Integration Manual

Fixed Mount 400 Series

FUZZYSCAN

FUZZYSCAN

cino®

Fixed Mount 400 Series

Integration Manual

International Edition, Version 1.0

2D Barcode Scanners
FA480, FA470, FA460

Linear Barcode Scanners
FM480

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Warranty

For product warranty information, please visit **www.cino.com.tw**.

Safety Precautions

For safe and correct use, be sure to read the Safety Precautions in this manual before using the scanners.

LED Product Precautions

Use of controls, adjustment, or performance of procedures other than those specified herein may result in hazardous LED radiation exposure.

Be sure to observe the following precautions. Otherwise, bodily injuries may ensue.

- Do not stare at LED light or its specular reflection. This product is not equipped with a mechanism to stop radiation of LED light when disassembling. Never disassemble the product.
- Do not look directly into the LED light with an optical instrument. Also, observing the LED light with certain types of optical instruments (for example, loupe, magnifying glass, and microscope) within the distance of 100 mm may be harmful to the eyes.

Notes on Proper Use

- **DO NOT** disassemble or modify the scanner; doing so may cause function failure.
- The scanner is a precision device, protect it against impacts and drops. Care should be taken, especially when it is being carried or installed.
- **DO NOT** carry the scanner by holding its cables alone. This may damage the cables or expose the scanner to impacts, resulting in breakage.
- Keep the scanner away from liquids, dust or oil. These can damage the scanner or cause reading errors. Gently wipe off them with a soft, dry cloth. Do not soak the cloth in alcohol or the like.
- **DO NOT** turn off power to the scanner during file access, as this may corrupt internal data.

About This Manual

This integration manual provides general instructions on setting up, operating, and troubleshooting Cino's fixed mount scanners.

Please read this manual thoroughly before using the scanners to ensure optimum performance.

Chapter Description

- **Chapter 1**, **Getting Started**

  This chapter provides basic information on Cino fixed mount scanners, and the types of interface cables that users can choose from.

- **Chapter 2**, **Configuration**

  This chapter introduces various ways to configure a scanner, and provides interface configuration barcodes to assist with setup.

- **Chapter 3**, **Scanner Positioning**

  This chapter discusses how test mode and the Intelli button can be used to find the optimal positioning for your fixed mount scanner.

- **Chapter 4**, **Using the Scanner**

  This chapter outlines the different ways to activate the scanner's trigger. It also presents various operation modes. This

- **Chapter 5**, **Data Formatting**

  The chapter presents the means by which Cino fixed mount scanners can be programmed to execute data formatting tasks.

- **Chapter 6**, **Troubleshooting**

  Description of basic troubleshooting procedures for FuzzyScan fixed mount scanners.

- **Appendix**

  Basic set-up commands and audio/visual indications.

Other Documentation

You may also refer to the documents below for additional information.

- **FuzzyScan Quick Start Guide**
  Quick introduction to scanner set-up and operation.
- **FuzzyScan Barcode Programming Manual**
  Programming instructions and configuration barcodes for Cino scanners.
- **FuzzyScan Serial Command Manual**
  Information on using serial commands to program Cino scanners.
- **Cino scanner API Manual**
  API information for developers wishing to integrate Cino scanners into their systems.

For more information, please visit **www.cino.com.tw**.

Table of Contents

1 Getting Started

The goal of this chapter is to help users get acquainted with their Cino fixed mount scanners. It contains information related to unpacking and standard kit contents. It also introduces the different models available, as well as the various ways to connect your scanner to a host device, e.g. through USB, RS232, or Universal interface cable.

Unpacking

Upon receiving the products, please verify the package labels and make sure that they match your order. When unpacking, please:

1. Make sure that the product kit content is correct.
2. Verify if any product was damaged during shipment.
3. If a product was damaged during shipment, report it immediately to your vendor. Keep the packaging materials as they are to be used when returning products.

Contents of Standard Kits

Contents of Cino's standard kits are listed below.

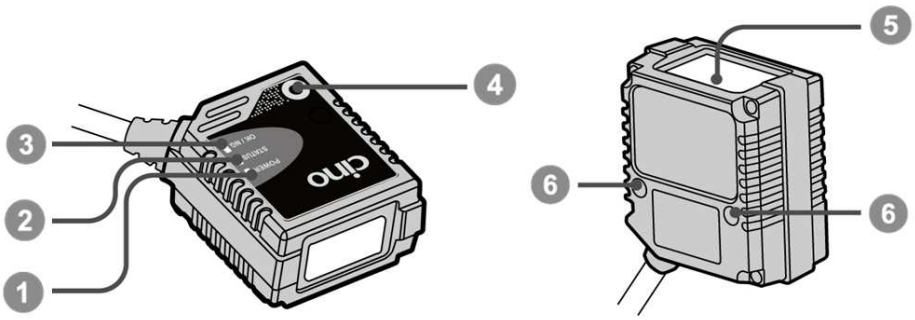
Standard Kit
• Scanner • Quick Start Guide

Know Your Scanner

Thank you for choosing the FuzzyScan fixed mount scanner. This robust scanner can work on its own or be integrated with other devices. Its small size makes it ideal for space-constrained environments. The option of a front or side scan window allows for flexibility when mounting or integrating the scanner. Our line of fixed mount scanners include the models below.

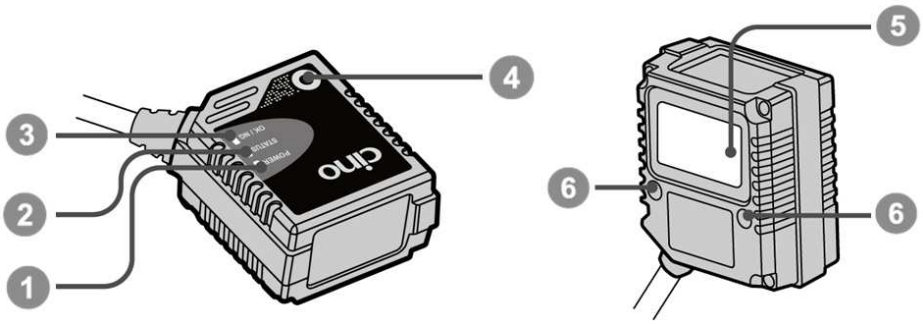
FA480

Front-View Model (F480-xx-xxF)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button
5. Scan Window
6. Mounting Hole

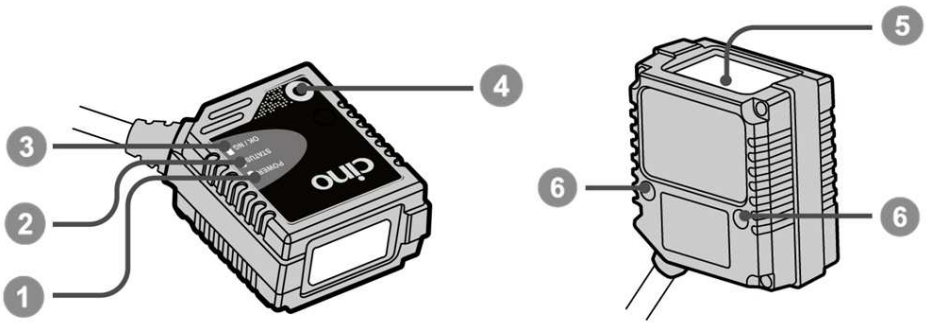
Side-View Model (FA480-xx-xxS)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button™
5. Scan Window
6. Mounting Hole

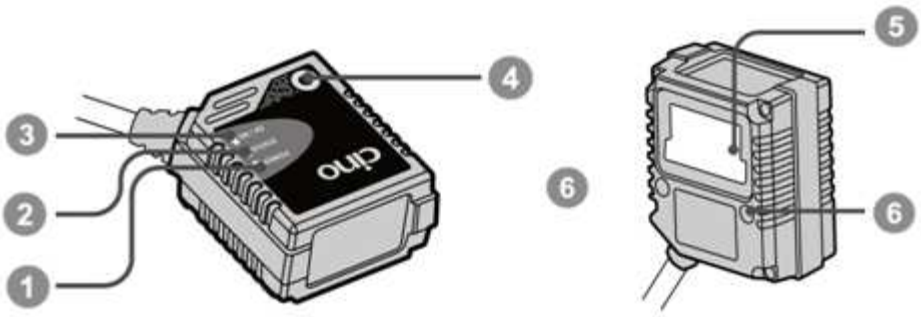
FA470

Front-View Model (FA470-xx-xxF)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button™
5. Scan Window
6. Mounting Hole

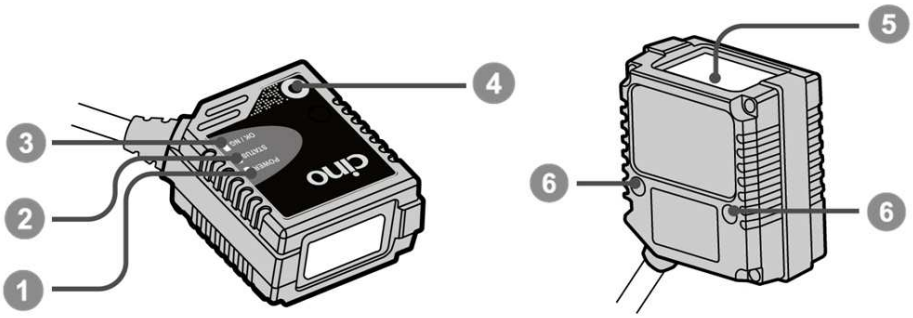
Side-View Model (FA470-xx-xxS)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button™
5. Scan Window
6. Mounting Hole

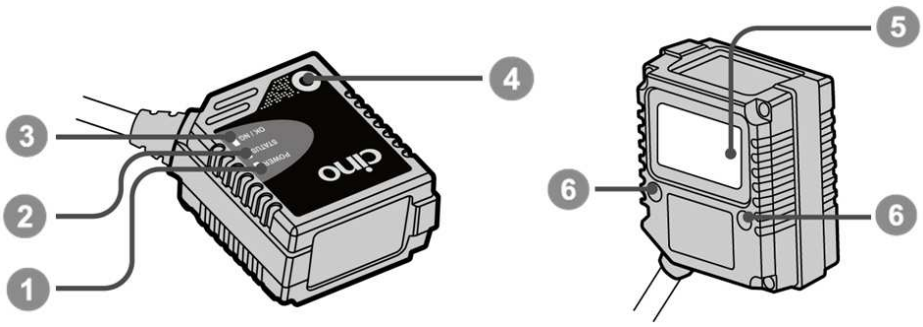
FA460

Front-View Model (FA460-xxF)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button
5. Scan Window
6. Mounting Hole

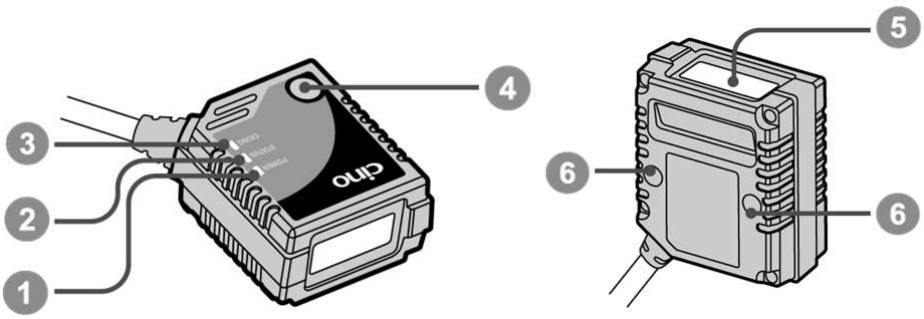
Side-View Model (FA460-xxS)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button
5. Scan Window
6. Mounting Hole

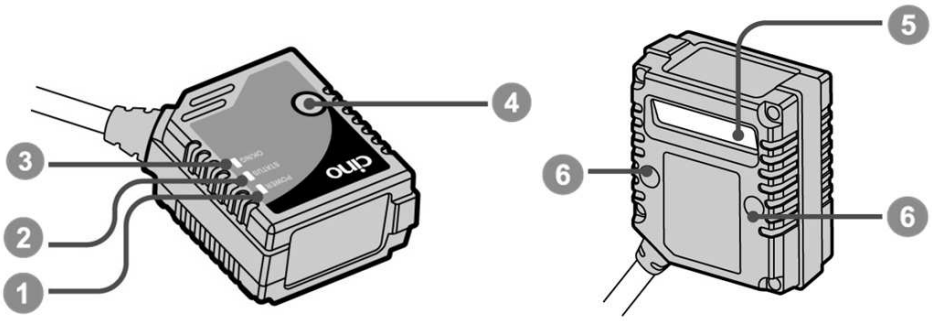
FM480

Front-View Model (FM480-xxF)



1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button
5. Scan Window
6. Mounting Hole

Side-View Model (FM480-xxS)



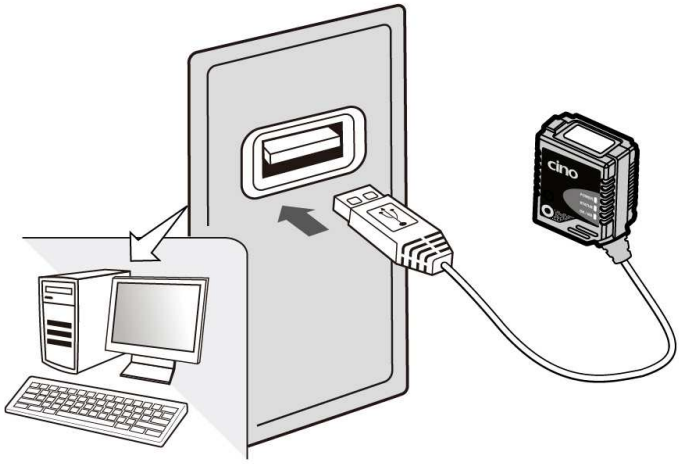
1. Power Indicator
2. Status Indicator
3. OK/NG Indicator
4. Intelli Button
5. Scan Window
6. Mounting Hole

Connecting Scanner to Host Device

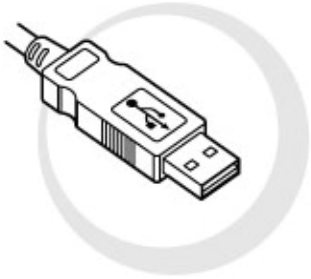
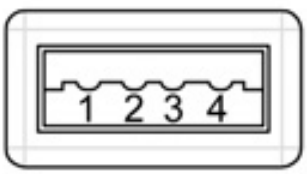
Cino's fixed mount scanners are available with different interface cables: USB, RS232 or Universal. The cables are pre-attached and fixed to the scanners. Users can select the models that best suits their needs.

USB Model (FM4xx-11x / FA4xx-11x)

Connect the cable to a USB port on the host device.

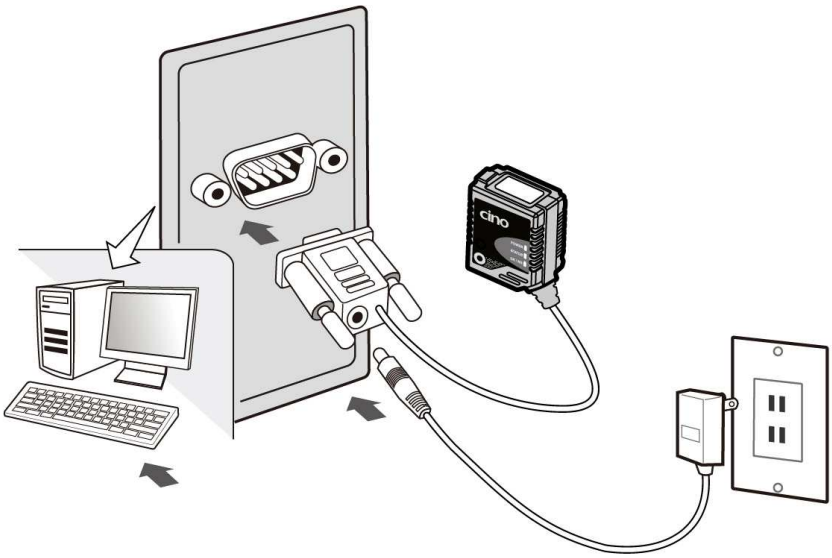


USB Connector Pin Assignment

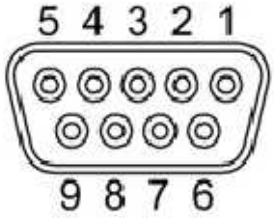
Connector	Pin No.	Signal	Description	I/O Type
  **4-pin Type A Connector**	Case	FG	Frame Ground	--
	1	VCC	--	I
	2	Data	USB Data	I/O
	3	Data	USB Data	I/O
	4	GND	Signal Ground	--

RS232 Model (FM4xx-00x / FA4xx-00x)

1. Connect the cable to your host device's serial port, as shown below.
2. If the serial port does not supply power, use the approved power supply unit ("PSU"). Insert the PSU's barrel connector into the socket of your RS232 connector. Plug the PSU into a suitable power outlet.

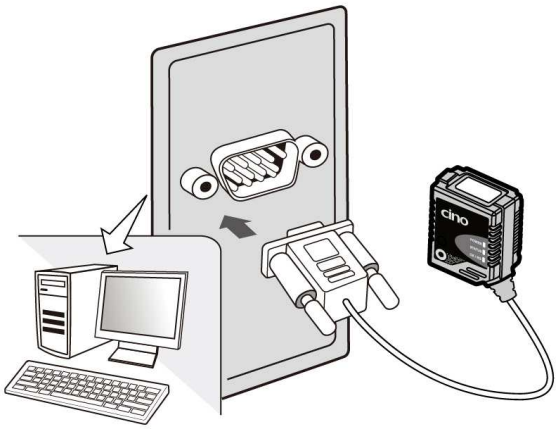


RS232 Connector Pin Assignment

Connector	Pin No.	Signal	Description	I/O Type
  **9-pin D-SUB Female Connector**	Case	FG	Frame Ground	--
	1	--	--	--
	2	TXD	Transmit Data	I
	3	RXD	Receive Data	O
	4	--	--	--
	5	GND	Signal Ground	--
	6	--	--	--
	7	CTS	Clear to Send	I
	8	RTS	Request to Send	O
	9	VCC	5VDC Power Supply	I

Universal Model (FM4xx-98x / FA4xx-98x)

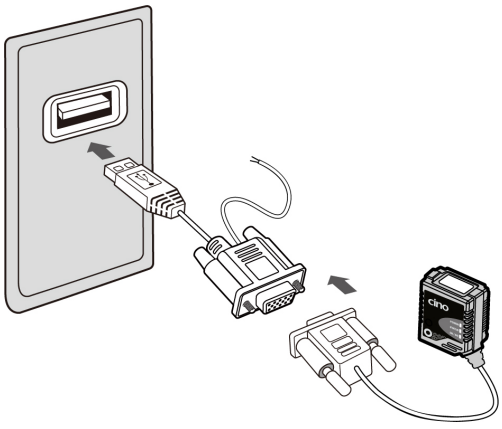
Connect the universal cable to the corresponding port on your host device.

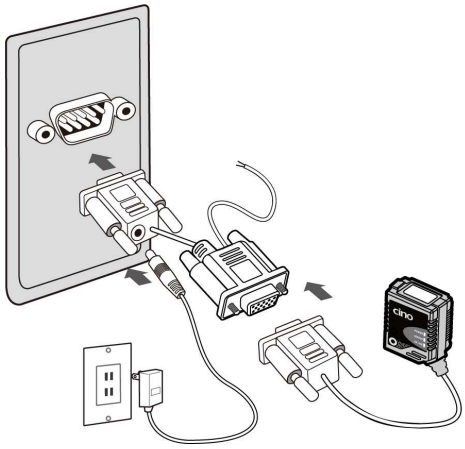


If there is no such port, Cino offers optional USB/RS232 cable converters with trigger wires.

USB cable converter

RS232 cable converter





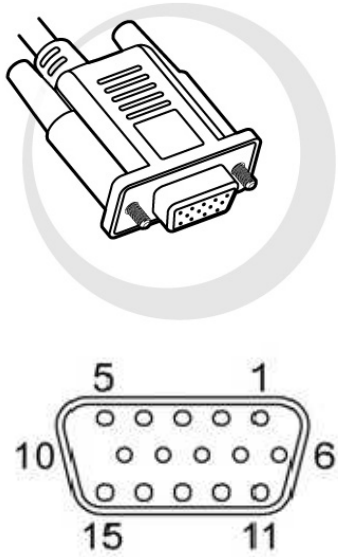
These cable converters will faciliate connection to the host device's USB or RS232 port. The trigger wires can be joined to an external switch or another apparatus, if needed.

External Input / Output

Your scanner can be connected to various third-party devices using the universal cable. The external trigger and OK/NG signal outputs may be programmed with the configuration barcodes found in Cino's Programming manual.

Universal Connector Pin Assignment

The universal connector's pins allow third-party devices to activate the scanner's trigger.

Connector	Pin No.	Signal	Description	I/O Type
 **15-pin D-SUB Female Connector**	1	VCC	5Vdc Power Supply	I
	2	TXD	Transmit Data	O
	3	RXD	Receive Data	I
	4	GND	Signal Ground	--
	5	--	--	--
	6	RTS	Request to Send	O
	7	OK	OK Signal Output	O
	8	Data	Request to Send	I/O
	9	Trigger	External Trigger Input	I
	10	CTS	Clear to Send	I
	11	--	--	--
	12	Data	USB Data	i/O
	13	Shield	Frame Ground	--
	14	NG	NG Signal Output	P
	15	Reserved	--	--

2 Scanner Positioning

This chapter provides information on how to find a suitable placement for your fixed mount scanner and achieve optimal scanning results. It also discusses related topics such as the Intelli button, test mode, reading angle adjustment, and applications with a pane in front of the scanner.

Positioning Support

Test mode helps users find the best angle and distance to position their scanner for optimal results. Under this mode, the scanner will automatically perform a number of scans and output the ratio of successful reads. Different positions can thus be tested and compared to determine the most suitable one. Test mode can be lauched using the **Intelli Button™**.

Activating Test Mode via the Intelli Button™

1. Make sure there is no any barcode inside scanner's reading area. Press and hold the Intelli Button™ for at least 5 seconds.
2. When the scanner beeps twice and its status indicator emits one green flash, release the button. Test mode is now activated. The scanner's power indicator will flash blue every second and its light source will be turned on.
3. Upon activation of test mode, the scanner will automatically begin to perform test readings. Therefore, have a barcode ready in front of the scanner before entering this mode.
4. The scanner will scan the barcode 100 times and output its reading rate. Thereafter, it will continue to perform sets of 100 scans and output their reading rates. The output message's format is as follows:

   < Data Captured > : < Reading rate (0 to 100) >

5. If the reading rate is inadequate, adjust the scanner's angle or distance to find a better positioning.
6. Press the button again to exit test mode.

Notes

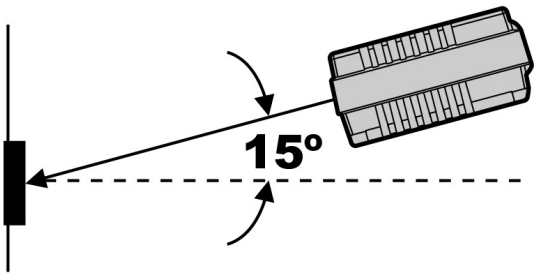
- The default time duration of each scan is 900ms. If the scanner is unable to read a barcode during this time frame, it will count it as an NG reading.
- During test mode, OK/NG output signals will not be sent.
- This manual does not consider application-specific requirements or factors. It is recommended to have a qualified engineer perform an opto-mechanical analysis prior to integration.
- During test scans, the Status and OK/NG indicators will provide reading rate information:

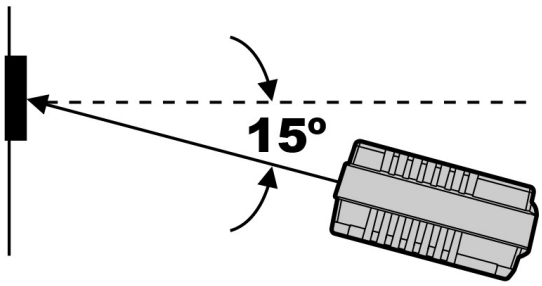
Reading Rate	Indicators			Beeper
	Power	Status	OK/NG	
100%	1 blue flash per second	Steady Green	Steady Green	One short beep upon completion of a test cycle (100 scans)
80 to 99%		Steady Red	Steady Green	
50 to 79%		Steady Green	Steady Red	
20 to 49%		Steady Orange	Steady Orange	
0 to 19%		Steady Red	Steady Red	

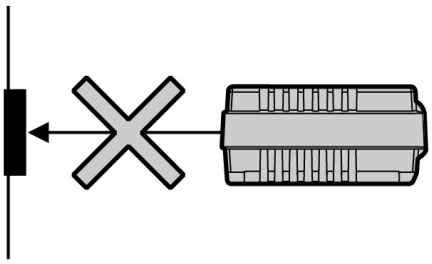
Reading Angle Adjustment

Reading performance may be diminished by the specular reflection coming from a perpendicular reading angle. It is suggested that the scanner be installed appromixately at a 15° to 20° angle to the barcode's perpendicular line. However, the optimal reading angle and distance may vary depending on the barcode's size and print quality.

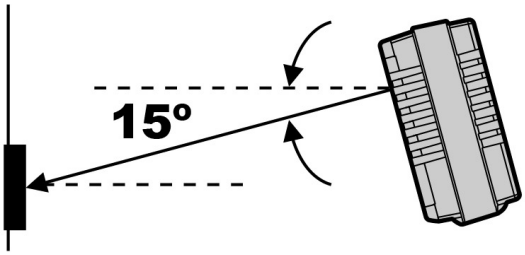
Front-View Models

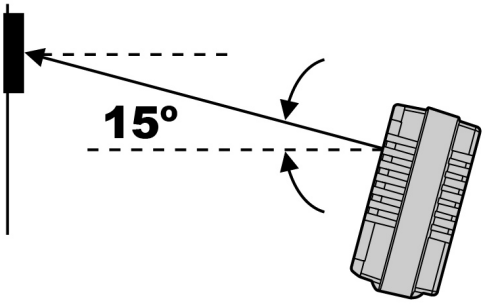


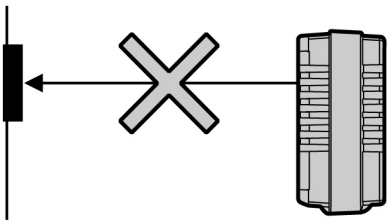




Side-View Models





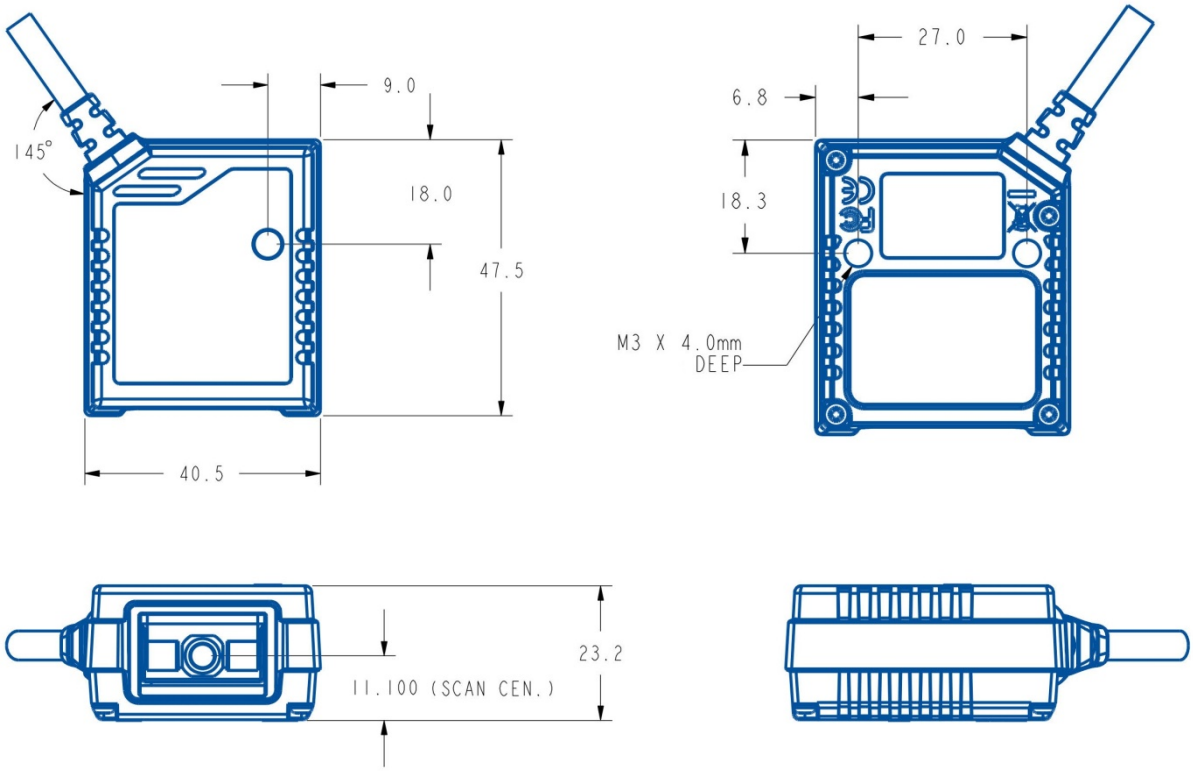


Scanner Diagrams

The dimensions of Cino's fixed mount scanner models are presented below. Please note that each model is designed with two M3 mounting holes to help you install your scanner.

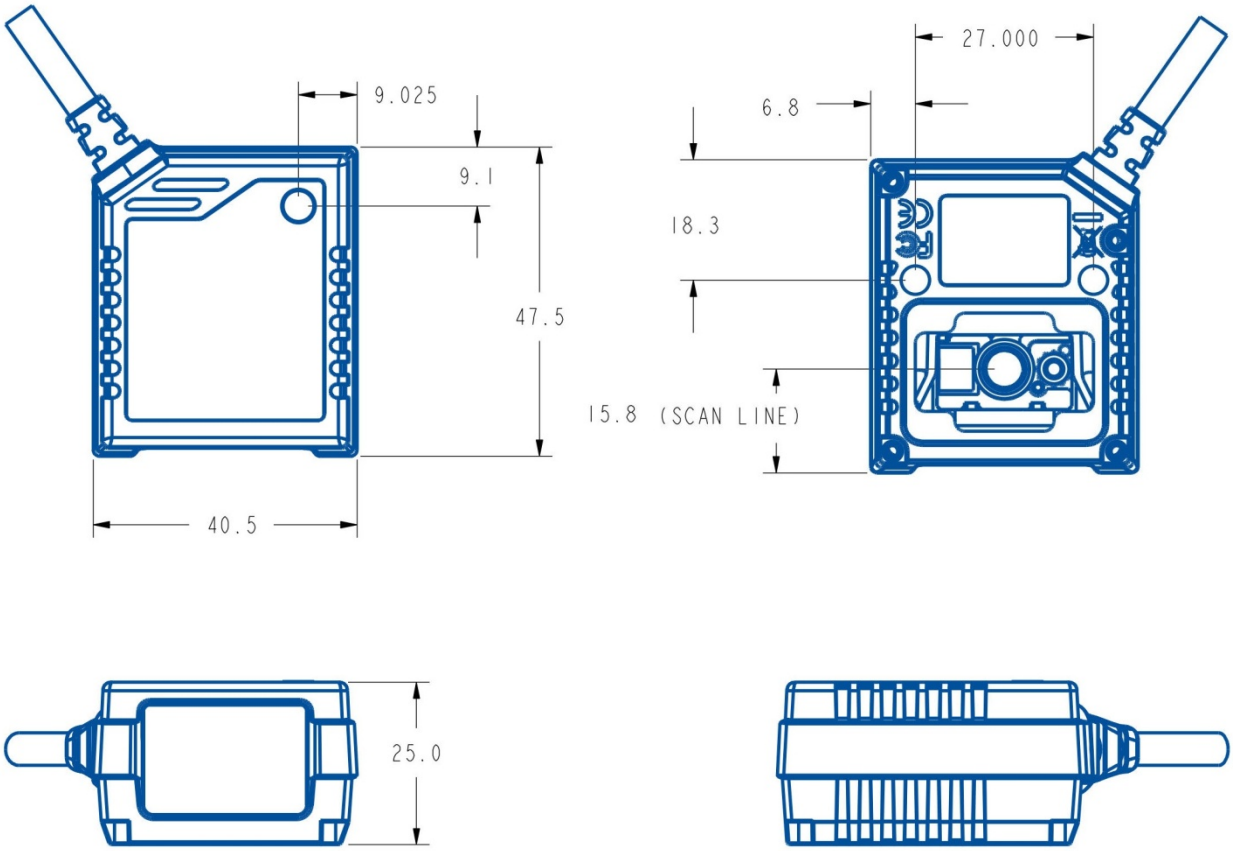
FA480-xx-xxF

Unit = mm



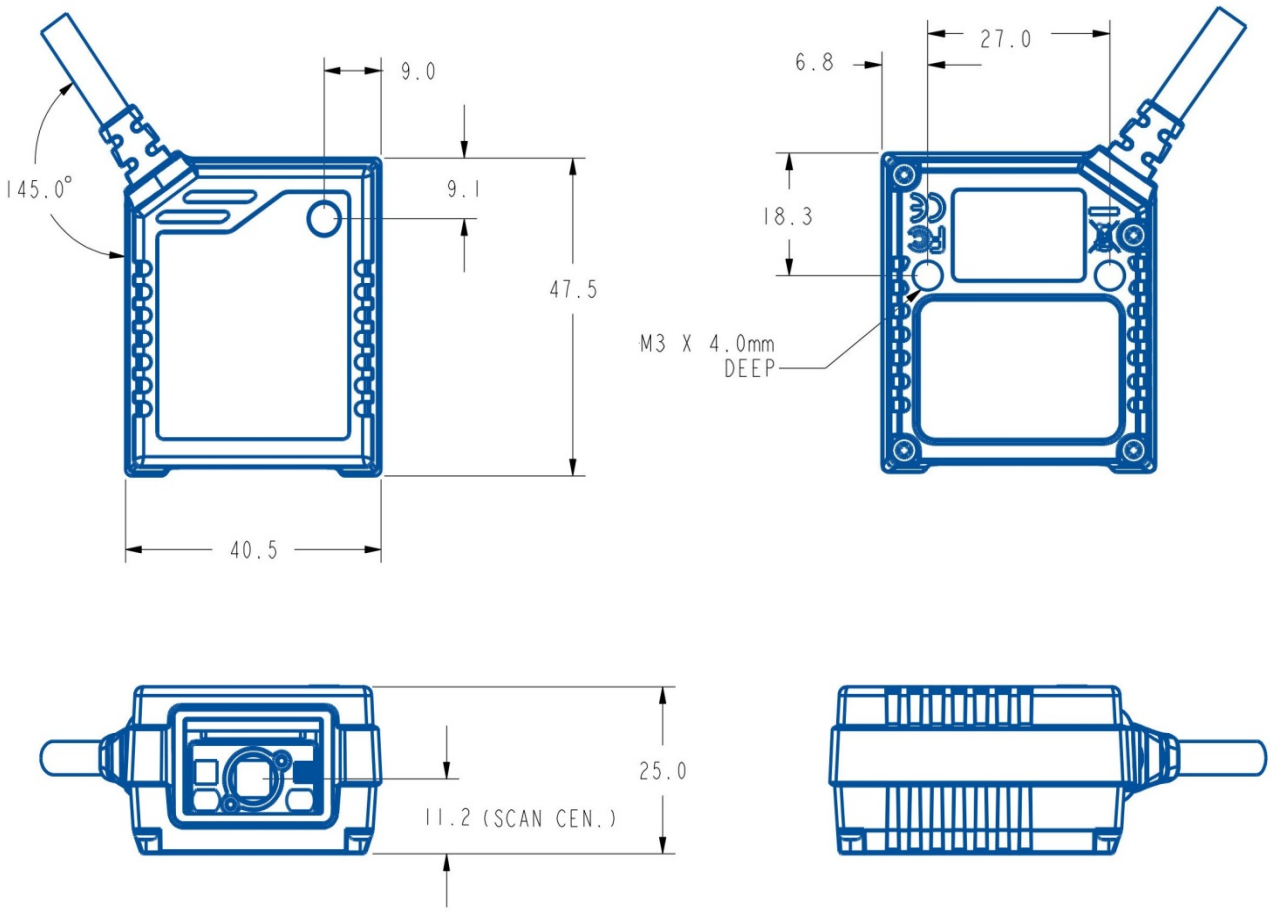
FA480-xx-xxS

Unit = mm



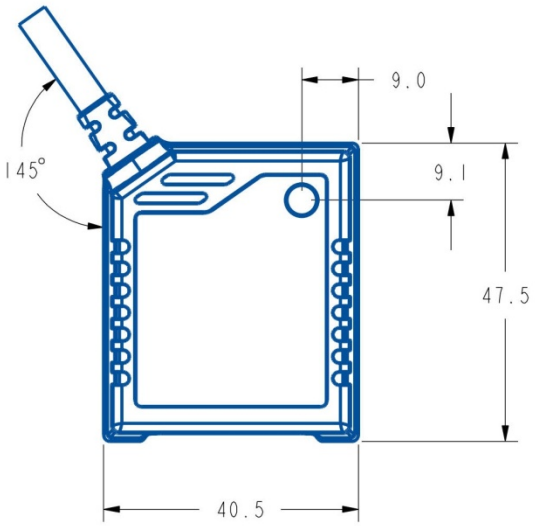
FA470-xx-xxF

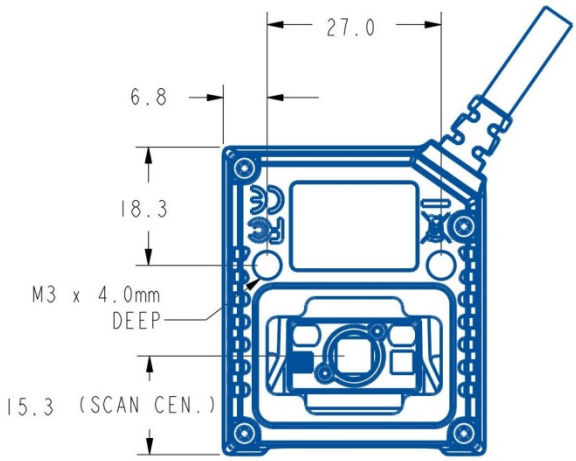
Unit = mm

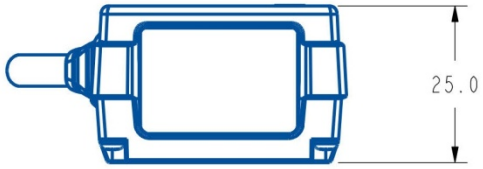


FA470-xx-xxS

Unit = mm

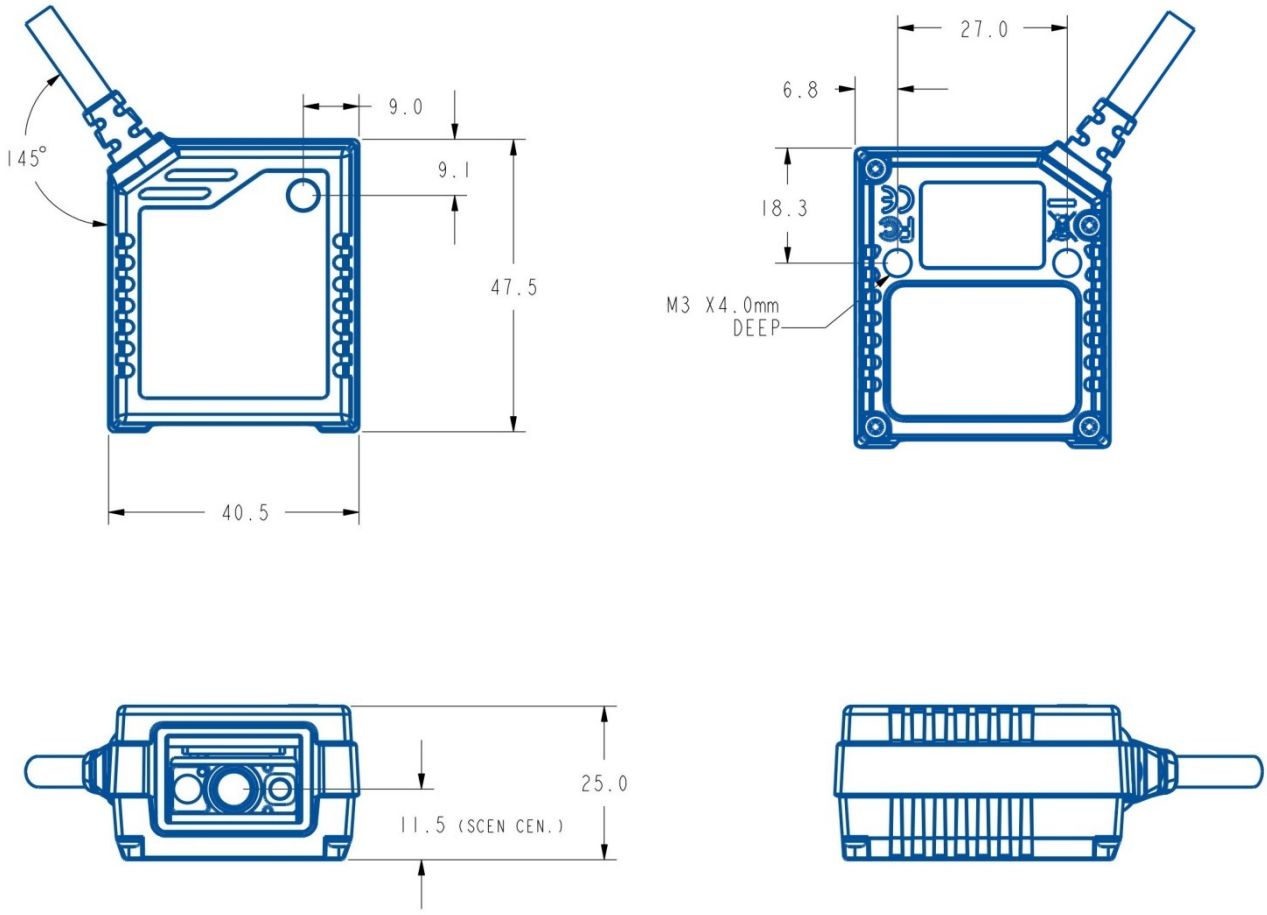






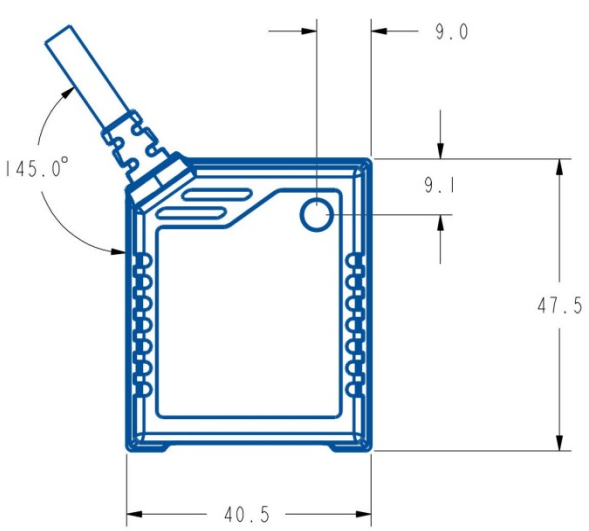
FA460-xx-xxF

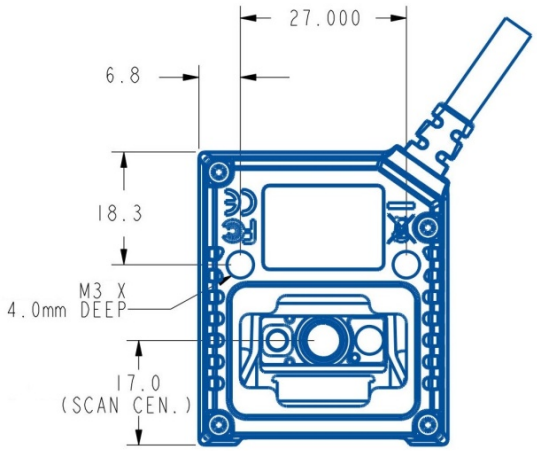
Unit = mm

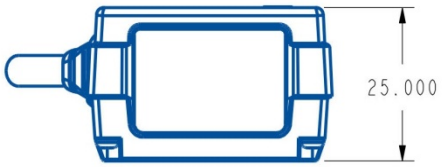


FA460-xx-xxS

Unit = mm

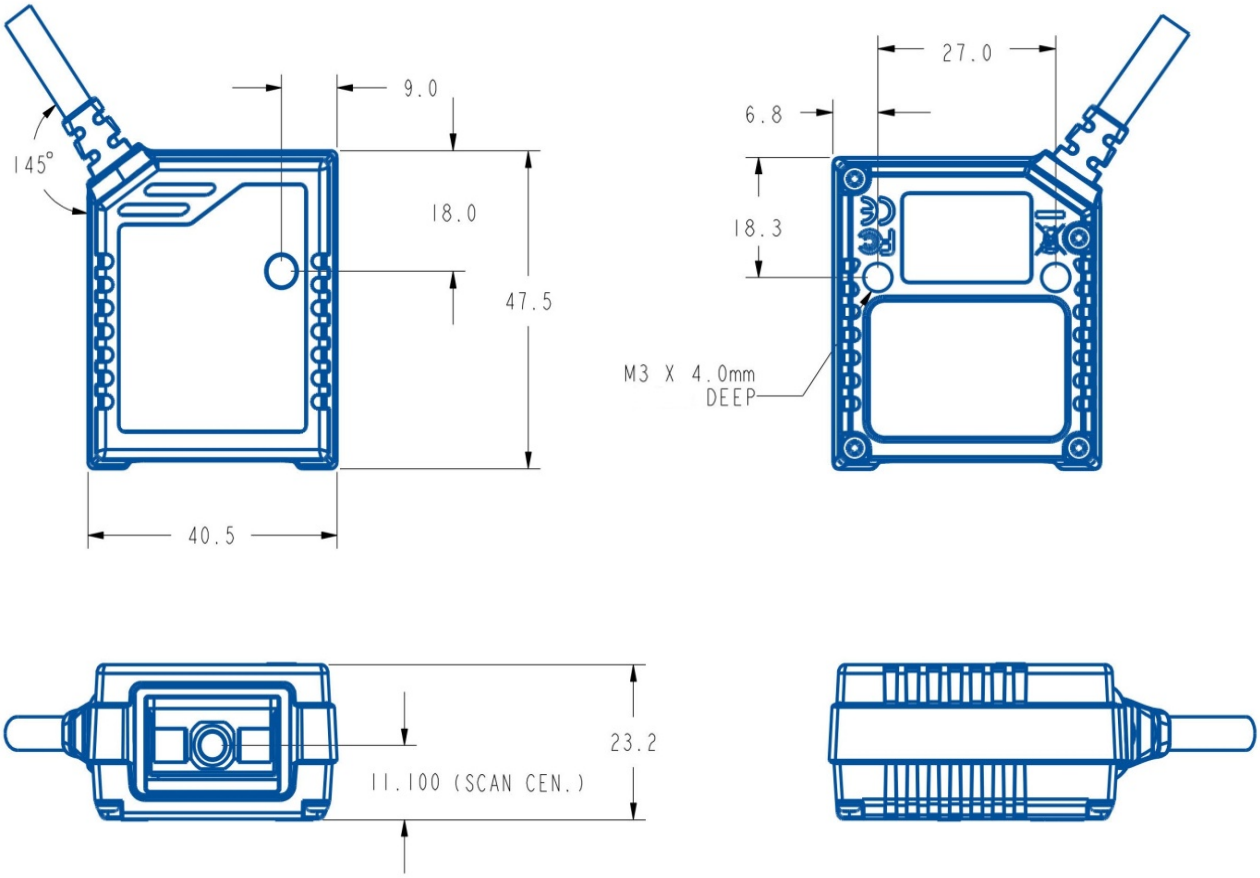






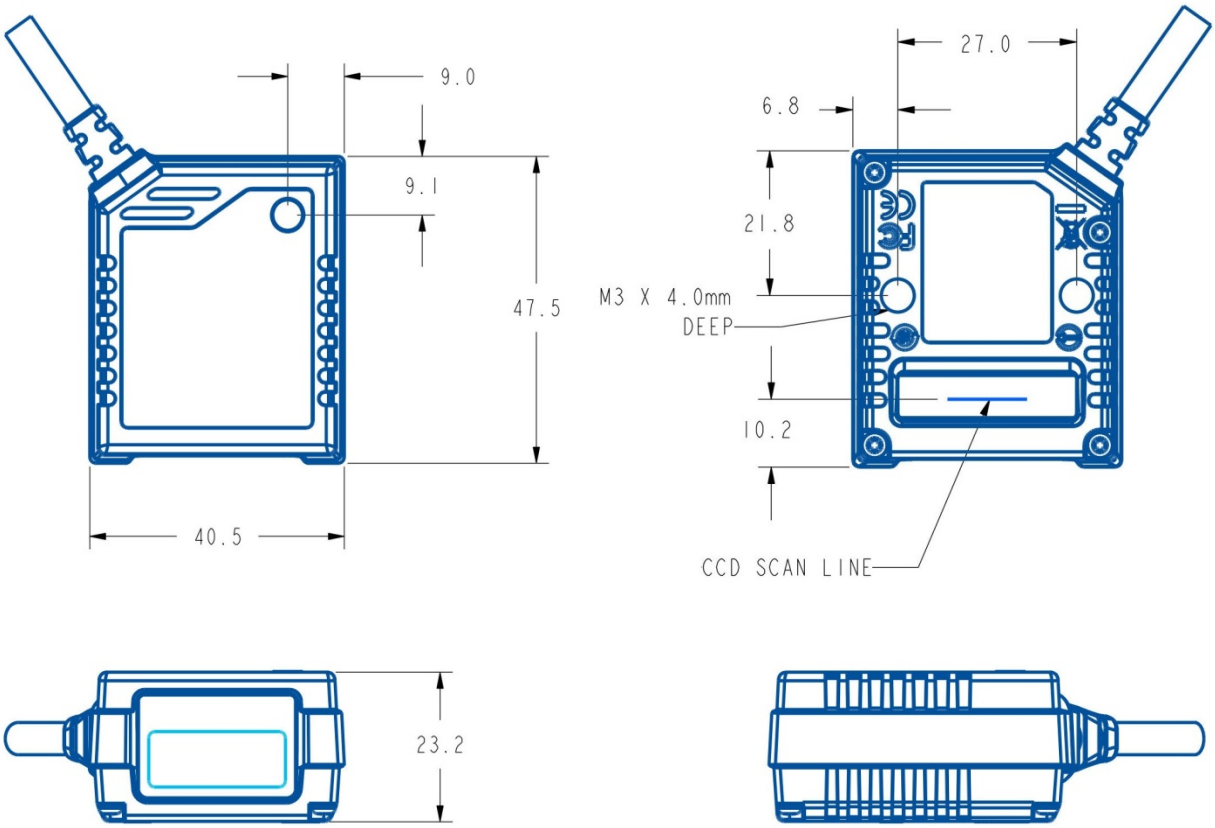
FM480-xx-xxF

Unit = mm



FM480-xx-xxS

Unit = mm

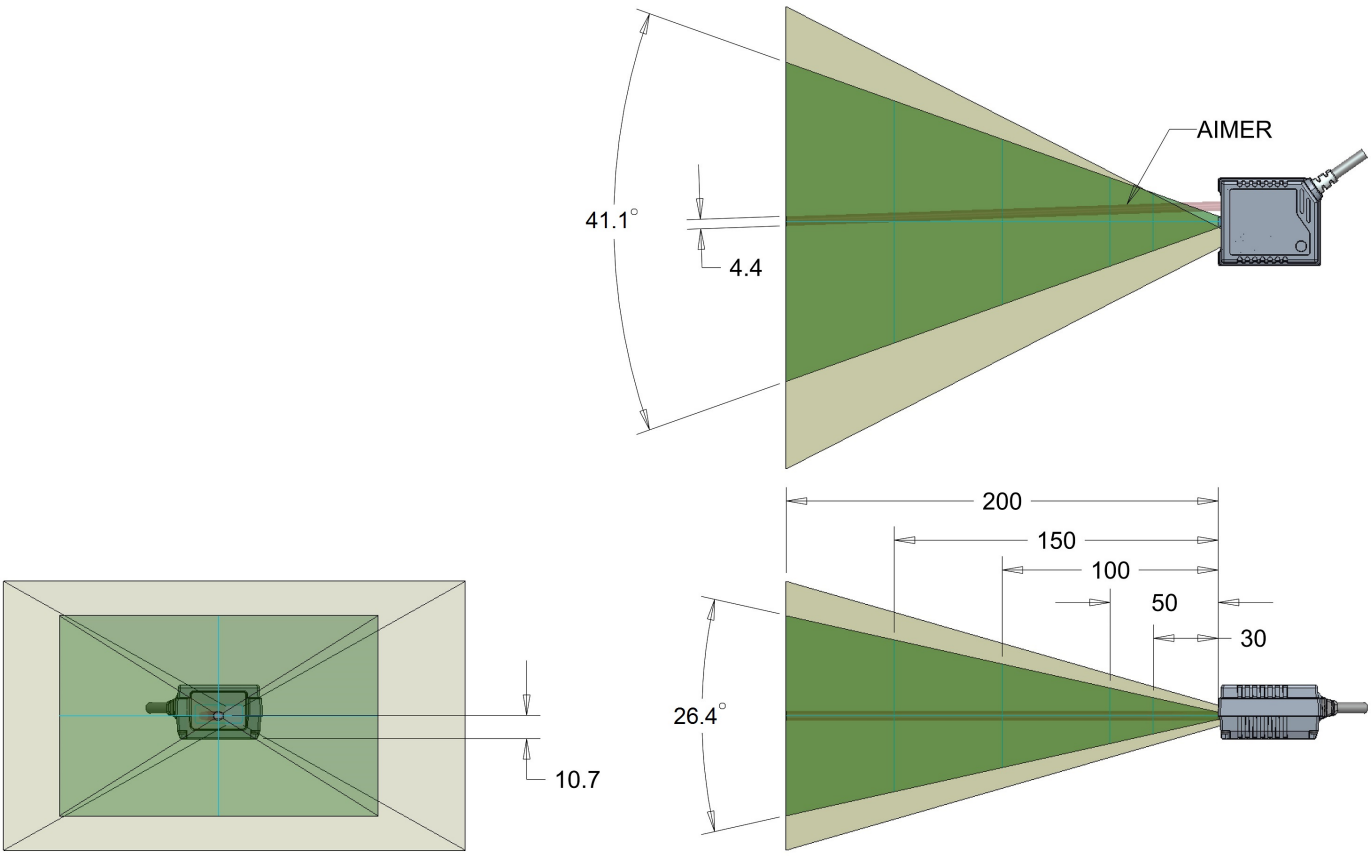


Field of View

The following diagrams show the widths and heights of fields of view of each Fixed Mount Scanner model.

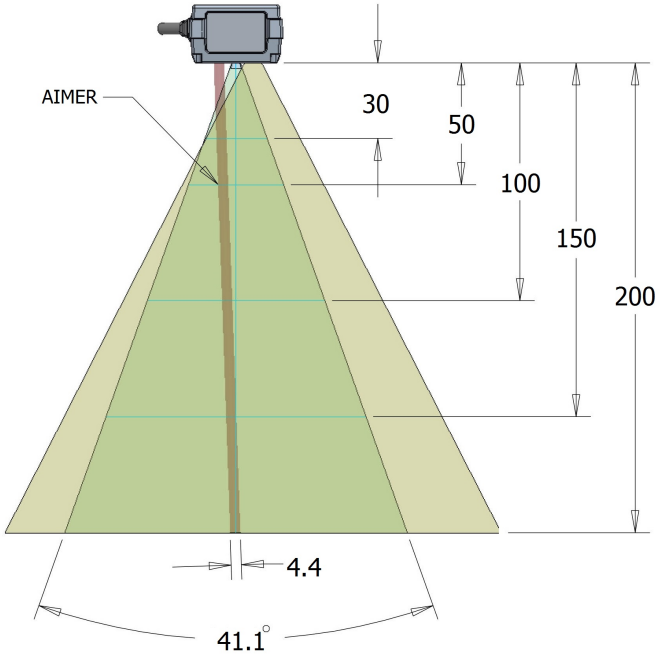
Optical Diagrams

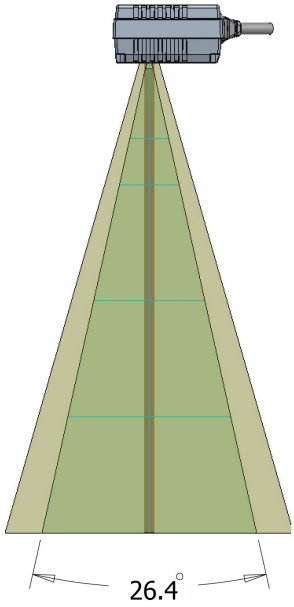
FA480 Front-View Model

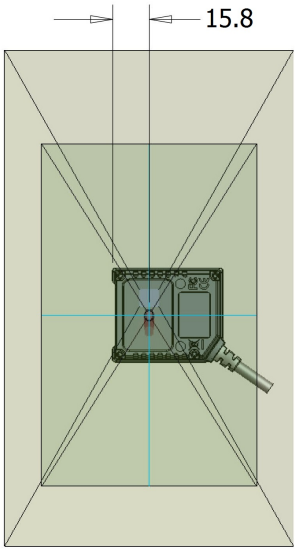


Distance, mm	30	50	100	150	200
FOV Width, mm	28.2	43.2	80.7	118.2	155.7
FOV Height, mm	17.5	26.9	50.3	73.7	97.1

FA480 Side-View Model

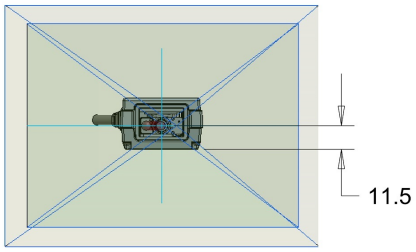


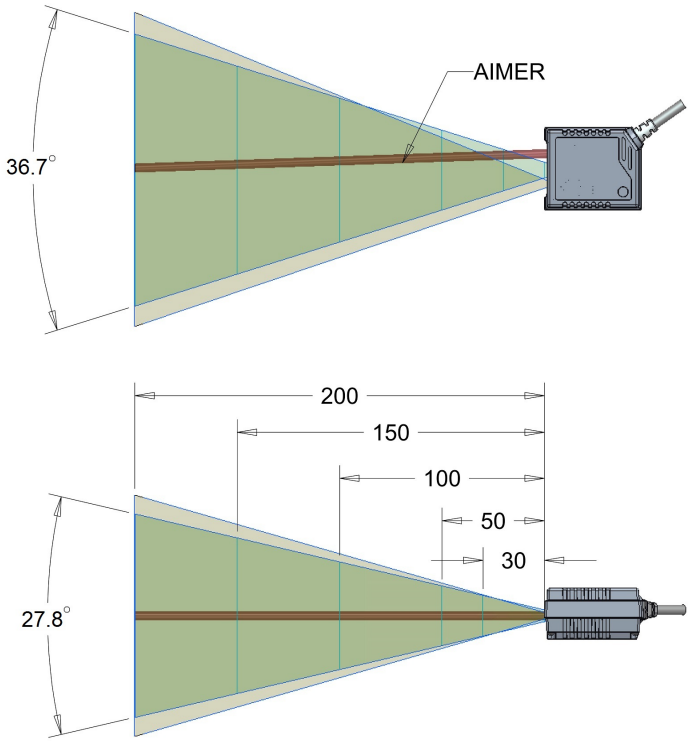




Distance, mm	30	50	100	150	200
FOV Width, mm	26.9	41.8	79.3	116.8	154.3
FOV Height, mm	16.6	26.0	49.4	72.8	96.23

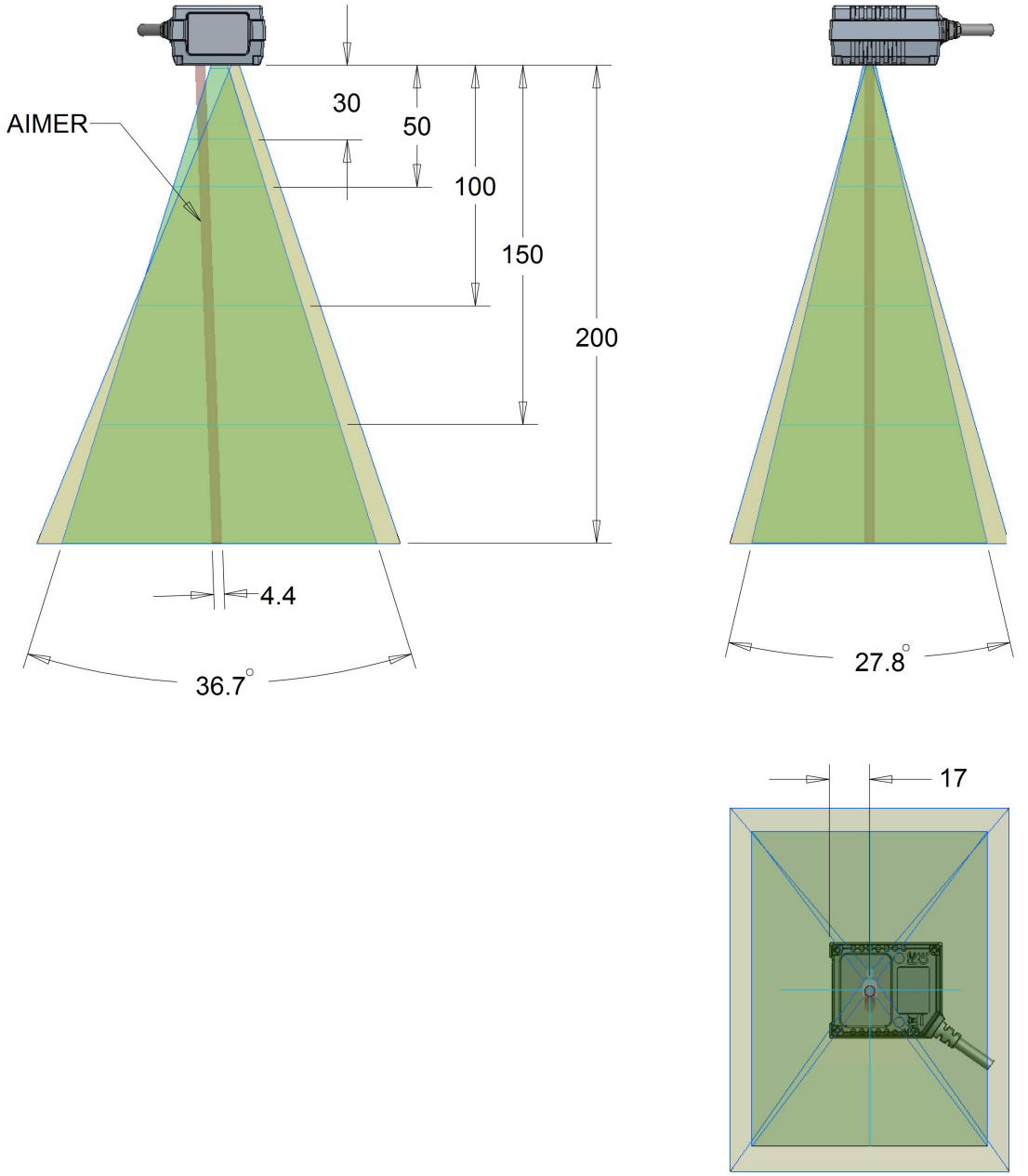
FA460 Front-View Model





Distance, mm	30	50	100	150	200
FOV Width, mm	25.0	38.2	71.4	104.6	137.7
FOV Height, mm	18.5	28.4	53.1	77.9	102.6

FA460 Side-View Model



Distance, mm	30	50	100	150	200
FOV Width, mm	23.8	37.0	70.2	103.4	136.5
FOV Height, mm	17.6	27.5	52.2	77.0	101.7

Installing a Pane in Front of Scanner

It is **not** recommended to have a pane (e.g. glass pane) between your scanner and the barcodes when scanning. Even if the pane is transparent, its material can negatively affect your scanner's reading performance. However, if a pane is necessary for your application, you should carefully research and test different materials to find the most suitable one.

Pane Materials

In addition to the pane material's impact on scanner performance, users may want to consider factors such as thickness, weight, resistance to abrasions, etc. The suitability of acrylic or allyl diglycol carbonate can also be explored.

Anti-Reflective or Protective Coatings

The necessity and effects of outer coatings on panes should be assessed. For example, anti-reflective coatings can be applied to minimize disruptive reflections. If scratches or abrasions are of concern, the use of protective coatings may be weighed.

Pane Angle and Distance

Test your scanner with and without the pane, from various positions. It will allow you to better understand the pane's impact on reading performance. This will also help you identify the optimal angle and distance to position your pane.

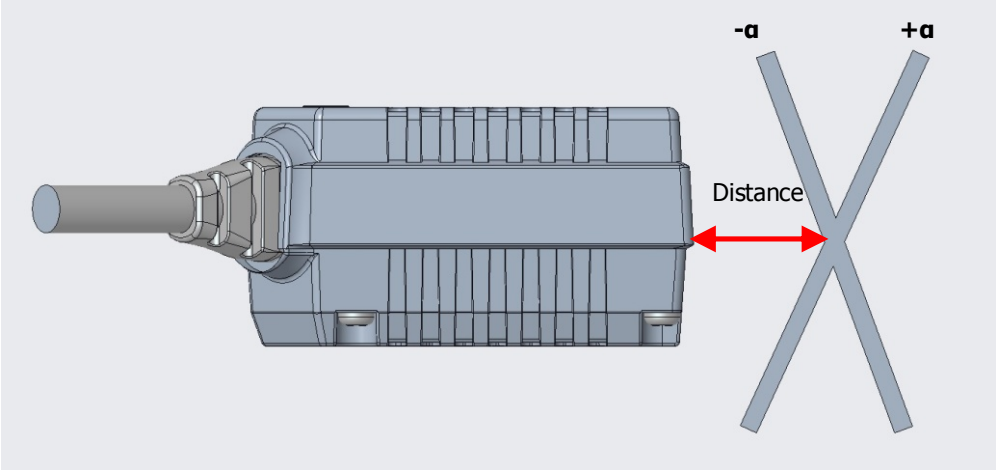
When installing a pane in front of the scanner, it's recommended to keep the tilting angle larger than the minimum requirement to decrease the possibility that the illumination is bouncing back to the scan lens. The latter is one of the main causes of poor scanner performance.

Distance between the window and front of the scanner is also a major consideration. The shorter the distance is, the larger tilting angle is required. AR coating is recommended and is an effective way to shorten the required distance. The table below demonstrates the minimum required tilting angle at certain distance.

Min. required angle							
FA480		**Distance [mm]**					
		5	**10**	**15**	**20**	**25**	**30**
Double-sided AR coating	**+α**	32°	27°	26°	23°	21°	20°
	-α	21°	21°	19°	17°	16°	15°
No coating	**+α**	37°	32°	28°	27°	24°	24°
	-α	26°	21°	22°	23°	22°	22°

Min. required angle							
FA460		**Distance [mm]**					
		5	**10**	**15**	**20**	**25**	**30**
Double-sided AR coating	**+α**	36°	31°	29°	27°	25°	23°
	-α	32°	26°	24°	22°	20°	20°
No coating	**+α**	41°	32°	29°	26°	26°	25°
	-α	36°	30°	26°	25°	23°	23°

Recommended minimum tilting angle of the pane



3 Using the Scanner

This chapter introduces different ways to activate the trigger on your fixed mount scanner. It also describes the various operation modes designed to support and accelerate your scanning tasks: Trigger, Alternative, Level, Presentation and Force modes.

Trigger Activation and Related Settings

Below are details pertaining to trigger activation and related settings.

External Trigger and Serial Trigger

Scanning can be activated by either a physical, tangible trigger ("external trigger"), or a serial command ("serial trigger"). The external trigger is only available with universal connectors. The serial trigger works with all interfaces, including RS232 serial and USB COM Port Emulation.

User-Defined Serial Trigger Commands

The serial trigger, as indicated, consists of serial commands. Using the FuzzyScan PwerTool, these serial commands can be defined by users in accordance with their system requirements.

Scan Input Time-Out Parameter

You can set the length of time during which a scanner's light source will remain on and the scanning process remain effective for each scan. This value is configured through the **scan input time-out** parameter. The duration can range from 100 milliseconds to 99 seconds. This functionality is available with presentation, alternative and level modes. Once the set duration has elapsed, the light source will turn off.

OK and NG Signal Outputs

The Universal model supports OK and NG signal outputs. By default, the scanner is configured to send: (i) a signal through the OK pin whenever it performs a good read, and (ii) a signal through the NG pin if it fails to read a barcode during a reading cycle or the preset **scan input time-out** duration.

The OK and NG signal outputs are designed as NPN signal outputs and preset to **active low**. OK and NG output parameters can be modified to suit the user's requirements.

Operation Modes

The FuzzyScan Fixed Mount Scanner has five different operation modes to meet various application demands: **Trigger**, **Alternative**, **Level**, **Presentation** and **Force** modes.

If the scanner is set to **Trigger**, **Alternative** or **Level** mode, scans must be initiated by means of external or serial trigger. Under **Presentation** or **Force** mode, readings are performed automatically by the scanner, without trigger activation.

Trigger Mode

Under trigger mode, when the scanner receives a serial trigger ON command or if its external trigger is activated, the scanner will turn on its light source and perform a scan. Once the external trigger is deactivated, or a serial trigger OFF command is received, the scanner will turn off its light source and stop scanning.

Trigger Mode

Alternative Mode

When the scanner receives a serial trigger ON command or if its extrernal trigger is activated, the scanner will turn on its light source and perform a scan. The light source will remain on until the defined **scan input time-out** duration has elapsed. The **scan input time-out** duration is reset after each scan. While the light source is on, the scanner will automatically read barcodes without the need to activate its external trigger or send a serial trigger ON command.

Alternative Mode

Level Mode

When the scanner receives an external trigger or a serial trigger ON command under level mode, the scanner turns on the light source to read barcodes until a good read is performed or the preset **scan input time-out** duration is up.

Level Mode
(FA480, FA470, FA460)

Level Mode
(FM480)

Presentation Mode

When presentation mode is selected, the light source will be turned on to help detect barcodes. The aimer and reading process will automatically be activated once the scanner detects a barcode-like image. The **Presentation Sensitivity** parameter can be adjusted to increase/decrease detection sensitivity (please see the Programming manual for details).

Presentation Mode

Force Mode

Under force mode, both the aimer and light source are constantly. The decoding process will be activated automatically once the scanner detects a barcode-like image.

Force Mode
(FA480, FA470, FA460)

Force Mode
(FM480)

4 Configuration

This chapter introduces the various tools that users have at their disposal to configure Cino fixed mount scanners, namely: FuzzyScan PowerTool, iCode, and command barcodes. It also provides various barcodes to help users with their scanners' interface settings.

Configuring Your Scanner

Below are the different ways to configure or modify the settings on your FuzzyScan devices.

FuzzyScan PowerTool

Cino's FuzzyScan PowerTool is an intuitive software utility that can be easily run by first-time users. It enables you to perform a wide variety of tasks, such as device configuration and firmware upgrade. It is also used to create iCodes for single scan setups, or access DataWizard Premium for complex data processing. The FuzzyScan PowerTool streamlines device management, and enhances the usability of Cino scanners. This utility can be downloaded from **www.cino.com.tw**.

iCode

The iCode is a macro command barcode designed to streamline your setup process. Instead of scanning multiple command barcodes to configure their devices, users can easily generate a single iCode that contains all of the relevant parameters. Your entire setup can thus be completed with one quick scan. This simplified procedure lowers the risk of configuration errors, accelerates deployments, and reduces field service expenses.

Command Barcodes

Cino provides numerous command barcodes to help users set up their FuzzyScan devices. Command barcodes can be found in many of Cino's documents, but the principal source is our **Barcode Programming Manual**.

Interface Configuration

Scan the applicable barcode(s) below to configure your scanner's interface settings. To make further modifications, please see the Programming Manual.

Default parameters are marked with a rhombus (◆).

Interface Selection

RS-232 Serial

(◆ for Universal model)

USB-HID Standard Mode

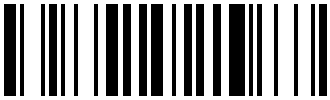
(◆ for USB model)

USB-HID Turbo Mode

USB-Com Port Emulation

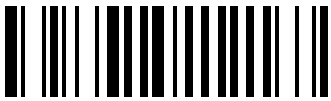
Serial Interface

Record Suffix



None

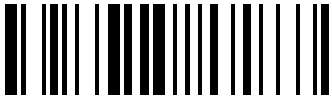
TAB



LF

CR ◆

SPACE



CRLF

Baud Rate

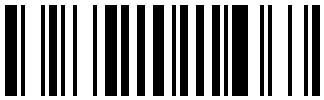
38.4K BPS

1200 BPS

4800 BPS

19.2K BPS

2400 BPS



9600 BPS ◆

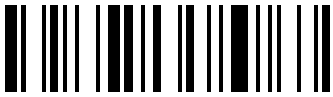
Data Frame

8, None, 1 ◆

7, None, 2

8, None, 2

8, Odd, 1



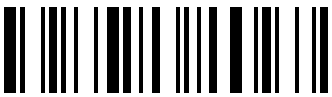
7, Odd, 2

7, Odd, 1

8, Even, 1

7, Even, 2

7, Even, 1



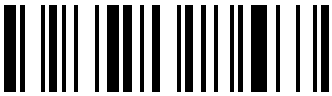
8, Space, 1

7, Space, 2

7, Space, 1

8, Mark, 1

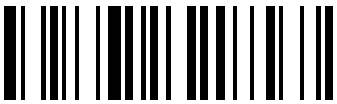
7, Mark, 2



7, Mark, 1

USB-HID Interface

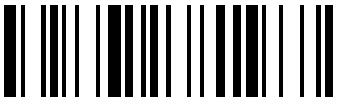
Multilingual Output Support



USA ◆

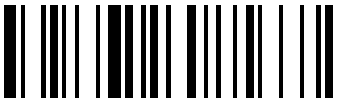
France

Germany



Canadian French

UK



Latin America

Japan

Spain

Nertherlands

For additional commands, see the Barcode Programming Manual.

Record Suffix

None

TAB

ENTER

RETURN ◆

SPACE

5 Data Formatting

In addition to scanning and content output, data formatting is also a common task performed by barcode scanners. FuzzyScan devices can be programmed to execute data formatting operations through DataWizard, DataWizard Premium, and DataWizard Condensed. This chapter presents an overview of each of these methods.

Configuring Your Scanner for Data Formatting

Below are the different ways to configure a Cino scanner for data formatting tasks.

DataWizard

DataWizard is the standard data formatting feature within Cino's FuzzyScan PowerTool. With it, users can easily configure items such as preamble, postamble, record suffix, data transmission and other parameters. For advanced data formatting, please see DataWizard Premium below.

DataWizard Premium

The requirements for barcode scanning are increasingly complex and diversified. Oftentimes, regular configuration tools may lack the capacity to meet enterprise-level demands. DataWizard Premium fills the gap by offering a flexible way to program Cino scanners for elaborate data formatting.

An advanced feature of the FuzzyScan PowerTool, DataWizard Premium allows users to write programming scripts and load them into scanners for execution. The script language used is similar to BASIC, and easy to learn for experienced programmers. DataWizard Premium also has various built-in functions to help with script development. Cino scanners can thus be instructed to perform intricate data processing tasks, such as parsing captured information in accordance with a host system's requirements. Details such the preamble, postamble, suffix, quantity, time stamp and other data can also be inserted or modified before output. Please see the **DataWizard Premium User Guide** for details.

Condensed DataWizard

The Condensed DataWizard is a set of command barcodes designed to program Cino scanners for data editing operations. Simply choose and scan the relevant barcodes, as applicable. Please see the **Programming Manual** for details.

6 Troubleshooting

This chapter outlines the basic troubleshooting procedures for Cino's fixed mount scanners. It offers examples of problems, as well as their possible causes and solutions. The goal of this chapter is to help you identify and resolve some of the more common issues that a user may encounter.

Troubleshooting the Scanner

Below are examples of scanner issues, as well as possible causes and solutions.

Unable to power on scanner / LED lights will not turn on

Possible Causes:

- Scanner is not receiving adequate power from the power source.
- Cable is not properly connected to the power source.

Possible Solutions:

- Verify if the scanner's power source provides adequate power. If not, connect to another power source instead.
- If your scanner is connected to a host device and relies on it for power, make sure the host device is turned on.
- Verify if your scanner's cable is well connected to the power source.

Scanner is reading barcodes, but data is not transmitted to host device

Possible Causes:

- Host interface setting is not configured properly on the scanner.

Possible Solutions:

- Verify if the host interface is properly configured.

Scanned data is incorrectly displayed on host device

Possible Causes:

- Host interface setting is not properly configured on the scanner.
- Keyboard layout is not properly configured on the scanner.

Possible Solutions:

- Make sure the host interface setting is properly configured.
- Make sure the keyboard layout is properly configured.

Scanner is unable to read barcodes / Poor scanning rate

Possible Causes:

- Scanner is not programmed to read that barcode's symbology.
- Barcode is in an unreadable state, e.g. excessively damaged, soiled, small, or reflective.
- Distance or angle of scanner is unsuitable.
- Scanner's scan window is obstructed.
- If there is a pane between your scanner and the barcodes, the pane may be causing interference.

Possible Solutions:

- Enable the applicable barcode symbology on your scanner.
- The barcode may be too damaged, stained, distorted or poorly printed to be read.
- The barcode may be too small in size, or its surface may be too reflective to be read.
- Re-adjust your scanner's reading distance or angle. Use test mode to help find the optimal scanner positioning.
- Make sure the scan window is not obstructed or dirty (e.g. stain, dust, grease, liquid). If applicable, remove the obstructions or gently clean the scan window with a soft cloth. Be careful not to scratch or damage the scan window.
- Remove the pane between your scanner and the barcodes.
- If the pane is necessary, make sure it is not damaged or dirty. Try test scans without the pane, even though it may appear clean and intact.

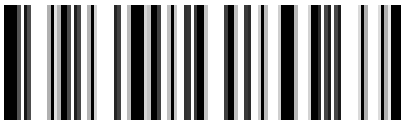
Appendix

The Appendix contains explanations on the audio and visual feedback emitted by Cino fixed mount scanners. It also lists the command barcodes that are frequently employed for scanner configuration.

Quick Set Commands

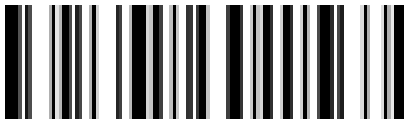
Host Interface

RS-232 Serial



USB Com Port Emulation

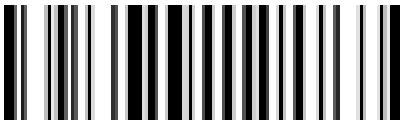
USB HID Standard Mode



USB HID Turbo Mode

Operation Modes

For FA480, FA470, FA460

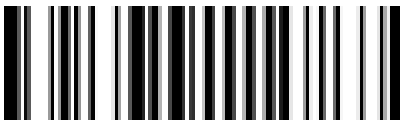


Trigger Mode

Force Mode
(Continued power on)

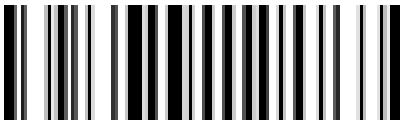
Alternative Mode
(Periodic power off)

Level Mode
(Auto power off)



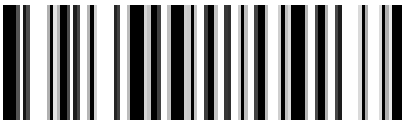
Presentation Mode
(Auto sensing)

For FM480



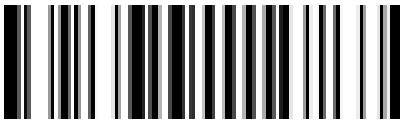
Trigger Mode

Force Mode
(Continued power on)



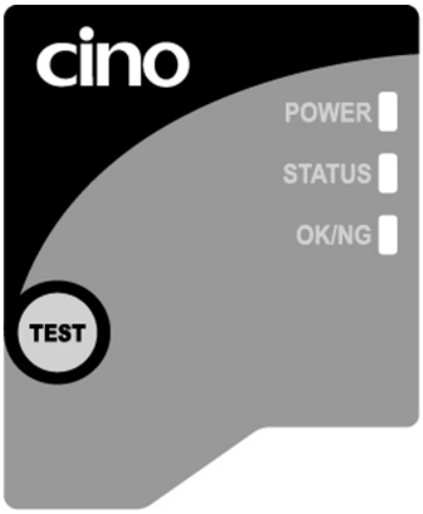
Alternative Mode
(Periodic power off)

Level Mode
(Auto power off)



Presentation Mode
(Auto sensing)

Audio & Visual Indications



FM480 series

FA480,FA470, and FA460 series

Regular Operations

Event	Indicators			Beeping
	Power	Status	OK/NG	
Power on	Steady blue	Off	Off	Power on beep
Good read (OK reading)	Off	Off	1 green flash	1 good read beep
No Good read (NG reading)	Off	Off	1 red flash	1 NG beep

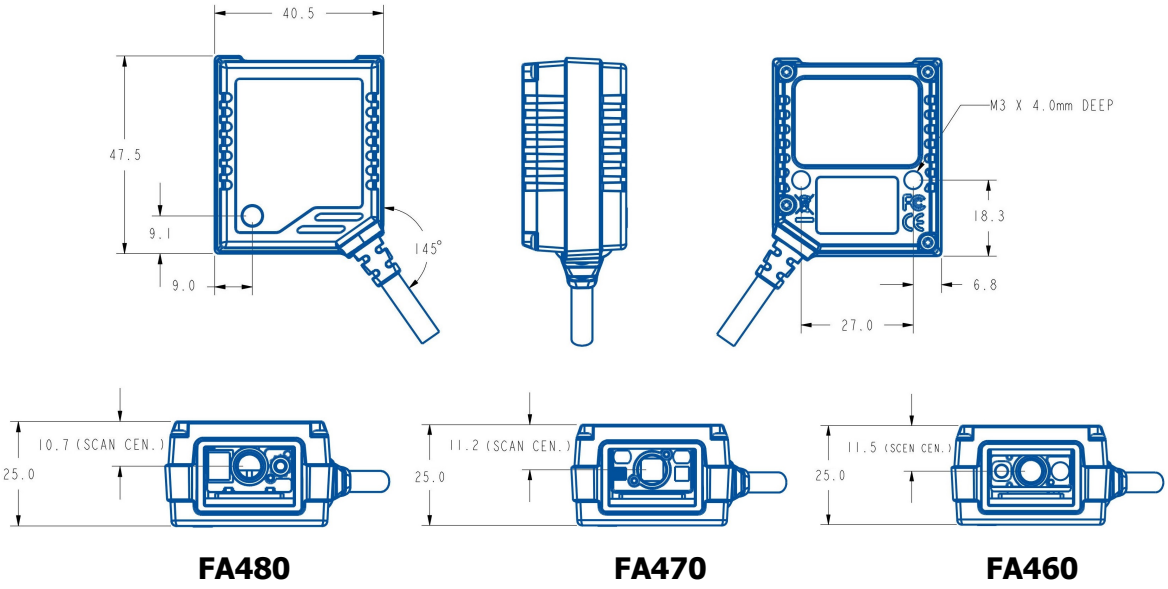
Test Mode Reading Rate

Reading Rate	Indicators			Beeping
	Power	Status	OK/NG	
100%	1 blue flash per second	Steady Green	Steady Green	One short beep upon completion of a test cycle (of 100 scans)
80 to 99%		Steady Red	Steady Green	
50 to 79%		Steady Green	Steady Red	
20 to 49%		Steady Orange	Steady Orange	
0 to 19%		Steady Red	Steady Red	

Scanner Dimensions

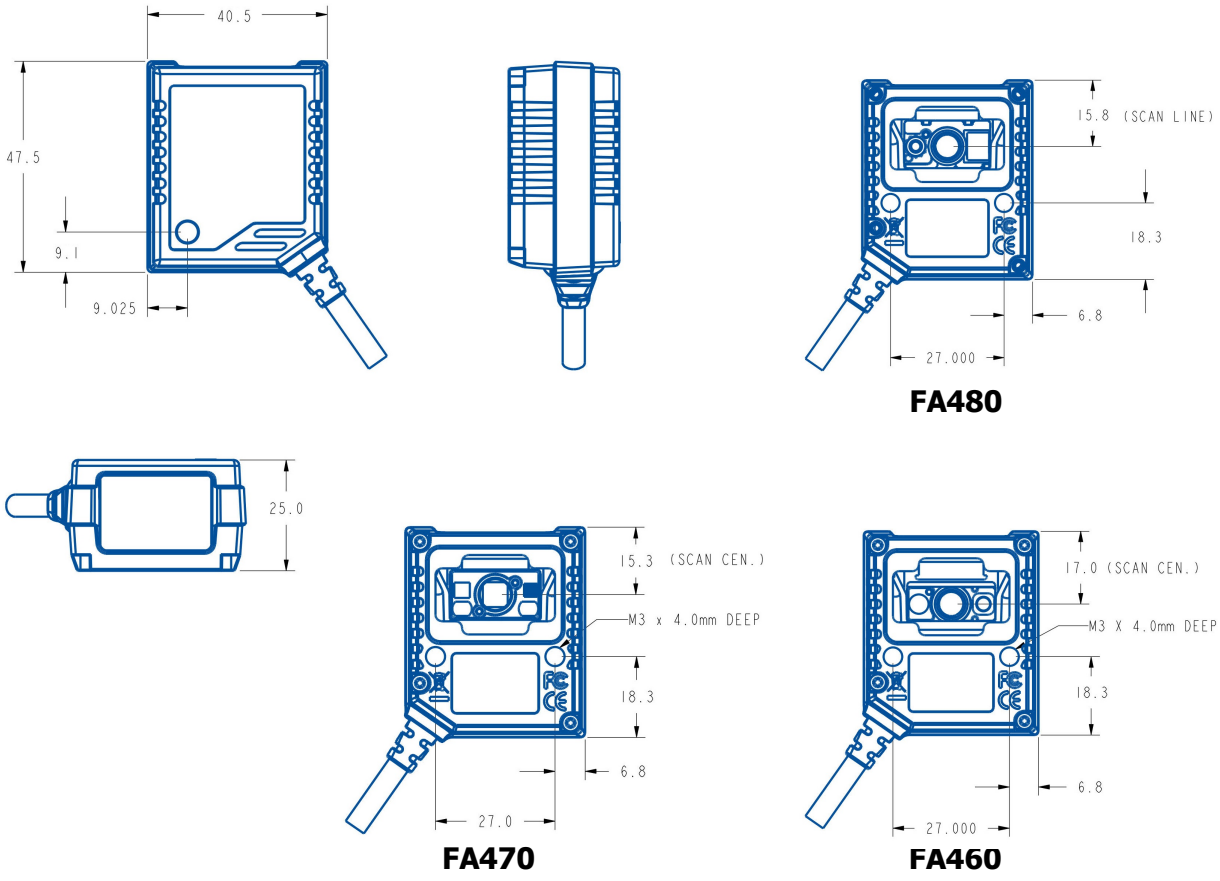
FA480/FA470/FA460

Front-View Models



FA480 **FA470** **FA460**

Side-View Models

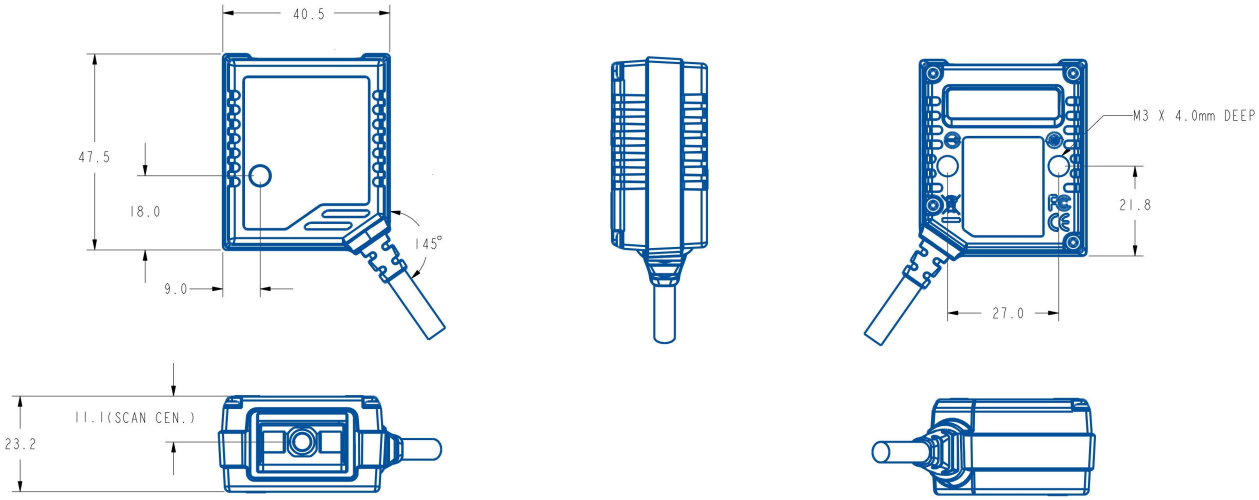


FA480

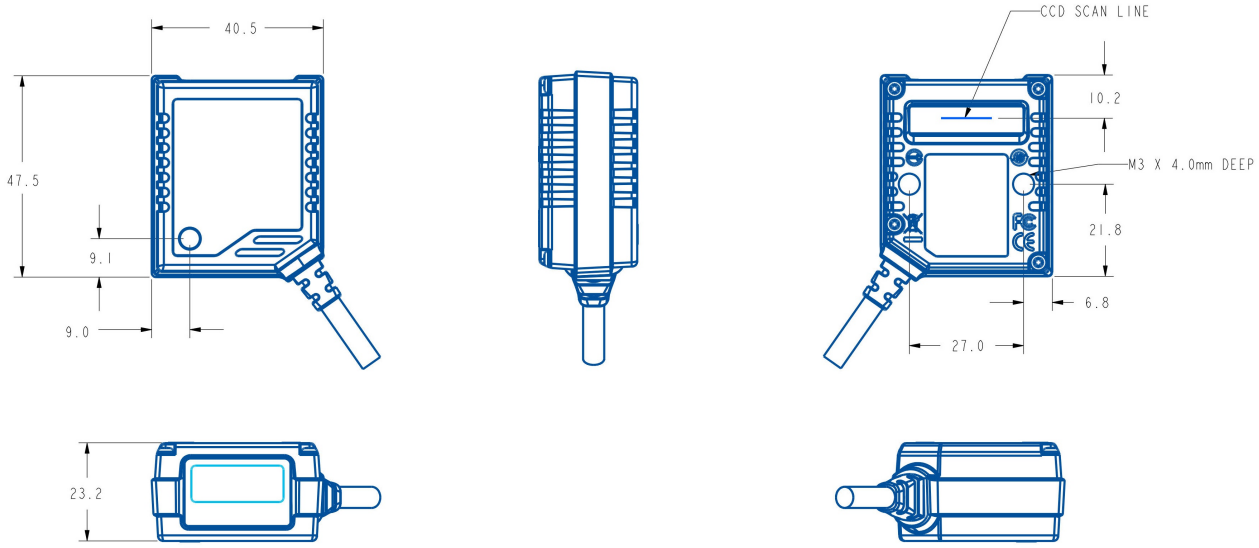
FA470 **FA460**

FM480

Front-View Model



Side-View Model



Release Notes

Revision	Date	Notes
1.0	2019.11.05	• First Release

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cino