

M-12

2D CMOS Imager

Powered by a high-speed global shutter sensor (120 fps) and a wide-angle optical system, the on/in-counter M-12 reads 1D, 2D, and OCR effortlessly, even in bright sunlight. Its low-profile design fits seamlessly into kiosks and payment terminals, with IP65-rated protection and operation from -20°C to 60°C.



Highlights

- High speed 2D CMOS imager — omnidirectionally scans up to 120 fps
- Rapidly scans and decodes 1D, 2D and OCR fonts including off of mobile device screens
- Incorporates Opticon scan engine for improved scanning of low quality barcodes and providing exceptional motion tolerance for moving applications
- The ultra wide-angle optical system can read standard QR codes at close range, as well as wide barcodes and large QR codes from approximately 40-45 mm away
- Smart design fits any desk, workspace or countertop
- Trigger modes: manual and auto-trigger
- Can easily be embedded into a fixed mount scanning solution
- IP65-rated dust and drip-proof, and works from -20°C to 60°C for versatile use
- A sunlight-resistant optical filter and industrial CMOS sensor enable readings up to 120,000 Lux
- Data editing program function captures up to 16 codes on multiple images simultaneously
- The M-12's space-saving size makes it ideal for kiosks and payment terminals
- Communication interfaces: USB (HID, COM), RS232
- Two year warranty

M-12

Product Specifications



Operation

CPU: 800MHz

Operating indicators:

- Visual: upper panel 3 color LED
- Non-visual: Buzzer

Communication

USB: Full-speed 12Mbps (HID/COM)

RS232: D-Sub 9 pin connector with external power supply

Power

Voltage requirement: 5V $\pm$ 10% (USB, RS232)

Current consumption USB: 140mA reading, 48mA standby

Current consumption RS-232C: 115mA reading, 22mA standby

2D Imager optics

Light source: 3 colors LED x 4 pcs

Scan method: CMOS area sensor, 640 x 480 pixels

Scan rate: Up to 120 fps

Reading pitch angle: $\pm$ 55°

Reading skew angle: $\pm$ 65°

Reading tilt angle: 360°

Curvature: $R \geq 20$ mm (12-digit UPC)

Min. resolution at pcs 0.9: 0.076 mm / 3 mil (Code 39)

Min. pcs value: 0.2

View angle: horizontal 120°, vertical 94.2°, diagonal 120°

Motion tolerance: UPC 0.127 mm, 3 m/s

Depth of field at code 39:

4 - 50 mm (0.127 mm) / 0.16 - 1.97 in (5 mil)

8 - 129 mm (0.254 mm) / 0.32 - 5.08 in (10 mil)

Depth of field at code 128:

13 - 97 mm (0.20 mm) / 0.51 - 3.82 in (7.9 mil)

Depth of field at UPC/EAN:

8 - 161 mm (0.33 mm) / 0.32 - 6.34 in (13 mil)

Depth of field at Codabar:

11 - 133 mm (0.254 mm) / 0.43 - 5.24 in (10 mil)

Depth of field at PDF417:

10 - 62 mm (0.254 mm) / 0.39 - 2.44 in (10 mil)

Depth of field at QR code:

4 - 22 mm (0.127 mm) / 0.16 - 0.87 in (5 mil)

4 - 74 mm (0.381 mm) / 0.16 - 2.91 in (15 mil)

Depth of field at Datamatrix:

3 - 46 mm (0.127 mm) / 0.12 - 1.81 in (5 mil)

Supported symbologies

Barcode (1D): JAN/UPC/EAN incl. add on, Codabar / NW-7, Code 11, Code 39, Code 93, Code 128, GS1-128 (EAN-128), GS1 DataBar (RSS), IATA, Industrial 2of5, Interleaved 2of5, ISBN-ISMN-ISSN, Matrix 2of5, MSI/Plessey, UK/Plessey, S-Code, Telepen, Tri-Optic, USPS
Postal code: Chinese Post, Intelligent Mail Barcode, Korean Postal Authority code, Dutch KIX code, UK Postal, Australian postal, Postal JPN, POSTNET, PLANET, 4-State Mailmark Barcode

2D code: Aztec Code, Aztec Runes, Composite codes, Codablock F, Data Matrix (ECC200), DMRE, Dot code, Maxi Code, PDF417, MicroPDF417, QR Code, Micro QR Code, rM QR code, Passport MRZ (OCR-B), Chinese Sensible code

Durability

Temperature in operation: -20 to 60 °C / -4 to 140 °F

Temperature in storage: -30 to 65 °C / -22 to 149 °F

Humidity in operation: 5 - 90% (non-condensing, no frost)

Humidity in storage: 5 - 90% (non-condensing, no frost)

Ambient light immunity: Fluorescent 10,000 lx max, Incandescent 10,000 lx max, Sunlight 120,000 lx max

Electrostatic discharge protection: 6 kV contact discharge / 15 kV air discharge (non-destructive)

Drop test: 1.5 m / 5 ft drop onto concrete surface

Vibration test: 10 - 100 Hz with 2G for 30 min.

Protection rate: IP65

MTBF: 50,000 hours

Physical

Dimensions (WxHxD): 58 x 58 x 14.8 mm / 2.28 x 2.28 x 0.58 in.

Cable length: 2 m USB

Weight: Ca. 47 g / 1.66 oz (excl. cable)

Regulatory & safety

Product compliance: CE, FCC, VCCI, IEC62471:2006, EN55032, EN55035, RoHS

Models

Interface options: USB, RS232 (excl. power supply)