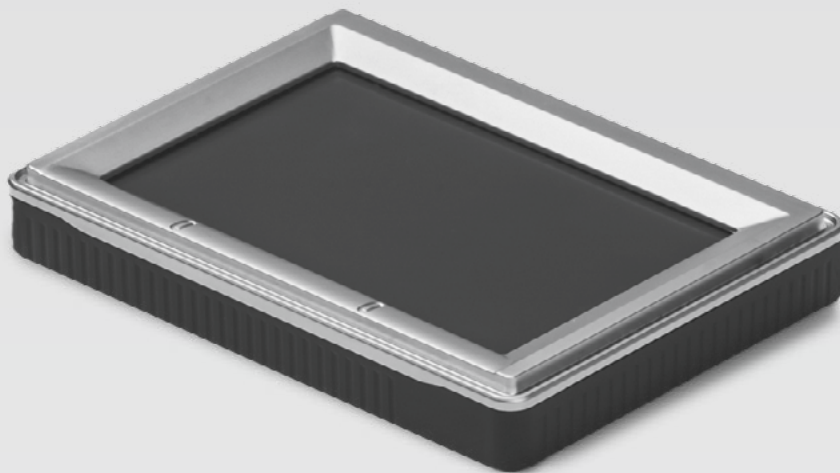




Five-0

FBI Appendix F Certified FAP 50
10-Print Roll Scanner



Warranty Information

All products have a 12-month warranty starting from the date of delivery. Additional years warranties available. Inquire with your salesperson.

[View the warranty here:](#)

Revision History

Revision No.	Issue Date	Comments
1.3	2022.4	Adjust Electrical DC Characteristics
1.2	2020.2	Added another Embedded cable; Added Rubber Gasket information
1.1	2019.3	Reformatted; Removed part number
1.0	2017.4	1.0 Version Preliminary

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1 FIVE-0

Five-0 uses Integrated Biometrics' patented light-emitting sensor (LES) technology to deliver fixed and mobile FBI Certified fingerprint imaging in an exceptionally durable, lightweight scanner.

Other benefits include:

Faster

- Rapid dry finger capture
- No need to clean latent prints in high-volume situations
- Easy integration via single SDK for all Integrated Biometrics FBI Certified products

Better

- Unaffected by extreme temperatures, direct sunlight, or bright artificial lights
- Compact, lightweight, and rugged
- Emits no bright lights during scans
- Meets or exceeds US military durability specifications

Smarter

- Extremely low power consumption
- Eliminates consumables (silicone membranes or cleaning tape)
- Lower maintenance costs



Software-Based Autodetect

- Scanner automatically detects the finger capture that generates the highest quality image without user intervention.
- Application developers enable this feature through the Integrated Biometrics software development kit (SDK)



01 **LES: Light Emitting Sensor, Sensing Area**

The patented LES film is a multilayer, polymer composite containing particles that luminesce (give off light) in the presence of an electrical field.

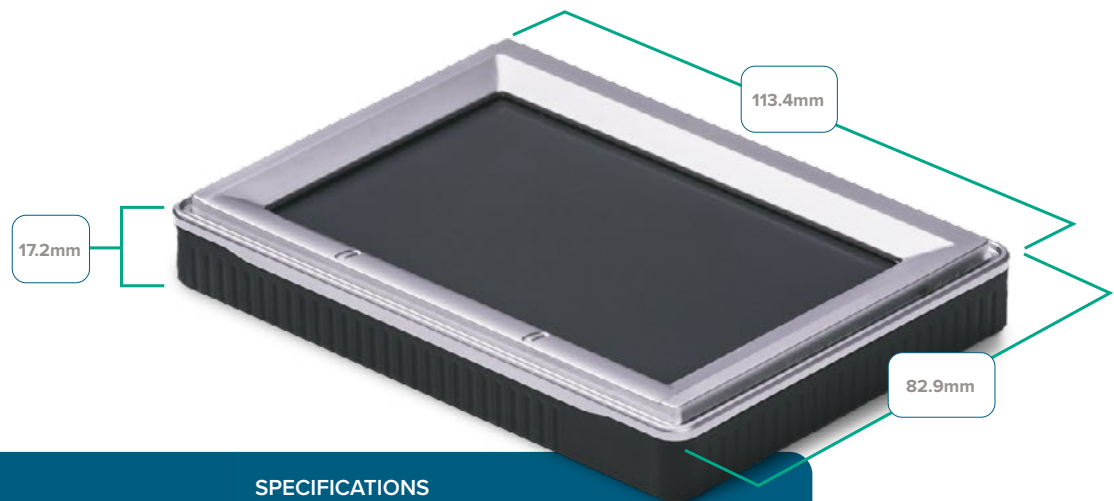
02 **Conductive Bezel**

The bezel, in conjunction with a user's finger, complete a low-level electrical circuit which causes the particles in the film to emit light.

03 **USB OTG Compliant Cable***

The USB-C port is shielded from the elements by a protective rubber covering. The cables provided come in both USB-A and USB-C variants.

*IB provided cables are highly recommended; however, third-party USB 2.0 OTG compliant cables may be used.



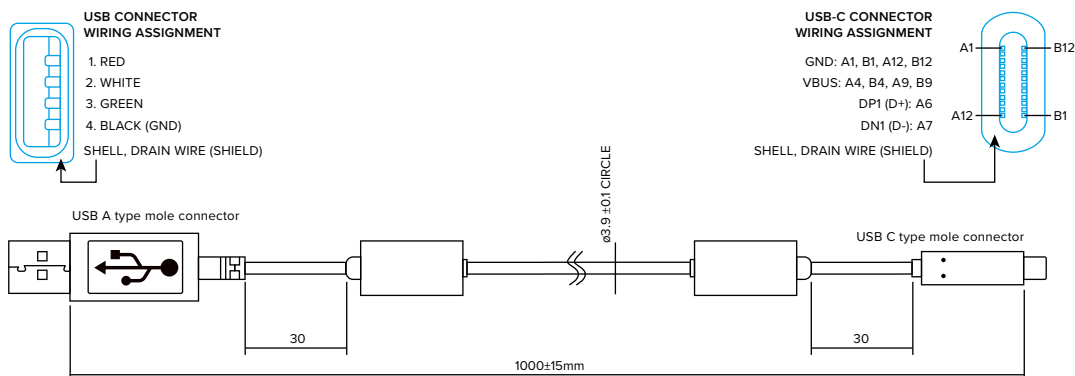
ITEM	SPECIFICATIONS
Scanner Physical Size	113.4mm x 82.9mm x 17.2mm
Total Weight	< 191.64 grams (not including cable)

HARDWARE CONNECTION SETUP

USB Connector Pin Description

PIN NUMBER	TYPE	DESCRIPTION
1	V_BUS	+5 VDC
2	USB	Data (-)
3	USB	Data (+)
4	G	Ground
5	G	Shield GND

USB Cable





01 LES: Light Emitting Sensor, Sensing Area

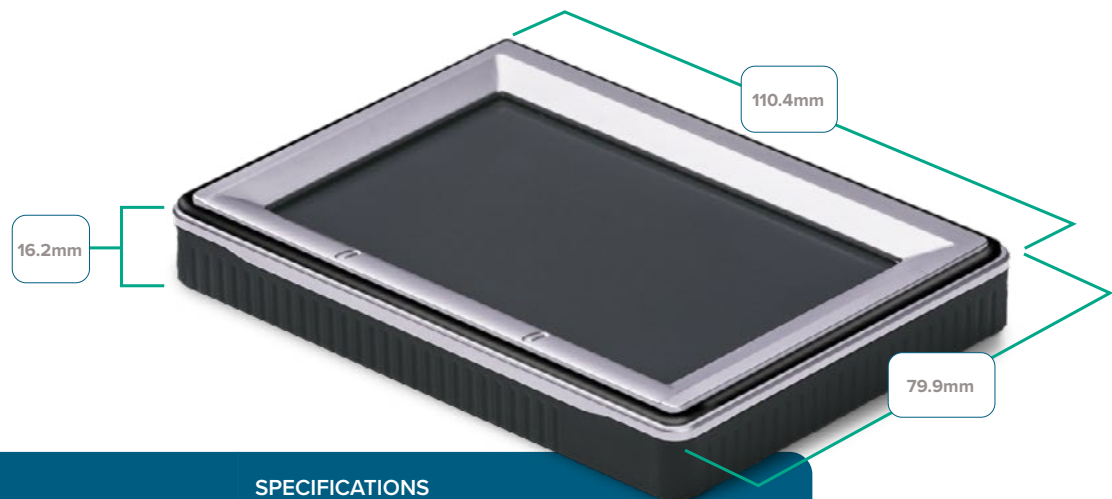
The patented LES film is a multilayer, polymer composite containing particles that luminesce (give off light) in the presence of an electrical field.

02 Conductive Bezel

The bezel, in conjunction with a user's finger, complete a low-level electrical circuit which causes the particles in the film to emit light.

03 Rubber Gasket O-Ring

Rubber gasket for embedded type. For details and mounting instructions, see [page 9](#).

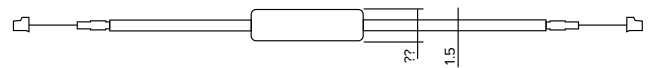
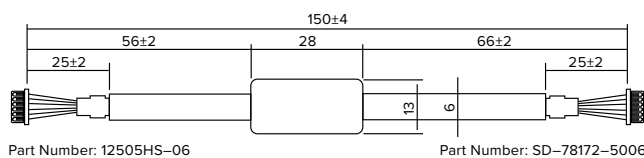
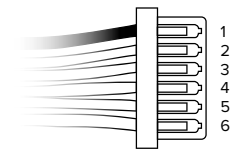


ITEM	SPECIFICATIONS
Scanner Physical Size	110.4mm x 79.9mm x 16.2mm
Total Weight	< 191.64 grams (not including cable)

HARDWARE CONNECTION SETUP

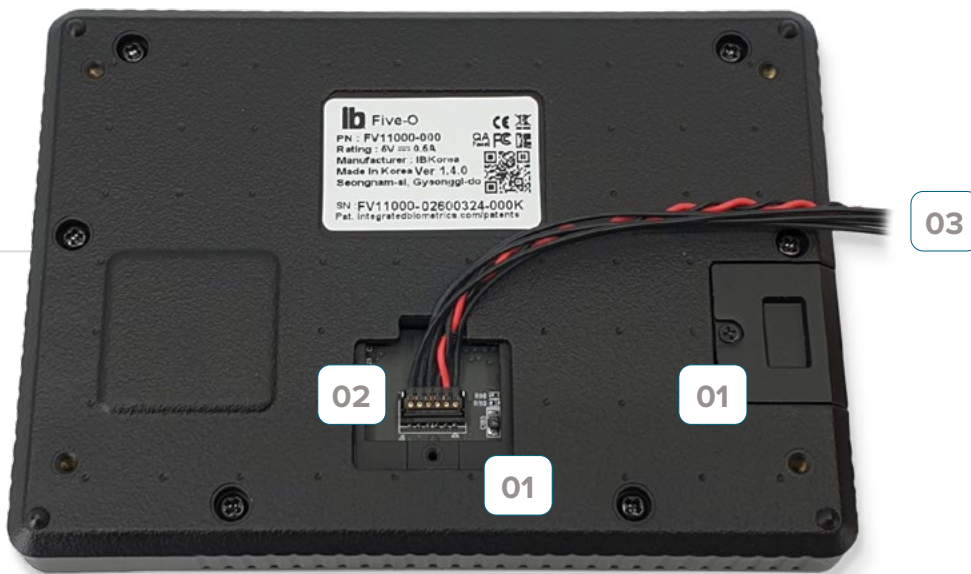
Molex Pin Number Description

PIN NUMBER	DESCRIPTION
1	+5 VDC
2	Data (+)
3	Data (-)
4	Ground
5	NC
6	Shield Ground



USB Connector Pin Description

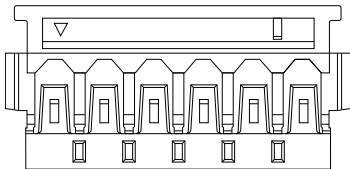
PIN NUMBER	TYPE	DESCRIPTION
1	V_BUS	+5 VDC
2	USB	Data (+)
3	USB	Data (-)
4	G	Ground
5	-	NC
6	G	Shield Ground



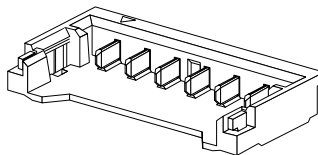
01 Molex Access Panel

The Molex Access Panel is designed for one time installation and removal. **Please note:** repeated installation of the panels may lead to damaged threads.

02 Connection to Device

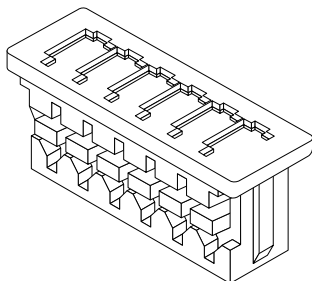


Molex Receiver (male) 78172-5006

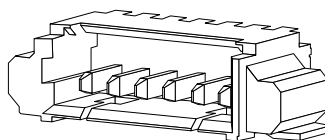


Molex connector (female) 78171-5006

03 Connection to Host PCB (not pictured)



Molex 51021-0600: 6 position Rectangular Housing Connector (female) natural 0.049" (1.25 mm) PicoBlade™ Connector System

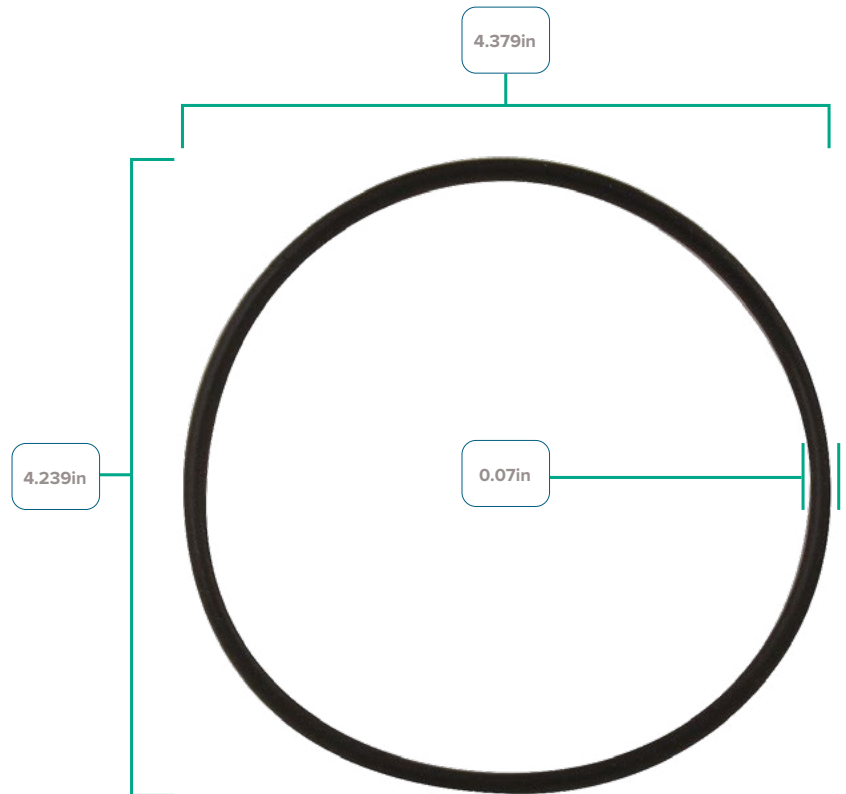


Molex 53261-0671: 0.049" (1.25mm) 6-Position Header Connector (Male) Surface Mount, Right Angle PicoBlade™ Connector System



How To Mount Rubber Gasket O-Ring

- Manufacturer: McMaster-Carr
- Part Number: 9452K135



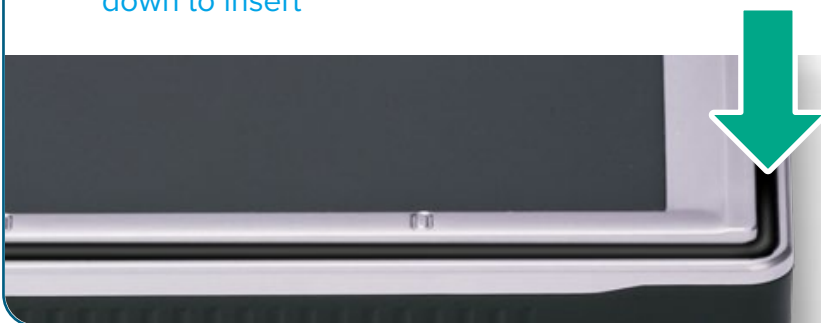
01

Locate the outer bevel and gap of the Five-0



02

Hook the rubber gasket at the gap and push it down to insert





OS Support & System Requirements

SECTION	SPEC.
Windows	Windows 7 or later (32-bit and 64-bit)
Linux	Kernel 2.6 or later (32-bit, 64-bit, ARMv7-A, and ARMv8-A)
Android	Android 4.0 or later (32-bit, 64-bit, ARMv7-A, and ARMv8-A)
CPU	x86 and x64 2.0GHz or higher ARM 1.0 GHz or higher
Memory	512MB or higher

General Specifications

SECTION	SPEC.
Sensor Type	LES
Camera	TFT
Resolution	500PPI
Grayscale	256 grayscale dynamic range
Image Size	1600 x 1000 pixels
Supported Image Formats	RAW, JPEG2000, BMP, PNG, WSQ (FBI-approved)
FBI / Image Certifications	FBI Appendix F-certified, Mobile ID IQS FAP 50, PIV, GSA FIPS201
Speed	Min frame rate slaps > 7.7FPS Min frame rate rolls >10FPS
API Interface	Capture single-finger/four-finger direct, single-finger rolls, multidevice / multi-thread support
Quality Scoring	NFIQ v1 supported on all OSes and NFIQ2 for Windows
USB Certification Spec	USB-IF USB.org
Product Weight	< 191.64 grams (not including cable)
Platen Size	85.85 mm x 53.97 mm / 3.38" x 2.12"
Sensing Area	81.28 mm x 50.80 mm / 3.20" x 2.00"
Scanner Assembly Dimensions	113.4 mm x 82.9 mm x 17.2 mm / 4.46" x 3.26" x 0.68"
Interface	USB 2.0
Power Source	USB Host
USB Voltage Level	4.4V ~ 5.25V
USB Certification	USB-IF USB.ORG
FCC/CE Conformance	FCC Part15 (per ANSI C62.4:2003) Class A, CSA ICES-003 Class A, CE Emissions: EN55022:2006 Class A, CE Immunity EN 55024:1998/A1:2001/A2:2003, IEC61000-4-2
Air Discharge / Contact Discharge	In compliance with IEC 61000-4-2



General Specifications continued...

SECTION	SPEC.
Equipment Safety	IEC 60950-1
Hazardous Material	RoHS Directive 2002/95/EC
Vibration Test	IEC 60068-2-64
Operating Temperature	-10°C ~ +55°C
Humidity	30~85% RH < 104°F / 40°C (Non-condensing)
Storage Temperature	-40°C ~ +80°C
Ingress Protection / Water / Dust	IP65 (sealed bezel to scanning surface for IP65 on embedded version)
Surface Durability	MIL-C-675c4.5010, MIL-STD-810F

Electrical DC Characteristics (VDD = 5Vdc, Top = 25°C)

SECTION		MIN.	TYP.	MAX.	UNIT
Power Supply Voltage (VBUS)		4.5		5.25	V
Full Scanning		—	275mA	280	mA
Standby				40	mA
Wake-Up Line	On/Off VIH (LVTTL)	2		3.6	V
	On/Off VIL (LVTTL)		0.8		V
Grounding		Bezel <5Ω to USB cable shield			
D+ and D-		USB			



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CLEANING AND SANITIZATION

For proper cleaning and disinfection of IB products, visit:

<https://integratedbiometrics.com/cleaning>



ABOUT INTEGRATED BIOMETRICS

Integrated Biometrics (IB) designs and manufactures FBI-certified fingerprint sensors for law enforcement, military operations, homeland security, national identity, election validation, social services, and a wide range of commercial applications. The company's patented Light Emitting Sensor (LES) Film results in lightweight scanners that outperform traditional prism-based devices in size, power consumption, speed, portability, spoof-detection and reliability. Identity management solution providers, government agencies, and corporations around the world rely on IB sensors for fast and accurate enrollment, verification and identification, even in remote locations and hostile environmental conditions.

Far more effective in mobile applications environments than silicon or other traditional prism-based sensors, Integrated Biometrics' FBI-certified fingerprint sensors work in any natural or artificial light, on dry or moist fingers and in dusty conditions. LES film resists abrasion and does not require the frequent cleaning cycles of other technologies.

integratedbiometrics.com