



Iris Recognition System for Physical Access Control

Product Description

The Iris recognition system is a wall-mountable, dual iris biometrics imaging system for physical access control. Developed with an advanced image capture and processing architecture, the Iris recognition system simultaneously and quickly captures the highest quality iris biometric images in the industry.

A simple and intuitive user interface makes positioning fast and repeatable, even for subjects with little or no acclimation. The Iris recognition systems automatically tilts vertically to adjust for each subject's height, making it ideal for wall-mounted access control applications.

The system is powered by a high performance ARM A9 embedded controller on a dedicated mainboard that handles all iris imaging, communications, and iris encoding and matching functions. It incorporates all essential PACS functions, including dual Wiegand connectors, optional on-board matching, a proximity sensor, a tamper switch, front side user buttons, and an optimized wall mounting system.

Developed with the latest in system design technologies by one of the leaders in iris recognition imagers, the Iris recognition system is physically robust, highly reliable and easy to integrate.

Key Features

Feature

Embedded processor on dedicated main board

Essential Physical Access Control functionality

Compatible with most PACS systems

Oversized optional data base

State-of-the-art optical design

Advanced, proprietary stereoscopic eye localization

Simple and repeatable subject user interface

Simplest of user instructions

Proprietary optics for positioning indicators eliminate parallax viewing problems

Automatic vertical height adjustment

Standoff distance of 32 to 35 cm

User Advantages

High performance, low power processor utilizes latest generation ARM A9 quad core SOC (system on chip) architecture. Provides highest level of on-board computing power for fast and seamless operation as well as very fast encoding and matching speeds.

- Proximity sensor for always-on operations
- Tamper switch to alarm if system is detached from wall
- Dual Wiegand ports
- Front side buttons for programmable user controls
- Optional on-board encoding and matching, and associated data base
- Speaker with voice feedback
- Easy to install wall mounting system

Readily interfaces to most PACS systems and peripherals through LAN (TCP/IP) and industry standard Wiegand connections.

Stores up to 10,000 pairs of templates for on-board matching.

With highest quality optics and very fast shutter speeds, the system exceeds industry standards for image quality. The measured modulation transfer function also exceeds the specification in the ISO 19794-6 standard of 4.0 lp/mm at 60% contrast ratio.

Accurately locates the position of both eyes in 3D in near-real time to optimize subject ease of positioning and iris image quality. Enables system subject distance positioning indicators.

Subject positioning is simple and intuitive. The subject merely aligns his / her eyes with the positioning mirrors, and then moves toward or away from the system based on simple, color LED indications:

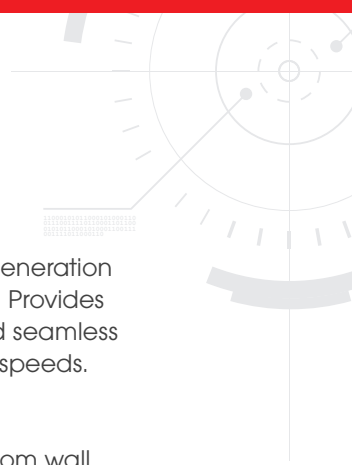
- Blue is too far away;
- Red is too close; and
- Green is OK.

The combination of the easy to use positioning features also means that the instructions to subjects are simple and straightforward. (See User Interface and Subject Instructions section.)

The proprietary and patented design of the color LEDs for distance positioning can only be viewed by one eye at a time, eliminating any parallax viewing problems that might cause the subject to reposition his / her head. The result is a smooth and intuitive experience, even if the subject's head is positioned slightly to one side.

The system automatically accommodates subjects of different heights by tilting the iris imaging subsystem after locating the subject's face and eyes.

Comfortable operating range is fully applicable to access control environments, especially in compact installations.



Feature

Large depth of capture of 30 mm

High speed, simultaneous dual imagers

Real time off-axis gaze detection

Very wide interpupillary distance range of 45 to 85 mm

User Advantages

The very large depth of capture enhances robustness and ease of positioning.

Dual iris imagers acquire iris images at very high speed, 30 frames per second. The system controller monitors in near real time various quality metrics to determine which iris image pairs should be selected as the biometric sample.

The system detects the subject gaze angle (i.e. whether the subject is looking directly ahead at the imager), an essential feature for optimal iris biometrics. If the subject is looking away, the system will automatically wait until the subject looks straight ahead in order to capture a valid iris biometric image.

The wide interpupillary distance range accommodates all adults and young children, making it ideal for large scale, public authentication programs.

User Interface and Subject Instructions

Simplest and most repeatable subject interface available:

- Partially transparent mirror guides subject placement in X-Y dimensions
- Easy to use color LED's at center of mirror indicate correct placement of 32 to 35 cm in Z dimension.



move forward



move backward



stop / capture

The subject should be instructed to:

- Place the reflection of his / her eyes in the center of the mirror;
- Keep eyes wide open;
- Look at the colored LEDs and move his / her head toward or away from system according to the color;
- Stop when LED is green, and hold the position for about 1 second.

Technical Specifications

Dimensions	202 x 122 x 66 mm (7.9 x 4.8 x 2.6 inches)
Weight	790 grams (27.8 ounces) without base
Image output	Meets ISO 19794-6; exceeds 4.0 lp/mm @ > 60% contrast
Iris diameter	240 pixels for average 11.5 mm diameter iris (200 to 285 pixels for full range of 9.5 to 13.5 mm diameter irises)
Iris image pixel resolution	640 x 480 pixels, 8 bit depth - Supports multiple formats
Operational iris imaging distance (stand-off range)	315 to 345 mm (12.4 to 13.6 inches)
Depth of field	30 mm (1.2 inches)
Inter-pupillary distance covered	45 to 85mm (1.8 to 3.4 inches)
Time of capture	Typically about 1.0 second from time subject's eyes are placed within capture volume
IR illumination for iris imaging	Dual LED: wavelengths of 850 nm nominal (~ 50%); and 750 nm nominal (~ 50%)
Subject positioning LED indicators	Blue: Subject too far away Red: Subject is too close Green: Subject within capture volume
Maximum user positioning speed	125 mm per second (4.9 inches per sec.) in "Z" direction
Operating temperature range	0 to 40 °C
Humidity	10 to 90% RH, non-condensing
Eye safety standard	IEC 62471
Network interface	10/100 Base-T Ethernet (RJ45 connector) WiFi 802.11bgn : optional
Other communications ports	Terminal and wired connectors for: Wiegand in/out, RS 422, RS 232, 4 GPI/O, USB host (for service), USB slave, 1 dry contact relay
Power	Independent power supply required: 2.0 A at 12.0 V (supplied with system)
Other certifications	CE, FCC, RoHS, IEC eye safety

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