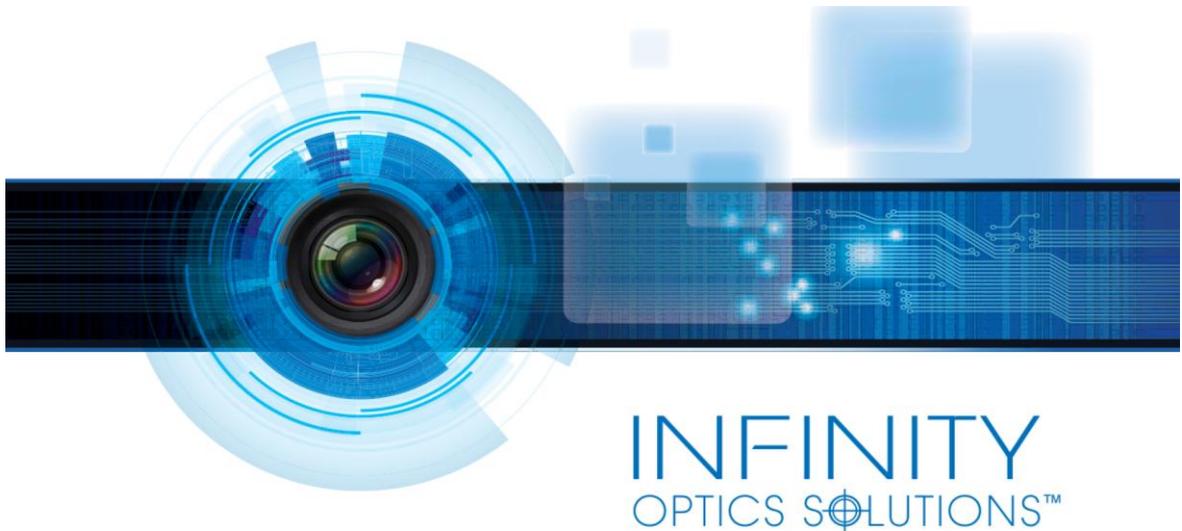


Single Lens Extended Depth-of-Field technology makes iris authentication more practical and convenient  
White paper - April 2015 Release, Biometricupdate.com



INFINITY  
OPTICS SOLUTIONS™

## Single Lens Extended Depth-of-Field technology makes iris authentication more practical and convenient

Iris recognition provides one of the most secure methods of biometric authentication and identification thanks to the unique characteristics of the iris architecture.

The Iris Recognition Process consists of the following steps:

1. Image Capture;
2. Locating the iris and optimising the image; and
3. Storing and matching the iris image

For the most part, capturing an iris image can be done using a standard camera with both visible and infrared light and may be a manual or automated procedure depending on the distance of the subject. In the manual process, the user will need to adjust the camera to get the iris in focus and needs to be within six to twelve inches from the camera. Proper training is required to ensure accuracy. The automated process uses a set of cameras or an auto focus

lens system to locate the face and iris automatically. This process, although much more user friendly, usually costs more.

With today's image capture technology, limitation of Depth-of-Field (DOF) is the main problem for traditional iris recognition systems. Reducing the aperture can increase the DOF, but the light gathering capability and resolution will decrease. Due to eye safety, increasing the light or illumination source is not encouraged, as the source may damage the human eye.

## Simple Solution to a Massive Depth-of-Field

Extended DOF solutions for iris identification have gone from concept, to possibility and now to practicality, bringing convenient iris authentication for the Internet of Things. Today's specialty optics imaging technology opens new doors to imaging for iris identification using only a Single Lens EDOF technology.

Advantages:

- Optical solution with no moving parts
- Convenience and speeds up identification
- Eliminate the 'chicken dance'
- No more complex wavefront coding optimization
- A Single Lens solutions making it the most cost effective
- Massive Depth-of-Field image capture capability of up to 5x or more
- Enhanced image quality capture ensuring high level security applications
- Provides the best single image (from images collected in the 5x DOF range) for iris algorithm and matching

With Single Lens EDOF Technology every iris device is able to capture images with an Extended Depth-of-Field, providing clear and crisp iris images for the backend resolution engine. This increases convenience, reliability, accuracy and efficiency in making iris authentication and identification the mainstream biometric of choice.

## How Infinity Optics™ Solutions Fits In

The EDOF solutions exists today: The Infinity™ Optics InfinityLens+™ technology provides iris image capture over 5x the DOF, compared to conventional lenses, all this using only a Single Lens. Combined with IO Solutions' SDK, the technology filters all the raw images and provides the best single enhanced image to allow your iris algorithm do lesser work.

IO Solutions' Single Lens provides the most versatile imaging solution for iris and facial biometric applications.

## About Infinity Optics™ Solutions

Infinity Optics™ Solutions (IO Solutions) is a Singapore based company with R&D facilities in Singapore and Hong Kong. We provide state-of-the art proprietary optics solutions for the most demanding optical image capture applications. IO Solutions provides design solutions and image processing on the frontend of the optics foundation so the analytics and algorithm at the back end 'do less work'. IO Solutions' founders and scientists worked with some of the most reputable Academy Award-winning film producers to develop optics imaging solutions encompassing a **Massive Depth-of-Field Vision**.

## Contact Us

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