

OPTICON

Data Collector

OPN3002i



This manual provides specifications for the OPN3002i
Bluetooth-enabled miniature 2D imager scanner.

Specifications Manual

All information subject to change without notice.

Document History

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SUPPORT

USA

Phone: 800-636-0090

Email: support@opticonusa.com

Web: www.opticonusa.com

Europe

Email: support@opticon.com

Web: www.opticon.com

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1. Abstract

The following specification manual is for the OPN3002i Bluetooth® enabled miniature 2D imager scanner.

2. Overview

This device comes with a built-in 2D imager scanner, and outputs scanned barcode data through its Bluetooth or USB interface.

- * Easy-to-operate handheld data collector.
- * Scanned data from the device is transmittable via USB or Bluetooth interfaces.
- * Compatible with a wide variety of Bluetooth-enabled devices, including PC, tablet PC, and smartphones.
- * Serial Port Profile (SPP) and Human Interface Device (HID) profiles are available for use.
- * In addition to the traditional buzzer and LED display, this device comes equipped with vibration functionality.
- * Scans smoothly and easily with green LED single-line aiming.
- * Body surface is compatible with, and may be cleaned by, alcohol wipes.
- * The power source utilizes a 3.7V, 600mAh (typ.) lithium ion polymer battery.
- * Charging is accomplished via USB interface.
- * This device comes with an Apple MFi license.

3. Basic Specifications

Item		Specifications	Notes
Controller	CPU	32bit CISC/96MHz	
	FROM	512Kbyte + 32Kbyte	
	SRAM	96Kbyte	
	FROM (storage)	1Mbyte	Data region only
Input	Keyboard	Trigger, Function Keys	
Display	LED	3 types/colors (red, green, blue)	
	Buzzer	Volume (3 levels), pitch level changeable	
	Vibration Motor	Strength Level (3 levels) is adjustable	
RTC	Content	Date & Time	Removing the batteries incorrectly may cause data loss.
	Margin of Error	Less than ± 90 sec. per month	
Interface	Bluetooth	Frequency	2402MHz - 2480MHz
		Specifications	Equipped with standard Bluetooth Ver. 2.1
		Transmission Distance	10 meters
		Output Level	Class 2
		Profile	SPP/HID
	USB	* Full-Speed 12Mbps (HID/COM) * Supports Hi-Power, Bus-powered	Distance may shorten due to environment Maximum Output 4dBm
Optical Component	Scanning Method	WVGA (36,000 pixels) CMOS Area Sensor	60 fps (frames per sec)
	Scanning Light Source	2x Red Light LED	
	Aiming Light Source	1x Green Light LED	
	Readable Pixels	36,000 pixels (H:752 x V: 480)	
	View Angle	Horizontal: 40.6 ° Vertical: 26.4 °	
1D Barcodes	Supported Symbolologies	UPC-A, UPC-A Add-on, UPC-E, UPC-E Add-on, EAN-13, EAN-13 Add-on, EAN-8, EAN-8 Add-on, JAN-8, JAN-13, Code 39, Tri-Optic, NW-7, Industrial 2 of 5, Interleaved 2 of 5, S-Code, IATA, Code 93, Code 128, MSI/Plessey, UK/Plessey, TELEPEN, Matrix 2 of 5, Chinese Post Matrix 2 of 5, Code 11, Korean Postal Authority code, Postal Code	For specifics, please check Section 17
	Minimum Resolution	Code 39: 0.127mm	PCS 0.9
	Scan Curvature	Radius ≥ 16 mm (10 digit Codabar 0.15mm) Radius ≥ 20 mm (12 digit UPC 100%)	PCS 0.9
	Expand Code	Width 100mm Code39 Resolution 0.2mm (Depth: 135mm) Readable	
	Moving Barcodes	Movement Speed 2m/sec UPC 100% (Depth: 100mm) Readable	

	Depth of Field (mm)	Code 39	Resolution (0.127)	90-110	
			Resolution (0.254)	65-185	
			Resolution (0.508)	65-260	
		Code 128	Resolution (0.20)	85-165	
		UPC	Resolution (0.33)	55-195	
GS1/ Composite	Supported Symbologies	GS1 DataBar , GS1 DataBar Limited, GS1 DataBar Expanded, Composite GS1 DataBar, Composite GS1-128, Composite EAN, Composite UPC			GS1 DataBar: formerly RSS
	Minimum Resolution	GS1 DataBar: 0.169mm Composite Code: 0.169mm			
2D Symbologies	Supported Symbologies	PDF417, MicroPDF417, Codablock F, QR Code, MicroQR Code, Data Matrix (ECC 0 - 140 / ECC 200), MaxiCode (Modes 2 to 5), Aztec Code, Chinese-sensible Code			When setting Codablock F disable Code 128.
	Minimum Resolution (mm)	PDF417: 0.169 QR Code: 0.212 Data Matrix: 0.212			PCS 0.9
	Depth of Field (mm)	PDF417	Resolution (0.169)	85-135	PCS 0.9
			Resolution (0.254)	65-180	
		QR Code	Resolution (0.212)	90-110	
			Resolution (0.381)	55-180	
		Data Matrix	Resolution (0.254)	85-135	
1D/2D Shared Specifications	Scan Angle	Pitch: ± 50°			
		Skew: ± 50°			
		Tilt: ± 180°			
	Minimum PCS	more than 0.3			The Reflectance Rate for margin spaces is set at over 32%
Power Supply	Main Battery	Lithium Polymer 600mAh (typ.)			
	Battery Duration	more than 10 hours			Scanning twice within 10 sec. intervals under normal temperatures while connected to Bluetooth
	Active (Charging) Voltage Range	4.5-5.5 V			Charges via USB
	Consumption Current While Charging	Under 500mA			Charges via USB
Environmental Specifications	Temperature	Operation	0-50°C		
		Storage	-20-60°C		
	Humidity	Operation	20%RH - 85%RH		Anti-freezing, condensation
		Storage	20%RH - 85%RH		Anti-freezing, condensation
	Surrounding Light Illumination Intensity	Fluorescent Light	Less than 10,000 1x		UPC 100% Optical Axis Angle 75° Distance: 100mm
		Sunlight	Less than 100,000 1x		
	Vibration	10Hz - 100Hz, acceleration rate 19.6m/s2 At 60 minutes per cycle, X, Y, and Z in each direction-1 cycle implemented.			
	Drop Resistance Test	Survives 18 times from 150 cm onto concrete surface (6 surface 3 cycles) natural drop, with no abnormalities.			

	Protective Structure		IP42 compliant	
	LED Safety Standards		IEC 62471-1:2006 Risk License Group	Peak Wavelength: 630nm
Specification Standards	Product Safety Standards		EN60950-1:2005 IEC60950-1:2006	
	EMC		EN55022 EN55024 FCC Part 15 Subpart C , Subpart B Class B Class B VCCI	Domestic, Commercial, and Industrial environments
	Certification Standards		CE Marking	
			Device is equipped with wireless factory layout authentication.	
	Other		Bluetooth logo authentication MFi License	
Immunity Test	Electrostatic Discharge Resistance	No Breakage	Aerial Discharge (Direct): ± 15 kV	Measuring Condition: IEC: 61000-4 compliant
		No Malfunctions	Aerial Discharge (Direct): ± 8 kV	
Dimensions	Mechanical Drawing		83.0 (D) \times 36.0 (W) \times 21.5 (H) (mm)	
	Total Weight		57 grams	Accessories not included

4. Detailed View

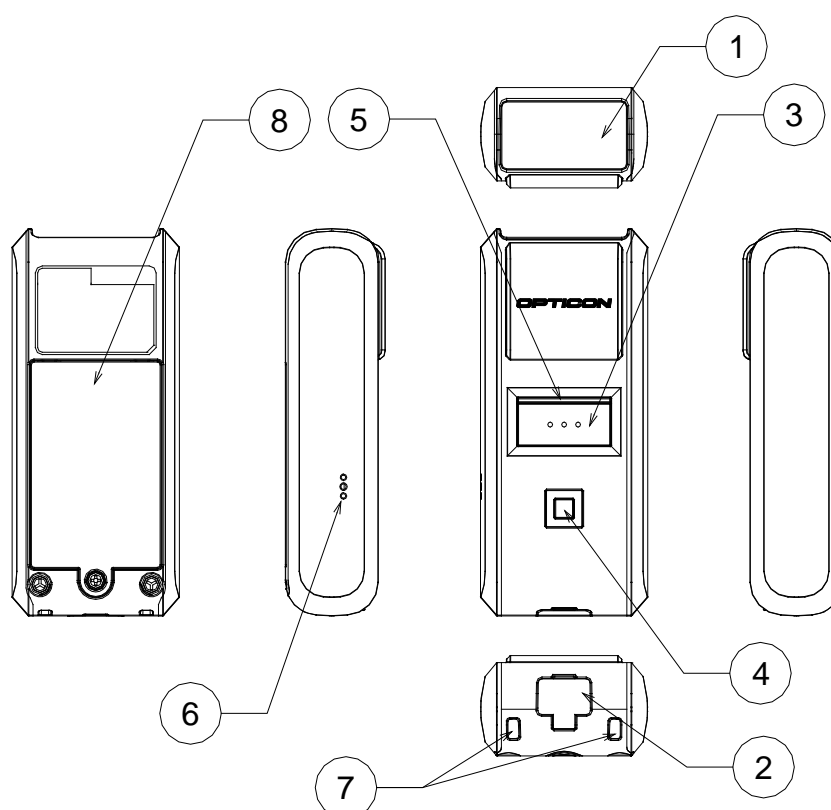


Figure 1: Detailed View

No.	Item	Description
1)	Scan Window	LED light is emitted to scan barcodes through here.
2)	USB Cap	Cap that covers the USB interface.
3)	Trigger	Key used to scan barcodes.
4)	Function Key	Key with configurable behavior, depending on settings.
5)	LED	Used to provide feedback about the success/failure of an action, or a current state, depending on context.
6)	Buzzer Outlet	Buzzer speaker.
7)	Strap Hole	For looping the safety strap.
8)	Battery Cap	Open or close to exchange batteries.

5. Electrical Specifications

5.1. USB

- * Power: Voltage 4.5-5.5V
- * Bus-Power (Class): Hi-Power (500mA max)
- * Consumption Current: Under 500mA

6. Interface Specifications

This device comes equipped with USB and Bluetooth interfaces.

6.1. USB Interface

Full-speed USB Interface

6.1.1. Connector

Signal Name	Pin Number
VCC	1
Data(-)	2
Data(+)	3
(NC)	4
GND	5

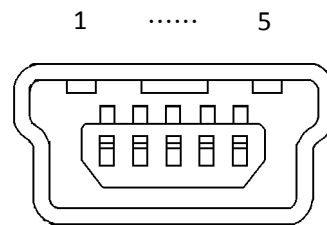


Figure 2: MINI USB B connector

6.1.2. USB Interface Circuit

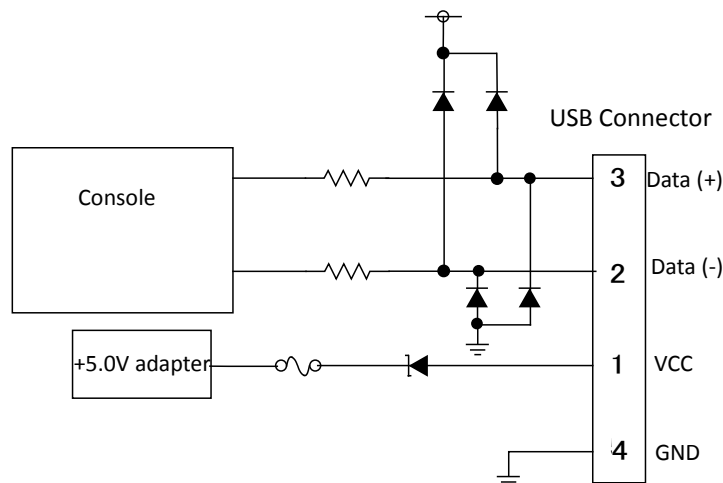


Figure 3: USB interface circuit

6.2. Bluetooth

Frequency:	2402 MHz - 2480Hz
Specification:	Bluetooth Standard Ver. 2.1 compliant
Communication Distance:	10m
Output Level:	Class 2 (maximum 4dBm)
Implementation Protocol:	SPP/HID
Connection Configuration when transmitting:	1 to 1 support
Active Mode when transmitting:	Master Mode / Slave Mode
Security Mode:	Authentication & Encryption are supported.

7. Optical Specifications

7.1. Basic Optical Specifications

Item		Characteristics
Scanning Method	CMOS Area Sensor (White/Black)	—
Effective Number of Pixels	(Length) x (Height)	752 × 480 dot
Image Capture Rate (*1)	Frame Rate	60 fps
Focus Distance	Distance from front of Scanner	124.8mm
View Angle	Horizontal	about 40.6°
	Vertical	about 26.4°
Scanning Light Source (LED × 2)	Red LED	—
	Wavelength	617 nm
	Angle of Direction $2\theta_{1/2}$ (*2)	60°
	Maximum Radiation Output (*3)	15000 mcd
Aiming Light Source (LED × 1)	Green LED	—
	Wavelength	528 nm
	Maximum Radiation Output (*4)	18700 mcd

*1 Maximum Image Capture Rate

*2 This reference value is from the LED data sheet, and represents half of the spread angle from the center of the optical axis.

*3 and *4 Reference Value is based on data sheet (25° C, $I_F = 140$ mA)

7.2. Aiming Pattern

The Aiming Light is used for:

- ① Determining the appropriate scanning position.
- ② Surface detection when Auto Trigger is enabled.

Aiming specifications are shown below:

- * Both the Optical Axis of the Shot Angle and the center of the Aiming Horizontal Width are matching, with distance $L = 85 \pm 20$ mm from the scanner.
- * For the Horizontal Shot Range of Distance $L = 85$, the Aiming Horizontal Width is $80\% \pm 10\%$.

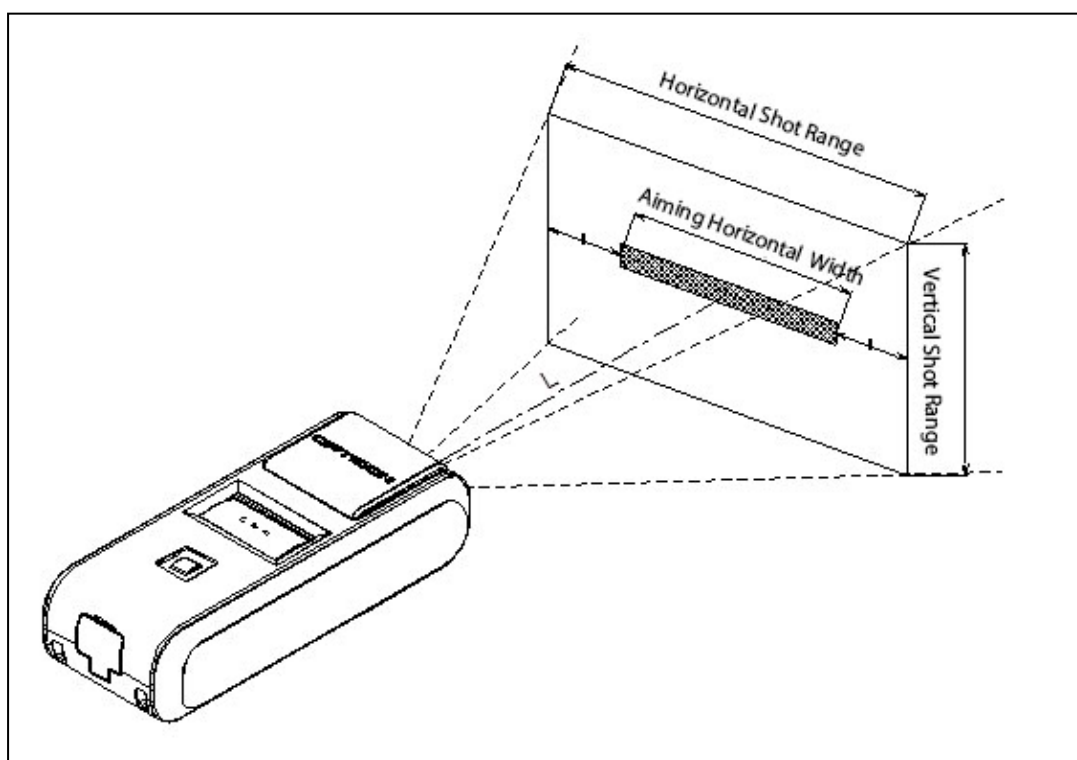


Figure 4: Aiming Pattern and Shot Range

7.3. Shot Range

Shot Range Specifications are $\pm 5\%$ the below value.

Shot Range:

L: Distance from Scan Window	(mm)	60	80	100	120	140	160
H: Horizontal Shot Range	(mm)	66	82	97	111	125	136
V: Vertical Shot Range	(mm)	42	52	62	72	82	93

8. Technical Specifications

Technical specification's conditions are as follows unless otherwise specified in subsequent sections.

Conditions:

Environment Temperature: regular temp/humidity

Environment Lighting: 100-200 lx

Pitch Angle: $\alpha = 0^\circ$

Skew Angle: $\beta = 15^\circ$

Tilt Angle: $\gamma = 0^\circ$

Curvature: $R = \infty$

Power Voltage: 5.0 V

Barcode/2D Code PCS: over 0.9

Reading Test: The Scan Rate is over 70% for every 2-second scan within 10 reading attempts.

Barcode/2D Codes: ref. 8.1

Evaluation Chart:

1D barcodes are based upon Opticon test chart.

GS1 Databar, Stack Codes, and 2D barcodes are created via barcode printer.

8.1. Scanning Chart

1D Barcodes

Code 39:

Resolution	Symbology	PCS	Size (mm)	Number of Digits
0.127 mm	Code 39	0.9	32 × 10	15 digits
0.20mm			100 × 10	31 digits
0.254 mm			32.5 × 12	7 digits
0.508 mm			36 × 25	4 digits

Code 128:

Resolution	Symbology	PCS	Size (mm)	Number of Digits
0.20mm	Code 128	0.9	42 × 10	16 digits

UPC:

Resolution	Symbology	PCS	Size (mm)	Number of Digits
0.330 mm	UPC-12	0.9/0.3	31.5 × 25.0	12 digits

Codabar:

Resolution	Symbology	PCS	Size (mm)	Number of Digits
0.150 mm	Codabar (NW-7)	0.9	20.0 × 10.0	10 digit

GS1 Databar/Composite

GS1 limited:

Resolution	Symbology	PCS	Size (mm)	Number of Digits
0.169 mm	limited	0.9	12 × 1.5	14 digit
0.169 mm	Limited Composite	0.9	12 × 3.0	26 digit

2D Barcodes

PDF417:

Resolution	Error Correction	PCS	Size (mm)	Number of Characters
0.169 mm	Level-3	0.9	23 × 10	58 characters
0.254 mm		0.9	35 × 15	

QR Code-Model-2:

Resolution	Error Correction	PCS	Size (mm)	Number of Characters
0.212 mm	M	0.9	6 × 6	44 characters
0.381 mm			11 × 11	

Data Matrix:

Resolution	Model	PCS	Size (mm)	Number of Characters
0.212 mm	ECC200	0.9	5 × 5	40 characters
0.254 mm			6 × 6	

* 'Size' refers to dimensions that do not include the Quiet Zone.

8.2. Scan Area & Depth of Field

The value of the Scan Area expresses the distance from the front of the device.

The Scan Area is centered within the arc of the scan origin point indicated at each resolution.

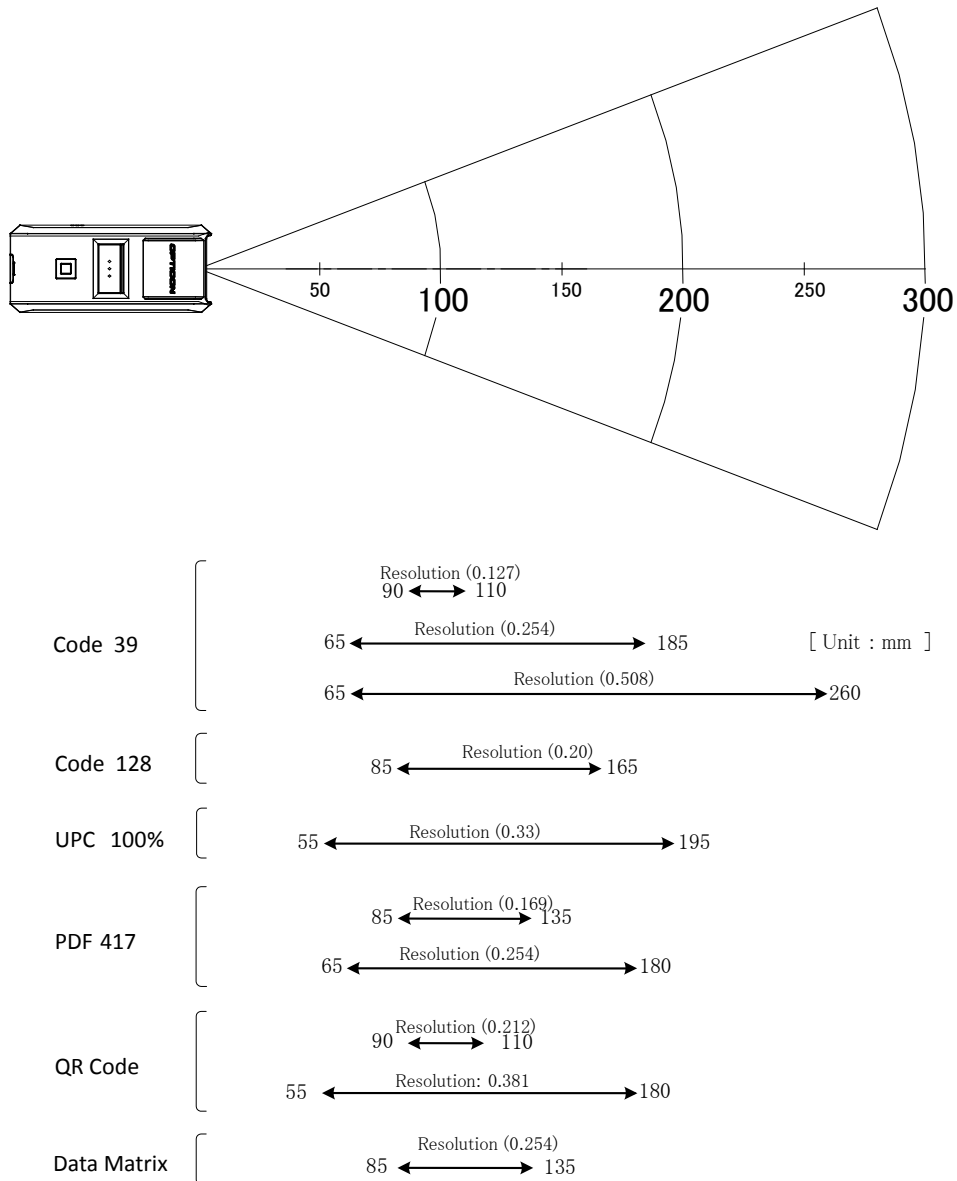


Figure 5: Depth of Field

8.3. Scan PCS

Scanning is possible at over 0.3 PCS.

Conditions:

MRD: More than 32% (over 70% background reflectance)

Distance: 125mm from the scan window

Code: Section 8.1 UPC/Resolution standards = 0.33 mm/PCS 0.3

*MRD = Symbology white bar minimum reflectance - black bar maximum reflectance

$$\text{PCS} = \frac{\text{Symbology white bar reflectance} - \text{black bar reflectance}}{\text{White bar reflectance}}$$

8.4. Minimum Scan Resolution

1D Barcodes: 0.127mm (Section 8.1 Code 39 standards)
 GS1-Databar: 0.169mm (Section 8.1 GS1 DataBar Limited standards)
 Stack Codes: 0.169mm (8.1 PDF417, GS1_Databar Limited Composite standards)
 2D Barcodes: 0.212mm (8.1 QR Code, Data Matrix provisions)

Conditions:

Barcodes: The above codes with Section 8.1 standards
 Distance: 95 mm from the scan window
 Angle: $\alpha = 0^\circ$ $\beta = +15^\circ$ $\gamma = 0^\circ$
 Curvature: $R = \infty$

8.5. Wide Barcode Reading

(Width 100mm) Code 39 Resolution: readable at 0.2mm

Conditions:

Barcodes: Section 8.1-standard Code39 Resolution = 0.20 mm/PCS 0.9
 Distance: 155 mm from the scan window
 Angle: $\alpha = 0^\circ$ $\beta = +15^\circ$ $\gamma = 0^\circ$
 Curvature: $R = \infty$

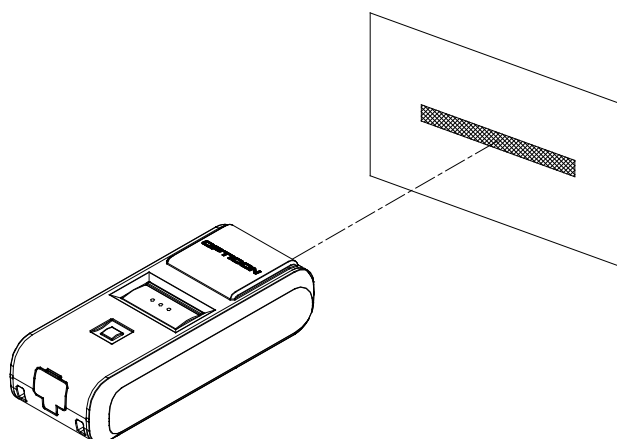


Figure 6: Wide Barcode Reading

8.6. Pitch, Skew, Tilt

Pitch Angle: $\alpha = \pm 50^\circ$ (*1)
 Skew Angle: $\beta = \pm 50^\circ$ (*2)
 Tilt Angle: $\gamma = \pm 180^\circ$ (*3)

Conditions:

Code: Section 8.1-standard 0.33mm UPC
 Distance: 125mm from the scan window
 Curvature: $R = \infty$

*1 Pitch Angle conditions, $\beta = +15^\circ$, $\gamma = 0^\circ$

*2 Skew Angle conditions, $\alpha = 0^\circ$, $\gamma = 0^\circ$

*3 Tilt Angle conditions, $\alpha = 0^\circ$, $\beta = +15^\circ$

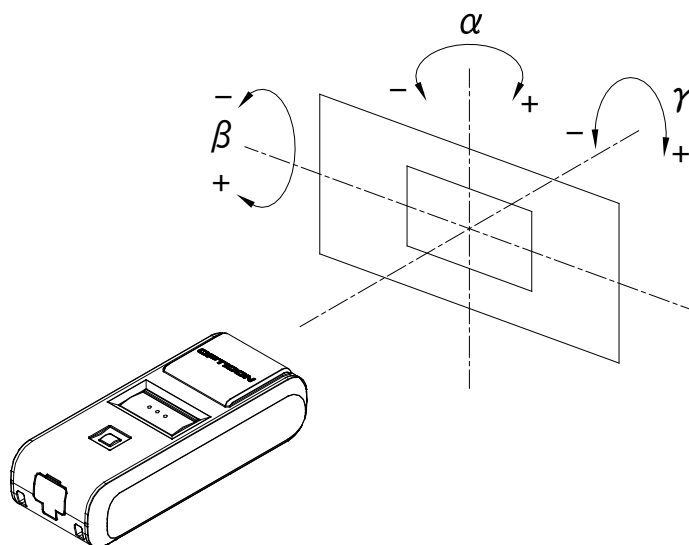


Figure 7: Tilted Barcode Reading

8.7. Curvature

0.33 mm UPC (using 12 digits): $R \geq 20 \text{ mm}$

0.15 mm Codabar (NW-7) (using 10 digits): $R \geq 16 \text{ mm}$

Conditions:

Barcodes: Section 8.1-standard 0.33mm UPC and 0.15mm Codabar

Distance: 105mm from the scan window

Angle: $\alpha = 0^\circ \beta = +15^\circ \gamma = 0^\circ$

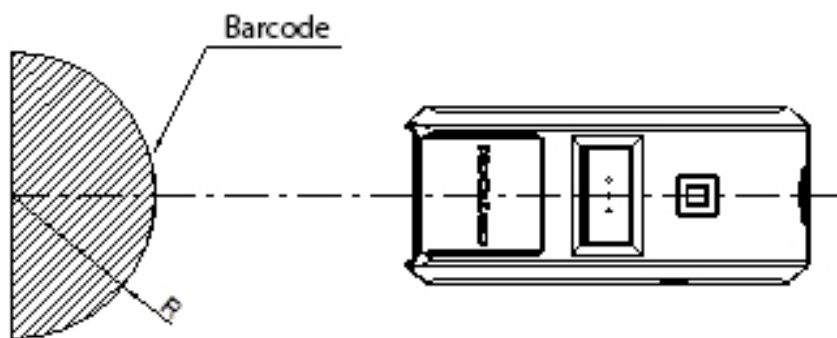


Figure 8: Curved Barcode Reading

**Note: There is a possibility of a drop in scanning functionality due to reflected light.*

8.8. Camera Stability, Moving Barcode Scanning

UPC barcodes achieve 100% scan rate when in motion at 2 m/s.

Conditions:

Environment Temperature and Humidity: room temperature, room humidity

Environment Lighting: 500-1000 lx

Distance: 125mm from the scan window

Barcode PCS: over 0.9

Codes: ref. section 8.1

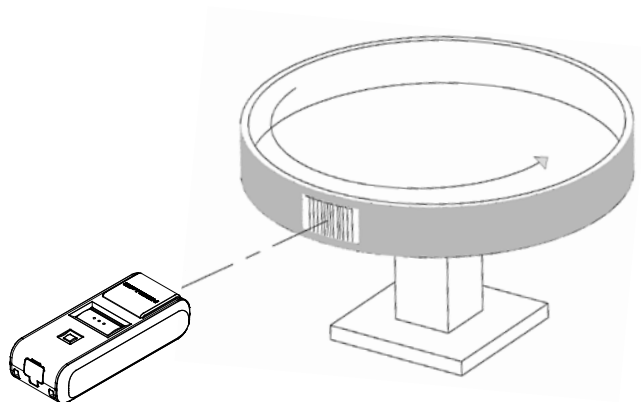


Figure 9: Camera Stability, Moving Barcode Specifications

**Note: There is a possibility of a drop in scanning functionality due to reflected light.*

9. Environmental Specifications

9.1. Temperature

Operating Temperature: 0 - 50 °C
Storage Temperature: -20 - 60 °C

** The adapter stops charging when in environments exceeding 40 °C in order to prevent battery damage.*

9.2. Humidity

Operating Humidity: 20 - 85%RH (anti-freezing, condensation)
Storage Humidity: 20 - 85%RH (anti-freezing, condensation)

9.3. Ambient Light Immunity

Scanning is possible when the Barcode Surface Illumination is 01x greater the following parameters:

Florescent light: 10,000 lx
Incandescent light: 10,000 lx
Daylight: 100,000 lx

Conditions-

Barcodes: Section 8.1-standard 0.33mm UPC
Distance: 125mm from the scan window
Angle: $\alpha = 0^\circ \beta = +15^\circ \gamma = 0^\circ$
Curvature: $R = \infty$
Power Voltage: 3.7V

9.4. Dust/Moisture

IP42

Protection against direct contact and/or foreign objects: Class 4

Class 4 protects against penetration from objects with a diameter or thickness greater than 1mm.

Water Penetration Protection Rate: Class 2 (anti-condensation type II)

Prevents dripping moisture damage from vertical to a 15° angle.

* JIS Standards

9.5. Vibration Strength (without packaging)

No malfunctions after the following vibration test:

Increase the frequency of the vibration from 10 to 100 Hz with accelerated velocity 19.6m/s² (2G) and sweep for 30 minutes (60 min. in one cycle) in non-operating state. Repeat this routine in each X, Y, and Z direction.

9.6. Vibration Strength (with packaging)

No malfunctions after the following vibration test:

Contained in packaging, increase the frequency of the vibration from 10 to 100 Hz with accelerated velocity 19.6m/s² (2G) and sweep for 30 minutes (60 min. in one cycle). Repeat this routine in each X, Y, and Z direction.

9.7. Drop Impact Strength (without packaging)

As shown in the image below, the device survives a drop onto concrete from a height of 150cm with no decrease in functionality. For every three times, averages eighteen drops.

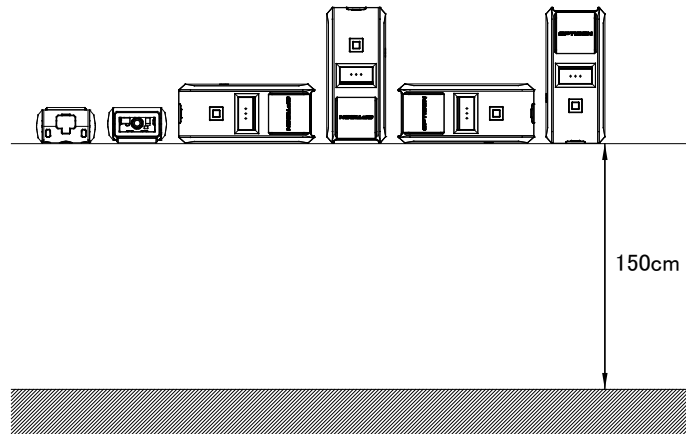


Figure 10: Drop Impact Strength (without packaging)

9.8. Drop Impact Strength (with packaging)

Averages ten drops onto concrete surface from a height of 150cm.

9.9. Electrostatic Discharge Immunity

Aerial Discharge: $\pm 8\text{kV}$ MAX (no malfunctions)
 $\pm 15\text{kV}$ MAX (no breakage)

Measurement Environment: Utilizes the electrostatic test machine IEC61000-4-2

Discharge Resistance: 330Ω

Charge Condenser: 150pF

10. Compliance Standards

10.1. LED Safety Standards

IEC 62471-1: 2006 Risk License Group

10.2. Product Safety Standards

EN60950-1: 2005

IEC60950-1: 2006

10.3. EMC

EN55022

EN55024

FCC Part 15 Subpart C, Subpart B Class B

Federal Communications Commission Notices:

This product 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.

Harmful Interference Notice:

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
 - Increase the separation between the equipment or devices
 - Connect the equipment to an outlet other than the receiver's
 - Consult a dealer or an experienced radio/TV technician for assistance
- Changes or modifications to this equipment that have not been approved by Ruckus Wireless may void the user's authority to operate this equipment.

Class B VCCI

This product is a Class B Information Technology Device based on and complying with the Voluntary Control Council for Interference (VCCI). The product is designed for domestic usage, however may receive poor reception when used near radio or television devices.

10.4. Other

Bluetooth logo authentication

MFi License

This device comes equipped with a wireless factory setting authentication.

Wireless Service Classification:

Proof Rule Section 2, Item 1, #19: 2.4GHz high-powered wireless service with minimum electrical data communications system.

Bluetooth Module: OPA-26X1

Factory Design Confirmation Number: 201-125603

11. Regulatory and Safety Standards

RoHS compliant

* *RoHS: The restriction of use of certain hazardous substance in electrical and electronic equipment, 2002/95/EC.*

12. Reliability

MTBF: 10,000 hours.

13. Precautions

13.1. Handling

Please do not handle the device in any of the following stress-inducing ways:

(1) Impact

- * Drops from higher distances than the specified maximum.
- * Setting heavy objects onto and/or stepping onto the cable.
- * Swinging the cable around.

(2) Heat Stress

- * Usage/storage outside of recommended temperature ranges.
- * Exposure to hot water.
- * Exposure to fire.
- * Bending the cable under temperatures that cause the cable to harden.

(3) Foreign Materials

- * Contact with corrosive chemical substances.

(4) Other

- * Do not disassemble the device.
- * Usage of the device in proximity to radio and/or TV systems may cause poor reception.
- * The device may malfunction due to sudden drops or spikes in voltage, such as those caused by lightning, etc.
- * Device may be unable to scan in areas of low light such as CTR.

13.2. Wireless System Precautions

The following actions are prohibited:

- * Modifying or otherwise taking apart the device.
- * Peeling or removing the Authentication Label.

Please do not use the device in the following situations/environments:

- * Medical devices or equipment designed to provide human safety.
- * Areas where it is possible to incur large scale damage.

Surrounding devices may be affected by wireless interference, which could lead to personal injury or damaged equipment.

13.3. Scanner Wireless System

- * Though this device adheres to specification standards, connection to non-confirmed equipment is not guaranteed.
- * The frequency band (2.4GHz) utilized by both the Scanner and supporting equipment, is compatible with a wide variety of devices. As such, both may experience a drop in transmission speed, distance, or lose connection when around devices utilizing the same frequency.
- * The speed and communication distance may vary depending on foreign objects between devices, radio wave status, and compatible devices currently in use.
- * Before utilizing the wireless functions for this device, please confirm that there are no other wireless stations nearby.
- * If radio interference occurs between the Scanner and other devices, either quickly change the area of use or cease usage within that environment.

* For all other questions or difficulties, please contact Opticon during normal hours.
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14. Product Nameplate

The product nameplate is placed on the Scanner's underside.

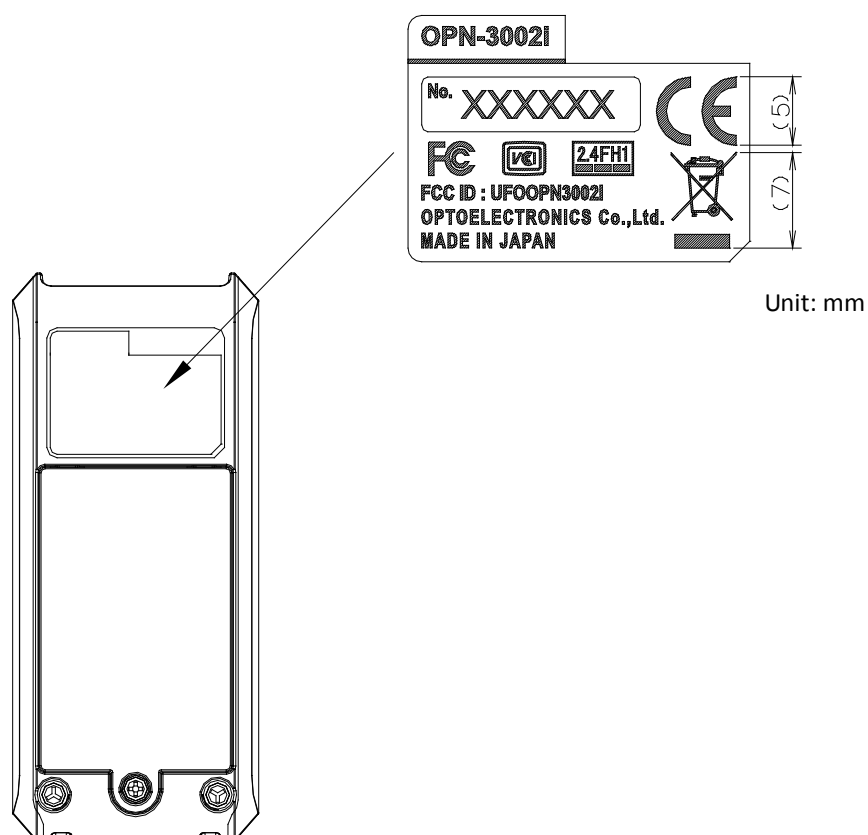


Figure 11: Product Nameplate

15. Packing Specifications

15.1. Individual Packaging

Individual packing box dimensions (when putting together) 125 (W) × 112 (D) × 40 (H) (mm)

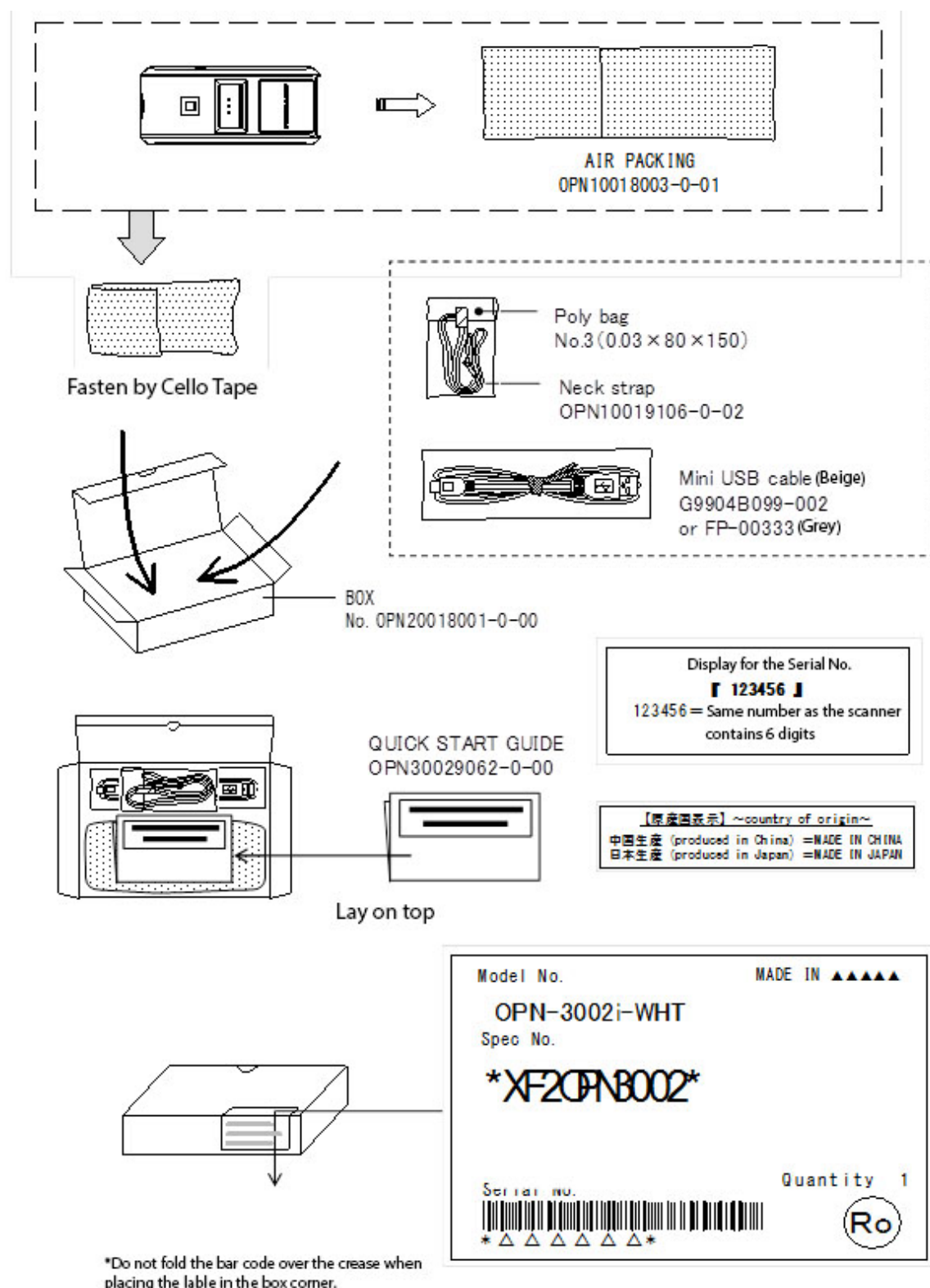


Figure 12: Individual Packaging

15.2. Collective Packaging

Quantity stored 100pcs

Dimensions (when putting together) 595(W) × 520(D) × 245(H) (mm)

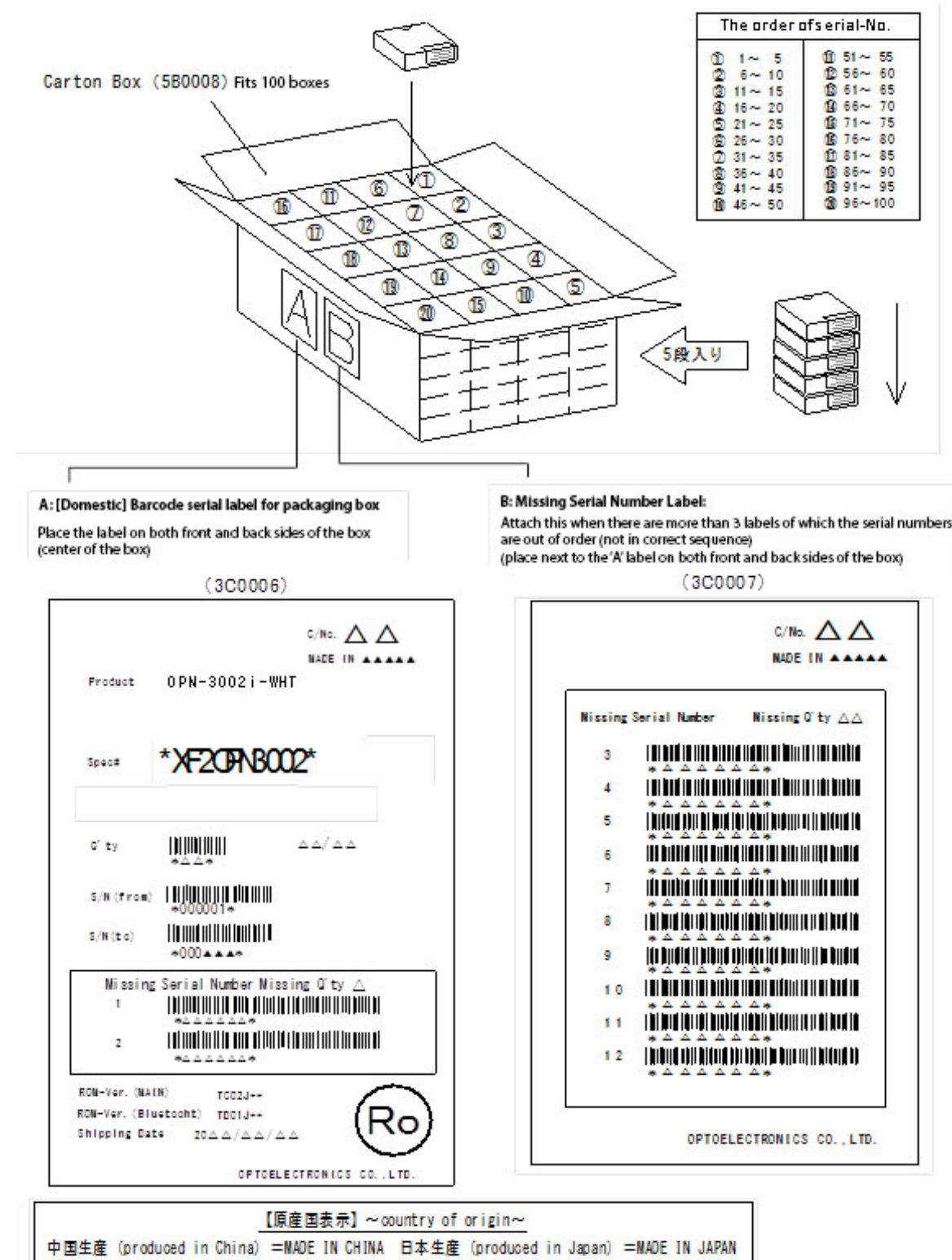


Figure 13: Collective Packaging

16. Dimensions

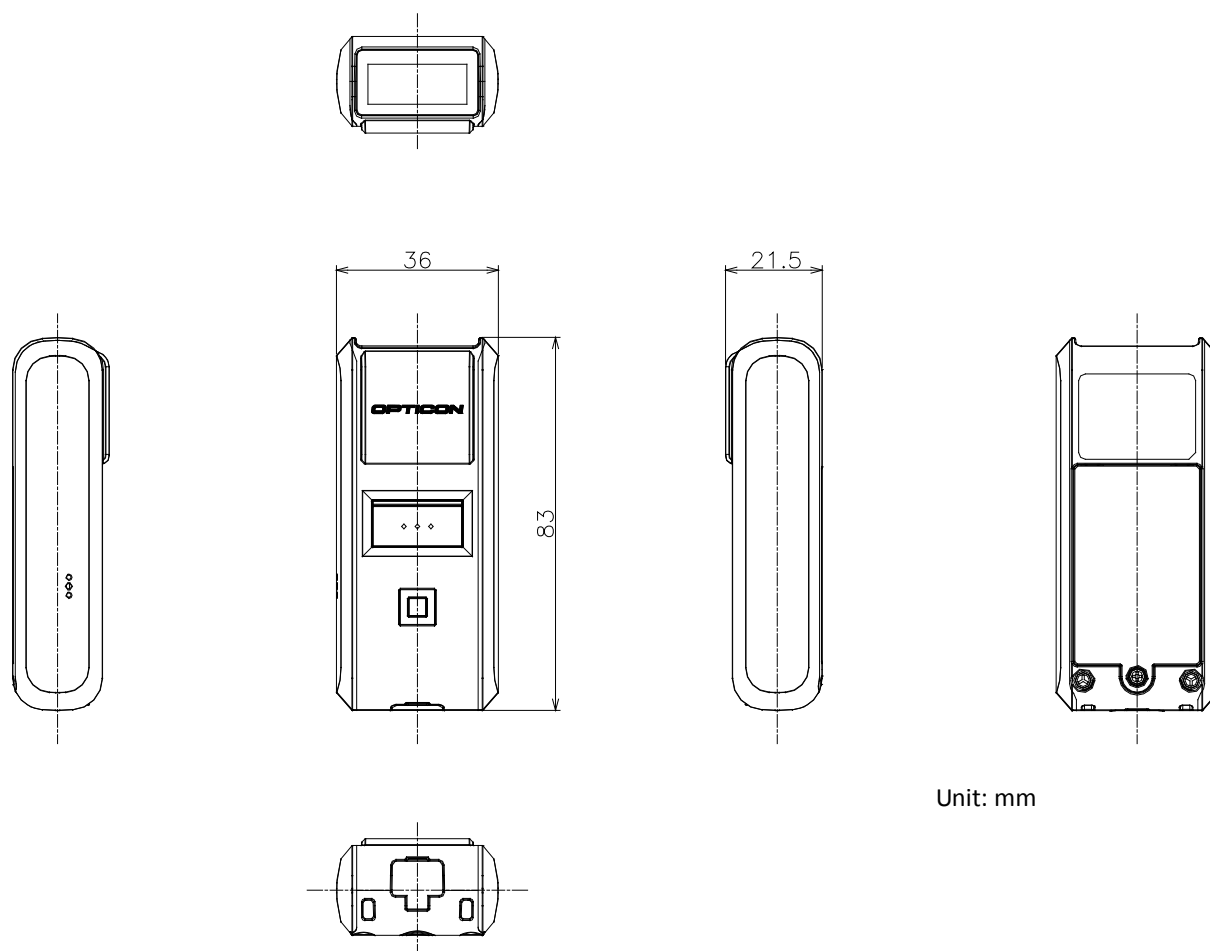
16.1. External Dimensions

83.0 (W) × 36.0(D) × 21.5 (H) mm

16.2. Total Weight

57 grams (accessories not included)

16.3. Mechanical Drawing



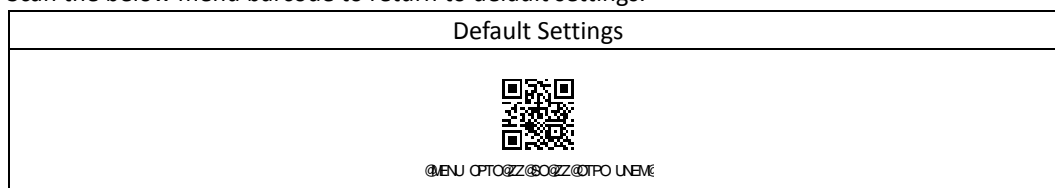
Unit: mm

Figure 14: Mechanical Drawing

17. Readable Barcode Types

17.1. Default Settings

Scan the below menu barcode to return to default settings.



17.2. Supported Symbolologies

17.2.1. 1D Symbolologies

Symbology	Default Settings	Minimum Character Length	Notes
UPC	o	-	
UPC Add-on 2 UPC Add-on 5			
EAN(JAN)	o	-	
EAN Add-on 2 EAN Add-on 5			
EAN-13	o		
EAN-13 Add-on 2 EAN-13 Add-on 5			
EAN-8	o		
EAN-8 Add-on 2 EAN-8 Add-on 5			
Code 39	o	1	No Start/Stop transmission
Tri-Optic	o	-	No Start/Stop transmission
Codabar (NW7)	o	1	No Start/Stop transmission
Industrial 2of 5	o	5	
Interleaved 2of 5	o	6	
S-Code		5	
Code 128	o	1	Switch GS1 (key settings)
Code 93	o	1	
IATA	o	5	
MSI/Plessey		3	
UK/Plessey		2	
Telepen		1	
Code 11		1	
Matrix 2 of 5		5	
Chinese Post Matrix 2 of 5		-	
Korean Postal Authority		-	
Intelligent Mail Barcode		-	
POSTNET		-	
JPN (Custom Barcode)		-	

17.2.2. GS1 Databar, Composite Codes

Symbology	Default Settings	Additional Comments
GS1 DataBar <ul style="list-style-type: none"> • GS1 DataBar Omnidirectional • GS1 DataBar Truncated • GS1 DataBar Stacked • GS1 DataBar Stacked Omnidirectional 	○	Switch GS1 (key settings)
GS1 DataBar Limited	○	
GS1 DataBar Expanded <ul style="list-style-type: none"> • GS1 DataBar Expanded • GS1 DataBar Expanded Stacked 	○	
Composite GS1 DataBar <ul style="list-style-type: none"> • CC-A • CC-B • Limited CC-A • Limited CC-B • Expanded CC-A • Expanded CC-B 		Switch GS1 (key settings)
Composite GS1-128 <ul style="list-style-type: none"> • CC-A • CC-B • CC-C 		Switch GS1 (key settings)
Composite EAN <ul style="list-style-type: none"> • EAN-13 CC-A • EAN-13 CC-B • EAN-8 CC-A • EAN-8 CC-B 		Switch GS1 (key settings)
Composite UPC <ul style="list-style-type: none"> • UPC-A CC-A • UPC-A CC-B • UPC-E CC-A • UPC-E CC-B 		Switch GS1 (key settings)

17.2.3. 2D Symbologies

Symbology	Default Settings	Additional Comments
PDF417	○	
Micro PDF417		
Codablock F		
QR Code	○	Switch GS1 (key settings)
Micro QR	○	
Data Matrix (ECC 200)	○	Switch GS1 (key settings)
Data Matrix (ECC 000-140)		
Aztec Code	○	
Aztec Runes		
Chinese-sensible Code		
Maxi Code		

* The readable symbology type may change depending on the configured settings.