



Lumidigm® V-Series V4xx Fingerprint Sensors and Modules



V-Series fingerprint readers are field-proven and widely deployed, authenticating over one billion ATM and teller transactions per year.

TRUSTED AND SECURE FINGERPRINT AUTHENTICATION

- **Establishes Trust in Transactions** — Device enables secure communications between the sensor and a centralized account management system, ensuring that only authorized users gain access.
- **Encrypts Sensitive Data** — Cryptographic toolkit provides data security throughout sensitive transactions, preventing man-in-the-middle and replay attacks.
- **Resists Tampering** — Cryptographic keys and other data stored on the device are protected by active hardware tamper detection and response.
- **Provides Best Available Biometric Performance** — Patented Lumidigm multispectral imaging technology leads the industry in real world fingerprint authentication performance.
- **Prevents Fraudulent Verification Attempts** — Award-winning liveness detection reliably distinguishes between fake and legitimate biometric characteristics.

USE CASES:

- **ATMs** — second factor or PIN replacement
- **Tellers** — confirm customer and teller identities
- **High-value transactions** — wire transfers, portfolio management, B2B payments, secure web portal access
- **Government benefits** — pension payments, public healthcare access

HID Global's Lumidigm® V-Series V4xx Fingerprint Sensors and Modules combine world-renowned Lumidigm biometric performance with data encryption, tamper detection/response, and key management for trusted user authentication. Designed to simplify transactions for users while eliminating fraud for financial institutions, the V4xx provides convenient and reliable biometric authentication in solutions requiring end-to-end security in transactions.

New to the V-Series, the cryptographic toolkit provides a broad set of tools that allow an organization to secure data transmissions. The V4xx encrypts sensitive data for transactional security, preventing man-in-the-middle and replay attacks using mutual authentication between the host and the sensor. The tamper response capability on the V4xx detects and resists physical tampering of cryptographic keys and other data stored on the device. Encrypted and authenticated firmware updates prevent malicious code loading.

The V4xx offers exclusive multispectral imaging and best-in-class liveness detection that leverages the industry's best-performing fingerprint sensor platform. Known for its ability to provide a quick and easy user experience while reducing the opportunity for fraud, HID Global's Lumidigm technology gathers biometric data from the surface and subsurface of the finger to provide reliable, real world biometric authentication in any environment and with any user population. Strong, field-updatable liveness detection ensures that the person making the transaction is who they claim to be.

The V4xx supports multiple standard cryptography transaction models or can be customized for a proprietary, customer-specific solution. With flexible deployment options, the V4xx will reduce fraud and restore trust in transactions.

Lumidigm® V4xx FEATURES:

- Cryptographic toolkit with symmetric/asymmetric encryption/decryption algorithms, hashing functions, random number generation, and digital signature generation/verification.
- Physical tamper resistance, detection and response.
- Per-device encryption keys that can be remotely updated.

- Mutual authentication between the host and the sensor.
- Encrypted and authenticated firmware updates.
- Secure boot.
- Lumidigm multispectral fingerprint imaging technology.
- State-of-the-art liveness detection.

DEPLOYMENT OPTIONS INCLUDE:

- Unlocked — enables integration with existing V3xx installations, allowing crypto features to be activated later.
- Standard — supports out-of-the-box cryptographic transaction models.
- Customized — allows a proprietary or customer-specific cryptographic transaction model and requires professional services support.



SPECIFICATIONS

Lumidigm® V4xx	
FINGERPRINT IMAGING SYSTEM	
Technology	Patented Lumidigm optical multispectral imaging
Image resolution / bit depth	500 dpi / 8-bit, 256 grayscale
Platen area	0.7" x 1.1" (17.8mm x 27.9mm) ellipse; durable, chemical resistant glass (no coatings to wear out)
BIOMETRIC FUNCTIONS	
Image out	Uncompressed or WSQ compressed images
Template out	ANSI 378 and ISO 19794-2 compliant (MINEX certified)
Score or verification (1:1)	ANSI 378 and ISO 19794-2 template inputs supported
Liveness detection	Included, updatable via firmware
Latent protection	Included
SECURITY FEATURES	
Physical tamper protection	Encapsulated electronics, tamper detection switches, tamper label, secure memory zeroization and other features.
Cryptographic toolkit	AES 128/192/256, TDES 64/128/192, RSA 1024/2048/4096, PKCS v1.5, v2.1 digital signature support, SHA-1/256/384/512, HMAC (variable key size), random number generator, unique device identifiers, remote and factory key loading support, configurable secure memory for key storage, multiple secure transaction models, secure boot, encrypted firmware updates and more.
BIOMETRIC PERFORMANCE	
Finger placement to image	2.0 sec. (typical)
Finger placement to template / score	2.1 sec. (typical)
ENVIRONMENTAL RANGE	
Ingress protection at platen	IP65
Temperature (operating, with enclosure)	-10 to 60°C
Humidity (operating, with enclosure)	0-100% RH condensing
ESD Immunity	IEC 61000-4-2 +/- 4kV contact, +/- 8kV air
INTERFACE	
USB	480 Mbps high-speed
Operating systems supported	Windows 8 / 8 Embedded (32/64 bit) Windows 7 / 7 Embedded (32/64-bit) Windows XP / XP Embedded Linux
FORM FACTOR & DURABILITY	
Overall dimensions	V420 Modules: 2.68 x 2.61 x 2.02 in (6.8 x 6.6 x 5.1 cm) (enclosure required) V421 Sensors: 3.25 x 4.00 x 2.35 in (8.3 x 10.2 x 6 cm) (enclosure included)
Enclosure	V421 Sensors: Painted magnesium alloy, IP65 rating, 2m USB cable
POWER SUPPLY REQUIREMENTS	
Supply current — operational	+5 VDC 500 mA (peak)
Supply current — idle	+5 VDC 100 mA (typical)
STANDARDS COMPLIANCE	
Interoperability	ANSI 378, ISO 19794-2:2005, ANSI 381, ISO 19794-4:2005, NFIQ compliant, MINEX-certified algorithm
Device certifications	CE, FCC Part 15 Class B, EN 60950, IEC 62471, RoHS, DEA EPCS, Certified support for thin clients, FBI WSQ, CTI (Brazil)
MINIMUM SYSTEM REQUIREMENTS	
Interface	USB 2.0 High Speed

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