InSight™ SD – 2 Meter Iris Recognition System

The AOptix Technologies *InSight™ SD* iris recognition system is fast, easy-to-use, and accurate. Using a fully automated, Adaptive Optics approach, the *InSight SD* delivers a 2 meter stand-off distance, outstanding image quality, and unprecedented throughput.
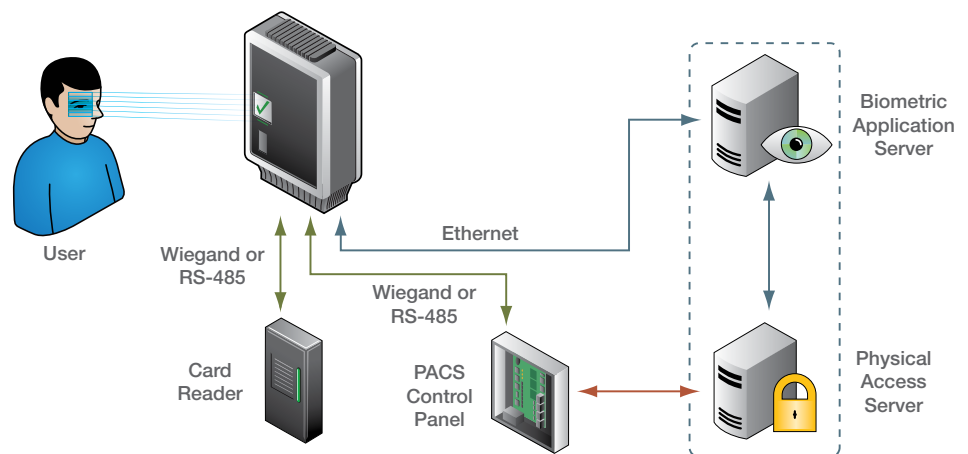
Throughout its industry-leading .75 cubic meter capture volume, the *InSight SD* automatically finds and captures pristine iris biometric images from cooperative subjects in only 2 seconds per eye. Since the volume is so large, virtually everyone from ADA-specified wheelchair height to over 7 feet (2.15 meters) tall can position themselves with minimal effort. The combination of system speed and usability delivers high throughput in both enrollment and recognition scenarios, even for non-acclimated subjects.

Using an advanced image quality measurement and assessment toolkit, the *InSight SD* is designed to reduce FTE and FTA while increasing overall accuracy and usability. Captured iris images exceed the image quality standards set forth in ISO 19794-6, and intuitive, helpful user feedback is provided in cases where the captured images do not pass the system's strict standards for quality. Furthermore, the *InSight SD* imaging design provides a consistent iris diameter regardless of a user's position in the capture volume, a method proven to improve matching accuracy.

The *InSight SD* is designed around open standards to promote interoperability and ease of integration. With encrypted communication based on SOAP over HTTPS, it provides an open architecture for integration with existing backend systems. Additionally, administrators can remotely manage the *InSight SD* through a secure, web-based interface. To facilitate system management, the *InSight SD* has sophisticated tools for event logging, health monitoring, remote diagnostics, and email alerts. This iris imaging functionality and communications protocol are identical to the *InSight VM* system, allowing for full interoperability of AOptix systems and standardized use of network management tools in any deployment.

The *InSight SD* optionally includes a robust set of Wiegand and RS-485 interfaces to facilitate integration with a wide variety of card-based physical access control systems. Whether needs call for high volume one-to-many identification, one-to-one verification, or even local matching against an on-device database, the *InSight SD* has the power and flexibility to enable truly usable, conclusive biometric authentication.

Effortless user experience

- 2 meter nominal standoff distance
- Fully automated subject acquisition and iris imaging
- Large capture zone of .75 cubic meters
- 2 second single eye image capture cycle time

Versatile system architecture

- 1-to-N matching using networked server
- 1-to-n matching against onboard database
- 1-to-1 matching against smart card
- Ethernet, Wiegand, and RS-485 interfaces

Well-suited to enrollment or authentication in

- Border Security
- National and Regional ID Cards
- Aviation Security
- Government and Commercial Access Control
- Law Enforcement and Criminal Justice

System Interfaces / System Architecture

User — Wiegand or RS-485 — Card Reader — Wiegand or RS-485 — PACS Control Panel — Ethernet — Biometric Application Server — Physical Access Server

Model Numbers

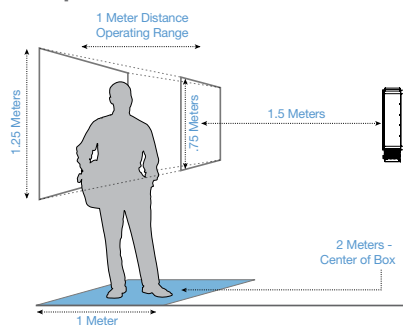| Standard Model	Cord Connected	Description
AB1001A	AB1001AC	*InSight SD* iris core imaging system
AB1001B	AB1001BC	*InSight SD* iris recognition system with on-board encoding, matching, and database functionality
AB1002C	AB1002CC	*InSight SD* iris recognition system with on-board encoding, matching, database functionality and physical access control connectivity

Functional Specifications

Parameter	Value / Functionality
Stand-off distance range	1.5 – 2.5 m (4.9 – 8.2 ft)
Capture volume	.75 cubic meters: 1 m (3.3 ft) deep 1 m (3.3 ft) high x 0.75 m (2.46 ft) wide at 2 meters stand off distance (mid-plane) Volume is a solid trapezoid, so cross section (high and wide) is proportionately smaller in front, and larger in rear of volume
User eye height	0.9 m (2.9 ft) to 1.9 m (6.2 ft) at mid-plane, dependent on mounting height ADA compliant – Works with individuals in wheelchairs or standing up to 2.0 m (W, 7 in.) at mid-plane Works with individuals to over 2.2 meters (over 7 ft.) tall in rear of capture volume
Image capture cycle time: 1 iris + associated face	2 seconds, including on-board image quality and encoding functionality
Image capture cycle time: 2 iris + face	4 seconds, including on-board image quality and encoding functionality
On-board biometric storage	Optional – 10,000 users (left and right eye template)
Iris illumination	820-860 nm (850 nm peak) near-infrared light; LED-based illuminator is eye safe at all distances
Face image capture	Face image captured (non-ISO standard) and associated with iris images in data record
User interface display	14 cm diagonal (5.7 in.) LCD, customizable; Multi-color user attention LEDs
Power consumption	650W (peak), 100W (standby)
Encryption	PKI for secure HTTP, On-board biometric databases encrypted when offline

Mechanical Drawing

15.4 in
39.2 cm

8.2 in
20.9 cm

22.2 in
56.3 cm

24.8 in
62.9 cm

Front

Side

Capture Volume

1 Meter Distance
Operating Range

1.25 Meters

.75 Meters

1.5 Meters

2 Meters -
Center of Box

1 Meter
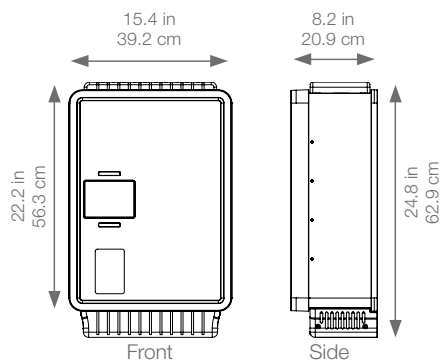
Interface Specifications

Interface	Description	Connection Type
Power	100-240V AC, 50 / 60 Hz Auto-switching	Screw terminal blocks, individually stranded maximum thickness 12 AWG wire
Ethernet	Cable compatibility: Category 5, 5e; 10/100/1000BASE-T Protocol: SOAP over HTTPS for data management; Web-based system configuration	8P8C "RJ45" 8-pin modular connector jack
Wiegand (Optional)	Input and output three wire terminals (e.g. to card reader and access control system), plus LED status indicators	Screw-terminal block capable of interfacing with individually stranded 16-24 AWG wire
RS-485 (Optional)	Two bi-directional three wire terminals (e.g. to card reader and access control system)	Screw-terminal block capable of interfacing with individually stranded 16-24 AWG wire
Alarm (Optional)	Two normally closed, voltage-free relays: Intrusion detection and power interruption	Screw-terminal block capable of interfacing with individually stranded 16-24 AWG wire

Environmental Specifications

Parameter	Value
Operating Temperature	-20 to +45ºC
Humidity	0 to 95%RH, non-condensing
Direct Sun Exposure	Not allowed (See AOptix Application Note regarding ambient light mitigation.)

This is a Class 1 Laser Product. However, the laser component is used for internal calibration, is not externally accessible, and is not used to image the eye in any way.

Regulatory Approvals
UL 60950, CE-marked. FCC Certified

Biometric Standards Compliance
ISO 19794-6

Encryption Features
For communications: Generates self-signed 1024-bit certificates for PKI.
Capable of importing standard P12 certificates of any key length.
For data storage: 256-bit AES

A∅PTIX
TECHNOLOGIES

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