



BMT-20

Binoculars-type Iris Recognition System for Biometric Enrollment

Product Description

The CMITech BMT-20 is a binoculars-type iris biometrics imaging device that quickly captures highest quality iris biometric images. Exceeding industry standards for image quality, this system optimizes matching accuracy, essential in very large scale deployments for which de-duplication is a core deliverable.

Easy to use, the system can be reliably positioned by the subject with minimal instructions, or by an operator with the aid of positioning feedback LEDs on the top of the imager's housing. The patent-pending optical design of the BMT-20 includes expanded depth of field and a very large interpupillary distance range, providing effortless capture for subjects of all ages. Intended for applications in which subjects have limited prior experience with biometrics devices, the BMT-20 is ideal for enrollment programs of all sizes, including those involving very young children.

Designed with the latest in optical and system control technology by one of the leaders in the industry, the BMT-20 is physically robust, highly reliable and durable. This system meets the elevated IP64 intrusion protection standard and is sealed against dust and other airborne particles to provide extended life in harsh environmental conditions.

CMITech's products and technology are leading the industry in cost effective and easy to use iris recognition solutions serving the full range of identification and authentication use cases, including physical and logical access control, national identity, law enforcement, border crossing and immigration control applications.



Key Features

Feature

User Advantages

State-of-the-art optical design

The optical design includes utilizing highest quality optics and long internal optical path, which allows the BMT-20 to exceed industry standards for image quality as specified by ISO in the 19794-6 document. The standard is 4.0 lp/mm at 60% contrast ratio.

Single sensor design

The proprietary and patented single sensor design interleaves left and right iris images for simultaneous capture. By utilizing only a single sensor, power consumption through the USB connection is minimized. This allows for optimized NIR illumination, resulting in the shortest exposure times possible, thereby minimizing any potential for motion blurring.

Long internal optical path

The optical design is folded within the BMT-20 system, providing the longest optical path of any binoculars-type iris recognition imager. At 365 mm (+/- 15 mm), the long optical path provides much greater depth of field while minimizing optical distortions.

Dedicated, on-board image processor supports very high speed, simultaneous capture of subject's irises In real-time coordination with the host PC software, the on-board image processor facilitates very high speed image capture, resulting in the fastest and most robust capture of both of the subject's irises at the same time. Typically, both irises are captured within one (1.0) second from the time that the subject places the system on his / her forehead.

Extended depth of field

The BMT-20 is capable of imaging over a depth of 30 mm, making the system highly tolerant of a) subject positioning in the "Z" dimension and b) how deep the subject's eyes are relative to his / her forehead. The BMT-20 therefore offers highly robust iris imaging across the widest range of people, including small children.

Wide inter-pupillary distance tolerance

The BMT-20 can capture iris image pairs from subjects with inter-pupillary distances as small as 4.0 cm, which is the minimum distance for a child of 5 years old. This makes the BMT-20 ideal for enrollment of all subjects within all national identity programs.

All solid-state design—no moving parts

The superior optical design of the BMT-20 provides the widest interpupillary distance and depth of field without needing any moving components. Reliability and durability are optimized with an all solid-state design.

Meets IP64-6 specifications for particulate intrusion prevention

Meeting this very high standard means that the BMT-20 is highly resistant to contamination by the very small airborne particles such as dust and dirt, that are commonly found in harsh non-conditioned enrollment environments. Stringently tested against this standard, this feature will provide extended life and high reliability. Other systems only meet the lesser IP54 specification.

Near-real time off-axis gaze detection

Capturing the correct position of the eyes is essential for optimal iris biometrics. The system automatically detects subject gaze angle (i.e. whether the subject is looking directly ahead at the imager). If the subject is looking away, the system will automatically wait until the subject looks straight ahead before capturing a valid iris biometric image.



Feature User Advantages

Internal white LED Internal white light emitting diodes (LEDs) are turned on just prior to

imaging. Constricting the subject's pupil provides ideally-sized pupils

for optimal iris biometric identification and authentication.

In dark rooms, the pupils of most subjects will dilate, shrinking the amount of iris area, which diminishes the effectiveness of the iris biometric image. By making the iris area larger, the iris biometric im-

ages are optimized.

Motion detection System detects eye motion relative to the system, and waits until sub-

ject meets motion threshold (which is adjustable), thereby minimizing

motion blurring of images.

Foldable side visors and forehead

positioning rest

Side visors and the forehead positioning aid on the BMT-20 block bright light, including direct sunlight, from entering the optical path of the system during imaging. In this way, the BMT-20 will deliver ideal

iris biometrics imaging, even when operated outdoors.

External color LED positioning

indicators

The BMT-20 can be operated in two modes: either by the subject or a trained operator. Subjects are given short and easy to understand instructions. Operators center the system over the subject's eyes, based on the following external color LED's:

Red: Device is too high
Blue: Device is too low
Green: Device position is OK

Position sensor A position sensor detects if the system is upside down, preventing

capture of images that can be reversed, left and right. This ensures

that all iris biometric samples are exactly as intended.

High temperature range The tested and certified operating temperature range of the BMT-20

is a full 0 to 50 degrees Celsius, making the system fully useable in non-conditioned environments, even in the hottest of summer days.

Powered by USB 2.0 cable The BMT-20 can operate without an independent power supply. Fully

power over USB 2.0 cable (maximum 500 mA at 5.0 V).

Please contact CMITech or your representative for more information on the CMIRIS Software Development Kit (SDK) that includes a demo and evaluation application.

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Technical Specifications

Dimensions 219 x 161 x 58 mm (8.6 x 6.3 x 2.3 inches)

Weight 680 g (1.5 lbs)

MTF / spatial resolution Exceeds 4.0 lp/mm @ > 60% contrast

Pixel resolution 18.4 to 20 pixels/mm

Iris image pixel resolution 640 x 480 pixels

Image output Meets or exceeds ISO 19794-6

Optical path distance 350 to 380 mm

Depth of field 30 mm (1.2 inches)

Inter-pupillary distance covered 40 to 90mm (1.6 to 3.5 inches)

Time of capture Typically around 1 second, from time of head placement

IR illumination for iris imaging Dual LED: wavelengths of 850 nm nominal

(about 60%); and 750 nm nominal (about 40%)

Internal LED for pupil contraction Broadband visible (white)

External LED indications for operator

assisted positioning

Red: Device position is too high Blue: Device position is too low Green: Device position is OK White: Image capture in progress

Operating temperature range 0 to 50°C

Humidity 10 to 90% RH, non-condensing

Eye safety standard IEC 62471, IEC 60825-1

Durability IP64 intrusion prevention standard

Interface USB 2.0 High Speed

Power USB 2.0 (500 mA at 5V)

No additional power required

PC hardware requirements PC/x86 platform: Intel® Atom™ or above processor

ARM: Cortex A9 quad core processor

Windows 8 and 8.1

OS compatibility Windows 7, 8, 8.1 (32 and 64 bit)

Linux Ubuntu 12.04 distribution

Android 4.0 and above

Other certifications CE , FCC, USB-IF, India STQC, RoHS, WHQL

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