



M-12 2D Imager Scanner

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Product Name: M-12

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1st	2026/01/30	-	-	Initial release
2nd	2026/04/17	3	4	Add scan window specifications
		11	8.1	
		3, 4	4	Update depth of field guaranteed value
		15	9.3	
		24 25 26 46	10.2.2 10.2.4 10.2.6 22.1	Add RS-232C 9-pin power supply specifications
		-	-	Correct typo, adjust format.

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1. Overview

This manual provides specifications for the M-12 on/in-counter 2D imager scanner.

2. About the M-12 Imager Scanner

The M-12 is a low-profile, handheld, imager-based, on/in-counter 2D imager scanner that enables high-speed scanning of 1D (linear) and 2D barcodes, as well as OCR fonts.

The M-12 includes these features:

- **New optical system**
The ultra wide-angle proximity readable optical system can read general QR codes at close proximity and wide barcodes* and large QR codes* from a distance of about 40 - 45 mm.
Note: *For a specified code.
- **Low-profile imager scanner**
The space-saving size of the M-12 makes it ideal for kiosks and payment terminals.
- **Environmental Resistance**
Dust and drip-proof in accordance with IP65 and operable in a wide temperature range of -20°C to 60 °C , making it suitable for a variety of uses.
- **User-friendly illumination design**
Uniformly illuminating the reading area reduces brightness and minimizes glare, providing a comfortable illumination design.
- **Ambient light immunity**
A special optical filter with sunlight resistance and industrial CMOS sensor control enables readings of up to 120,000 Lux.
- **High-speed image sensor**
The high-speed global shutter CMOS image sensor in the MDI-12 captures images at a speed of up to 120 fps. This feature enables fast and accurate scanning.
- **Full-color indicator and floodlight LED**
The M-12 has four full-color LEDs. The surface-emitting LED provides high visibility for the indicator display. You can also change the illumination color.
- **Low power consumption**
The high-performance and customized low-power 800MHz CPU has drastically minimized the power consumption in operating, standby, low-power states, and booting. This feature also makes it ideal for wireless devices.
- **Data Edit Programming**
Data Edit Programming provides an almost unlimited flexibility to format scanned data before it is sent. Up to 16 barcodes can be partially combined and fixed parts can be added. The output editing process, such as GS1 format, can also be easily configured.
- **RoHS compliance**
The M-12 is a RoHS compliant product, as declared by Optoelectronics Co., Ltd.

3. Model Details

The M-12 model name is constructed by a combination of these characteristics.

Model Name	Housing Color	Interface
M-12	-WHT or -BLK	-USB-HID or -USB-COM or -RS232C

3.1. Standard Product Description

These specifications describe the standard products.

Standard	Description
M-12-BLK-USB	Black housing USB-HID/USB Type-A 2.0 m cable
M-12-BLK-RS232C	Black housing RS-232C (multi-interface spec), cable not included

Note: Other combinations are available by special order. For help, contact your local sales office.

3.2. Model Description

Housing

Symbol	Description
- BLK	Black housing
- WHT	White housing

Interface Cable

Symbol	Description
-USB	Cable: USB type-A cable 2.0 m Supported interface: USB-HID/USB-COM Interface default setting: USB-HID
-USB-COM	Cable: USB type-A cable 2.0 m Supported interface: USB-HID/USB-COM Interface default setting: USB-COM
-RS232C	Cable: Not included (sold separately) Supported interface: RS-232C/USB-HID/USB-COM Interface default setting: RS-232C <div data-bbox="571 1547 810 1724" data-label="Image"> </div> <p>Modular Jack Connector (For connecting the cable sold separately)</p> <p>Note: The modular jack connector for connecting the cable (sold separately) is attached to the M-12. Connecting the RS-232C cable and AC adapter or USB cable (sold separately) is required.</p>

4. Basic Specifications

Specification			Description	Notes
Interface	RS-232C		300 bps to 115200 bps	Default: 9600 bps
	USB (HID/COM)		Full Speed 12Mbps	
Indicator	LED		Upper panel 3 color LED	
	Buzzer		Loudness/tone adjustable	
Optical Section	Scanning method		Monochrome CMOS area sensor	Frame rate: 120 fps
	Scanning light source		3 color LED × 4 pcs	
	Effective pixels		0.30 million pixels (H: 640 x V: 480)	
	View angle		Horizontal: about 120.0° Vertical: about 94.2° Diagonal: about 120.0°	
	Scan window		Material: Acrylic (PMMA) with hard coating Pencil hardness: 6H Mohs hardness: 4 equivalent	
Supported 1D Symbolologies	Symbolologies	1D	UPC-A, UPC-E, UPC-E1, UPC-A Add-on , UPC-E Add-on, EAN-13, EAN-8, EAN-13 Add-on/EAN-8 Add-on, JAN-8, JAN-13, Code 39, NW-7(Codabar), Industrial 2 of 5, Interleaved 2 of 5, Code 93, Code 128, GS1- 128, MSI/Plessey, Code 11, UK/Plessey, Telepen, Code 11, Matrix 2 of 5	PCS 0.9
		Postal	Korean Postal Authority code, Chinese Post Matrix 2 of 5, Japanese Postal, Intelligent Mail Barcode, POSTNET, PLANET, Netherlands KIX Code, Australian Postal, UK Postal, 4- State Mailmark Barcode	
	Minimum resolution		Code 39: 0.076 mm	
	Curvature		Radius $\geq$ 20 mm (12-digit UPC)	
	Barcode width		Possible to read: Code 39 with 100 mm width and resolution 0.2 mm (DOF: 127 mm)	
	Motion tolerance		Possible to read: UPC 100% moving at 3 m/s (DOF: 40 mm)	
	Depth of field	Code 39	Resolution (0.127 mm) 7 - 43 mm	
			Resolution (0.254 mm) 11 - 109 mm	
		Code 128	Resolution (0.20 mm) 17 - 88 mm	
		UPC	Resolution (0.33 mm) 12 -128 mm	
GS1/Composite	Symbolologies		GS1 DataBar, GS1 DataBar Limited, GS1 DataBar Expanded Composite GS1 DataBar, Composite GS1-128, Composite EAN, Composite UPC	GS1 DataBar: formerly called "RSS"
	Minimum resolution		GS1 DataBar: 0.127 mm Composite Code: 0.127 mm	PCS 0.9

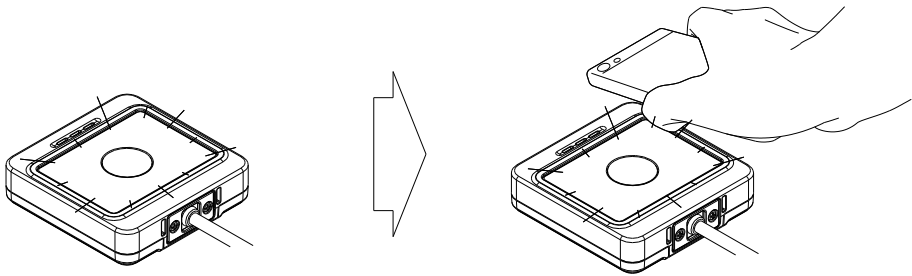
Specification			Description		Notes
Supported 2D Symbolologies	Symbolologies		PDF417, MicroPDF417, Codablock F, QR Code, Micro QR Code, rM QR Code, Data Matrix (ECC 200), MaxiCode, Aztec Code, Chinese Sensible Code		Disable Code 128 when Codablock F is enabled.
	Minimum resolution		PDF417: QR 0.127 mm Code: 0.127 mm Data Matrix: 0.127 mm		PCS 0.9
	Depth of field	PDF417	Resolution (0.254 mm)	13 - 53 mm	
		QR Code	Resolution (0.127 mm)	7 - 18 mm	
			Resolution (0.381 mm)	7 - 69 mm	
			Data Matrix	Resolution (0.254 mm)	
Common	Scan angle		Pitch: ±55°		
			Skew: ±65°		
			Tilt: 360°		
Minimum PCS		0.2 or more		MRD: 13% or more	
OCR	OCR font		Machine Readable Travel Documents, ISBN(OCR-B)		
Imager	Image data format		Windows Bitmap, JPEG		
	Shades of gray		256, 16, 2		
	Range of output image		Select top/bottom (column) and left/right (row)		
	Resolution of output image		Full,1/2, 1/4		
	Interface of output image		RS-232C, USB-COM		
	Image Transfer Time		USB-COM (full speed)	About 3 sec	Resolution: Full
RS-232C (baud rate: 115.2 kbps)			About 40 sec		
Power	Range of operating voltage		5V ± 10%		Both RS-232 and USB
	Current consumption	Reading	RS-232C: 115 mA/USB: 140 mA (typ.)		Ambient temperature: 25°C
		Standby	RS-232C: 22 mA/USB: 48 mA (typ.)		Power supply voltage: 5.0 V
Environmental Specifications	Temperature	Operating	-20 to 60 °C		
		Storage	-30 to 65 °C		
	Humidity	Operating	5 to 90% (no condensation, no frost)		
		Storage	5 to 90% (no condensation, no frost)		
	Ambient light immunity	Fluorescent	10,000 lx or less		UPC 100%
		Sunlight	120,000 lx or less		Optical axis angle: 75° Distance: 90 mm
	Vibration		10 Hz to 100 Hz, acceleration of 19.6 m/s ² , 60 minutes per cycle, repeat once in each X, Y and Z-direction		
	Drop		Drop 3 times, at each 5 faces (right, left, front, back and top), from a height of 150 cm onto a concrete surface.		* Excluding the part where the interface cable is attached
	Dust and drip proof		IP65		IEC 60529(JIS C 0920)

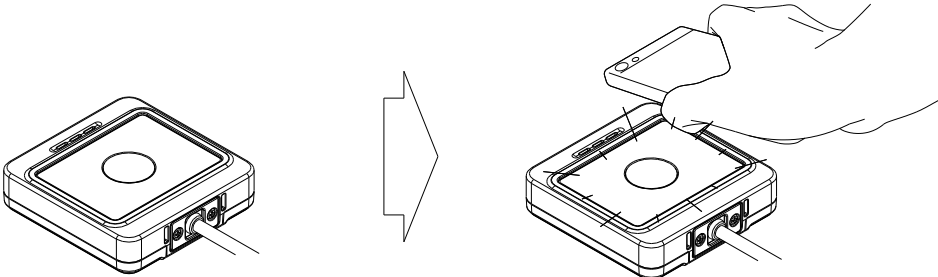
Specification			Description	Notes
Regulatory	This scanner is an Exempt Risk Group LED product.			
	LED safety		IEC 62471:2006 Exempt Group	Warm white LED and Green LED
	EMI		VCCI/EN55032/FCC Class-B	For residential, commercial and light-industrial environments
	Product safety		CE Marking	
	Electromagnetic compatibility (EMC)		EN 55035	For residential, commercial and light-industrial environments
Immunity Test	ESD immunity	No destruction	Air discharge (direct): ±15 kV	Condition: IEC:61000-4-2 compliant
		No malfunction	Contact discharge (direct/indirect): ±6kV Air discharge (direct): ±8 kV	
	Radio-frequency electromagnetic field. Amplitude modulation	Frequency	80 to 1000 MHz	Condition: IEC61000-4-3 compliant
		Level	3 V/m	
		AM	80% (AM)	
	Fast transient	Voltage	Alternating-current input cable: ±1 kV	Condition: IEC61000-4-4 compliant
		Pulse	5/50 ns (Tr/Tw)	
		Frequency	5 kHz	
	Surge	Pulse	1.2/50 μs (Tr/Th)	Condition: IEC61000-4-5 compliant
		Voltage	From L to P: ±2 kV (closed-loop voltage)	
			From L to L: ±1 kV (closed-loop voltage)	
	Radio-frequency common mode	Frequency	0.15 to 80 MHz	Condition: IEC61000-4-6 compliant
		Level	3 V	
		AM	80% (AM)	
	Power frequency magnetic field	Frequency	50 and 60 Hz	Condition: IEC61000-4-8 compliant
		Level	3 A/m	
	Voltage dip, momentary voltage drop, fluctuation	Dip 1	Drop 30%, 0.5 cycles	Condition: IEC61000-4-11 compliant
Dip 2		Drop 60%, 5 cycles		
Momentary drop		Drop > 95%, 250 cycles		
Physical Features	Dimensions		Approx. 58 × 58 × 14.8 (WDH mm)	Excluding the cable
	Weight		Approx. 47 g	Excluding the cable
	Housing color		Black/White (special order)	

5. Basic Operation Mode

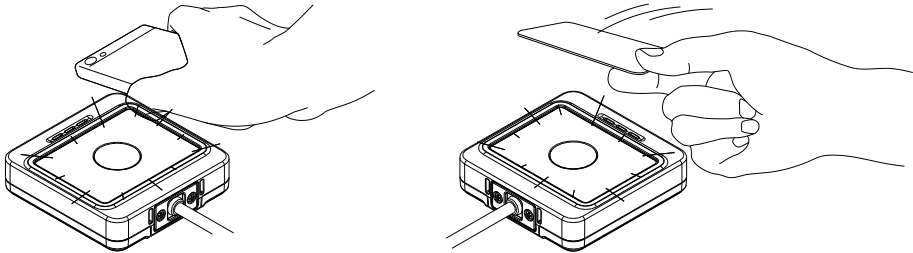
The M-12 has two trigger modes and three specific reading modes.

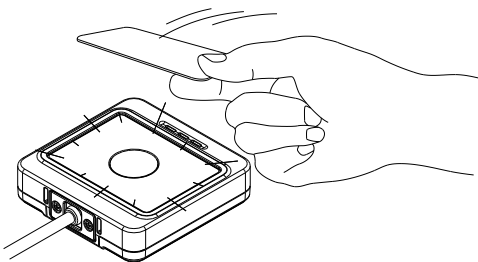
5.1. Basic Modes

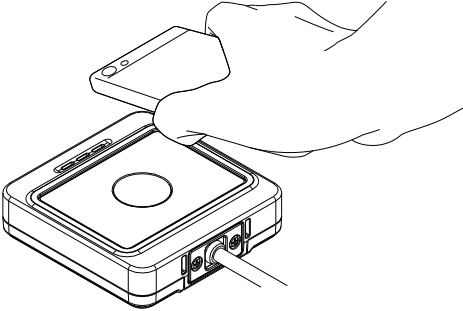
Operation Mode Name	Always Reading Mode (Default)		
Mode description	The mode to read instantly by holding a code on a screen or on paper.		
Menu label		Menu command	S7
Operation diagram	 <p><i>Figure 1: Always Reading Mode Operation</i></p>		

Operation Mode Name	Auto Trigger Mode		
Mode description	Starts reading when holding the reading target and turns on the illumination. *1 *1 When Screen Only Mode is selected as the Specific Reading Mode, the illumination is OFF.		
Menu label		Menu command	S8+I
Operation diagram	 <p><i>Figure 2: Auto Trigger Mode Operation</i></p>		

5.2. Specific Reading Modes

Operation Mode Name	Balance Mode (Default)		
Mode description	The mode to read both on-screen codes and printed codes.		
Menu label		Menu command	[D3B
Operation diagram	 <p><i>Figure 3: Balance Mode Operation</i></p>		

Operation Mode Name	Paper Only Mode		
Mode description	Suitable for reading code on paper only. Illumination is ON.		
Menu label		Menu command	[D39
Operation diagram	 <p><i>Figure 4: Paper Only Mode Operation</i></p>		

Operation Mode Name	Screen Only Mode		
Mode description	Suitable for reading code on screen only. Illumination is OFF.		
Menu label		Menu command	[D3A
Operation diagram	 <p><i>Figure 5: Screen Only Mode Operation</i></p>		

6. Detailed View

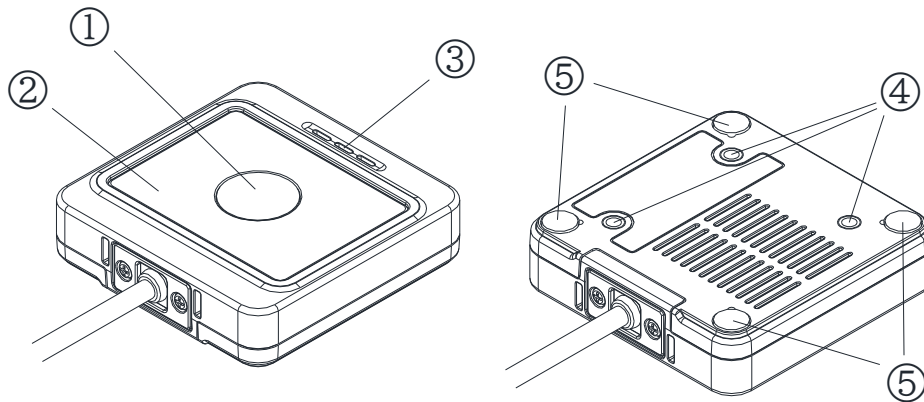


Figure 6: Detailed View of M-12

No.	Name	Description
1	Scan Window	Light path of the imager and LED illumination and LED aiming. Make sure that the lens is not exposed to dust or dirt before scanning.
2	LED Panel	Shows the operating status of the scanner. Blue LED light indicates a good read. You can also set the lighting color.
3	Buzzer Hole	Sound from a built-in buzzer comes out through these holes. When they are covered, the buzzer sound will be diminished. The sound varies depending on the settings. You can configure buzzer volume and duration.
4	Screw Holes	The screw holes are used to mount the scanner. They are M3×L5 in 3 places. Recommended tightening torque: 0.63 [N·m]
5	Rubber Feet	The rubber feet help to prevent slipping.

7. Electrical Specifications

The M-12 comprises of these sections:

- Image Section: contains the CMOS sensor, wide-angle lens, and LED for illumination and indicator.
- Decoder Section: for image processing and decoding 1D/2D codes captured in the acquired image.
- Communication Control Section: to communicate with a host.
- Power Supply Section: for the main power supply conversion.

The USB interface models are powered by the interface, so no external power supply is needed. The RS-232C interface model needs a DC 5.0V power supply. You can attach the USB cable (sold separately) to the RS-232C interface mode. When attaching the USB cable, the scanner is powered by the interface, just like the USB interface model.

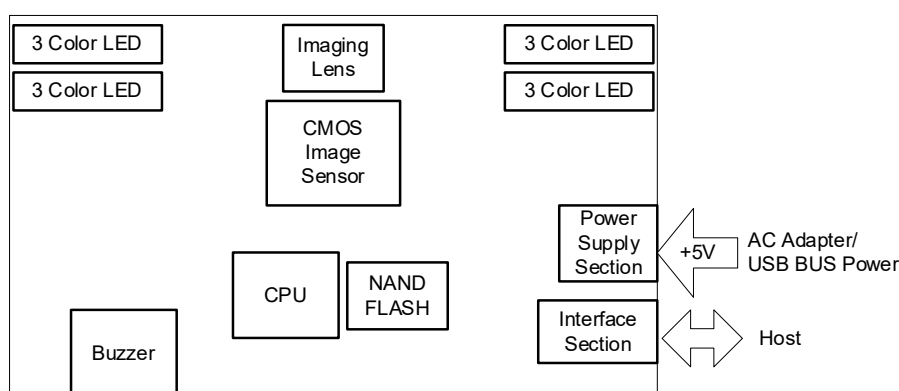


Figure 7: Configuration Diagram

7.1. USB Specifications

Input voltage: 5.0 V $\pm$ 5%
 Current consumption:* 48 mA (typ.) in standby mode
 140 mA (typ.) during reading operation

* The current consumption was measured at 25°C and may vary depending on the host.

7.2. RS-232C Specifications

Input voltage: 5.0 V $\pm$ 5%
 Current consumption:* 22 mA (typical) in standby mode
 115 mA (typical) during reading operation

* The current consumption was measured at 25°C and may vary depending on the host.

8. Optical Specifications

8.1. Basic Optical Specifications

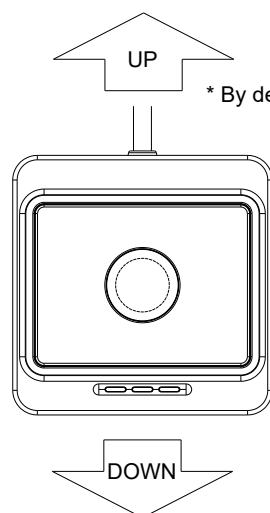
Specification		Characteristics
Scan method	CMOS area sensor (white/black)	-
Number of effective pixels	(Column) × (Row)	640 × 480 pixels
Image capture speed*1	Frame rate	120 fps
Image capture direction*2		See Figure 8 below
Focal distance	Distance from the front edge of scanner	Approx. 23 mm
View angle*3	Horizontal	about 120.0°
	Vertical	about 94.2°
	Diagonal	about 120.0°
Reading light source (3 colors LED × 4)	3 colors LED	White sorted product
	Maximum luminous intensity*4	2.0cd
Scan window	Material	Acrylic (PMMA) with hard coating
	Pencil hardness	6H
	Mohs hardness	4 equivalent

*1 The fastest speed of image capture.

*2 The image direction during image capture can be changed by the setting.

*3 Imaging range. The readable area may vary depending on the code type and reading conditions.

*4 Reference value based on the Nichia Corporation (NESM238AT-PW white sorted product) data sheet.



* By default, the cable side is at the top of the image.

Figure 8: Image Capture Direction

9. Technical Specifications

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

Conditions

Ambient Temperature and Humidity	Room temperature, room humidity
Ambient Light	100 to 500 lux
Angles	Pitch: $\alpha = 0^\circ$, Skew: $\beta = 0^\circ$
Curvature	$R = \infty$
Power Supply Voltage	5.0 V
PCS (1D and 2D)	0.9 or higher
Scanning Test	Accept the performance with 90% or more success rate for 10 tries of scan.
Barcode Test Sample (1D and 2D)	Specified in section 9.1.

Test Chart

For 1D codes, OPTOELECTRONICS test samples.

For GS1 Databar, stacked codes and 2D codes, printed by a dedicated printer for barcode.

9.1. Barcode Test Sample

1D Barcodes

Code 39

Resolution	Symbology	PCS	Size (mm)	No. of Digits
0.076 mm (3 mil)	Code 39	0.9	13 × 10	10
0.127 mm (5 mil)			11 × 10	4
0.20 mm (7.9 mil)			60 × 10	17
0.254 mm (10 mil)			32.5 × 10	7
0.508 mm (20 mil)			43 × 25	4

Code 128

Resolution	Symbology	PCS	Size (mm)	No. of Digits
0.20 mm (7.9 mil)	Code 128	0.9	42 × 10	16

UPC/EAN

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

Codabar (NW-7)

Resolution	Symbology	PCS	Size (mm)	No. of Digits
0.254 mm (10 mil)	Codabar	0.9	40 × 13	12

GS1 Databar/Composite

GS1 DataBar Limited

Resolution	Symbology	PCS	Size (mm)	No. of Digits
0.127 mm (5.0 mil)	Limited	0.9	9 × 1.3	14
0.127 mm (5.0 mil)	Limited-Composite	0.9	9 × 2.5	26

2D Codes

PDF417

Resolution	Error Correction	PCS	Size (mm)	No. of Characters
0.127 mm (5.0 mil)	Level-3	0.9	17.3 × 7.5	58
0.254 mm (10 mil)			35 × 15	

QR Code: Model-2

Resolution	Error Correction	PCS	Size (mm)	No. of Characters
0.127 mm (5.0 mil)	M	0.9	4 × 4	44
0.381 mm (15 mil)			11 × 11	
1.650 mm (54 mil)			48 × 48	

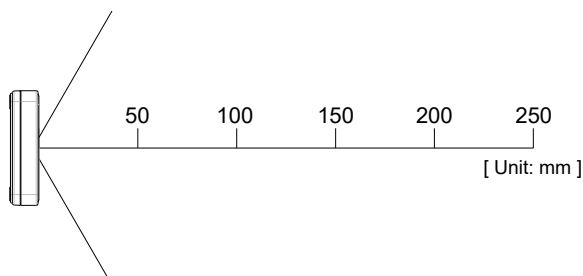
Data Matrix

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

* Size is measured using the outline dimensions, excluding the quiet zone.

9.2. Scan Area and Depth of Field

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



Code 39	$\left[\begin{array}{l} 4 \xleftarrow{0.127 \text{ mm}} 50 \\ 8 \xleftarrow{0.254 \text{ mm}} 129 \end{array} \right.$
Code 128	$\left[\begin{array}{l} 13 \xleftarrow{0.20 \text{ mm}} 97 \end{array} \right.$
UPC/EAN	$\left[\begin{array}{l} 8 \xleftarrow{0.33 \text{ mm}} 161 \end{array} \right.$
Codabar	$\left[\begin{array}{l} 11 \xleftarrow{0.254 \text{ mm}} 133 \end{array} \right.$
PDF417	$\left[\begin{array}{l} 10 \xleftarrow{0.254 \text{ mm}} 62 \end{array} \right.$
QR Code	$\left[\begin{array}{l} 4 \xleftrightarrow{0.127 \text{ mm}} 22 \\ 4 \xleftarrow{0.381 \text{ mm}} 74 \end{array} \right.$
Data Matrix	$\left[\begin{array}{l} 3 \xleftarrow{0.254 \text{ mm}} 46 \end{array} \right.$

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 without strong reflection.

Figure 9: Scan Area and Depth of Field

9.3. Depth of Field

The depth of field is measured from the front edge of the scanner.

Resolution	Code	PCS (MRD)	Guaranteed Value (mm)		Typical Value (mm)	
			Near	Far	Near	Far
0.127 mm	Code 39	0.9 (0.8)	7 mm	43 mm	4 mm	50 mm
0.254 mm	Code 39	0.9 (0.8)	11 mm	109 mm	8 mm	129 mm
0.2 mm	Code 128	0.9 (0.8)	17 mm	88 mm	13 mm	97 mm
0.33 mm	UPC/EAN	0.9 (0.8)	12 mm	128 mm	8 mm	161 mm
0.254 mm	Codabar	0.9 (0.8)	15 mm	108 mm	11 mm	133 mm
0.254 mm	PDF417	0.9 (0.8)	13 mm	53 mm	10 mm	62 mm
0.127 mm	QR Code	0.9 (0.8)	7 mm	18 mm	4 mm	22 mm
0.381 mm	QR Code	0.9 (0.8)	7 mm	69 mm	4 mm	74 mm
0.127 mm	Data Matrix	0.9 (0.8)	6 mm	39 mm	3 mm	46 mm

Note: The depth of field depends on the reading angle and barcode width.

9.4. Printed Contrast Signal (PCS)

PCS: 0.2 or higher

Conditions

MRD	13% and higher (80% or higher reflectivity of space and quiet zone)
Barcode Sample	UPC specified in section 9.1. (Resolution: 0.33 mm, PCS: 0.2)
Code paper surface brightness	100 lx and more

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

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

Note: Make sure to keep the optical window clean. Dirt or scratches on the optical window may negatively affect reading.

9.5. Minimum Resolution

1D Code:	0.076 mm (3 mil) Code 39 specified in section 9.1
GS1-Databar:	0.127 mm (5 mil) GS1 Databar Limited specified in section 9.1
Stacked Code:	0.127 mm (5 mil) PDF417, GS1 Databar Limited Composite specified in section 9.1
2D Code:	0.127 mm (5 mil) QR Code and Data Matrix specified in section 9.1

Conditions

Barcode Sample	The above codes specified in section 9.1
Angle	$\alpha = 0^\circ$, $\beta = 0^\circ$
Curvature	$R = \infty$

9.6. Barcode Width

1D Code:	60 mm width Code 39
2D Code:	Size 48 × 48 mm QR Code

Conditions

1D Code Sample Distance	Resolution 0.20 mm Code 39/PCS 0.9 specified in section 9.1 40 mm from the front edge of the scanner
2D Code Sample Distance	Resolution 1.65 mm QR Code/PCS 0.9 specified in section 9.1 45 mm from the front edge of the scanner
Angle	$\alpha = 0^\circ$, $\beta = 0^\circ$
Curvature	$R = \infty$

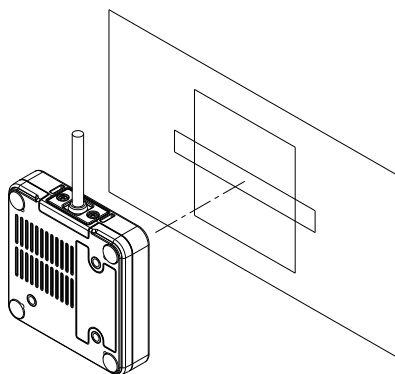


Figure 10: Wide Barcode

9.7. Pitch, Skew and Tilt

Pitch: $\alpha = \pm 55^\circ$, $\beta = 0^\circ$, $\gamma = 0^\circ$

Skew: $\beta = \pm 65^\circ$, Dead zone $\alpha = 0^\circ$, $\gamma = 0^\circ$

Tilt: $\gamma = 360^\circ$, $\alpha = 0^\circ$, $\beta = 0^\circ$

Conditions

Barcode Sample	0.5 mm Code 39, specified in section 9.1
Distance	50 mm from the front edge of the scanner
Curvature	$R = \infty$

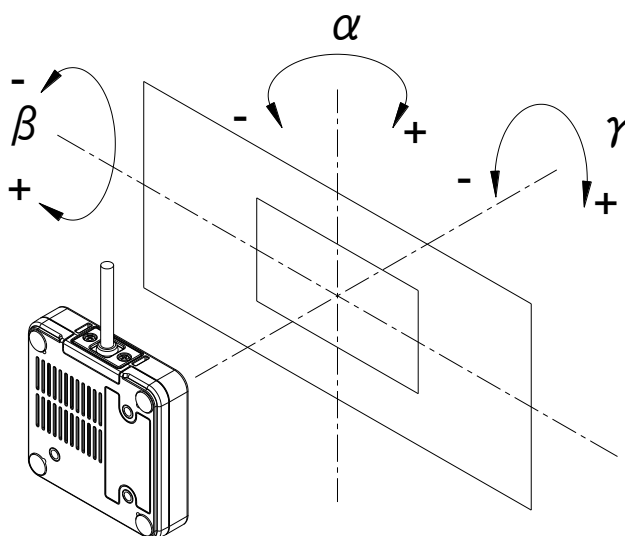


Figure 11: Pitch, Skew, and Tilt

9.8. Curvature

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

Conditions

Barcode Sample	0.33 mm UPC specified in section 9.1
Distance	50 mm from the front edge of the scanner
Angle	$\alpha = 0^\circ$, $\beta = 0^\circ$

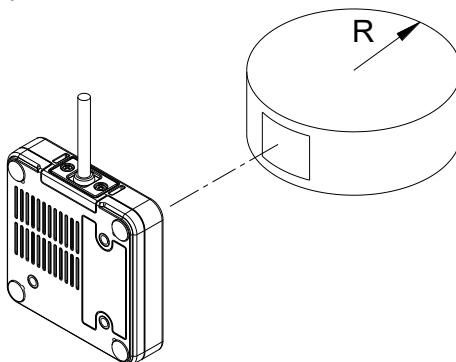


Figure 12: Curvature

Note: The reading characteristics may deteriorate due to the specular reflection of LED illumination when the reflectivity is high.

9.9. Motion Tolerance

UPC can be read when it is moving at 3m/s

Conditions

Ambient Temperature and Humidity	Room temperature, room humidity
Ambient Light	500 to 1000 lux
Distance	40 mm from the front edge of the scanner
PCS (1D and 2D)	0.9 or higher
Barcode Sample	UPC 0.33 mm, specified in section 9.1.

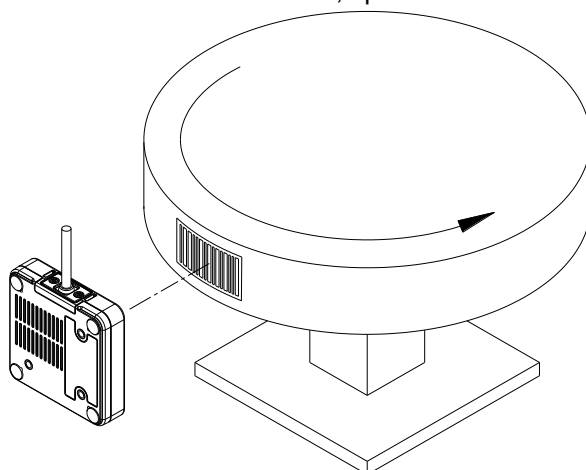


Figure 13: Motion Tolerance

Note: This is only the possible reading speed, which does not guarantee 100% reading.

The reading characteristics may deteriorate due to the specular reflection of LED illumination when the reflectivity is high.

9.10. Auto Trigger

In Auto Trigger mode, the scanner automatically detects a barcode and starts scanning. Auto Trigger is a configurable option. The scanner starts scanning automatically when it detects an abrupt change in brightness within the scan area.

For example:

- Auto Trigger is activated when a gray-colored paper is inserted in front of a black paper.
- Auto Trigger is activated when a black-colored paper is inserted in front of a gray paper.

Conditions

Paper used	Black paper from Glory called as Black 010010016 Gray paper from Glory called as Silver-gray 010010016
Ambient Light	500 to 1000 lux
Moving speed of paper	less than 2m/second
Ambient Temperature and Humidity	Room temperature, room humidity

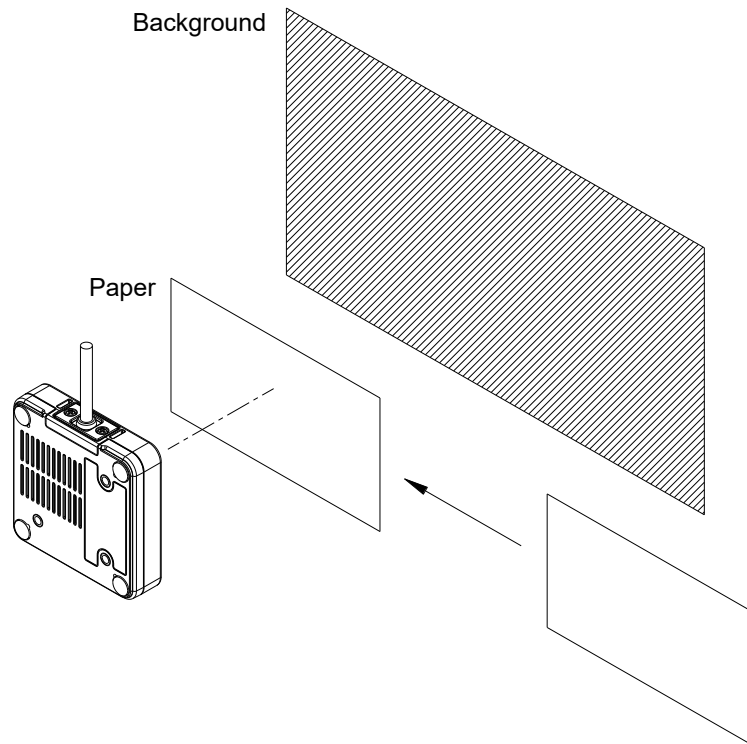


Figure 14: Auto Trigger Specification

9.11. Reading On-Screen Codes

You can read codes displayed on a screen (brightness of white part 30 cd/m² or more, contrast ratio 100:1).

Reading Conditions

Code	QR Code 0.381 mm equivalent, specified in Section 9.1
Ambient light	100 lx or less
Distance	40 mm from the front edge of the scanner
Read mode	Screen only mode
Angle	$\alpha = 0^\circ$, $\beta = 0^\circ$
LCD screen type	Transmissive (backlight) TFT and Organic EL

$$\text{Contrast ratio} = \frac{\text{Brightness of white parts}}{\text{Brightness of black parts}}$$

- * The barcode resolution is the value when displayed on the screen.
- * The width of barcode element is an integral multiple of pixel width of the screen.
- * The reading characteristics may deteriorate due to the specular reflection of LED illumination when the reflectivity is high and the influence of the screen film.
- * Specified screen is used.

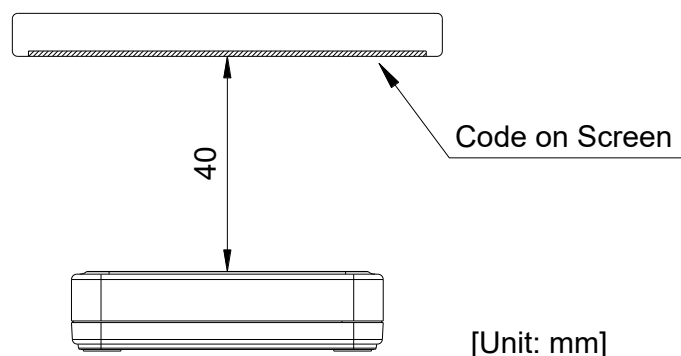


Figure 15: Reading On-Screen Codes

10. Interface Specification

The USB interface model supports two interfaces: USB-HID and USB-COM. You can change the interface by changing the settings.

The RS-232C interface model supports three interfaces: RS-232C, USB-HID, and USB-COM. You can change the interface by changing the cable (optional) and changing the settings.

10.1. USB Interface

This section describes the specifications when using the OPTICON USB cable (optional accessories) for the USB and RS-232C interface models.

The USB interface has two specifications: HID (Human Interface Device Class) and COM (Communication Device Class). COM allows for bidirectional serial communication and is used for command transmission from the host device to the scanner, in addition to receiving barcode data.

Notes:

- With USB-COM, the scanner can transfer images.
- For the USB-COM interface model, you need to install the Opticon USB-COM driver on your host device. Make sure to use the latest version of the USB-COM driver.
- While using USB-COM, if the host COM port is not actively open, scanned data cannot be sent and the M-12 will make an error sound.
- By changing the cable and configuration, you can change an RS-232C model to a USB model and vice versa. For more information, see Chapter 20.

10.1.1. USB Interface Specifications

Bus-power class: 500 mA (high-power)

Speed: Full speed (12 Mbps)

Interface: HID/COM (Virtual COM Port)

Notes:

- When using USB, the USB interface models are bus powered, so no AC adapter is needed.
- HID interface cannot transfer images.
- Use only a high-power bus (500 mA) USB port.
- Do not use the host keyboard when using USB-HID to transmit barcode data. Data may be lost.

Parameter	Description
Transfer Speed	USB2.0 Full Speed/High Speed
Vendor ID	065A
Product ID	A001 (HID)
Product ID	A002 (COM)

10.1.2. USB Connector

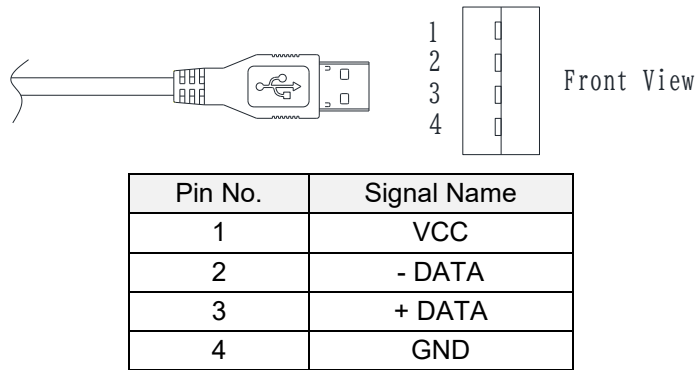


Figure 16: USB Plug (A) Pin Assignment

10.1.3. USB Interface Circuit

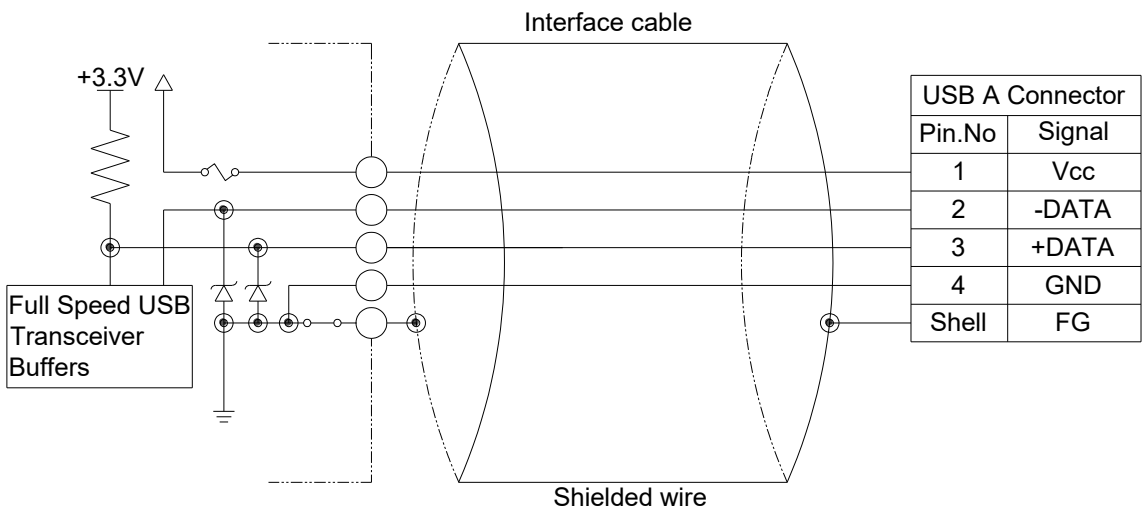


Figure 17: Interface Circuit (USB)

10.1.4. USB Interface Cable (USB Interface Model)

Cable length (L): 2000 mm
Cable diameter: ϕ 3.8
Weight: Approx. 53 g

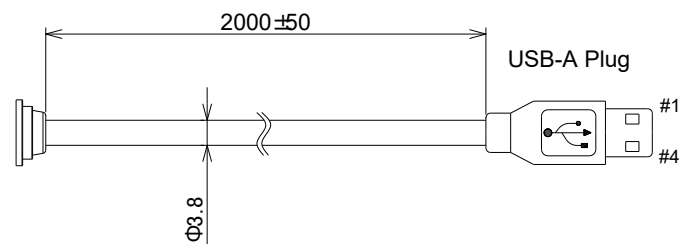


Figure 18: USB Interface Cable

10.1.5. USB Interface Cable (Optional Accessories for RS-232C Interface Model)

Cable length (L): 2100 mm
Cable diameter: ϕ 4.8
Weight: Approx. 75 g

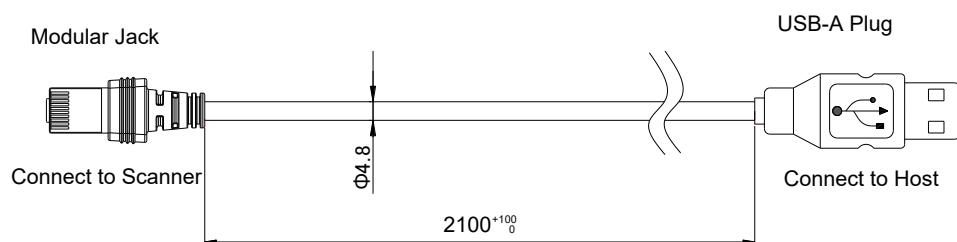


Figure 19: USB Interface Cable (Optional Accessory)

10.2. RS-232C Interface

This section describes the specifications when using the OPTICON RS-232C cable (optional accessory) for RS-232C serial communication with a host computer.

Notes:

- When the COM port on the host side is closed, scanned data cannot be sent.
- By exchanging the cable and changing the configuration, you can convert an RS-232C interface model to a USB interface model. To change the setting, refer to chapter 20.
- The USB interface model cannot be switched to an RS-232C interface.

10.2.1. Initial Communication Settings

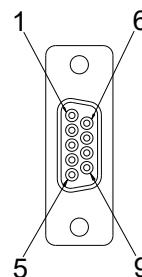
Parameter	Value	Default
Baud rate	300 to 115200 bps	9600 bps
Data length	7 bits, 8 bits	8 bits
Parity	None, Even, Odd	None
Stop bits	1 bit, 2 bits	1 bit

Note: With RS-232C, the scanner can transfer images.

10.2.2. Signal Level and Pin Assignment

Signal names are based on the signals transmitted from the scanner to the host.

Signal Name		Pin No.	Notes
AC Adapter power supply specification	9 pin power supply specification		
NC		1	Open (not connected)
TxD		2	
RxD		3	
NC		4	Connected to pin 6
GND		5	
NC		6	Connected to pin 4
CTS		7	
RTS		8	
NC	VCC	9	Open (not connected, when AC adapter power supply specification)



D-Sub 9pin female

Figure 20: RS-232C Connector Pin Assignments

Signal Level

Signal Name	IN/OUT	Voltage(V)	
		Mark	Space
TxD	OUT	-5 to -15	+5 to +15
RxD	IN	-3 to -15	+3 to +15
RTS	OUT	-5 to -15	+5 to +15
CTS	IN	-3 to -15	+3 to +15

10.2.3. RS-232C Interface Circuit (AC Adapter Power Supply Specification)

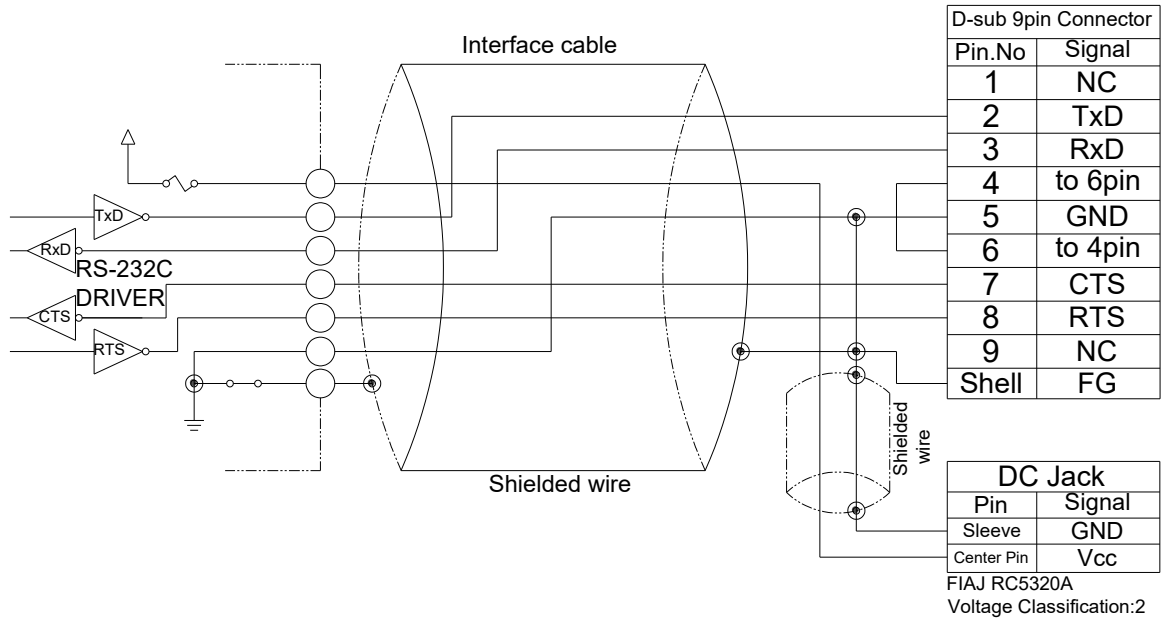


Figure 21: Interface Circuit (AC Adapter Power Supply Specification)

10.2.4. RS-232C Interface Circuit (9-Pin Power Supply Specification)

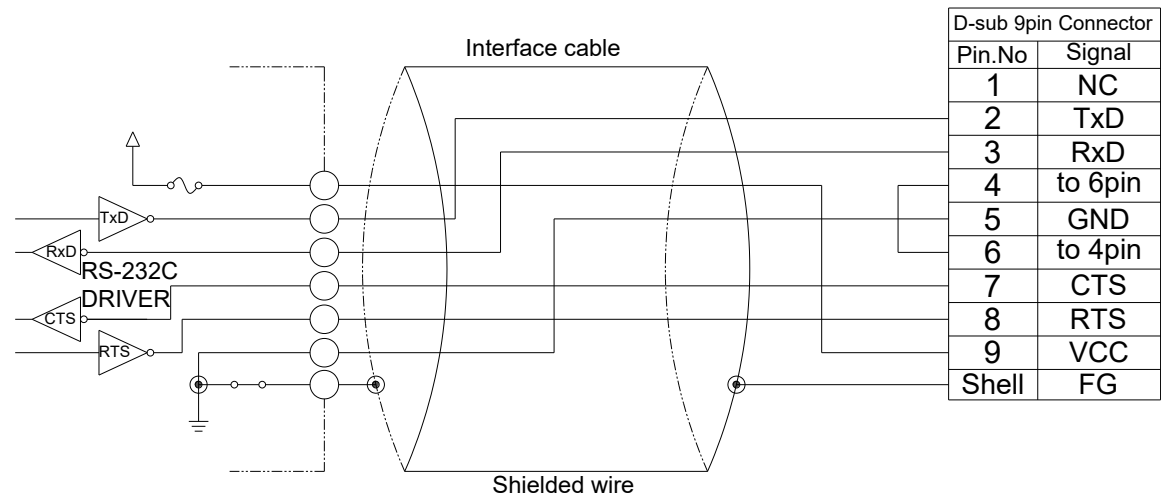


Figure 22: Interface Circuit (9-Pin Power Supply Specification)

10.2.5. RS-232C Interface Cable (AC Adapter Power Supply Specification/Optional Accessory for RS-232C Interface Model)

Cable length (L): 2100 mm
Cable diameter: ϕ 4.8
Weight: Approx. 93 g

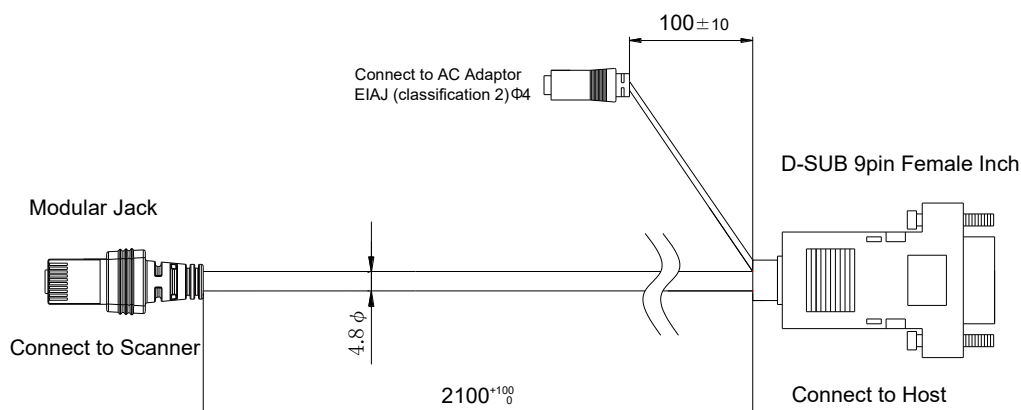


Figure 23: RS-232C Interface Cable (AC Adapter Power Supply Specification/Optional Accessories)

10.2.6. RS-232C Interface Cable (9-Pin Power Supply Specification/Optional Accessory for RS-232C Interface Model)

Cable length (L): 2100 mm
Cable diameter: ϕ 4.8
Weight: Approx. 86 g

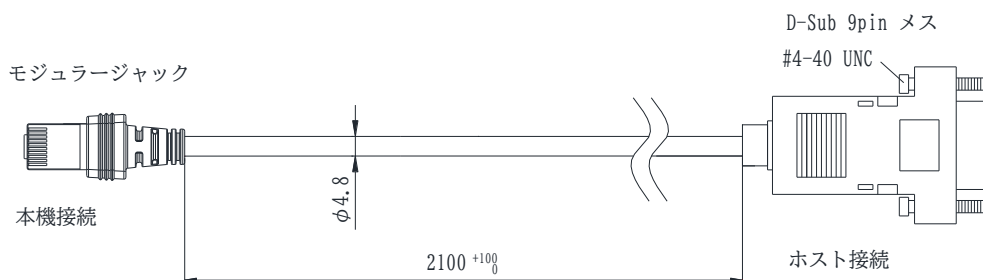


Figure 24: RS-232C Interface Cable (9-Pin Power Supply Specification/Optional Accessories)

10.3. Modular Jack Connector Specifications

The connector used is a 10-pin RJ-50 connector.

Modular Jack Connector Pin Assignments

Signal Name	Pin No.	Notes
RTS	1	
CTS	2	
TxD	3	
RxD	4	
Vcc	5	5 V input
GND	6	
USB -	7	
USB +	8	
USB GND	9	
(NC)	10	

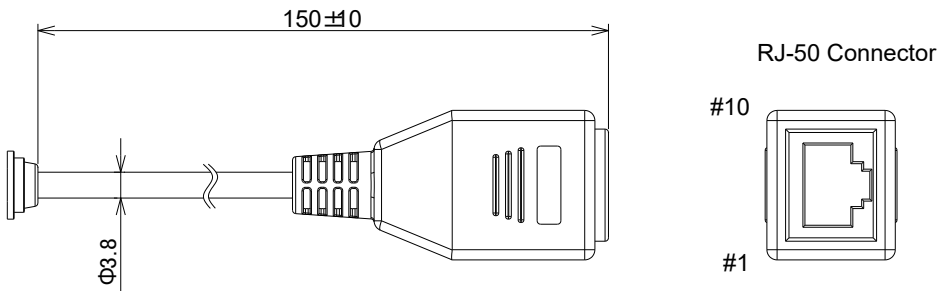


Figure 25: Modular Jack Cable

11.Environmental Specifications

11.1. Temperature

Scanning performance is guaranteed when the ambient temperature around the scanner is within the following ranges:

Operating Temperature	-20 to 60 °C
Storage Temperature	-30 to 65 °C

Conditions

Barcode	0.33 mm UPC, specified in section 9.1.
Distance	40 mm from the front edge of the scanner
Angle	$\alpha = 0^\circ, \beta = 0^\circ$
Curvature	$R = \infty$
Scanning Test	Read at intervals of 300 ms

11.2. Humidity

Scanning performance is guaranteed when the ambient humidity around the scanner is within the following ranges:

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

Conditions

Barcode	0.33 mm UPC, specified in section 9.1.
Distance	40 mm from the front edge of the scanner
Angle	$\alpha = 0^\circ, \beta = 0^\circ$
Curvature	$R = \infty$

11.3. Ambient Light Immunity

Scanning performance is guaranteed when the illumination on a barcode surface is between 100 lx and the following values:

Incandescent light	10,000 lx
Fluorescent light	10,000 lx
Sunlight	120,000 lx

Conditions

Barcode	0.33 mm UPC, specified in section 9.1.
Distance	40 mm from the front edge of the scanner
Angle	$\alpha = 0^\circ$, $\beta = 0^\circ$
Curvature	$R = \infty$

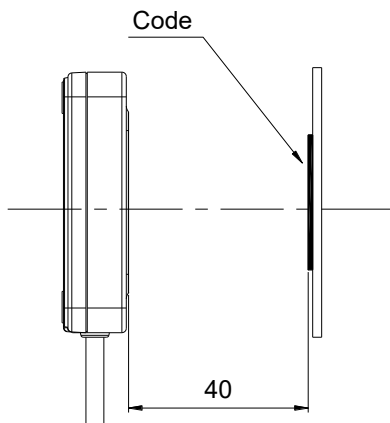


Figure 26: Ambient Light Immunity

Note: Avoid direct or specular reflection from the light source to get the best scanning performance.

11.4. Dust and Drip Proof

IEC60529(JIS C 0920) IP65

Protection against solid objects: Level 6

Dust Tight: No ingress of dust; complete protection against contact.

Protection against liquids: Level 5

Water Jets Protected: Protected against water jets from any direction.

11.5. Cable Strength

The cable is guaranteed to withstand the conditions of the following cable strength test.

Cable Strength Test

Affix the scanner to an immovable object and pull the cable using a force of 49N (5 kgf static loading) for 60 seconds.

11.6. Cable Bending Strength

The cable is guaranteed to withstand the conditions of the following cable bending test.

Cable Bending Test

Flex the cable 60° in both directions. Repeat 10,000 times.

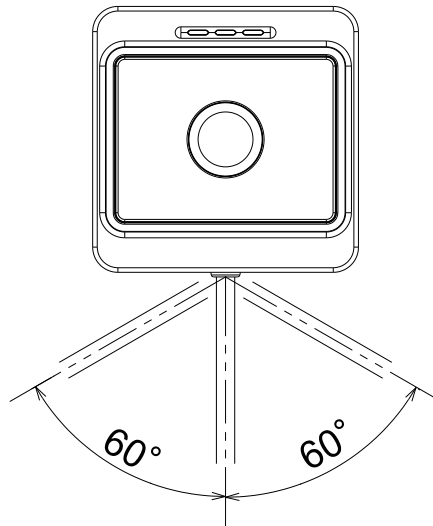


Figure 27: Cable Bending Test

11.7. Vibration Strength (Without Packaging)

The M-12 is designed to withstand the conditions of the following vibration test.

Vibration Test Without Packaging

Increase the frequency of the vibration from 10Hz to 100Hz at an acceleration velocity of 19.6m/s² (2.0 G) for 30 minutes in the non-operating state. Repeat twice for each X, Y, and Z direction.

11.8. Vibration Strength (in Individual Packaging)

The M-12 is designed to withstand the conditions of the following vibration test.

Vibration Test in Individual Packaging

Increase the frequency of the vibration from 10Hz to 100Hz at an acceleration velocity of 19.6 m/s² (2.0 G) for 30 minutes in an individually packaged state. Repeat twice for each X, Y, and Z direction.

11.9. Drop Impact Strength (Without Packaging)

The M-12 is designed to withstand the conditions of the following drop test.

Drop Test Without Packaging

Drop the scanner 15 times (3 times at each of 5 orientations), from a height of 150 cm onto a concrete floor, as shown below:

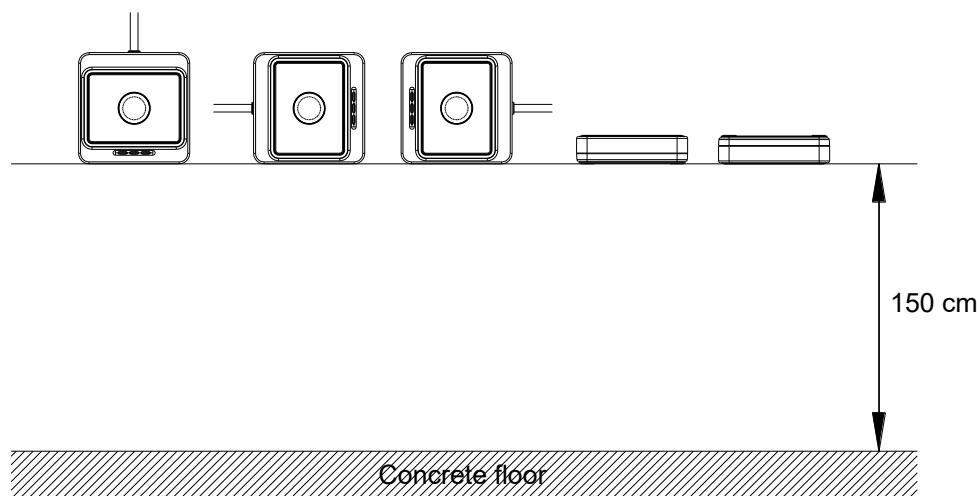


Figure 28: Drop Test

11.10. Drop Impact Strength (in Individual Packaging)

The M-12 is designed to withstand the conditions of the following drop test.

Drop Test in Individual Packaging

Drop an individually packaged scanner 10 times in total, at any of 1 corner, 3 edges, and 6 faces, from a height of 150 cm onto a concrete floor.

11.11. Electrical Specifications

Electrostatic discharge*	No destruction	±15 kV (air discharge, direct)
immunity*	No malfunction	±8 kV (air discharge, direct)
		±6 kV (contact discharge, direct/indirect)

* Testing method is compliant with IEC-61000-4-2. (150 pf, 330 ohm)

12. Regulatory Compliance

12.1. LED Safety

IEC 62471:2006 Exempt Group

12.2. EMC

EN 55032:2015 +A11:2020 +A1:2020 Class B

EN 55035:2017 +A11:2020

FCC Part 15 Subpart B Class B

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful Interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

VCCI クラス B

この装置は、クラスB機器です。この装置は、住宅環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

13. RoHS

RoHS compliance.

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

14. Reliability

MTBF (Mean Time Between Failures): 50,000 hours

Note: Reliability is calculated based on standard operation of the product within the operating environment parameters and without extreme electronic or mechanical shock.

15. Precautions

Handle this product carefully. Do not deliberately subject it to any of the following conditions.

Shock

- Do not drop from the non-standard height.
- Do not swing the product around by the cable.
- Do not place any heavy items on the scanner.
- Do not squeeze the scanner between heavy items.

Temperature Conditions

- Do not use the scanner at temperatures outside the specified range.
- Do not pour boiling water on the scanner.
- Do not throw the scanner into fire.
- Do not bend cables forcibly at low temperatures.

Foreign Materials

- Do not put the scanner in water.
- Do not put the scanner in chemicals.

Other Precautions

- Do not plug/unplug the connectors while power is supplied.
- Do not disassemble this product.
- The scanner may be damaged by voltage drops caused by lightning.
- Do not wrap the M-12 cable around a host device (PC, tablet, etc.). This may cause malfunction.

* This specification manual is subject to change without prior notice.
--

16. Product Display

16.1. Product Label

The next image shows the label attached to the scanner.

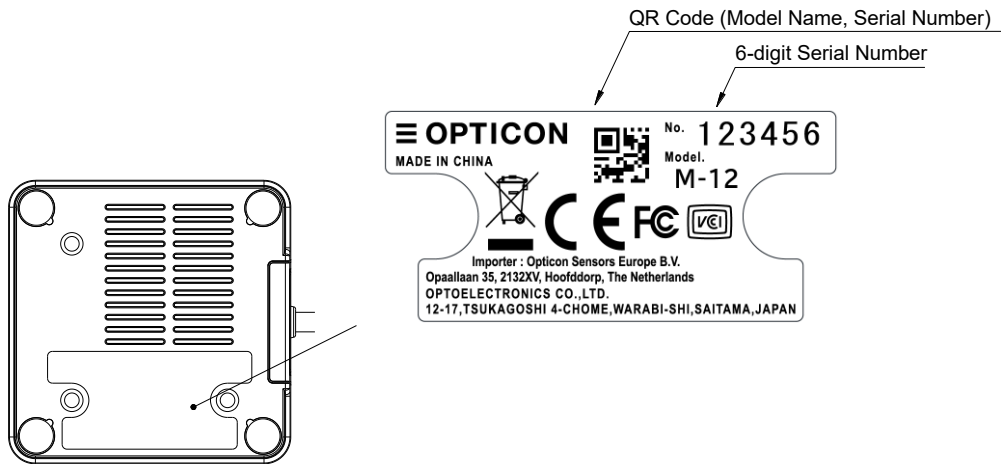
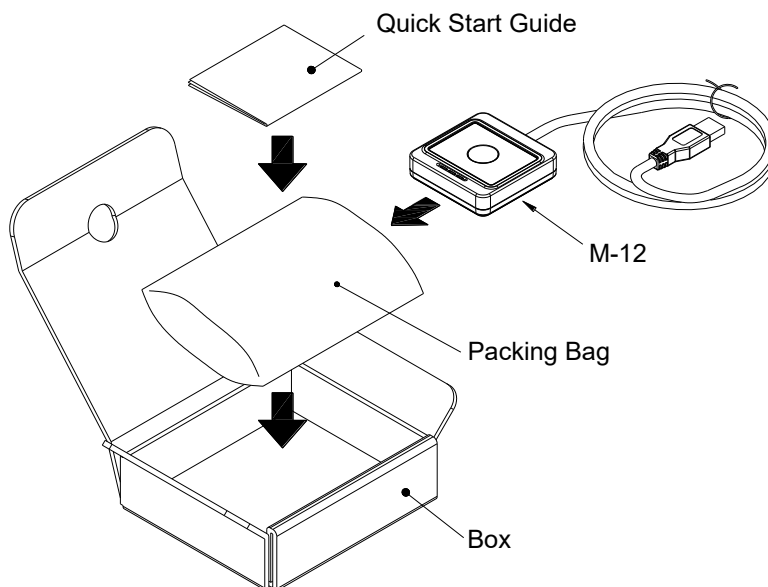


Figure 29: Product Label

17. Packaging Specifications

17.1. Individual Packaging Specification

Package size: Approximately 122 x 112 x 38 (WDH mm)
 Weight: Approximately 145 g (USB interface model)
 Approximately 113 g (RS-232C interface model)



BAR CODE LABEL for BOX (3A0002)

Model No. **M-12-BLK-USB** MADE IN CHINA

Spec#JPN *OF2M12D*

Spec#USA ** Spec#EUR *15387*

S/N: Quantity 1

△△△△△△

8719982153872

UK: Opticon Ltd, F20a, 110 Butterfield, Great Marlings, Luton, Bedfordshire LU2 8DL, United Kingdom.

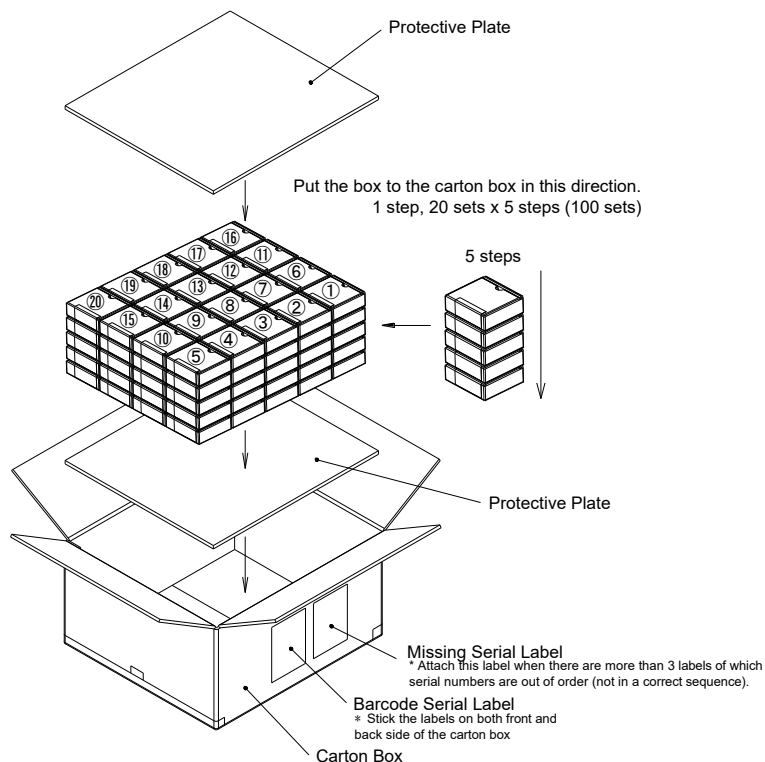
GTIN-13 Barcode on white box:
 Barcode = truncated EAN-13
 Data = 8719982153872 / OCR-B

*The barcode must not overlap the fold.

Figure 30: Individual Packaging

17.2. Collective Packaging Specification

Assembled package size: Approximately 590 × 525 × 240 (WDH mm)
 Weight: Approximately 16 kg (USB interface model)
 Approximately 13 kg (RS-232C interface model)



OPTICON EU: Opticon Sensors Europe B.V. Opasliën 35,2132 XV Hoofddorp, The Netherlands UK: Opticon Ltd, F20a, 110 Butterfield, Great Marings, Luton, Bedfordshire LU2 8DL, United Kingdom.		C/No. △△ MADE IN CHINA	
Product M-12-BLK-USB		Q'ty *100* 100 / 100	
PO#		*△△△-△△*	
Spec#JPN		*0F2M12D*	
Spec#EUR		*15387*	
Spec#USA		**	
S/N from to		*△△△△△△* *△△△△△△*	
Missing Serial Number Missing Q'ty △ 1 *△△△△△△* 2			
Software Ver. ROM-VER. BJ01J05		Shipping Date △△△△/△△/△△ 	
18719982153879 <small>OPTICON SENSORS EUROPE B.V. / OPTICON SENSORS EUROPE B.V. THE NETHERLANDS / OPTICON INC. USA</small>			

OPTICON EU: Opticon Sensors Europe B.V. Opasliën 35,2132 XV Hoofddorp, The Netherlands UK: Opticon Ltd, F20a, 110 Butterfield, Great Marings, Luton, Bedfordshire LU2 8DL, United Kingdom.		C/No. △△ MADE IN CHINA	
Product M-12-BLK-USB		Q'ty *△△* △△ / △△△	
PO#		*△△△-△△*	
Spec#JPN		*0F2M12D*	
Spec#EUR		*15387*	
Spec#USA		**	
S/N from to		*△△△△△△* *△△△△△△*	
Missing Serial Number Missing Q'ty △ 1 *△△△△△△* 2			
Software Ver. ROM-VER. BJ01J05		Shipping Date △△△△/△△/△△ 	
98719982153875 <small>OPTICON SENSORS EUROPE B.V. / OPTICON SENSORS EUROPE B.V. THE NETHERLANDS / OPTICON INC. USA</small>			

'Ro mark' on the trays and boxes indicates that the product is RoHS compliant as declared by Optoelectronics Co., Ltd.

Figure 31: Collective Packaging

18. Physical Features

18.1. Dimensions

Approximately 58.0 mm × 58.0 mm x 14.8 mm (WDH, except protruding portion)

18.2. Weight

Approximately 47 g (excluding cable)

18.3. Mechanical Drawing

Dimensions are in mm.

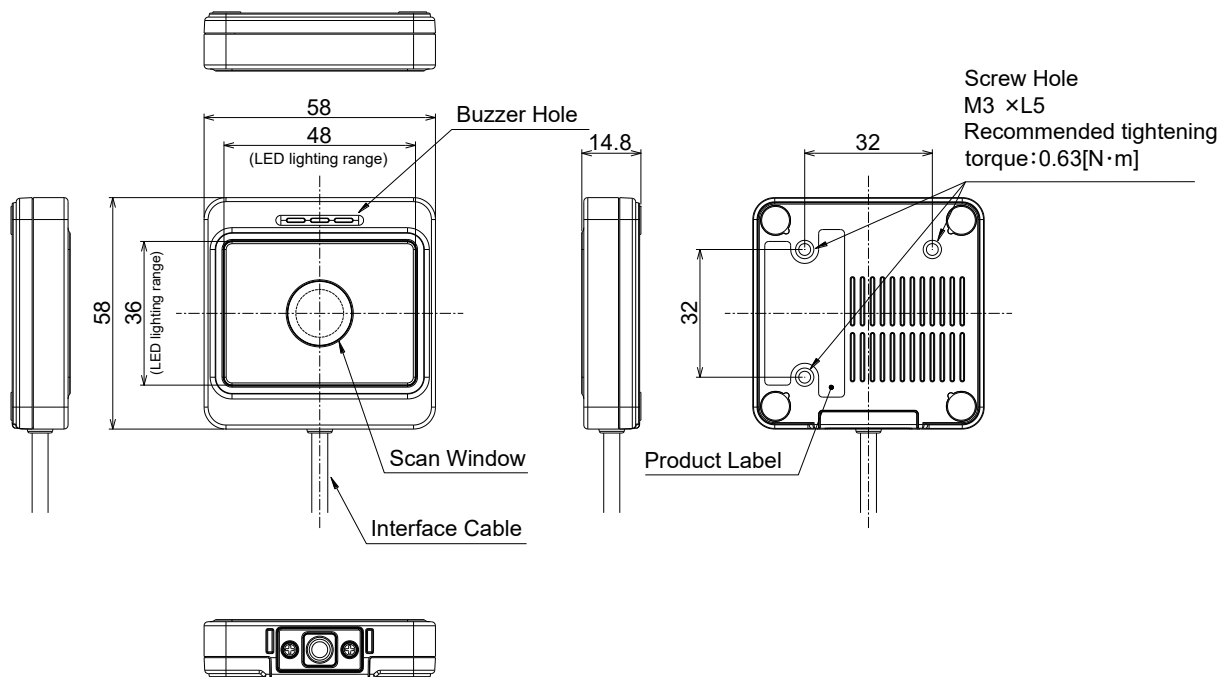


Figure 32: Mechanical Drawing

19. Default Settings

19.1. Default Menu Barcodes (Part 1: Supported Symbolologies)

19.1.1. 1D Barcodes

The scanner is reset to each interface's factory default by reading the following menu barcodes.

Code Type	Default	Minimum Length	Notes
UPC	✓	-	
UPC Add-on 2, UPC Add-on 5		-	
EAN(JAN)	✓	-	
EAN Add-on 2, EAN Add-on 5		-	
Code 39	✓	3	Not transmit ST/SP
Tri-Optic	✓	-	
Codabar	✓	3	Not transmit ST/SP
Industrial 2 of 5	✓	5	
Interleaved 2 of 5	✓	6	
S-Code		-	
Code 128	✓	3	GS1 conversion (setting required in USB-HID)
Code 93	✓	3	
IATA	✓	5	
MSI/Plessey		3	
UK/Plessey		2	
MSI/Plessey		3	
Telepen		3	
Matrix 2 of 5		5	

19.1.2. Postal Codes

Code Type	Default	Minimum Length	Notes
Chinese Post Matrix 2 of 5		-	
Korean Postal Authority		-	
Intelligent Mail Barcode		-	
POSTNET		-	
PLANET		-	
Japan Postal		-	
Netherland KIX Code		-	
Australian Postal Code		-	
UK Postal (Royal mail)		-	
4-State Mailmark Barcode		-	

19.1.3. GS1 Databar, Composite Codes

Code Type	Default	Notes
GS1 DataBar •GS1 DataBar Omnidirectional •GS1 DataBar Truncated •GS1 DataBar Stacked •GS1 DataBar Stacked Omnidirectional	✓	GS1 conversion (setting required in USB-HID)
GS1 DataBar Limited	✓	
GS1 DataBar Expanded •GS1 DataBar Expanded •GS1 DataBar Expanded Stacked	✓	
Composite GS1 DataBar •CC-A •CC-B •Limited CC-A •Limited CC-B •Expanded CC-A •Expanded CC-B	✓	GS1 conversion (setting required in USB-HID)
Composite GS1-128 •CC-A •CC-B •CC-C	✓	GS1 conversion (setting required in USB-HID)
Composite EAN •EAN-13 CC-A •EAN-13 CC-B •EAN-8 CC-A •EAN-8 CC-B		GS1 conversion (setting required in USB-HID)
Composite UPC •UPC-A CC-A •UPC-A CC-B •UPC-E CC-A •UPC-E CC-B		GS1 conversion (setting required in USB-HID)

19.1.4. 2D Codes

Code Type	Default	Notes
PDF417	✓	
Micro PDF417		
Codablock F		
QR Code	✓	GS1 conversion (setting required in USB-HID)
Micro QR	✓	
rM QR Code		
Data Matrix	✓	GS1 conversion (setting required in USB-HID)
Aztec Code	✓	
Aztec Runes		
Chinese-sensible code		
Maxi Code		

19.1.5. OCR Font

Code Type	Default	Notes
[ICAO Machine Readable Travel Document]		
Machine readable Passports		
Machine readable Visa-A		
Machine readable Visa-B		
Official Travel Documents 1		
Official Travel Documents 2		
ISBN (OCR font-B)		

19.2. Default Setting (Part 2: Read Setting, Trigger, Buzzer)

Command	Default Setting
Read mode	Single read
Reading effective time	Trigger synchronize
Extended read time	Disable
Buzzer duration	50 ms
Buzzer tone	2650Hz
Start-up buzzer	Enable
Buzzer loudness	Maximum
Buzzer timing	Before data transmission
Good read LED indicator duration	200 ms
Indicator LED color	Light blue
Start-up LED Indicator	Enable
Data buffering	Buffered mode

[Data Buffering]

Not all output data can be received depending on the host system. So, you should use buffered mode for USB-HID and unbuffered mode for RS-232C and USB-COM interfaces.

Unbuffered Mode	Buffered Mode (default)
	

19.3. Default Setting (Part 3: Interface Communication Settings)

19.3.1. USB

Command	Default Setting
Keyboard language	USA (USB-HID)
Send "new line key "after data	Enable
Send "TAB key "after data	Disable
Send "→ key "after data	Disable
Other	CDC-ACM compliant (USB-COM)*

* When using USB-COM, OPTOELECTRONICS USB-COM driver must be downloaded.

19.3.2. RS-232C

Command	Default Setting
Baud rate	9600 bps
Parity	No parity
Data length	8 bits
Stop bits	1 bit
Handshaking	No handshake
ACK/NAK	ACK/NAK no response
CTS time out	Indefinitely
ACK/NAK time out	1 second
Command header	ESC or STX
Command terminator	CR or ETX
Response to the commands	Disable

20. Interface Setting

You can configure the M-12 with these interface settings. The RS-232C interface model does not come with a cable. You must purchase the cable separately.

Interface Settings

Product Type	Switchable Interface
USB interface model	USB-HID (Default)/USB-COM
RS-232C interface model	RS-232C (Default)/USB-HID/USB-COM

*Customer specific settings need to be configured after switching the interface.

20.1. USB Interface Model

You can set the M-12 to USB-HID or USB-COM.

20.1.1. Switching to USB-COM from USB-HID

Switching Procedure		
1	Read this menu code.	
	USB-COM Interface setting and initialization	
2	The M-12 makes a sound when interface switching is complete and automatically changes to normal reading operation.	

Notes for USB-COM:

- When the COM port on the host side is closed, scanned data cannot be sent and the M-12 makes an error sound.
- The OPTOELECTRONICS USB-COM driver needs to be installed on the host device.
- Make sure you are using the latest version of the USB Driver.
- After changing from HID to COM, depending on the compatibility of the host device, you may need to disconnect and reconnect the M-12 before the interface change is recognized by the host.

20.1.2. Switching to USB-HID from USB-COM

Switching Procedure		
1	Read this menu code.	
	USB-HID Interface setting and initialization	
2	The M-12 makes a sound when interface switching is complete and automatically changes to normal reading operation.	

20.2. RS-232C Interface Model

You can set the M-12 to RS-232C, USB-HID, or USB-COM.

20.2.1. Switching to USB-HID from RS-232C

Switching Procedure		
1	Connect the USB interface cable to the M-12.	
2	Connect the M-12 to the host.	
3	Read the next menu code within 3 seconds of turning on the M-12 power.	
	USB-HID Interface setting and initialization	
4	The M-12 makes a sound when interface switching is complete and automatically changes to normal reading operation.	

Notes:

- Before switching the interface, connect the USB cable. Switching the interface without a USB cable may cause the scanner to become inoperable and the status LED to flash. To recover from this state, see section 20.3.
- When the COM port on the host side is closed, scanned data cannot be sent and the M-12 makes an error sound.

20.2.2. Switching to USB-COM from RS-232C

Switching Procedure		
1	Connect the USB interface cable to the M-12.	
2	Connect the M-12 to the host.	
3	Read the next menu code within 3 seconds of turning on the M-12 power.	
	USB-COM Interface setting and initialization	
4	The M-12 makes a sound when interface switching is complete and automatically changes to normal reading operation.	

Notes:

- Before switching the interface, connect the USB cable. Switching the interface without a USB cable may cause the scanner to become inoperable and the status LED to flash. To recover from this state, see section 20.3.
- When the COM port on the host side is closed, scanned data cannot be sent and the M-12 makes an error sound.

20.2.3. Switching to RS-232C from USB (HID, COM)

Switching Procedure		
1	Connect the RS-232C interface cable to the M-12.	
2	Connect the M-12 to the host.	
3	Read the next menu code within 3 seconds of turning on the M-12 power.	
	RS-232C Interface setting and initialization	
4	The M-12 makes a sound when interface switching is complete and automatically changes to normal reading operation.	

20.3. Startup Menu Reading Function

Forced initialization lets you read the initialization menu code regardless of the interface settings after turning on the M-12. This function makes it possible to forcibly initialize and recover, even if the M-12 is unable to read due to incorrect settings.

Note: When an interface setting menu code that differs from the interface cable is read, communication to the host fails and the status LED remains flashing. The M-12 is not able to read. Attempting to read the original interface menu code fails.

To Forcibly Initialize and Recover the M-12

1. Power off the M-12.
2. Within 3 seconds of turning on the M-12, read the interface setting and initialization menu code for the interface being used.
3. The resetting completion noise sounds and the initialization is complete. The M-12 automatically changes to normal reading operation.

Please be careful when switching between interfaces.

21. Optional Accessories

To use the RS-232C interface model, you need the appropriate cable and AC adapter. By connecting the USB cable, you can use the M-12 with a USB interface.

The next table lists the cable specification numbers. For detailed specifications, refer to Section 10.

Single Cable Specification Numbers

Specification Number	Description
UF1-HFPS21S5002-A-PAC	RS-232C cable (External AC power supply specification/2.1 m/White) Available by special order
UF1-HFPS21S5002-5-PAC	RS-232C cable (External AC power supply specification/2.1 m/Black)
UF1-HFPS21S5012-A-PAC	RS-232C cable (9-pin power supply specification/2.1 m/White) Available by special order
UF1-HFPS21S5012-5-PAC	RS-232C cable (9-pin power supply specification/2.1 m/Black)
UF1-HFPS21S5003-A-PAC	USB cable (2.1 m/White) *Available by special order
UF1-HFPS21S5003-5-PAC	USB cable (2.1 m/Black)