

# MDI-5300

2D Imager Engine



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## Document History

Model Number:	MDI-5300	Specification Number:	SS20024
Edition:	1st	Original Spec Number:	(SS20023)
Date:	16-November-2022		

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## Revision History

Product Name : MDI-5300

Edition	Date	Page	Section	Description of Changes
First	2022/11/16	-	-	First release

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## 1. Abstract

This manual provides specifications for the MDI-5300 imager scan engine.

## 2. Overview

The MDI-5300 is a low profile, imager based, barcode scan engine with an integrated decoder, that enables high speed scanning of 1D (linear) and 2D code as well as OCR fonts.

The main features of the MDI-5300 are as follows:

- **Low profile 2D imager scan engine**  
The MDI-5300 with an integrated decoder is low profile at just 10.8mm height. This allows the MDI-5300 to be integrated easily into even the most compact equipment such as PDA's, data collectors and ticket readers.
- **Red cross laser aiming and Warm-White LED Illumination**  
A high-visibility Class1 red cross laser aiming and efficient warm-white LED illumination makes it easy to aim the scanner while providing safety and long life.
- **High-speed reading**  
The extremely high-performance decoder and horizontal 50deg wide angle lens used in the MDI-5300 ensures wide range and stress-free scanning and fast response, even in the case of poor-quality codes (damaged, low contrast etcetera), movement/vibration and poor lighting conditions.
- **High-speed image sensor**  
The high-speed 1 mega pixel CMOS image sensor in the MDI-5300 captures images at a speed of up to 120 fps. Combined with the fastest global shutter speed in the industry, this enables fast and accurate scanning.
- **Low power consumption**  
The power consumption in operating, standby and low power states has been drastically minimized. Various power saving settings can be configured to optimize the power consumption for your particular application.
- **Data edit function**  
Capable of batch reading 1D codes (up to 16 pieces), 2D codes and OCR. The combined output is highly configurable using regular expressions. Also supports GS1 data conversion and code coordinate output.
- **RoHS compliance**  
The MDI-5300 is a RoHS compliant product, as declared by Optoelectronics Co., Ltd.

### 3. Physical Features

#### 3.1. Dimensions

Imager Engine (MDI-5300) : 25.3 × 21.0 × 10.8 (WDH : mm)

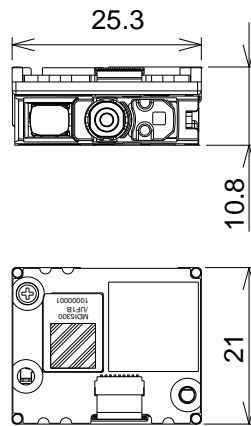


Figure 1 : Dimensions of The MDI-5300

#### 3.2. Weight

Imager Engine (MDI-5300) : 5.6g (Max)

## 4. Electrical Specifications

### 4.1. Absolute Maximum Ratings\*

Item	Symbol	Rated Value	Unit
Power Supply Voltage ( $V_{CC}$ to GND)	$V_{CC}$	-0.3 to 7.0	V
Input Voltage	$V_I$	-0.3 to $V_{CC} + 0.3$	V

\* Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

### 4.2. Recommended Operating Conditions

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	$V_{CC}$		3.0	3.3/5.0	5.5	V
Input Voltage	Low	$V_{IL}$	0	-	0.15	V
	High	$V_{IH}$	$V_{CC} - 0.4$	-	$V_{CC}$	V
Output Voltage	Low	$V_{OL}$	$I_{OL} = 600\mu A$	-	0.55	V
	High	$V_{OH}$	$I_{OH} = -20\mu A$	$0.67 * V_{CC}$	-	$V_{CC}$
Output current	Low	$I_{OL}$	$V_{CC} = 3.0V$		-4	mA
	High	$I_{OH}$	$V_{CC} = 3.0V$		4	mA

\* Measured at the MDI-5300 connector



### 4.3. Current Consumption

( IF:UART/USB, V<sub>CC</sub> = 3.3V/5.0V T<sub>A</sub> = 25°C)

Item	State	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Rush Current *	Boot	I <sub>PK</sub>	-	-	800	1000	mA

\* Measured at the MDI-5300 connector

#### UART

[ V<sub>CC</sub> = 3.3V]

( IF:UART, T<sub>A</sub> = 25°C)

Item	State	Recovery time *1	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Current	Read	-	I <sub>OP</sub>	-	-	300	535	mA
Standby Current	Standby	0ms	I <sub>STB</sub>	-	-	24		mA
Low Power Current	Low Power	41ms	I <sub>LOW</sub>	Configured*	-	1,4		mA

[ V<sub>CC</sub> = 5.0V]

( IF:UART, T<sub>A</sub> = 25 °C)

Item	State	Recovery time *1	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Current	Read	-	I <sub>OP</sub>	-	-	200	400	mA
Standby Current	Standby	0ms	I <sub>STB</sub>	-	-	22		mA
Low Power Current	Low Power	41ms	I <sub>LOW</sub>	Configured*	-	1.1		mA

\*1 Recovery time is time until ready to scan.

\* Refer to "Serial Interface Specifications" for details.

#### USB

[ V<sub>CC</sub> = 3.3V]

( IF:USB, T<sub>A</sub> = 25°C)

Item	State	Recovery time *1	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Current	Read	-	I <sub>OP</sub>	-	-	310	540	mA
Standby Current	Standby	0ms	I <sub>STB</sub>	*2	-	42		mA
Low Power Current	Low Power	43ms	I <sub>LOW</sub>	Configured* *2	-	1.8		mA

[ V<sub>CC</sub> = 5.0V]

( IF:USB, T<sub>A</sub> = 25°C)

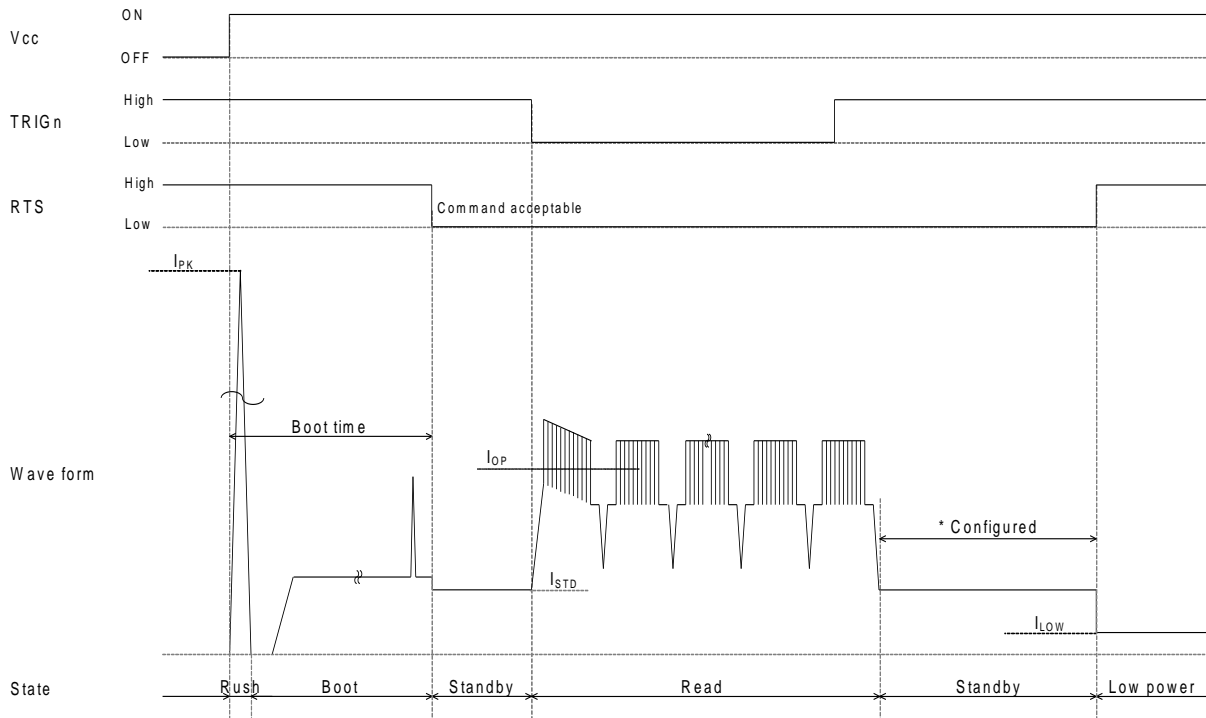
Item	State	Recovery time *1	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Current	Read	-	I <sub>OP</sub>	-	-	205	400	mA
Low Power Current	Standby	0ms	I <sub>STB</sub>	*2	-	30		mA
Low Power Current	Low Power	43ms	I <sub>LOW</sub>	Configured* *2	-	1.4		mA

\*1 Recovery time is time until ready to scan.

\*2 Current value when USB is "Selective Suspend" mode. When using as USB-COM (USB as virtual COM), use USB driver "Opticon USB Code Reader driver" version 3.x.x.x.

\* Refer to "Serial Interface Specifications" for details.

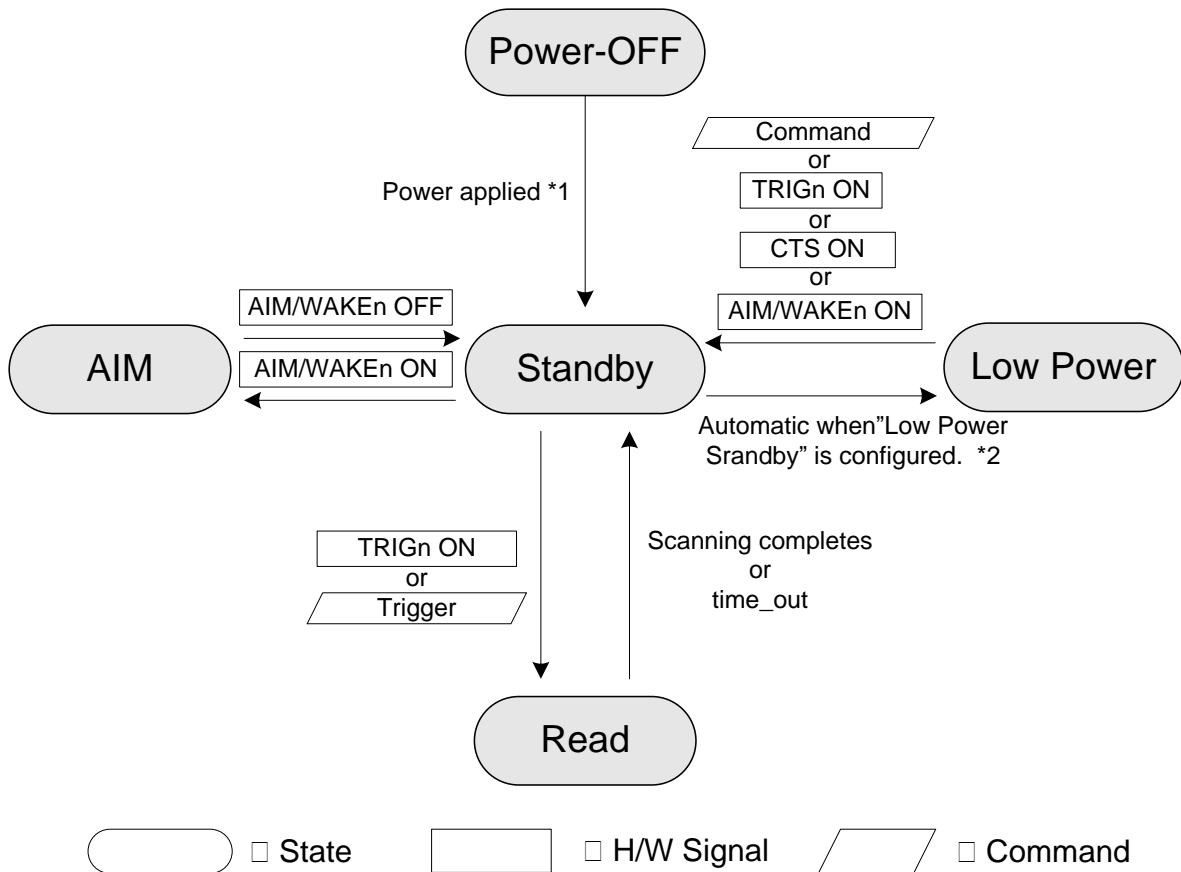
### 4.4. Current Waveform



\* When Low Power Mode is enabled, the MDI-5300 automatically enters Low Power state after Power On.

Figure 2 : Current Waveform

## 5. Power Mode Transition



\*1 Options are available that adjust the start-up time: Fast Boot and Normal Boot

\*2 When Low Power is enabled, the MDI-5300 automatically enters Low Power mode when Standby state passed the specified time.

Figure 3 : Power Mode Transition

Status	Description
Read	White LED illumination and laser aiming light and process reading.
Standby	Ready to read. The state which can read immediately.
Low Power	Low current consumption status. The time to shift from standby is configurable.
AIM	With AIM signal is ON, Laser aiming lights.

## 6. Interface Specifications

### 6.1. Interface Signals

Connector used is equivalent to the one produced by IRISO Electronics Co., Ltd.

Product No.: 9681-12 (12pin, 0.5mm pitch bottom contact, 0.3mm thick FPC/FFC connector)

No.	Name	Function	I/O	Conditions	State	Note
1	TRIGn	Trigger	In		L: Start operation H: No action	100kΩ pull up on scan engine
2	AIM/WAKEn	Recovery signal from Low Power state	In		L: Recover from low power state H: No action	100kΩ pull up on scan engine
		Aiming control signal in other states than Low Power	In		L: Aiming Laser on H: Aiming Laser off	
3	GR_LEDn	Good read LED	Out		L: LED on H: LED off	4.7kΩ pull up on scan engine
	EX_ILLUM	Control of an external light source.	Out	Configured	L: External Illumination On H: External Illumination Off	
4	BUZZERn	Buzzer	Out		ACTIVE: PWM signal (frequency and duration configurable) IDLE: Steady high or low (configurable idle state)	A transistor or FET should be used to drive a buzzer. 100kΩ pull up on scan engine
5	POWERDWN	Indicates Low Power state	Out		L: Normal state H: Low Power state	100kΩ pull up on scan engine
6	RTS	Communication control signal to host system	Out			10kΩ pull up on scan engine
7	CTS	Communication control signal from host system	In	Interface configured as UART		100kΩ pull up on scan engine
	USB+	D+ signal for USB	In/Out	Interface configured as USB		
8	TxD	Transmitted data signal	Out			10kΩ pull up on scan engine
9	RxD	Received data signal	In	Interface configured as UART		100kΩ pull up on scan engine
	USB-	D- signal for USB	In/Out	Interface configured as USB		
10	GND	System ground				
11	Vcc	Power input	In		3.3V / 5.0V	
12	Reserve		In			N.C

\* Refer to "Serial Interface Specifications" for details.

## 6.2. Interface Circuit

Signal Name	Circuit
AIM/WAKEn RxD CTS	
TRIGn	
RTS TxD	
GR_LEDn	
BUZZERn POWERDWN	
USB+ USB-	

Figure 4 : Interface Circuit

## 7. Optical Specifications

### 7.1. Basic Optical Specifications

Item		Characteristics
Scan method	CMOS area sensor (Monochrome)	-
Number of effective pixels	(H) × (V)	1280 × 800 pixel
Image capture speed	Frame rate <sup>*1</sup>	120 fps
Sensor shutter speed	Minimum shutter speed	30μs
Focal distance	From the front edge of scan engine	Approx. 200 mm
View angle	Horizontal	Approx. 50.0°
	Vertical	Approx. 32.0°
	Diagonal	Approx.58.0°
Auxiliary light source ( LED × 1 )	LED	Warm white
	Color temperature	Approx.2700K
	Maximum Optical Efficiency <sup>*2</sup>	150 lm/W
Light source for aiming ( Laser × 1 )	Red Laser diode	Red cross
	Peak Wavelength	655nm
	Maximum Optical Efficiency <sup>*2</sup>	390uW (Class1)

\*1 The fastest speed of image capture

\*2 The reference value extracted from the LED datasheet

## 7.2. Aiming Specifications

The aiming specifications are as follows:

The following specifications can be met under the condition of L=125 mm distance from the front edge of the camera module:

- Aiming center  
The center of aiming goes through a circle with a radius 10 mm, centered at the optical axis of the imaging system.
- Aiming pattern width  
The horizontal aiming width is  $56 \pm 10\%$  of the horizontal FOV width.  
The vertical aiming width is  $25 \pm 10\%$  of the vertical FOV width.
- Aiming ratio  
The ratio of left to right width from the center of horizontal aiming 'r' is  $0.85 < r < 1.18$ .  
The ratio of up to down width from the center of vertical aiming 'R' is  $0.85 < R < 1.18$ .
- Aiming tilt  
The inclination of horizontal aiming line to the horizontal FOV is within  $\pm 2^\circ$ .

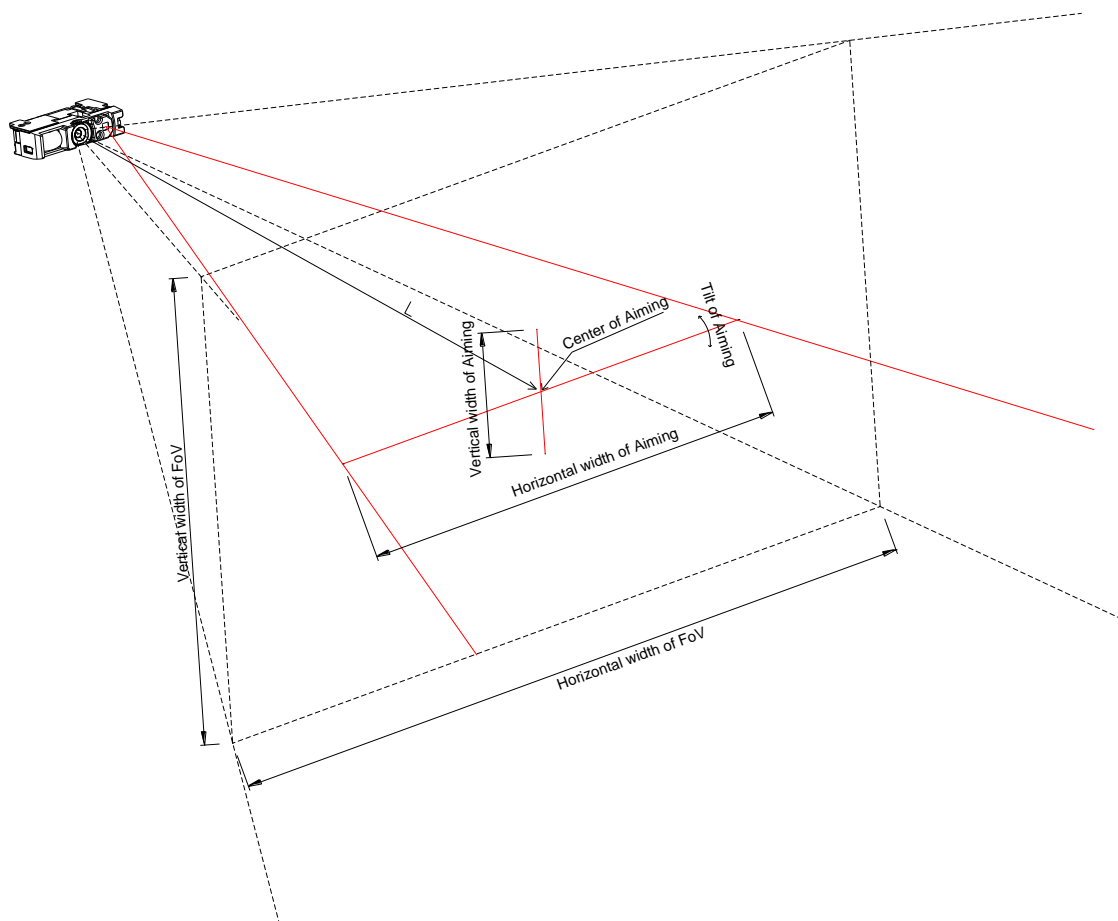


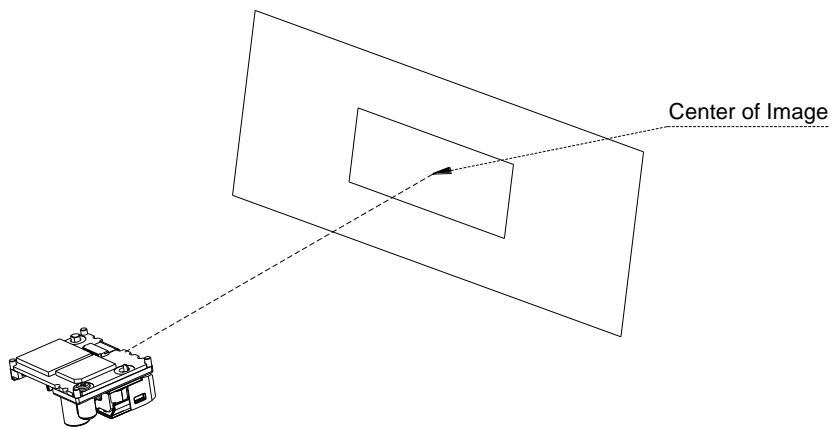
Figure 5 : Aiming Pattern

## 8. Technical Specifications

The conditions for technical specifications are as follows, unless otherwise specified in each section.

### Conditions

Ambient Temperature and Humidity	Room temperature and room humidity
Ambient Light	100 to 500 lux (on the surface of a barcode)
Tilt	$\alpha = 0^\circ, \beta = 15^\circ$
Code Position	Center of the image
Curvature	$R = \infty$
Power Supply Voltage	3.3 and 5.0 V
PCS (1D and 2D)	0.9 or higher
Scanning Test	Accept the performance with 90% or more success rate for 10 scan attempts.
Barcode Test Sample (1D and 2D)	Specified below



*Figure 6 : Test Condition of Depth of Field*



## 8.1. Test Chart Labels

### 1D Barcode test labels

#### Code 39

Resolution	Symbology	PCS (MRD)	Size (mm)	No. of Digits
0.076 mm (3mil)	Code 39	0.9 (80)	24 × 10	10
0.127 mm (5mil)			11 × 10	4
0.20 mm (7.9mil)			110 × 10	34
0.254 mm (10mil)			32.5 × 10	7
0.508 mm (20mil)			43 × 25	4

#### Code 128

Resolution	Symbology	PCS (MRD)	Size (mm)	No. of Digits
0.20 mm (7.9mil)	Code 128	0.9 (80)	52 × 10	16

#### UPC/EAN

Resolution	Symbology	PCS(MRD)	Size (mm)	No. of Digits
0.330 mm (13mil)	UPC/EAN	0.9/0.2 (80/13)	31.5 × 24.5	12/13

### GS1 DataBar / Composite test labels

#### GS1-limited

Resolution	Symbology	PCS(MRD)	Size (mm)	No. of Digits
0.127 mm (6.7mil)	Limited	0.9 (80)	12 × 1.8	14
0.169 mm (6.7mil)	Limited-Composite		12 × 3.0	26

### 2D Codes test labels

#### PDF417

Resolution	Error Correction	PCS(MRD)	Size (mm)	No. of Character
0.169 mm (6.7mil)	Level-3	0.9 (80)	23 × 10	58
0.254 mm (10mil)			35 × 15	

#### QR Code: Model-2

Resolution	Error Correction	PCS(MRD)	Size (mm)	No. of Character
0.127 mm (10mil)	M	0.9 (80)	4 × 4	44
0.381 mm (15mil)			11 × 11	

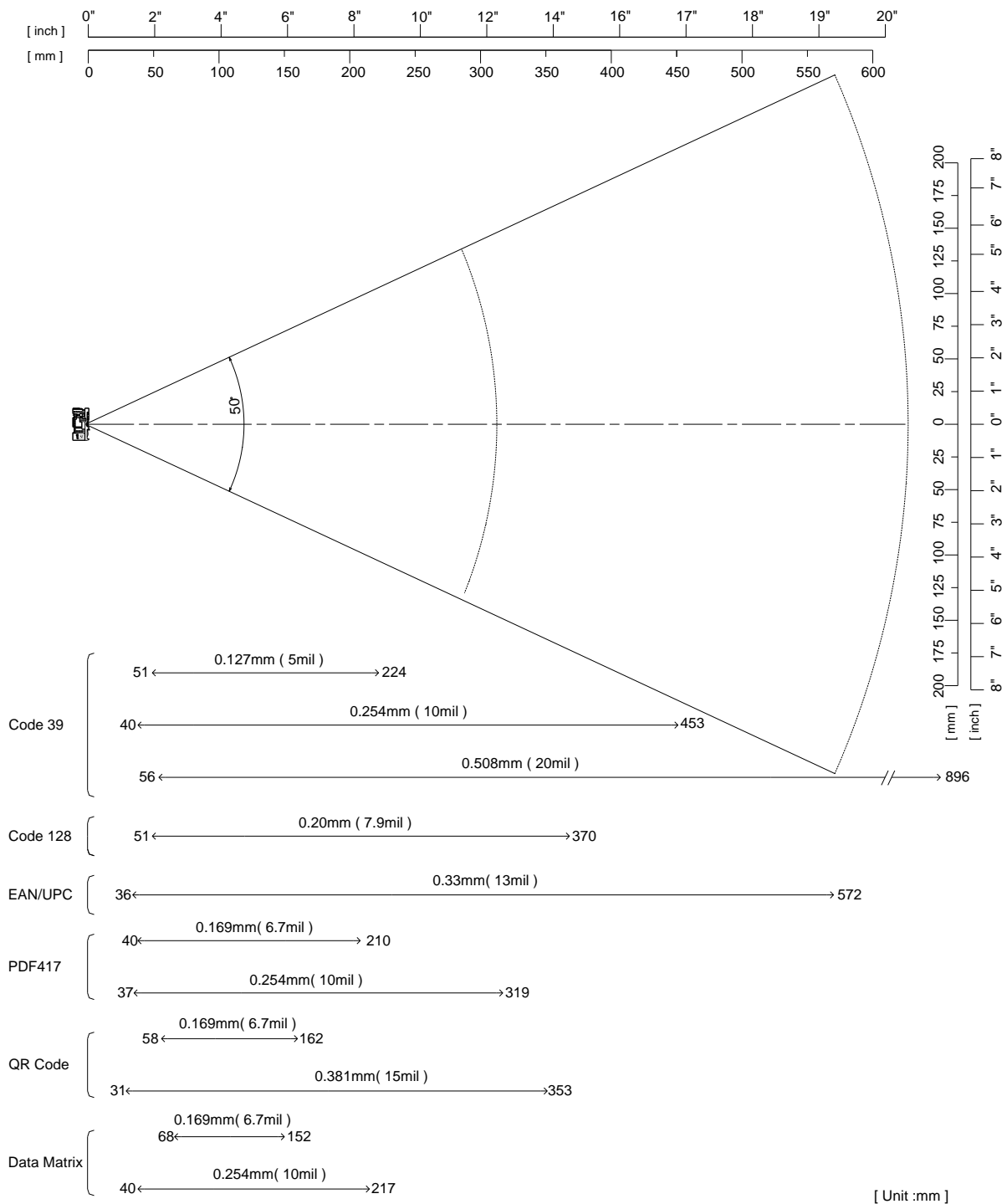
#### Data Matrix

Resolution	Model	PCS(MRD)	Size (mm)	No. of Character
0.127 mm (5.0mil)	ECC200	0.9 (80)	3 × 3	40
0.254 mm (10mil)			6 × 6	

Note: The size is outline dimensions excluding quiet zone.

## 8.2. Scan Area and Depths of Field

The scan area is measured from the front edge of the engine.



Note: The depth of field depends on the view angle and symbol length.

The depth of field values mentioned are the typical values measured at an ambient temperature of 25°C.

*Figure 7 : Scan Area and Depth of Field*

### 8.3. Depths of Field

The scan area is measured from the front edge of the scan engine.

(T<sub>A</sub> = 25C)

Resolution mm (mil)	Symbology type	PCS (MRD)	Guaranteed Value		Typical Value	
			Near	Far	Near	Far
0.127 mm (5 mil)	Code 39	0.9 (0.8)	66 mm (2.60")	146 mm (5.75")	51 mm (2.01")	224 mm (8.82")
0.254 mm (10 mil)	Code 39	0.9 (0.8)	52 mm (2.05")	289 mm (11.38")	40 mm (1.58")	453 mm (17.84")
0.508 mm (20 mil)	Code 39	0.9 (0.8)	78 mm (3.07")	567 mm (22.32")	56 mm (2.21")	896 mm (35.28")
0.2 mm (7.9 mil)	Code 128	0.9 (0.8)	64 mm (2.52")	238 mm (9.37")	51 mm (2.01")	370 mm (14.57")
0.33mm (13mil)	UPC/EAN	0.9 (0.8)	53 mm (2.09")	357 mm (14.06")	36 mm (1.42")	572 mm (22.52")
0.169 mm (6.7 mil)	PDF417	0.9 (0.8)	61 mm (2.40")	176 mm (6.93")	40 mm (1.58")	210 mm (8.27")
0.254 mm (10 mil)	PDF417	0.9 (0.8)	62 mm (2.44")	257 mm (10.12")	37 mm (1.46")	319 mm (12.56")
0.169 mm (6.7 mil)	QR Code	0.9 (0.8)	76 mm (2.99")	126 mm (4.96")	58 mm (2.28")	162 mm (6.38")
0.381 mm (15 mil)	QR Code	0.9 (0.8)	40 mm (1.58")	294 mm (11.58")	31 mm (1.22")	353 mm (13.90")
0.169 mm (6.7 mil)	Data Matrix	0.9 (0.8)	90 mm (3.54")	123 mm (4.84")	68 mm (2.68")	152 mm (5.98")
0.254 mm (10 mil)	Data Matrix	0.9 (0.8)	54 mm (2.16")	181 mm (7.16")	40 mm (1.58")	217 mm (8.54")

Note: The depth of field depends on the view angle and symbol length.

The depth of field values mentioned are the typical values measured at an ambient temperature of 25°C.

### 8.4. Print Contrast Signal (PCS)

PCS 0.2 or higher

**Conditions**

MRD	13 and higher (70% or higher reflectivity of space and quiet zone)
Barcode Sample	UPC specified in Chapter 8. (Resolution: 0.33 mm, PCS: 0.2)

MRD = Minimum reflectance of white space - Maximum reflectance of black bar

$$PCS = \frac{\text{Reflectance of white space} - \text{Reflectance of black bar}}{\text{Reflectance of white space}}$$

### 8.5. Minimum Resolution

1D Code	0.076 mm ( 3 mil )	Code 39 specified in Chapter 8
GS1-DataBar	0.169 mm ( 6.7 mil )	GS1 DataBar Limited specified in Chapter 8
Stacked Code	0.169 mm ( 6.7 mil )	PDF417, GS1 DataBar Limited Composite specified in Chapter 8
2D Code	0.169 mm ( 6.7 mil )	QR Code and Data Matrix specified in Chapter 8

**Conditions**

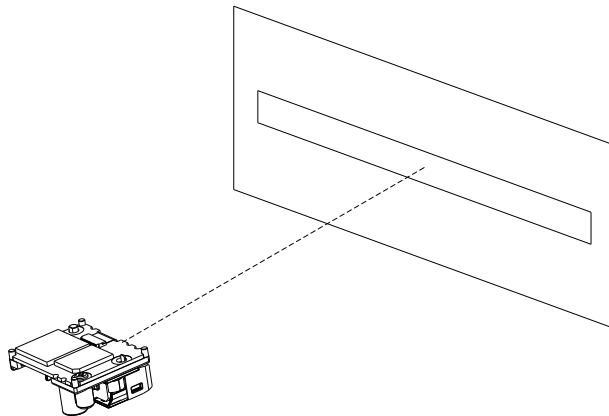
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$

### 8.6. Barcode Width

110 mm

**Conditions**

Barcode Sample	0.20 mm Code 39 specified in Chapter 8
Distance	180 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$



*Figure 8 : Barcode Width*

### 8.7. Pitch, Skew, and Tilt

Pitch :  $\alpha = \pm 65^\circ$   
 Skew :  $\beta = \pm 65^\circ$   
 Tilt :  $\gamma = 360^\circ$

**Conditions**

Barcode Sample : 0.5 mm Code 39 specified in Chapter 8  
 Distance : 180 mm from the front edge of the scan engine  
 Curvature :  $R = \infty$   
 For pitch angle and tilt angle measurements, set the skew angle  $\beta$  to  $+15^\circ$

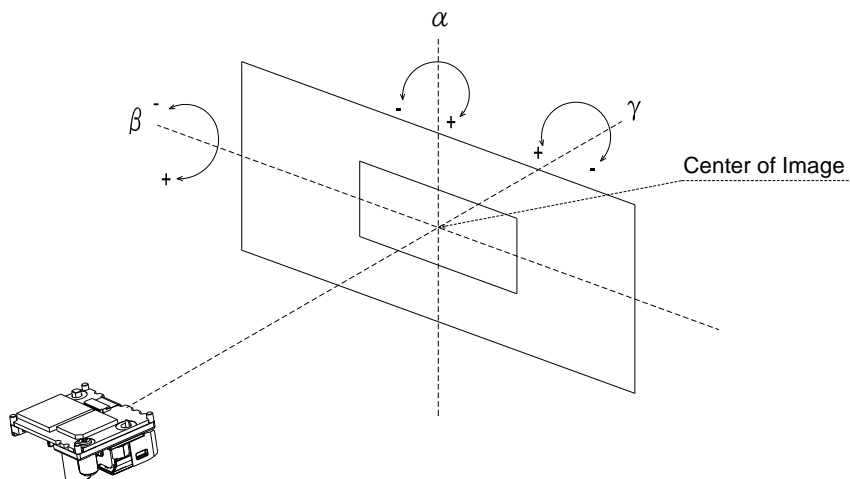


Figure 9 : Pitch, Skew, and Tilt

### 8.8. Curvature

0.33 mm 12-digit UPC  $R \geq 20$  mm

**Conditions**

Barcode Sample : 0.33 mm UPC specified in Chapter 8  
 Distance : 180 mm from the front edge of the scan engine  
 Angle :  $\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$

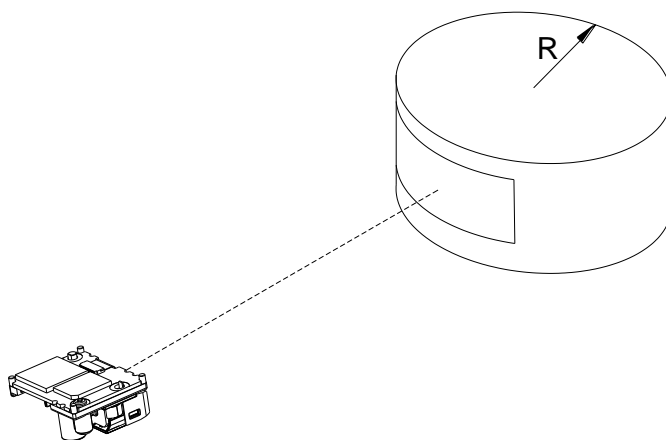


Figure 10 : Curvature

## 8.9. Motion Tolerance

2.54 m/s

### Conditions

Ambient Temperature and Humidity

Room temperature and Room humidity

Ambient Light

500 lux to 1000 lux (on the surface of the barcode)

Distance

130 mm from the front edge of the scan engine

Skew

$\alpha = 0^\circ$ ,  $\beta = +15^\circ$ ,  $\gamma = 0^\circ$

Curvature

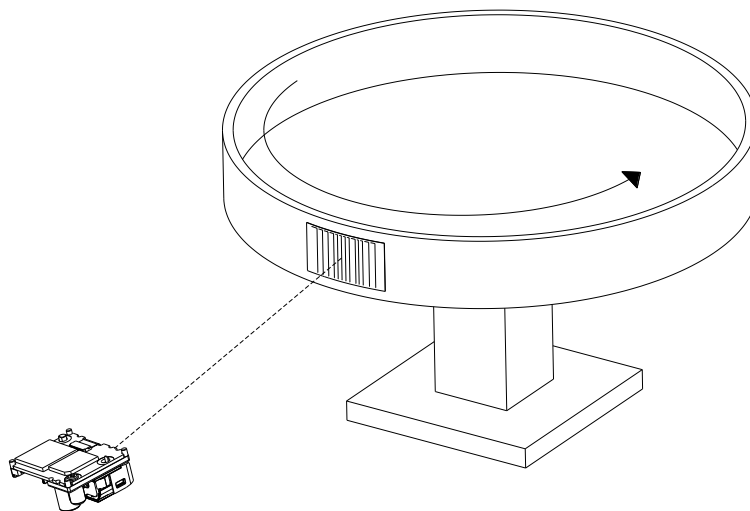
$R = \infty$

PCS

0.9 or higher

Barcode Sample

UPC with 0.33 mm resolution specified in Chapter 8



Note: Successful reading at the indicated speed cannot be guaranteed. Reading may fail due to specular reflection of the illumination LED when the reflectivity is high.

*Figure 11 : Motion Tolerance*

## 9. Environmental Specifications

### 9.1. Temperature

Operating Temperature	-20 to 60 °C
Storage Temperature	-40 to 70 °C

**Conditions**

Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Scanning Test	Read at intervals of 300 ms
Power Supply Voltage	3.3 and 5.0 V

### 9.2. Humidity

Operating Humidity	5 to 90% RH (no condensation, no frost)
Storage Humidity	5 to 90% RH (no condensation, no frost)

**Conditions**

Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Power Supply Voltage	3.3 and 5.0 V

### 9.3. Ambient Light Immunity

Scanning performance is guaranteed when the illuminance on the surface of a barcode is between zero and the following values:

Incandescent Light	10,000 lux
Fluorescent Light	10,000 lux
Sunlight	100,000 lux

**Conditions**

Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Power Supply Voltage	3.3 and 5.0 V

Note: Scanning performance is guaranteed as long as direct ambient light and specular reflection from the illumination LED does not enter the light receiving section of the MDI-5300.

## 9.4. Electrical Noise

### a) Scanning Symbolologies

There shall be no abnormalities in the output signals when sinusoidal electrical noise (50 Hz to 100 kHz, smaller than 0.1 Vp-p) is added to the power supply line.

#### Conditions

Scan Method	Continuous scanning
Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Scanning Test	Read at intervals of 300 ms
Power Supply Voltage	3.3 and 5.0V

### b) Image Data Acquisition

There shall be no excessive noise or misalignments in acquired images when sinusoidal electrical noise (50 Hz to 100 kHz, smaller than 20 mVp-p) is added to the power supply line.

Note: There may be a case where the electrical noise affects the quality of captured images. The signal processing system of the MDI-5300 is especially designed for the purpose of scanning symbolologies but not for the acquisition of image data. Therefore, the quality of captured images of the MDI-5300 may be lower than that of general purpose digital cameras.

## 9.5. Vibration Strength

There shall be no sign of malfunction of the MDI-5300 after the following test.

**Vibration Test:** Increase the frequency of the vibration from 12Hz to 200Hz at accelerated velocity  $32.3\text{m/s}^2(3.3\text{G})$  for ten minutes. Continue this routine for 2 hours to X-direction, 2 hours to Y-direction and 4 hours to Z-direction.

#### Conditions

Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Power Supply Voltage	3.3 and 5.0 V

## 9.6. Drop Impact Strength

There shall be no sign of malfunction of the MDI-5300 after the following test.

**Drop test:** Fix the MDI-5300 in a specific aluminium made dummy case 100x70x50 (WDH mm) and drop it 10 times in total, at top, bottom, front, back, left, right, top-left, top-right, bottom-left and bottom-right faces, from a height of 1.8 meters onto a concrete floor.

#### Conditions

Barcode Sample	0.33 mm UPC specified in Chapter 8
Distance	130 mm from the front edge of the scan engine
Angle	$\alpha = 0^\circ, \beta = +15^\circ, \gamma = 0^\circ$
Curvature	$R = \infty$
Power Supply Voltage	3.3 and 5.0 V



## 10. Environmental Specifications

Connection between the MDI-5300 and a host system:

Use a FFC or FPC cable developed in accordance with specifications provided by the connector manufacturer to connect the MDI-5300 with the host system.

The connector used is produced by IRISO Electronics Co., Ltd.

Product No. 9681-12 (12pin, 0.5mm pitch, 0.3mm thick)

Recommended Cable Length Cable length that ensures that the voltage supplied to the MDI-5300 is 3.0V or higher

## 11. Regulatory Specifications

### 11.1. LED Safety

IEC 62471: 2006 Risk Group 1

### 11.2. Laser Safety

IEC/EN 60825-1:2014 Class 1

JIS C 6802:2014 クラス 1

## 12. RoHS

The MDI-5300 is compliant with RoHS.

Note: RoHS: The restriction of the use of certain hazardous substances in electrical and electronic equipment.  
Directive 2011/65/EU  
Commission Delegated Directive (EU) 2015/863

## 13. Reliabilities

MTBF (mean time between failures) of this product except for laser diode is 375,419 hours.

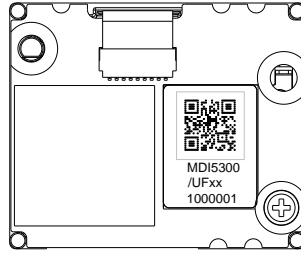
The life cycle of laser diode is 10,000 hours.

## 14. Precautions

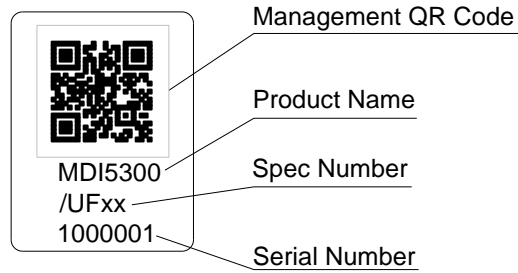
- All work-benches, tools, measuring instruments and any part of the human body which may come into contact with the MDI-5300 must undergo antistatic treatments.
- Do not touch the optical and electrical components. Hold it on the camera body when handling the MDI-5300.
- Avoid handling the MDI-5300 in a dusty area. In case dust gets on the MDI-5300, gently blow it off with dry air. Direct contact of swabs and such on its optical part may cause deterioration of its performance.
- Do not drop the MDI-5300.

## 15. Product Label

The product labels are affixed to the MDI-5300 as shown below.



The details of the label are as follows.



The serial number (seven-digit) starts from 1000001 and is sequentially numbered.

*Figure 12 : Product Label*

## 16. Packaging Specifications

### 16.1. Packaging

A carton box: 280 pieces MDI-5300 (MAX)

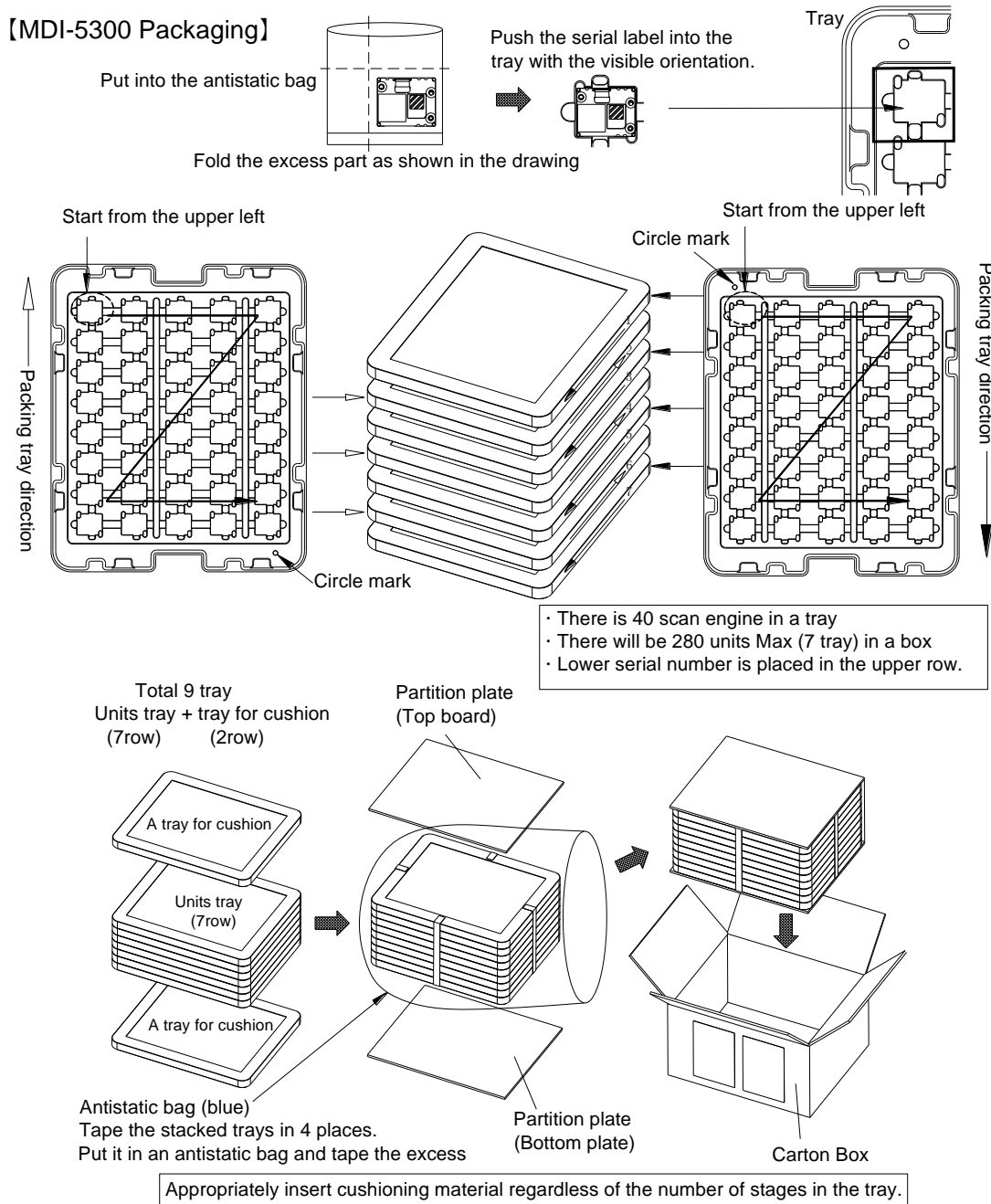


Figure 13 : Packaging

### 16.2. Packaging

365 × 295 × 225 (WDH mm) (Outside dimensions)

Note: The “RO” mark labelled on the package tray or package box guarantees that the applicable product has passed our test of RoHS restrictions compliance (The restriction of the use of certain hazardous substances in electrical and electronic equipment, Directive 2011/65/EU, Commission Delegated Directive (EU) 2015/863.). However, this mark does not have any legal weight in the European Union.

17. Mechanical Drawing

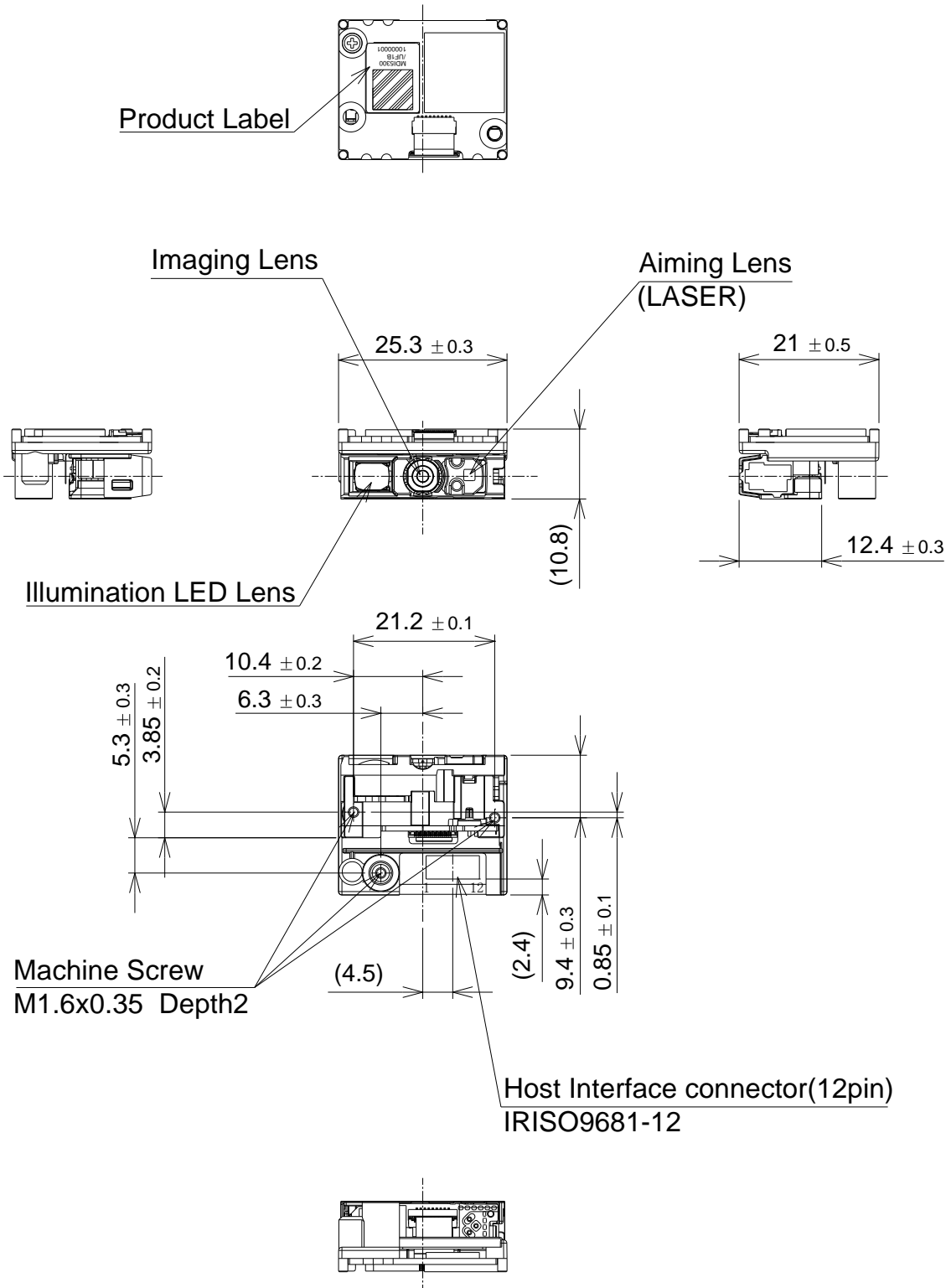


Figure 14 : Drawing (MDI-5300)