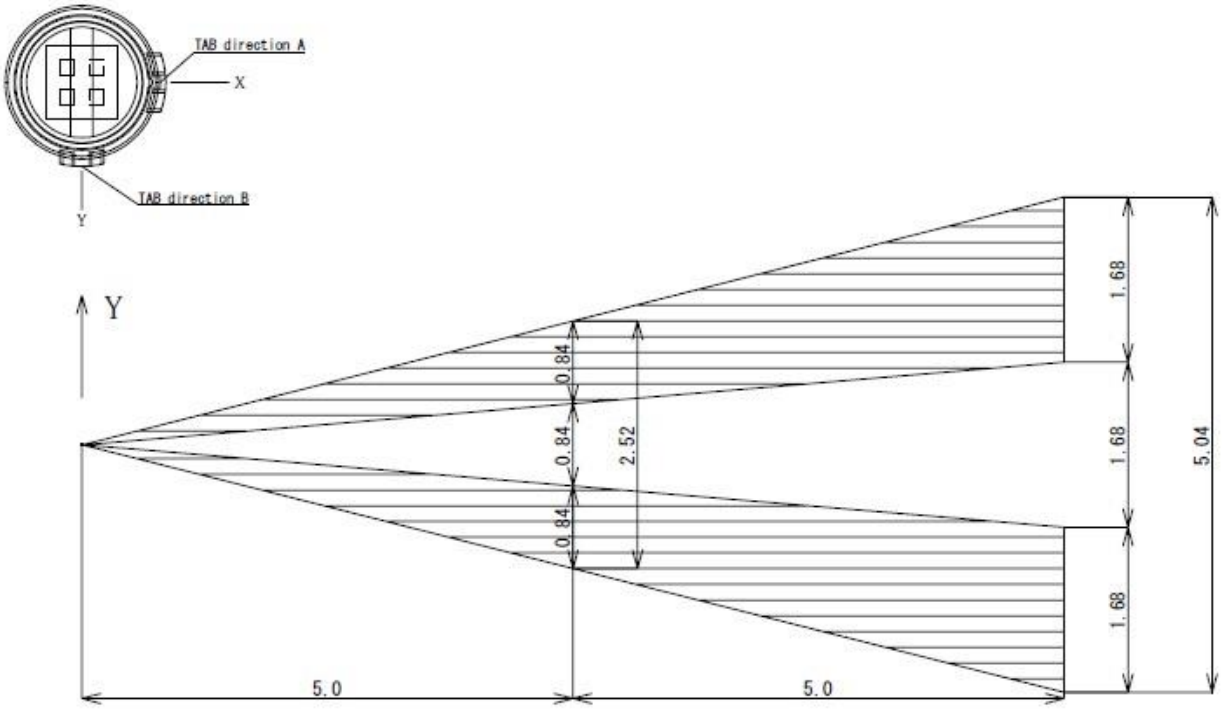

Figure 10 - ZNCL10IL; Y Axis; Quad Element; Tab-A

ZNCL10IL
X Axis
Tab Position B
Quad Element PIR
Element Size: 1mm x 1mm: 1mm gap

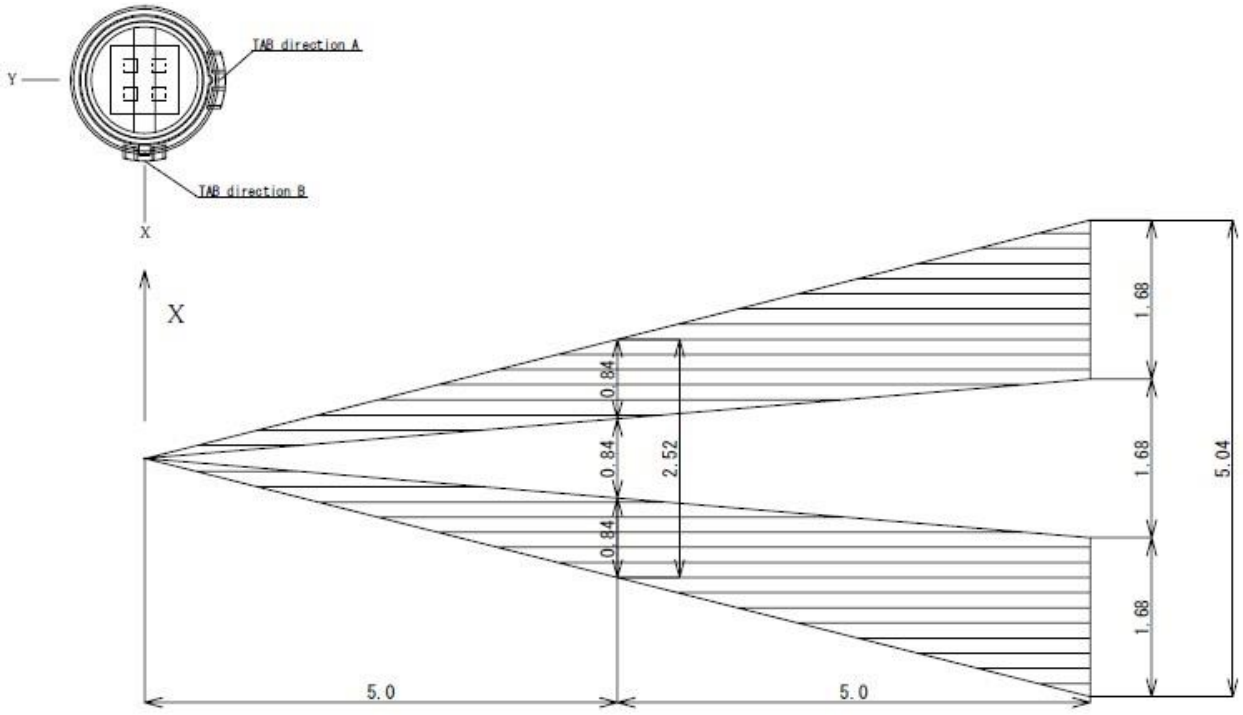

Figure 11 - ZNCL10IL; X Axis; Quad Element; Tab-B

ZNCL10IL
Y Axis
Tab Position B
Quad Element PIR
Element Size: 1mm x 1mm: 1mm gap

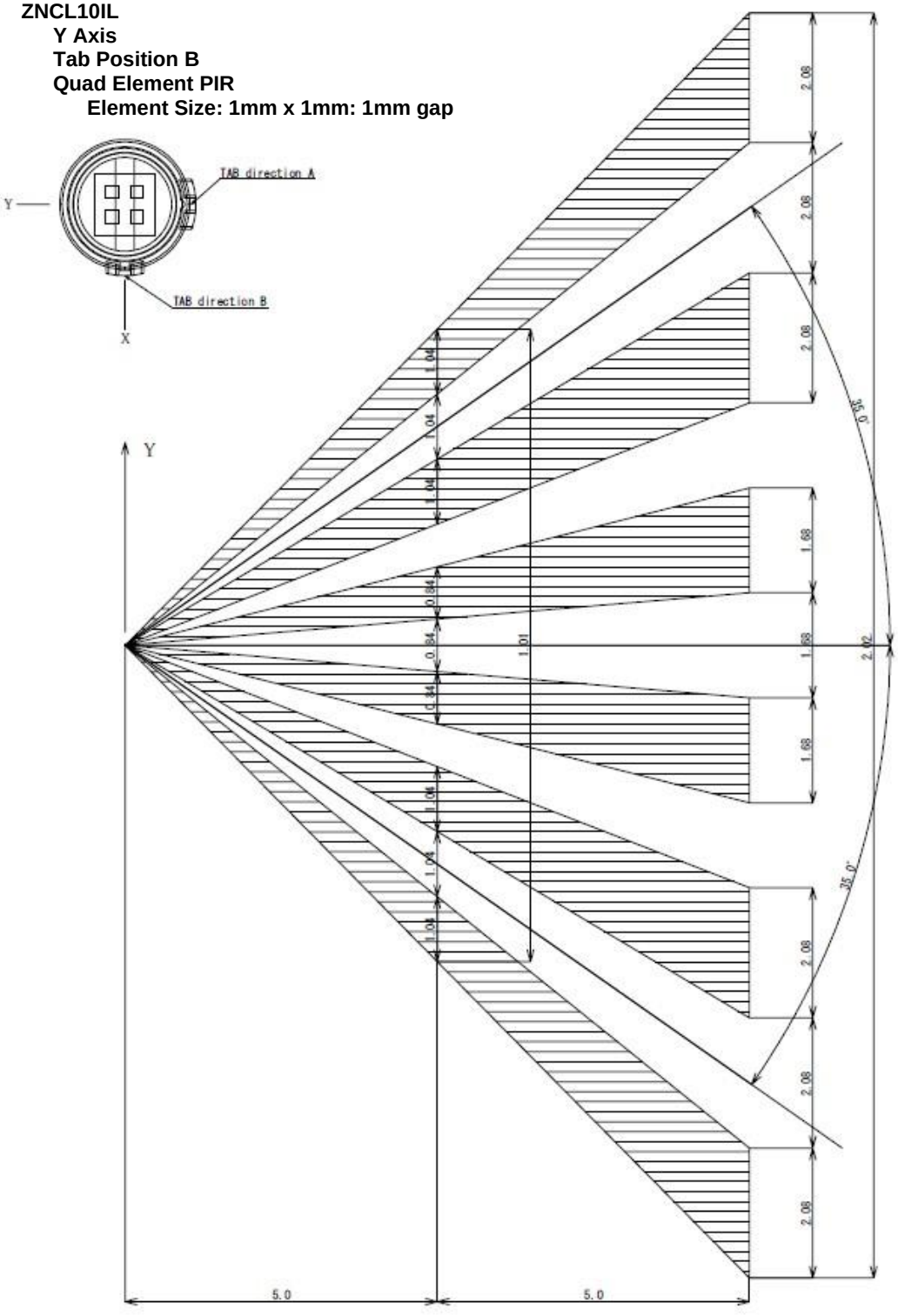

Figure 12 - ZNCL10IL; Y Axis; Quad Element; Tab-B

ZNCL10R/RB

ZNCL10R and ZNCL10RB beam patterns are shown in the following figures using dual and quad element PIR sensors in tab position A (Tab-A) and tab position B (Tab-B) lens orientations. All dimensions are in meters.

ZNCL10R/RB
XY Axis
Tab Position A
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

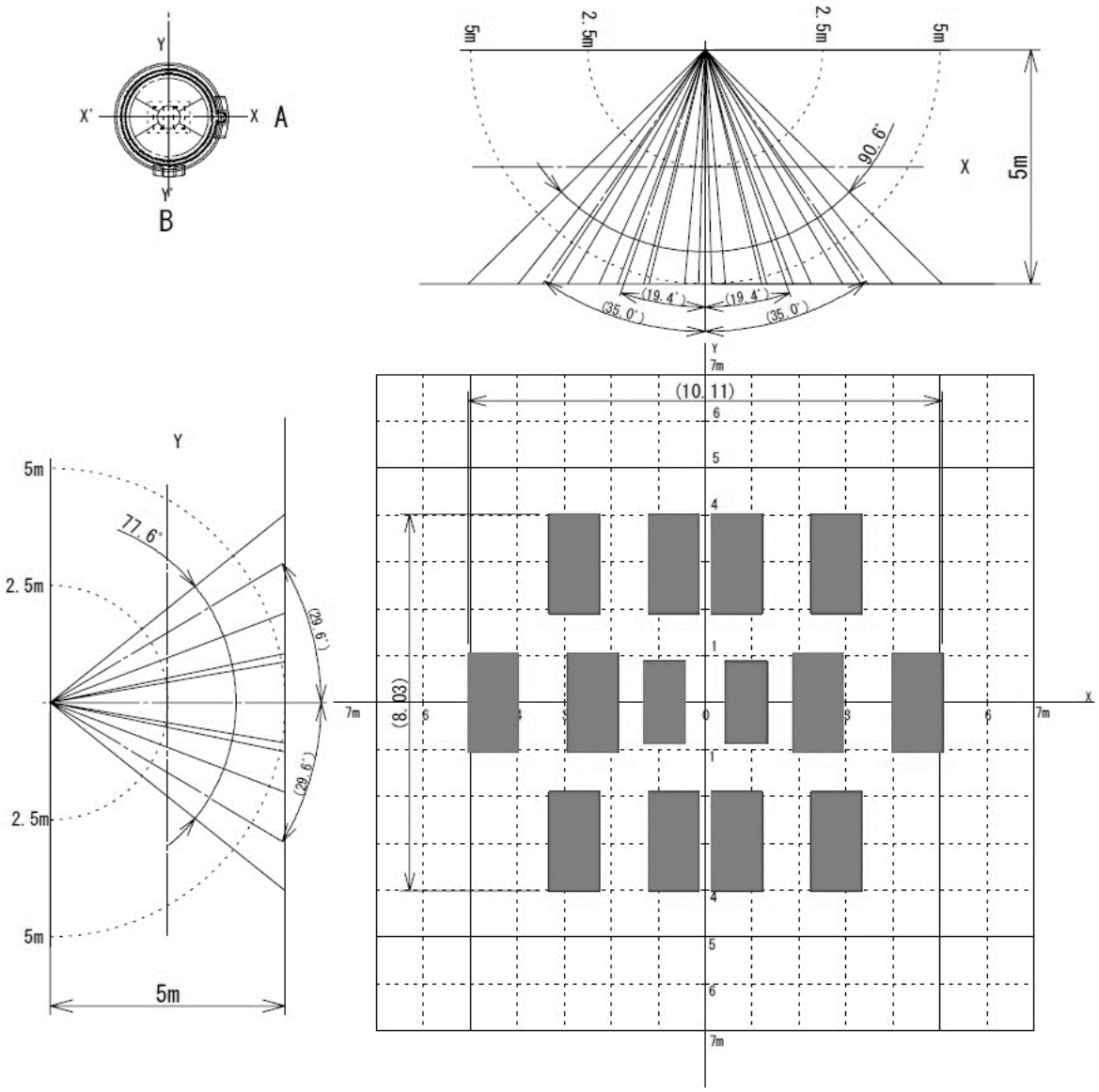

Figure 13 - ZNCL10R/RB; XY Axis; Dual Element; Tab-A

ZNCL10R/RB
XY Axis
Tab Position B
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

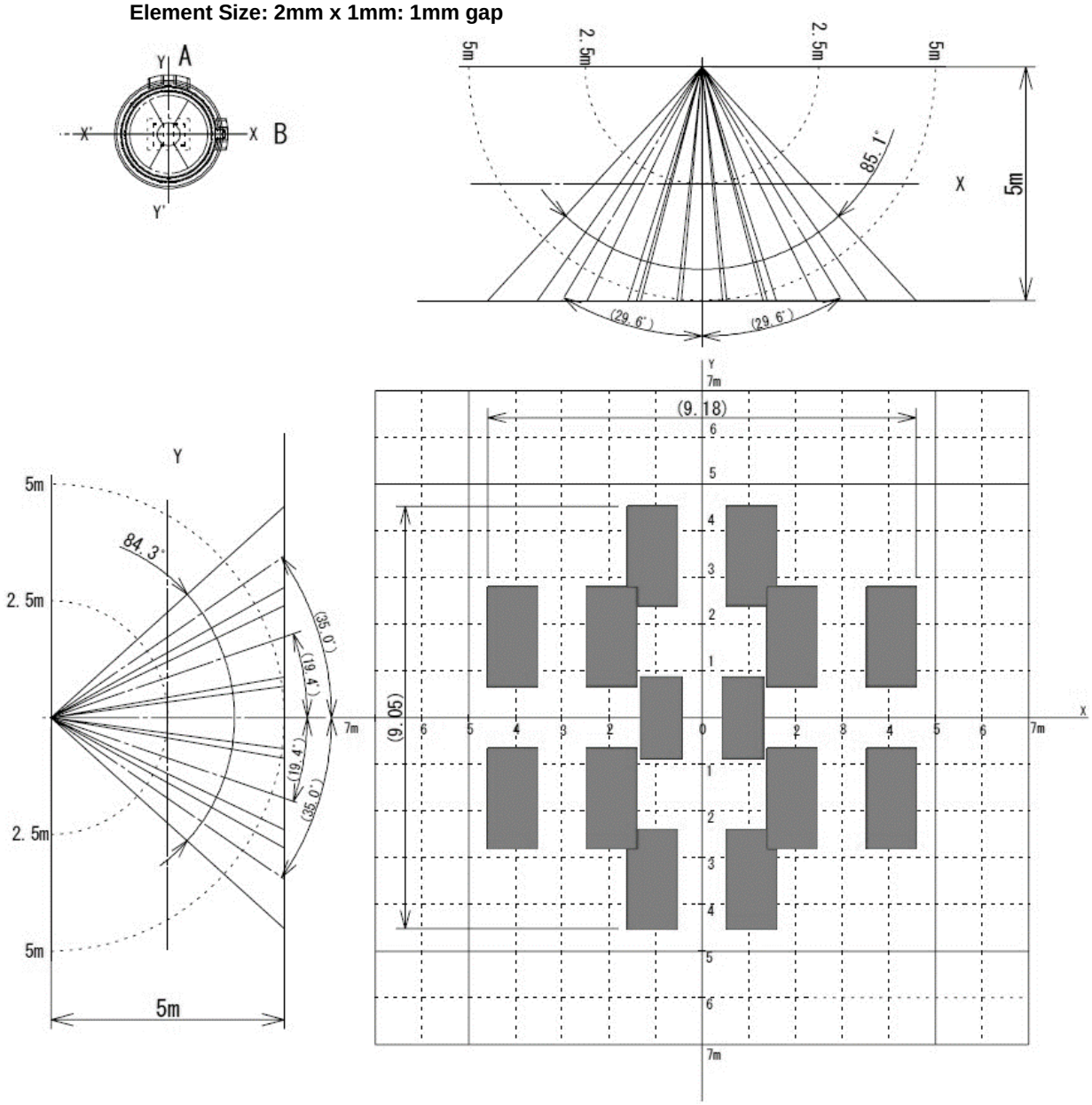

Figure 14 - ZNCL10R/RB; XY Axis; Dual Element; Tab-B

ZNCL10R/RB
XY Axis
Tab Position A or B
Quad Element PIR
Element Size: 1mm x 1mm: 1mm gap

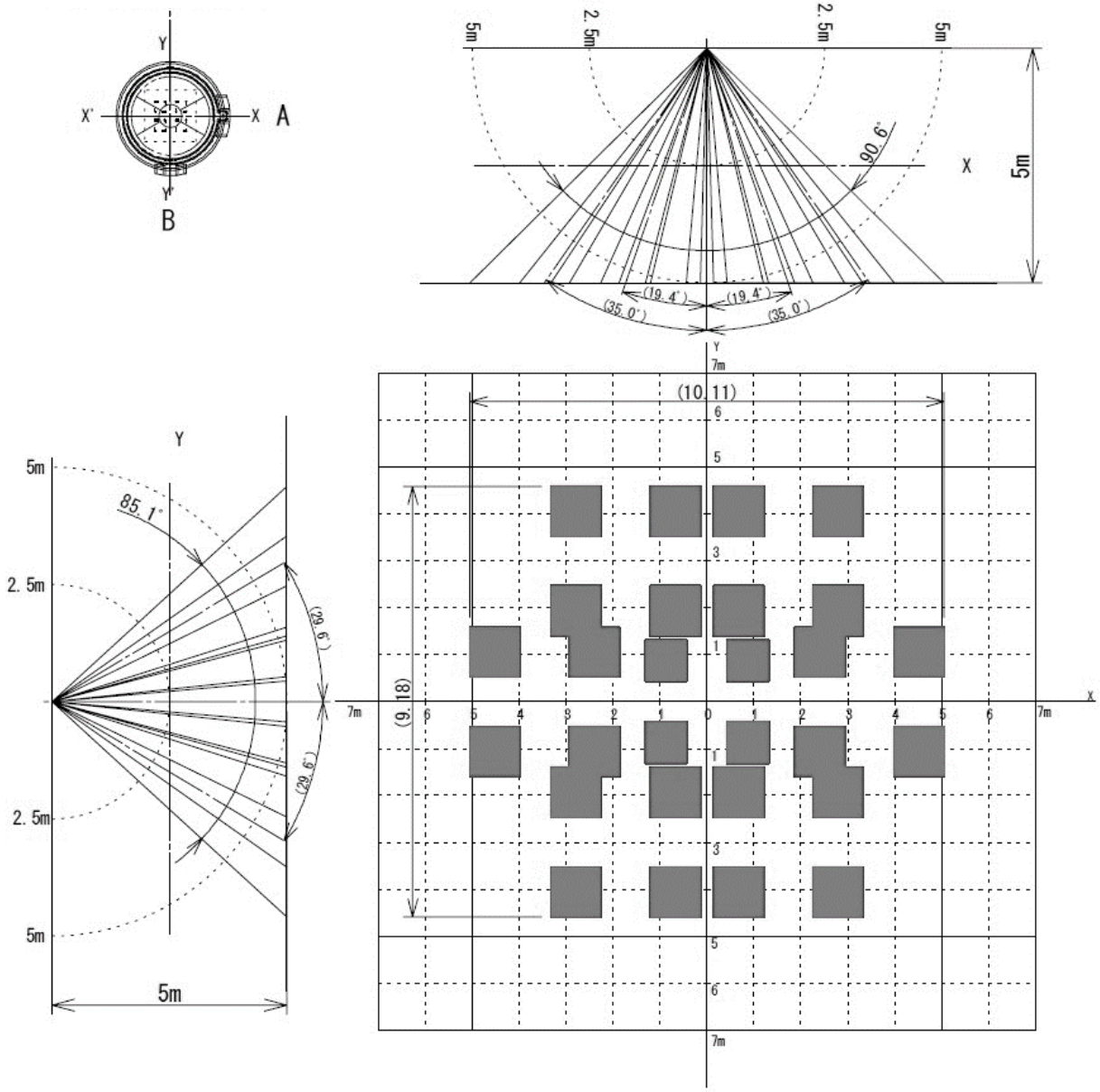

Figure 15 - ZNCL10R/RB; XY Axis; Quad Element; Tab-A or Tab-B

ZNCL10S

ZNCL10S beam patterns are shown in the following figures using dual and quad element PIR sensors. For this lens, tab position A (Tab-A) and tab position B (Tab-B) provide the same beam patterns. All dimensions are in meters.

ZNCL10S
X Axis
Tab Position A or B
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

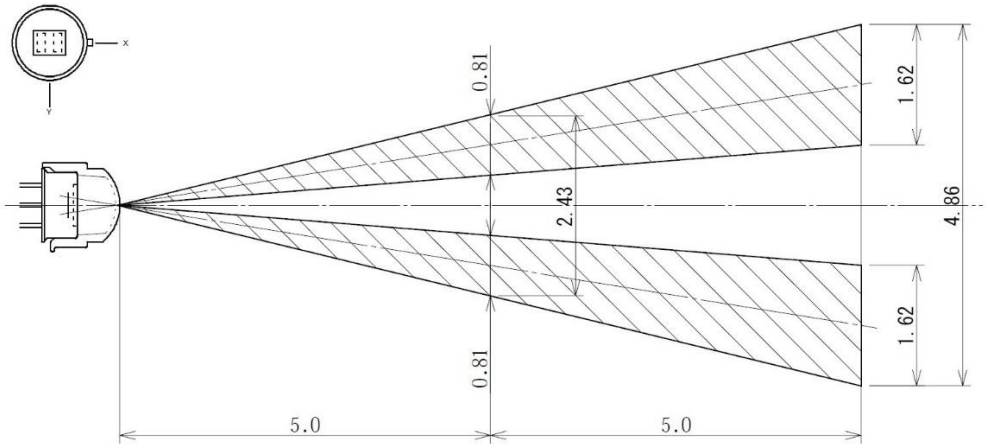

Figure 16 - ZNCL10S; X Axis; Dual Element; Tab-A or Tab-B

ZNCL10S
Y Axis
Tab Position A or B
Dual Element PIR
Element Size: 2mm x 1mm: 1mm gap

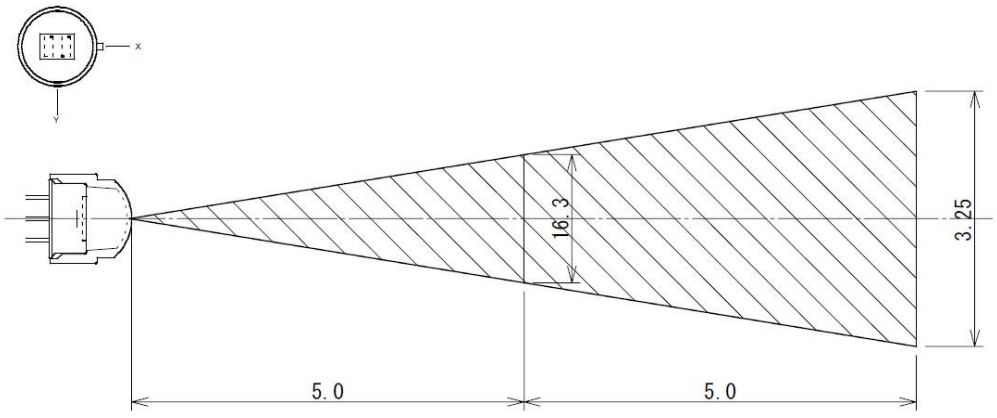

Figure 17 - ZNCL10S; Y Axis; Dual Element; Tab-A or Tab-B

ZNCL10S
X and Y Axis
Tab Position A or B
Quad Element PIR
Element Size: 1mm x 1mm: 1mm gap

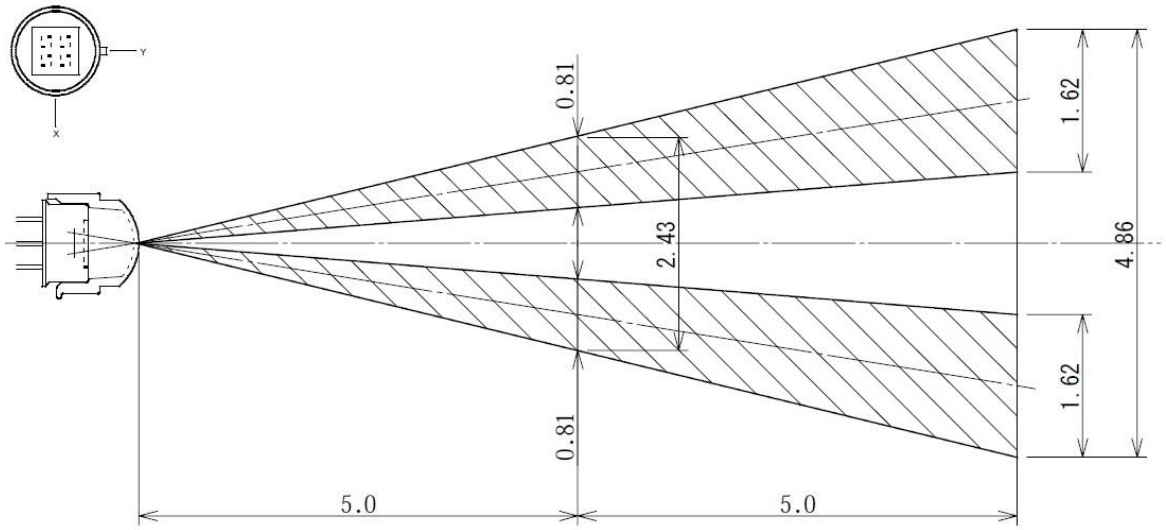

Figure 18 - ZNCL10S; X and Y Axis; Quad Element; Tab-A or Tab-B

Related Documents

The documents associated with the ZRE200GE PIR sensor are listed below. Each of these documents, and others can be obtained from the ZMOTION Product Page on the Zilog website: http://www.zilog.com.

Document Number	Description
PB0264	PIR Lens Product Brief
PB0258	ZMOTION MCU Product Brief
PS0263	PIR Sensor Product Brief

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