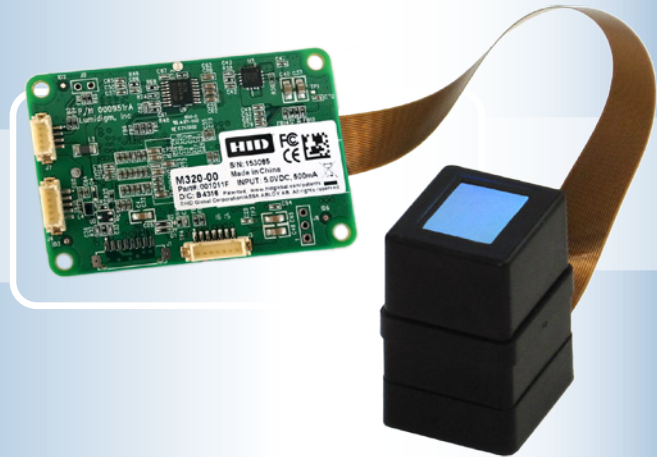


## Lumidigm® M-Series Fingerprint Modules



*Enhanced fingerprint capture firmware and high-performing liveness detection available in the embedded M320!*

### KEY ENHANCEMENTS:

- More reliable fingerprint image capture (M320)
- High performance liveness detection (M320)
- Top MINEX III algorithm for improved 1:1 and 1:N matching
- Updated SDK tools

### USE CASES:

- **Enterprise:** Time & attendance, physical and logical access
- **Banking:** Employee logical access (single sign-on), teller authentication
- **Healthcare:** Patient and staff authentication, electronic medical record access, e-prescribing (EPCS)
- **Point of Sale (POS) terminals**

## COMPACT MULTISPECTRAL BIOMETRIC MODULE

- **Real World Performance** — Patented Lumidigm multispectral imaging outperforms conventional fingerprint technologies, reducing problems with user enrollment and matching.
- **Reliable Fingerprint Capture** — Enhanced finger detection software consistently captures high quality fingerprint images from all users in all environments.
- **High-Performance Liveness Detection** — Embedded modules now provide strong liveness detection, preventing the fraudulent use of fake or stolen biometric data.
- **Enhanced Matching** — Top-ranked MINEX III algorithm is interoperable with ANSI/ISO templates and delivers accurate 1:1 matching and 1:N searches up to 5,000 users.
- **Excellent Value** — Durable, compact and field-proven, M-Series modules bring multispectral imaging to cost-sensitive applications.

Compact and cost-effective Lumidigm M-Series Fingerprint Modules use patented multispectral imaging technology to capture fingerprint data for all users, detect fraudulent verification attempts, and provide accurate fingerprint matching. Streamline user authentication and reduce your administrative burden with the M-Series.

Multispectral imaging technology captures surface and subsurface fingerprint data, delivering clear images every time — even when finger surface features are hard to distinguish due to age, dryness, or finger pressure. Multispectral imaging outperforms traditional optical or capacitive technologies that capture only surface details, resulting in poor performance when fingers are dry or wet, and platens are dirty.

High-performance liveness detection, available with the M320, prevents the

fraudulent use of fake or stolen biometric data and protects user privacy.

The M Series features a top ranked MINEX III certified algorithm with interoperable ANSI/ISO fingerprint minutia templates, proven 1:1 and 1:N matching up to 5000 users, and FBI-certified WSQ finger image compression. With USB and RS-232 interfaces, the devices support image, template and match score outputs and are available in embedded or streaming operating mode.

Designed for cost-sensitive yet demanding applications, durable M-Series modules are ideal for integration into physical access control and time & attendance terminals for improved employee usability and security, multifactor logical access control devices to improve security over weak password systems, and point of sale (POS) terminals to reduce transaction fraud from the use of lost or stolen payment card credentials.

## Operating modes:

- Embedded modules (M320, M300\*) store and process biometric data on the device. USB or RS 232 interface.
- Streaming modules (M310) connect to an Intel 32b/64b USB host that stores and processes biometric data.

\* Legacy M300 embedded modules not recommended for new designs

## SPECIFICATIONS

	M320 (Embedded)	M300 (Embedded legacy)	M310 (Streaming)
<b>FINGERPRINT IMAGING SYSTEM</b>			
<b>Technology</b>	Patented Lumidigm optical multispectral imaging		
<b>Image resolution / bit depth</b>	500 dpi / 8-bit, 256 grayscale		
<b>Platen area</b>	0.55" x .69" (13.9mm x 17.4mm) rectangle, uncoated		
<b>BIOMETRIC FUNCTIONS</b>			
<b>Image output format</b>	ANSI 381, ISO 19794-4, WSQ compression (FBI certified)	ANSI 381, WSQ compression	ANSI 381, ISO 19794-4, WSQ compression (FBI certified)
<b>Template output format</b>	1:1: ANSI 378, ISO 19794-2 1:N: Proprietary (ANSI 378+ format)	ANSI 378	1:1: ANSI 378, ISO 19794-2 1:N: Proprietary (ANSI 378+ format) (SDK 6+)
<b>Verify (1:1) match score input</b>	ANSI 378 or ISO 19794-2 template	ANSI 378 template	ANSI 378 or ISO 19794-2 template (SDK 6+)
<b>Identify (1:N) search score input</b>	Proprietary template (ANSI 378+ format)	ANSI 378 template	Proprietary template (ANSI 378+ format) (SDK 6+)
<b>Latent and liveness detection</b>	Yes	Latent only	Latent only
<b>FINGERPRINT TEMPLATES</b>			
<b>Verify (1:1) template storage</b>	Up to 50,000	Up to 50,000	Only limited by USB host memory
<b>Identify (1:N) template storage</b>	Up to 4,000/group, 10 groups	Up to 3,000/group, 10 groups	Up to 5,000 users on USB host (SDK 6+) 1,000 users/group, 10 groups (SDK 5)
<b>Identity (1:N) user storage</b>	Up to 2,000 users (1-finger/user)	Up to 1,000 users (1-finger/user)	Up to 5,000 users (up to 10-fingers/user) (SDK 6+)
<b>Template size</b>	1592 bytes or less	512 bytes or less	1592 bytes (SDK 6+), 512 bytes (SDK 5)
<b>BIOMETRIC PROCESSING TIMES</b>			
<b>Finger touch to image capture</b>	200 ms (typical)	200 ms (typical)	135 ms (typical)
<b>Finger touch to image out</b>	1.1 sec (typical)	1.3 sec (typical)	400 ms (typical)
<b>Finger touch to 1:1 score or template</b>	1.6 sec (typical)	1.8 sec (typical)	405 ms (typical)
<b>Finger touch to 1:N score</b>	2.0 sec (typical, 1,000 users)	2.0 sec (typical, 1,000 users)	450 ms (typical, 1,000 users)
<b>Liveness detection (when enabled)</b>	425 ms (added processing time)	n/a	n/a
<b>ENVIRONMENTAL RANGE</b>			
<b>Ingress protection</b>	IP65 dust and water protection at platen		
<b>Ambient light tolerance</b>	90 Klux (liveness off), 10 Klux (liveness on)	18 Klux	
<b>Temperature (operating)</b>	Enclosure: -10 to 60°C / No Enclosure: 0 to 60°C		
<b>Humidity (operating)</b>	Enclosure: 0-100% RH condensing / No Enclosure: 0-95% RH condensing		
<b>ESD immunity (operating)</b>	IEC 61000-4-2 Level 4+/-15 kV air discharge, at platen		
<b>INTERFACE MODULE</b>			
<b>Device interface</b>	USB 1.1 or 2.0, RS-232 (115.2 kbps)		USB 2.0 (480 Mbps)
<b>Memory, platform requirement</b>	n/a		64 MB RAM, Intel 32b/64b platform
<b>Operating systems supported</b>	Windows 10/8/7 (32b/64b), Windows XP, Linux, Android (M320 or M300 only)		
<b>Encryption</b>	n/a		Encrypted video for playback protection
<b>FORM FACTOR</b>			
<b>Sensor head module</b>	1.1"W x 1.2"D x 1.6"H (27 x 30 x 41 mm)		
<b>Electronic control unit</b>	1.6"W x 2.4"D x 0.4"H (40 x 60 x 9 mm)	1.7"W x 1.0"D x 0.2"H (42 x 26 x 4 mm)	
<b>Housing</b>	ABS plastic		
<b>POWER SUPPLY REQUIREMENTS</b>			
<b>+5VDC Current: Operational / Idle</b>	400 mA Operational (peak) / 200 mA Idle (typical)		225 mA Operational / 100 mA Idle
<b>STANDARDS COMPLIANCE</b>			
<b>Interoperability</b>	MINEX III, ANSI 378, ISO 19794-2:2011, ANSI 381, ISO 19794-4:2011, NFIQ, WSQ	MINEX 2004, ANSI 378, ISO 19794-2:2005, ANSI 381, ISO 19794-4:2005, NFIQ, WSQ	MINEX III, ANSI 378, ISO 19794-2:2011, ANSI 381, ISO 19794-4:2011, NFIQ, WSQ (SDK 6+)
<b>Device certifications</b>	CE, FCC Part 15 Class B, EN 60950, IEC 62471, RoHS, DEA EPCS, support for thin clients		CE, FCC Part 15 Class B, EN 60950, IEC 62471, RoHS, DEA EPCS, WHQL

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