HID®

Lumidigm® M-Series Fingerprint Sensors

Enhanced fingerprint capture firmware and high-performing liveness detection available in the embedded M321!

KEY ENHANCEMENTS:

- More reliable fingerprint image capture (M321)
- High performance liveness detection (M321)
- Top MINEX III algorithm for improved 1:1 and 1:N matching up to 5000
- Updated SDK tools

USE CASES:

- Enterprise: 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)

BIOMETRIC AUTHENTICATION FOR THE ENTERPRISE

- **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 sensors 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** — Robust, compact and field-proven, M-Series USB sensors bring multispectral imaging to the enterprise desktop.

Lumidigm M-Series Fingerprint Sensors extend patented multispectral imaging technology to the value-conscious enterprise, providing the required durability and performance in a sleek and compact USB desktop housing. The M-Series captures fingerprint data for all users, detects fraudulent verification attempts, and provides accurate fingerprint matching. With the M-Series, you can strengthen your identity and access management solution by replacing vulnerable passwords with the quick and secure touch of a finger.

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 in common conditions.

High-performance liveness detection, available with the M321, 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. The desktop devices support image, template and match score outputs and are available in embedded or streaming operating mode.

The M-Series USB sensors are ideal desktop devices to replace passwords and prevent the use of shared, stolen or faked ID credentials in logical access applications such as employee network access (single sign-on), bank teller authentication, patient and healthcare provider authentication, and point of sale (POS) transactions.

SPECIFICATIONS

	M321 (Embedded)	**M301** (Embedded legacy)	**M311** (Streaming)
FINGERPRINT IMAGING SYSTEM			
Technology	Patented Lumidigm optical multispectral imaging		
Image resolution / bit depth	500 dpi / 8-bit, 256 grayscale		
Platen area	0.55" x .69" (13.9mm x 17.4mm) rectangle, uncoated		
BIOMETRIC FUNCTIONS			
Image output format	ANSI 381, ISO 19794-4, WSQ compression (FBI certified)	ANSI 381, WSQ compression	ANSI 381, ISO 19794-4, WSQ compression (FBI certified)
Template output format	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+)
Verify (1:1) match score input	ANSI 378 or ISO 19794-2 input	ANSI 378 template	ANSI 378 or ISO 19794-2 template (SDK 6+)
Identify (1:N) search score input	Proprietary template (ANSI 378+ format)	ANSI 378 template	Proprietary template (ANSI 378+ format) (SDK 6+)
Latent and liveness detection	Yes	Latent only	Latent only
FINGERPRINT TEMPLATES			
Verify (1:1) template storage	Up to 50,000	Up to 50,000	Only limited by USB host memory
Identify (1:N) template storage	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)
Identity (1:N) user storage	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+)
Template Size	1592 bytes or less	512 bytes or less	1592 bytes (SDK 6+), 512 bytes (SDK 5)
BIOMETRIC PROCESSING TIMES			
Finger touch to image capture	200 ms (typical)	200 ms (typical)	135 ms (typical)
Finger touch to image out	1.1 sec (typical)	1.3 sec (typical)	400 ms (typical)
Finger touch to 1:1 score or template	1.6 sec (typical)	1.8 sec (typical)	405 ms (typical)
Finger touch to 1:N score	2.0 sec (typical, 1,000 users)	2.0 sec (typical, 1,000 users)	450 ms (typical, 1,000 users)
Liveness detection (when enabled)	790 ms (added processing time)	n/a	n/a
ENVIRONMENTAL RANGE			
Ingress protection	IP50 dust and water protection		
Ambient ligth tolerance	90 Klux (liveness off), 10 Klux (liveness on)	18 Klux	
Temperature (operating)	-10 to 60°C		
Humidity (operating)	0–100% RH condensing		
ESD immunity (operating)	IEC 61000-4-2 Level 3 +/-8 kV air discharge		IEC 61000-4-2 Level 4 +/-15 kV air discharge
INTERFACE			
Device Interface	USB 1.1 or 2.0		USB 2.0 (480 Mbps)
Memory, platform requirement	n/a		64 MB RAM, Intel 32b/64b platform
Operating systems supported	Windows 10/8/7 (32b/64b), Windows XP, Linux, Android (M321 or M301 only)		
Encryption	n/a		Encrypted video for playback protection
FORM FACTOR			
Overall dimensions	1.9"W x 3.1"D x 2.0"H (47mm x 78mm x 52mm)		
Housing	ABS plastic		
POWER SUPPLY REQUIREMENTS			
+5VDC Current: Operational / Idle	400 mA Operational (peak) / 200 mA Idle (typical)		225 mA Operational / 100 mA Idle
STANDARDS COMPLIANCE			
Interoperability	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+)
Device certifications	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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