



## A4Vision 3D Facial Physical Access Hardware Solutions

### Enrollment Station

Use the Enrollment Station (ES) to perform user enrollment and build a template database. This solution easily integrates into a wide range of existing security system hardware and software. Designed with our advanced patented optical technology, structured light, and algorithms, the Enrollment Station is comprised of a special projector and digital camera. The digital camera is used for user enrollment and provides the image for template creation within a database or the ability to write to card ID systems. The output of this equipment is both a 3D biometric template and a standard color image of the subject.

### Face Reader

Use the Face Reader (FR) to control physical access to buildings and entrances. Through a proprietary Matching Engine and algorithms, this system performs subject identification and verification and can be used in a stand-alone, or networked distributed environment. This solution is comprised of a real-time 3D surface scanner working in invisible near-infrared light. The Face Reader module can be used in both identification and verification modes.

When working in identification mode, the system compares the extracted biometric template against all locally stored templates operating at up to 10000 matching per second. In verification mode, the system compares the extracted biometric template against the stored with a card or pin number, or against a template stored on card.

# Specifications

## Enrollment Station and Face Reader Specifications

Verification Time: <1 second  
Identification time: <1 second  
Enrollment time: 3-5 seconds  
Face Readers in system: 10,000  
Visitors per Face Reader: 4,000  
Supported Wiegand formats: Standard 26-bit. Other Wiegand formats available upon request  
Host connection: 100Mb Ethernet  
Supported platforms: Microsoft Windows 2000/Professional/XP Professional

## A4Vision's Hardware Solutions

### Face Reader

Horizontal view field: 17°± 30'  
Vertical view field: 13°± 30'  
Near zone size (horiz x vert): 137x185 mm  
Far zone size (horiz x vert): 274x370 mm  
Reliable recognition zone depth: >500 mm  
Operating Temperature: +15°C to +30°C

Device body dimensions:  
90 mm (3.5 inches) wide  
227 mm (8.9 inches) high  
80 mm (3.1 inches) deep  
Power consumption: 0.42 amps at 12 volts  
Weight: 0.8 kg

### Enrollment Station

Device body dimensions:  
102 mm (4 inches) wide  
285 mm (11.2 inches) high  
153 mm (6 inches) deep  
Power consumption: 3.4 amps at 12 volts  
Weight: 1.6 kg

# Technological Advantages

**Invariance to light:** Using near-infrared range and direct ground-based measurements available from 3D images, our imaging solutions are invariant to ambient light conditions, independent from background color, facial make-up, and accessories.

**Invariance to angles:** Real-time video feed exploits the richness of 3D parameters, performing recognition with full head motion of up to 30° degrees each direction.

**3D Image Uniqueness:** The richness of extracted facial measurements and data points is sufficient to distinguish between identical twins.

**Processing Speed and Accuracy:** Proprietary 3D bio-algorithms perform real-time video face capture, and calculation at rates exceeding 30 frames per second. Processing speeds of 10-12 full capturing-matching cycles per second allow for extremely low False Rejection Rates (FRR), even when the False Acceptance Rate (FAR) is set close to zero ( $10^{-4}$ ), proving A4 is the industry leader in processing and accuracy.

# Features and Benefits

- **Advanced Technology:** Feature extraction algorithms coupled with advanced optical technology allow for rotated face recognition in a continuous range of angles. Due to the near-infrared range of the projector and camera, invariance under light and illumination is automatically achieved. Advanced reconstruction algorithms perform real-time matching and recognition while simultaneously overcoming processing constraints inherent in competitive 3D facial recognition technology.
- **Non-Invasive:** Working in invisible infrared light, our solution is capable of passive recognition with high-performance results in real life environments. Because our technology is non-invasive, requiring neither contact and minimal user cooperation.
- **Compatibility:** Compatible with existing physical access control applications and a multitude of external readers, including laser, magnetic stripe, Wiegand, proximity, and other biometric devices.
- **Integration:** Using our proprietary Vision Access™ (VA) SDK, you can quickly and easily integrate with existing third-party products as well as existing and planned A4Vision's advanced security solutions and develop new access control time and attendance applications.
- **Networking Capabilities:** Performs local and network enrollment, identification, verification, and monitoring. Enrollment may be performed on a PC for integration with existing security software or at any FR-enabled door panel. Template storage can be managed locally or within a network database.
- **Ergonomics:** Optimal ergonomics allow for fast and easy face positioning result in instant recognition within less than 1/2 of second from the time a subject appears within the Face Readers view field.
- **Flexibility:** Face Reader operates in Stand-Alone and Host-Driven Modes: In stand-alone mode, the Face Reader performs automatic visit-event detection, verification/identification tasks, and visit-result signaling. In host-driven mode, the system performs all tasks performed in stand-alone mode, plus face capturing and template building.