

# User's Manual

2D Image Hands-Free Scanner





**Revision History**

Changes to the original manual are listed below:

<b>Version</b>	<b>Date</b>	<b>Description of Version</b>
1.0	03/24/2016	Initial release
1.1	03/15/2018	Added Plus version DOF, IR, and LED

## Important Notice

No warranty of any kind is made in regard to this material, including, but not limited to, implied warranties of merchantability or fitness for a particular purpose. We are not liable for any errors contained herein or incidental or consequential damages in connection with furnishing, performance or use of this material.

No part of this document may be reproduced, transmitted, stored in a retrieval system, transcribed, or translated into any language or computer language in any form or by any means electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without express written consent and authorization.

We reserve the right to make changes in product design without reservation and without notification. The material in this guide is for information only and is subject to change without notice.

All trademarks mentioned herein, registered or otherwise, are the properties of their various respective owners.

Copyright © 2018. All rights reserved.

## Guidance for Printing

This manual is in A5 size. Please double check your printer setting before printing it out.

**Adjustments:** Do not attempt any adjustments or alteration of this product. Do not remove the protective housing of the scanner. There are no user-serviceable parts inside.

**Optical:** The use of optical instruments with this product will increase the eye hazard. Optical instruments include binoculars, magnifying glasses, and microscopes but do not include normal eye glasses worn by the user.

**CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

## For CE-countries

This scanner is in conformity with CE standards. Please note that an approved, CE-marked power supply unit should be used in order to maintain CE conformance.

# Table of Contents

Introduction .....	1
Unpacking.....	2
Outline .....	3
Installing the Device .....	4
Using Mounting Screw .....	4
Adjusting Scan Angle .....	5
Connection .....	6
Interface Cable .....	6
Connecting to the Host .....	7
Power Connection.....	7
Scanner Operation .....	9
Setting Up the Scanner.....	10
Scan Test.....	10
Programming the Scanner .....	11
How to Scan in Different Mode.....	12
Presentation Mode .....	12
Continue Scan Mode.....	12
Manual Scan.....	13
Sleep Mode .....	14
Beeper Indication .....	15
LED Indication .....	15
USB Virtual COM.....	16
Trouble Shooting .....	17
Maintaining the Scanner .....	18
Cleaning the Scan Window .....	18
Specification.....	19
Connector and Pin Out.....	20
Device.....	20
Interface Cable .....	20
Dimension .....	21
Field of View & Depth of Field.....	22
IR View .....	22
IR View .....	23
LED View .....	25



# Introduction

Lighting speed without compromising performance, the scanner features a powerful 2D engine that easily decodes most 1D and 2D barcodes with intuitive aiming accuracy. It also excels at reading barcodes on smart phone screens and barcodes that are poorly printed. It is the perfect solution for medical industry, retail stores, smart phone applications, and the banking industry.

- High speed reading of 1D, 2D and postal barcodes
- Manual or automatic triggering
- Reads barcode reliably off cell phone screens
- Extremely low power consumption
- Two cabling options: USB or RS-232
- Captures barcodes on mobile phone, tablet, or computer screens

# Unpacking

---

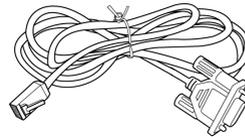
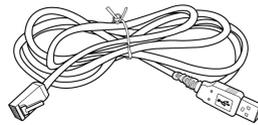
The hands-free scanner package contains:

2D Image Hands-Free Scanner



Communication cable

(Type depends on customer selection)



Power adapter

(only for specific RS-232 cables as  
optional accessory)

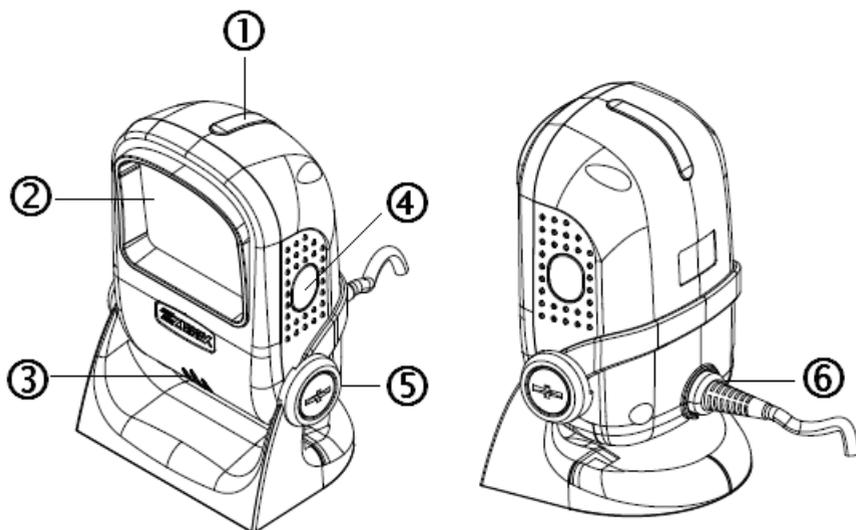


Quick Guide



- Please leave this user's manual within easy access for persons using the scanner.
- If any contents are damaged or missing, please contact your dealer immediately.

# Outline

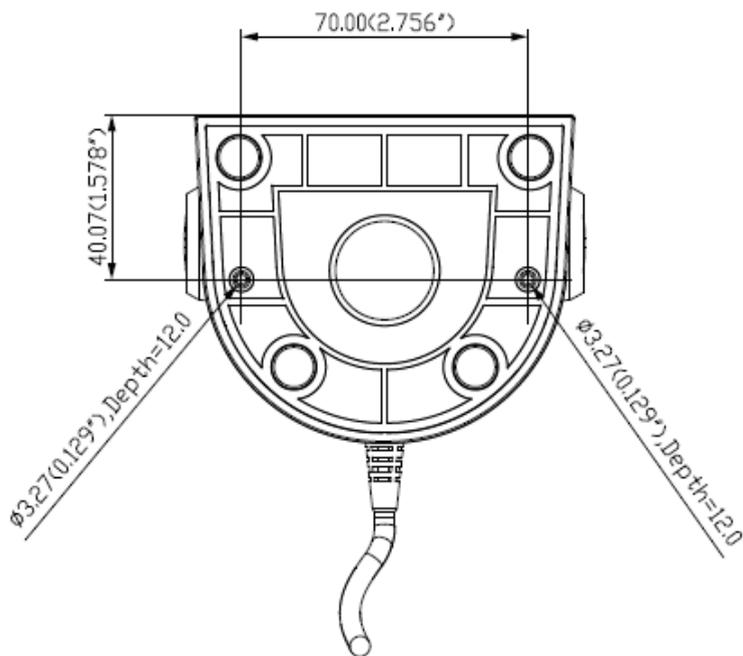


#	Description	Function
1	LED Indicator	Reading status indication
2	Scan Window	Read barcodes
3	Speaker Exit	For beep tone indication
4	Trigger Button	Push to scan
5	Hinge Shaft	Allow adjustment of device body forwards or backwards
6	Interface Cable Connection	For interface communication cable connection

# Installing the Device

## Using Mounting Screw

The device is reserved with 2 mounting holes for permanent fixture if required. Refer to the figure below for detailed information.

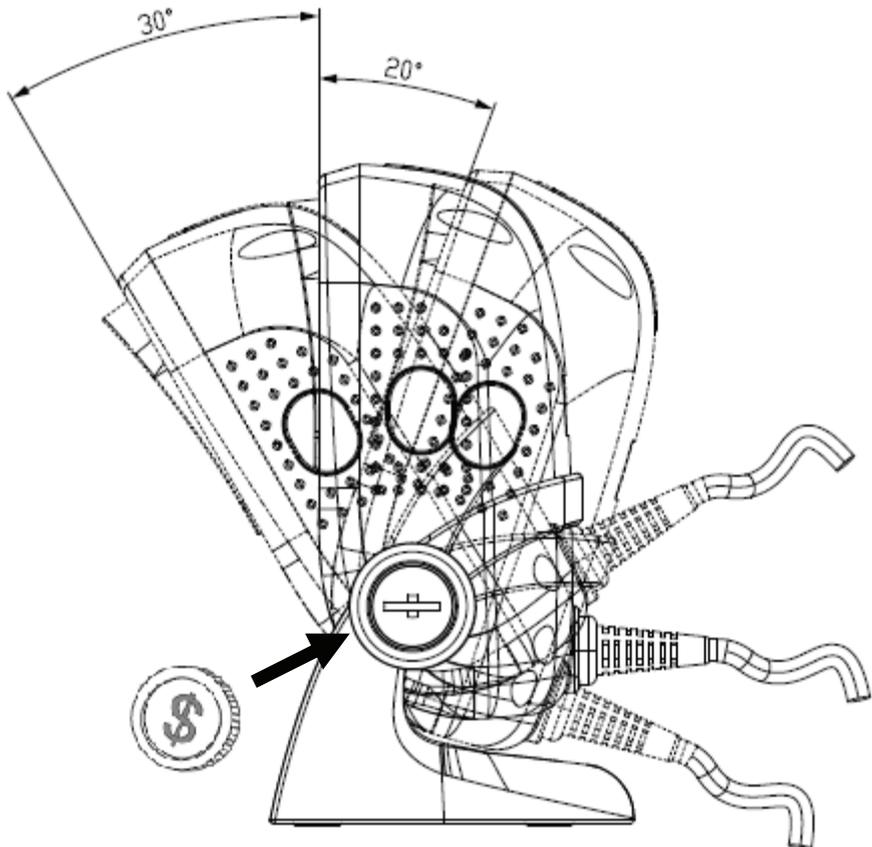


Unit: mm(inch)

Mounting screw holes

## Adjusting Scan Angle

The device has a hinge shaft that allows tilt forwards and backwards in certain angle. Gently holds the device with one hand and move the scan angle as needed; use a coin to tighten the screws on both sides of the stand when necessary.



Scan angle



Do not let the scan LED light face directly to human eyes.

# Connection

---

## Interface Cable

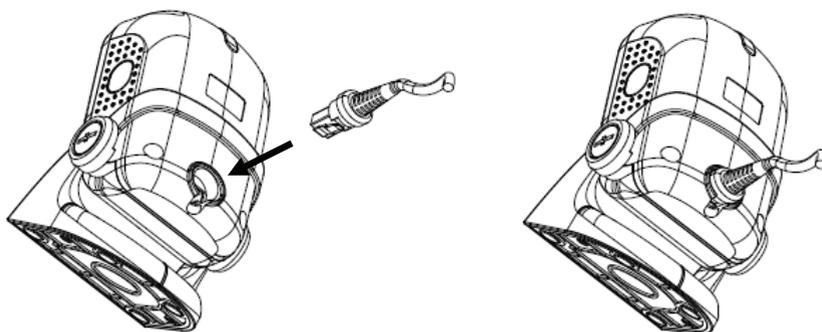
The interface cable comes with different host-end connectors, and there are 2 standard types of interface connection that this device supports:

1. HID USB interface
2. RS-232 interface

\*\*Refer to Connector and Pin our section for pin-out configuration of each interface available

### Insert the cable to device

Follow as illustrated below to insert the RJ-45 connector side of cable into the device. A clear “click” sound is heard if the cable is properly inserted.



### Release the cable from device

Gently face down the device, and insert a flat tool at the bottom to release the lock then gently pull the cable out.

## Connecting to the Host

Follow the steps below to connect the interface cable to the host.

1. Connect the host-end of the interface cable to the appropriate connector on the host system.
2. For those cases where external power is used, plug the external AC power adapter into the jack on the interface cable.

## Power Connection

The scanner turns on when power is supplied, and turns off when power is removed.

There is no on/off switch on the scanner itself.

The scanner requires a minimum of 2W at 5VDC power. The interface cable that comes with the scanner supports both direct power (where the scanner takes power from the host machine) and external power (that's what the supplied power adapter is for). A sufficiently robust POS system can support a scanner successfully without external power; a POS system with a barely adequate power supply may produce erratic performance (either of the POS system itself, or of the scanner, or both) when a scanner is attached.

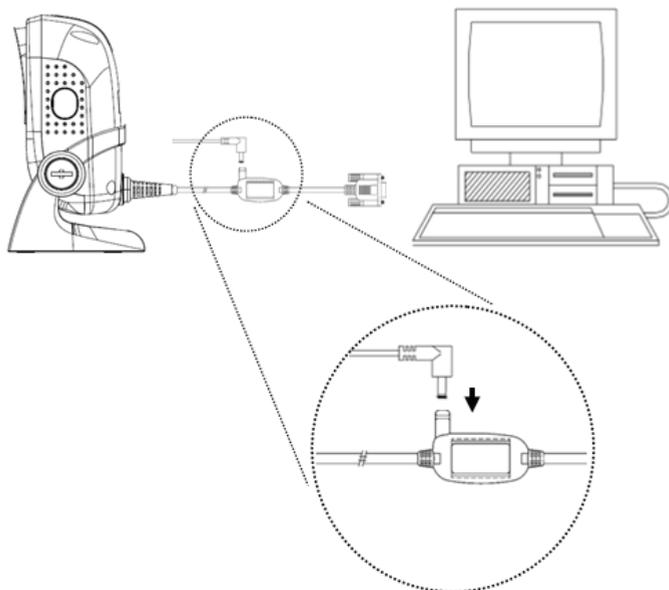
To ensure steady performance, the host system should be capable to supply a minimum of 400mA of current @ 5VDC. Unless you are sure your POS system can handle such loading, it is recommended that you use the qualified power adapter. When an external adapter is connected, the scanner will automatically switch off the direct power from host to scanner.



Use only an AC/DC power adapter approved for the scanner. Use of other power supplies may cause damage to the scanner, and void the factory warranty.

Follow the steps below when you need an external power connection to the scanner:

1. Connect the interface cable to the bottom of the scanner.
2. Connect the other end of the interface cable to the host (refer to your host manual to locate the correct port).
3. Plug the power supply into the power jack on the interface cable.
4. Plug the other end of the power supply into an AC outlet.



# Scanner Operation

Please follow the procedure below to verify scanning operation.

1. Insert the modular plug of the Interface cable into the back of the scanner until a firm click is heard.
2. If necessary, plug the power adapter into the jack on the interface cable.
3. Plug the AC end of the power adapter into an AC outlet, or plug the other end of cable into host if power adapter is not needed. When power is supplied, the scanner powers up, the speaker sounds beeps and the LED indicator glows.
4. Present a known-good test barcode to the scanner. The scanner should issue a short beep and the LED should flash red momentarily.



1. If the scanner is connected to a USB for this test, it should read one barcode, beep and then remain a red LED indicating light. This is normal when the USB is not connected to a live host terminal. If the initial interface of the scanner is in keyboard wedge, and it only reads one barcode and remains with a green LED indicating light, this is because the scanner is not connected to a host terminal.
2. If the scanner does not produce any beeps, or produces the wrong beeps, or the LED does not light up, remove the power connection and refer to the Troubleshooting section.

## Setting Up the Scanner

---

In certain cases no setup is required. The scanner is either pre-programmed to suit the situation, or it automatically detects and is ready to go. In other cases the scanner must be informed about what kind of system it is connected to. This can be done in a few moments using the programming barcodes in the Programming Guide.

The programming section may be used to set a number of parameters on the scanner: communication interface type (RS-232, USB), beep tone, scan mode, baud rate, enable/disable decoding of numerous code types, and more advanced settings like set prefix and suffix.

Individual parameters may be set at any time without affecting the other parameters.

## Scan Test

---

1. With the scanner running (green LED lights) and the host system on, try to scan several known-good barcodes.
2. Check the results on the POS screen. If the scanner is reading okay, it is likely that no further setup is necessary.
3. If the POS screen does not show the expected scans, go to the Programming section below.

# Programming the Scanner

---

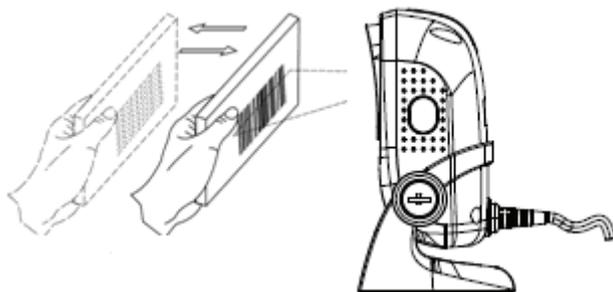
1. When the scanner is powered on (green LED lights), find the <Set> barcode in the Programming Guide and present this barcode to the scanner. When the scanner gives two beeps, it means the scanner is in programming mode.
2. Decide which parameters are required and find their barcodes in the Programming Guide.
3. Cover unwanted codes with your hand and present the desired codes, one by one, to the scanner; the scanner beeps once as it accepts each code.
4. When done, again present the <End> barcode to the scanner. The scanner beeps thrice, it means the scanner is out of programming mode. The scanner has been programmed.
5. Test again with known-good barcodes. If results are good, you are done setting up. Otherwise, return to step 1 and try again.

# How to Scan in Different Mode

---

## Presentation Mode

In this mode, the front scan window is in automatic mode and reads barcodes as the barcode approaches with the scanning field.



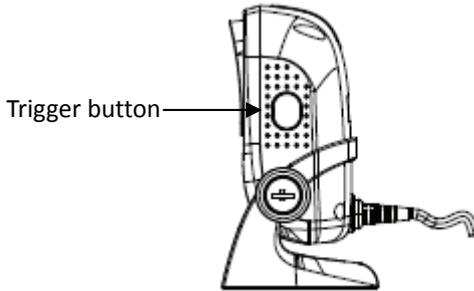
The adjustable stand allows to be tilted forwards and backwards in position when scanning various sized objects.

## Continue Scan Mode

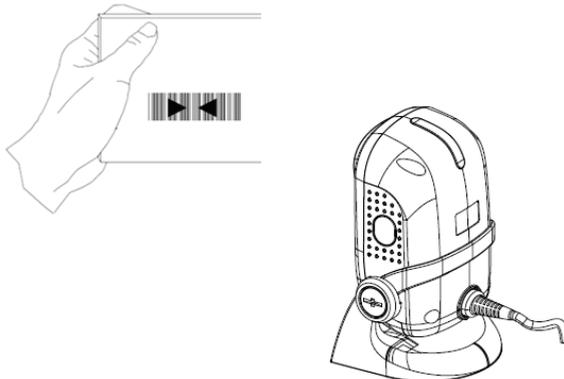
In this mode, the scan LED light stays active and continues to decode until a same barcode is scanned. If no barcode is present in the scanning field for 20 seconds, the scanner goes to standby with scan LED light continues to flash.

## Manual Scan

The scanner can also be used as a handheld scanner by simply pressing the button.



1. Press down the trigger button and a light pattern would appear. It allows you to aim at the barcode.
2. Press the button to decode the barcode. One beep indicates a good read.



## Sleep Mode

---

After the scanner has been inactive for a period of time, the scanner would enter the sleep mode and the green LED would blink as indication.

After 30 seconds inaction, the scanner would enter the sleep mode from presentation mode.

After 5 minutes inaction, the scanner would enter the sleep mode from continue scan mode. The time period of continue scan mode is programmable.

To wake up the scanner, present an object close to the scan window, or press the trigger button.



The scanner includes a sensor that detects activity in front of the scan window. The detecting distance is about 10cm (3.9 inch) from the scan window while in condition with effectiveness of environment lights.

## Beeper Indication

---

Beeps	Indication
3 beeps in a series from low to high pitch	Power up
1 short beep	A barcode has been successfully decoded
2 short beeps	The scanner has entered program mode
1 long beep	A setting has been programmed
3 beeps in a series from low to high pitch	The scanner has exited program mode
3 short beeps	Error setting the scanner

## LED Indication

---

LED	Indication
1 red flash	A barcode has been successfully decoded
Steady green	Scanner in work mode
Green flashing	Scanner in sleep mode

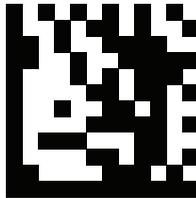
## USB Virtual COM

---

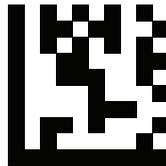
If you use virtual COM port emulation, follow the steps below to start using the scanner.

1. Execute the driver (VCOM-Driver-Installation.exe).
2. Connect the scanner USB cable to the host computer.
3. Set the interface to USB Virtual COM Port.

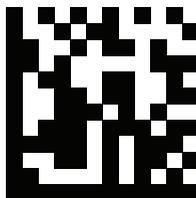
Set



Enable USB virtual COM



End



- On the computer, check Device Manager to see if the computer successfully detects the scanner as “Barcode Scanner USB-COM device.” (The COM port number would vary depending on different hardware environment).



## Trouble Shooting

This section contains information about how to solve problems that you may encounter when operating the scanner. However, before referring to the tips, make sure that the scanner is installed as instructed in this manual and that all cables are properly connected. If the problem remains, please contact your dealer.

Problem	Diagnostic Tips
The scanner is on but cannot read barcodes.	<ul style="list-style-type: none"> <li>● The scanner window is dirty. Clean the scanner window as described in the Maintenance section.</li> <li>● The presented barcode type is not enabled. Select the barcode type in the Programming Guide.</li> <li>● The host disables the scanner.</li> <li>● The barcode type you presented to the scanner is not supported.</li> </ul>

# Maintaining the Scanner

## Cleaning the Scan Window

---

The scanner is designed for long-term trouble-free operation and rarely requires any maintenance. Only an occasional cleaning of the scanner window is necessary in order to remove dirt and fingerprints.

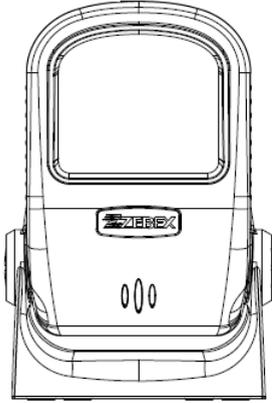
Wipe the scan window with a soft lint-free cloth and a non-abrasive cleaner to avoid scratching and damaging the scan window. The scan window may be cleaned while the scanner is running.

# Specification

<b>Optical</b>	Sensor Resolution	752H × 480V pixels
	Light Source	2* 617nm LED (Red)
	Image Field of View (Scan Zone)	44.4°H x 29.1°V
	Roll/ Pitch/ Yaw	360°/ ± 65°/ ± 60°
	Scan Rate	60 fps
	Print Contrast Ratio (Minimum)	30% @ UPC/EAN 100%
	DOF	Code 39 (5 mil): 0 - 50 mm UPC/EAN (13 mil): 0 - 210 mm
	Minimal Element Resolution	Code 39: 5 mil QR Code: 7.5 mil
<b>Interface</b>	Host port	RS232,USB HID,USB Virtual COM
<b>Power</b>	Input Voltage	100~240VAC 50/60Hz
	DC Input	5VDC
<b>Environment</b>	Operating Temperature	0-50°C
	Storage Temperature	-40°C~70°C
	Operating Humidity	5% ~ 95% (No dewing allowed)
	Light levels	Up to 100,000 Lux
<b>Physical</b>	Indicator	2 Colors (Green , Red)
	Button	1 Button (Trigger)
	Volume	2W Speaker x 1
<b>Dimensions</b>	Width	80.2 mm
	Height	145.0 mm
	Depth	97.0 mm
<b>Regulatory</b>	LED Safety	IEC62471
	EMC	CE & FCC DOC Compliant; VCCI; BSMI

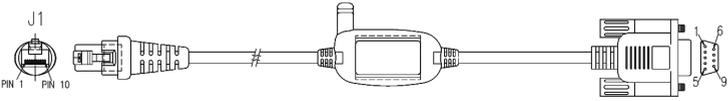
# Connector and Pin Out

## Device

	PIN-OUT CONFIGURATION		
	PIN	FUNCTION	
		RS-232C	USB
	1		USB Power
	2	+5V	
	3		D-
	4	RTS_TTL	
	5	GND	
	6	TXD_TTL	
	7	RXD_TTL	
8		D+	
9	CTS_TTL		
10			

## Interface Cable

### RS-232C Cable – DTE pin out

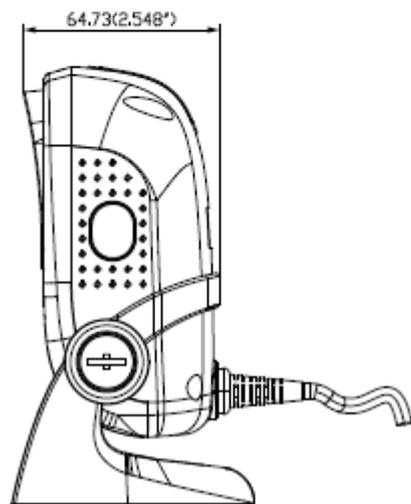
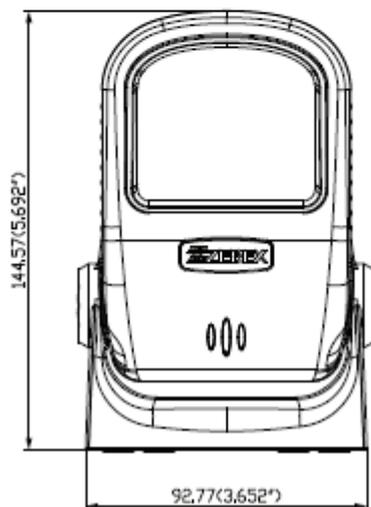
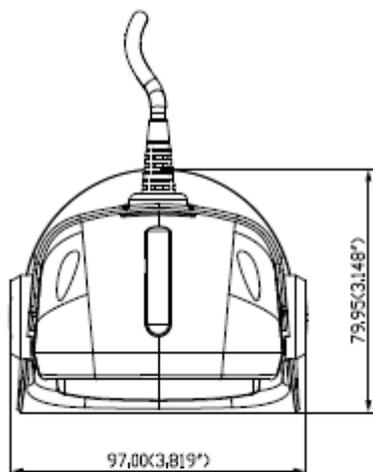
	PIN-OUT CONFIGURATION	
	DB-9 (F)	FUNCTION
	2	TX
	3	RX
	7	CTS
	8	RTS
	5	GND
9	+5V	

### USB Cable –USB Type A

	Connector	Function
	1.	VCC
	2.	D-
	3.	D+
4.	VSS	

# Dimension

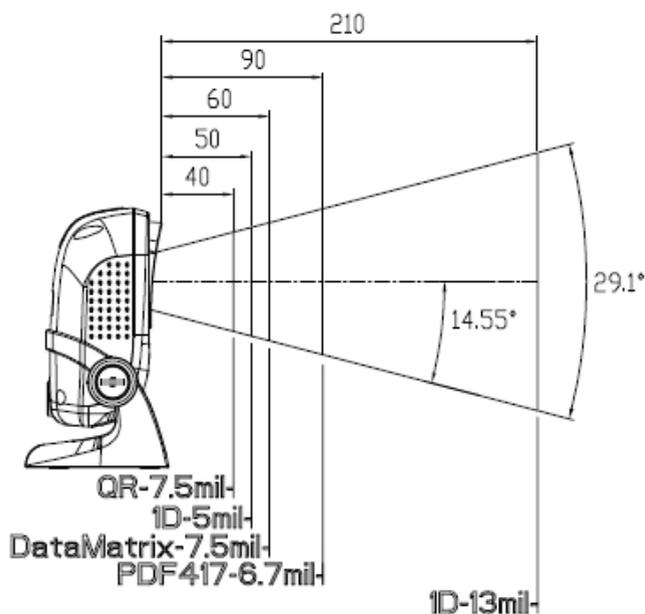
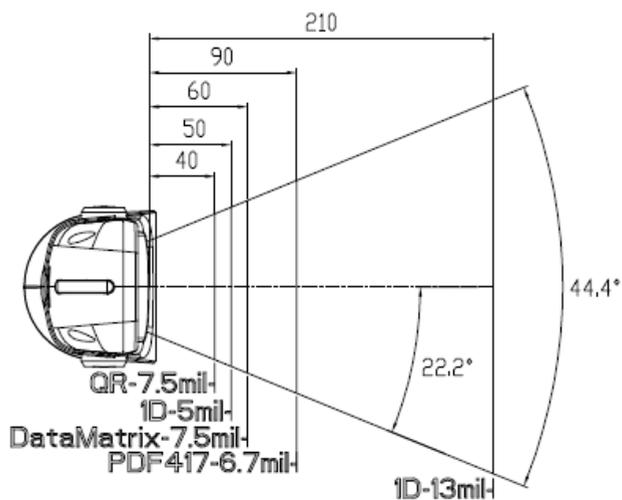
Z-8072 & Z-8072 Plus



Unit: mm (inch)

## Field of View & Depth of Field

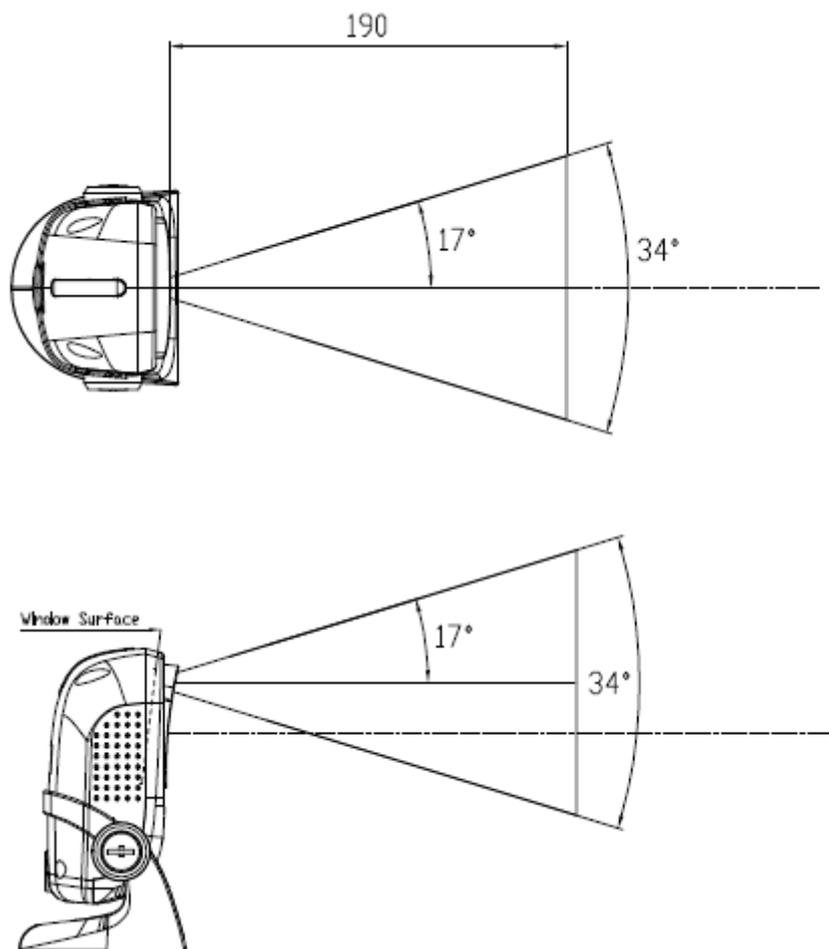
Z-8072 & Z-8072 Plus



## IR View

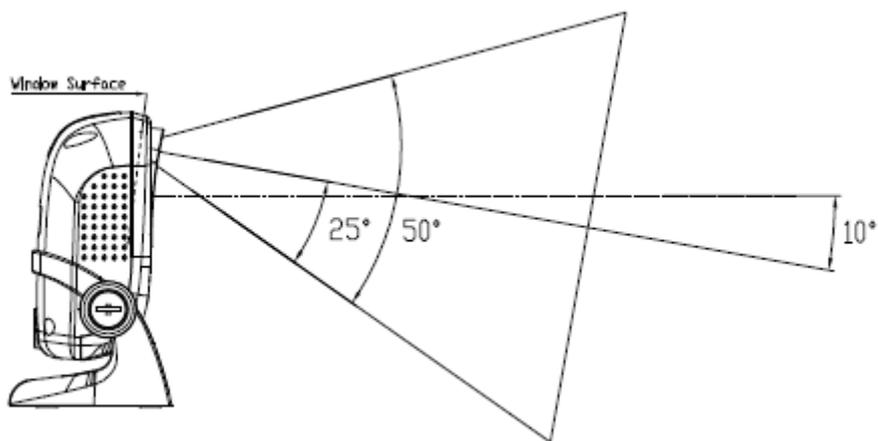
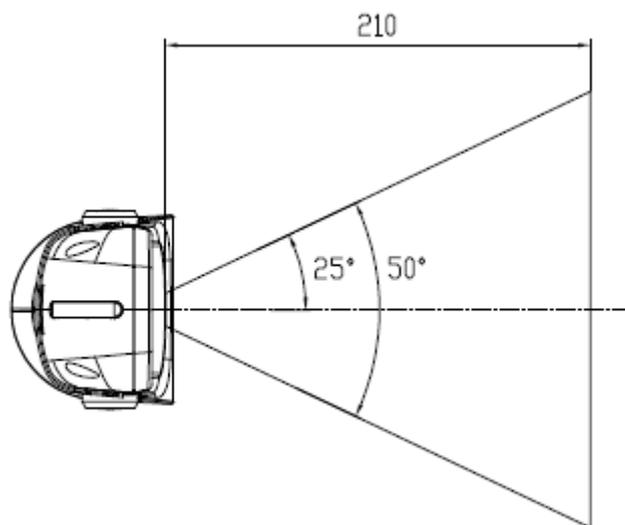
The following shows the IR activation area for the build-in object detection sensor.

Z-8072 version



Unit: mm

Z-8072 Plus version

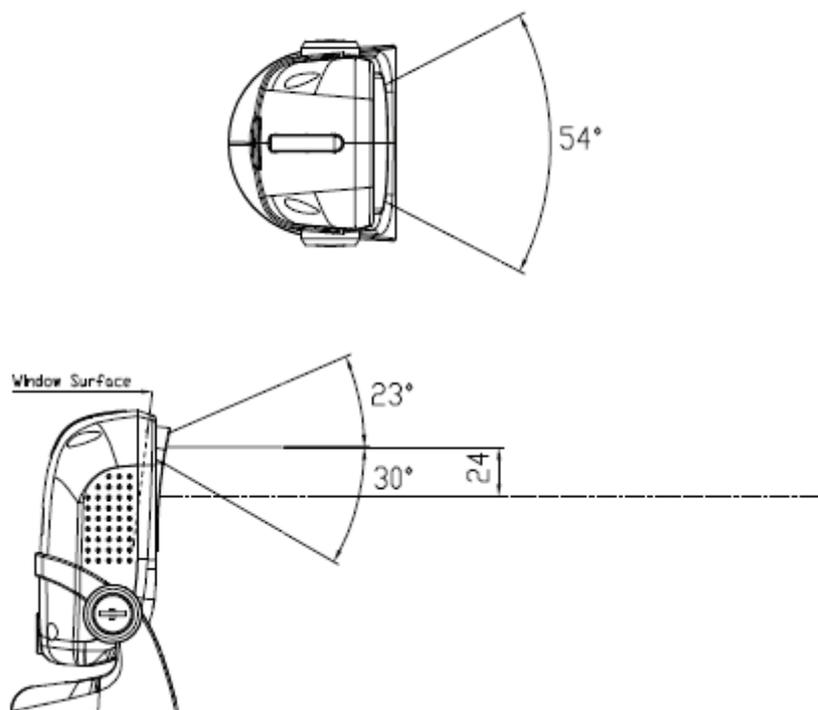


Unit: mm

# LED View

---

Z-8072 version



Z-8072 Plus version

