Panasonic
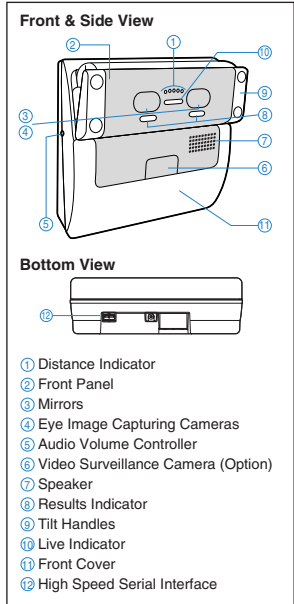## ideas for life

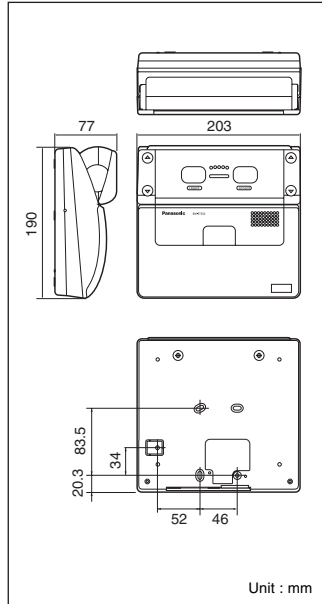Combination high-speed capture engine
and two mirrors for rapid,
high-accuracy recognition.

MAJOR OPERATING CONTROLS

Front & Side View

Bottom View

① Distance Indicator
② Front Panel
③ Mirrors
④ Eye Image Capturing Cameras
⑤ Audio Volume Controller
⑥ Video Surveillance Camera (Option)
⑦ Speaker
⑧ Results Indicator
⑨ Tilt Handles
⑩ Live Indicator
⑪ Front Cover
⑫ High Speed Serial Interface

APPEARANCE

77   203

190

83.5

34

20.3

52   46

Unit : mm

BM-ET200 SPECIFICATIONS PAL

General

Power source *1	12 V DC/24 V DC
Power consumption	Max. 24 W
Ambient operating temperature	0 °C to +40 °C
Ambient operating humidity	30 % to 90 %
Dimensions	203 mm (W) x 190 mm (H) x 77 mm (D)
Weight	0.9 kg (this iris reader only)
Interface	Wiegand, RS-485
Network	10 Base-T/100 Base-TX (Auto negotiation)
Network protocol	TCP/IP
Available card reader for Iris on card system	RWK400 (Manufactured by HID Corporation)

Input/Output

Iris Reader (BM-ET200)

Recognition start trigger input	0 V to 5 V, 24 mA (Max), Active low, Pulse width: 200 ms or more
Recognition result output1 (ACCEPT)	make contact output, Normally Open, Pulse width: 0.1 s to 60 s, 24 V DC, 100 mA, ON-Resistance 6 Ω
Audio Output (Preamplifier)	Stereo mini plug (ø3.5 mm)(10 kΩ, 100 mV[P-P])
High speed serial interface	Numeric Key, External memory (*5)

Interface Board (BM-ETA201) (optional)

Dimensions	65 mm (W) x 76 mm (H) x 31 mm (D)
Alarm output1 (tamper detection)	Open collector output, Normally Open, Active low, 24 V DC, 24 mA
Alarm output2 (power status)	Open collector output, Normally Close (Low level), 24 V DC, 24 mA
Recognition result output2 (REJECT)	Open collector output, Normally Open, Active low, Pulse width: 0.1 s to 60 s, 24 V DC, 24 mA
Buzzer input:	0 V to 5 V, 24 mA (Max), Active low, Pulse width: 200 ms or more
Time adjust input	0 V to 5 V, 24 mA (Max), Active low, Pulse width: 100 ms or more (*7)
Interface (card reader)	Wiegand, RS-485 (Either can be selected.)
Wiegand power output (card reader)	5 V DC, 100 mA max.
Wiegand DATA0 input(card reader)	0 V to 5 V DC, 25 mA max., Active low
Wiegand DATA1 input (card reader)	0 V to 5 V DC, 25 mA max., Active low
RS-485 (A), (B) (card reader)	Differential input: ± 0.2 V or more, Differential output: ± 2 V or more (When termination is ON) (*6)
Interface (access control panel)	Wiegand, RS-485 (Either can be selected.)
Wiegand power input (access control panel)	5 V DC (No connection available)
Wiegand DATA0 output (access control panel)	0 V to 5 V DC, 25 mA max., Active low
Wiegand DATA1 output (access control panel)	0 V to 5 V DC, 25 mA max., Active low
Wiegand ACCEPT-LED input (access control panel)	0 V to 5 V, 24 mA (Max.), Active low, Pulse width: 200 ms or more
Wiegand REJECT-LED input (access control panel)	0 V to 5 V, 24 mA (Max.), Active low, Pulse width: 200 ms or more
RS-485 (A), (B) (access control panel)	Differential input: ± 0.2 V or more, Differential output: ± 2 V or more (When termination is ON) (*6)

Video Surveillance Camera (BM-ETC202) (optional)

Video Output	1 V [P-P] PAL composite 75 Ω BNC connector

Function

Iris recognition time	Approx. 0.3 seconds (After iris image capturing until the recognition result is output) (*2)
	Approx. 5 seconds (Server certification. After iris image capturing until the recognition result is output) (*3)
Eye image capturing range	Approx. 30 cm to 40 cm between the eyes and the mirror
Total number of users enrolled	
BM-ET200	Stand alone mode : 50 users max.
	Network mode : 5,025 users max. (*4)
Iris server	10,025 users max.
Voice guidance	14 languages supported (English, German, French, Spanish, Italian, Russian, Chinese, Korean, Portuguese, Turkish, Arabic, Dutch, Swedish, and Japanese)
	Mute, Simple (recognition result), and Full (voice guidance and recognition result) selectable
Distance indicator	Lighting of the lamp indicates the proper distance between the user and the main body.
Live indicator	Blinking, On, and Off selectable
Angular field view (Video surveillance camera: BM-ETC202)	Horizontal: 115° Vertical: 85° (Fixed)
Security function	Tamper detection switch, Iris data encryption

RECOMMENDED SMART CARD READERS AND WRITERS

Applicable products	Manufacturer	Product / Product No.
Smart Card Writer	HID Corporation Ltd.	RWK400 RW400
	RFIDeas, Inc.	RFID1356i (USB and RS-232)
Smart Card	HID Corporation Ltd.	2001, 2011, 2021, 2031, 2041, 2051, 2061

NOTE

• In regard to details of the Smart Card Writer and the Smart card, refer to the respective instruction manuals attached to merchandise.
• When a card writer is connected and a USB-RS-232C conversion connector is used, the system may not operate normally.
• The USB connections are applicable to Windows® XP only. Operation is impossible with Windows® 2000.

PRODUCT CONFIGURATION

Iris Reader
BM-ET200

Interface Board
BM-ETA201
(optional)

Video Surveillance Camera
BM-ETC202
(optional)

Administration Software
BM-ES200

User License Software
BM-EU30100
(for 100 Users)

BM-EU31000
(for 1,000 Users)

BM-EU33000
(for 3,000 Users)

BM-EU35000
(for 5,000 Users)

*1 The third-party external power-supply should meet the following specifications, and must be a UL Listed access control power limited device.

Output voltage	Output current capacity
12 V DC ± 0.5 V	1.2 A or more
24 V DC ± 0.5 V	0.6 A or more

Rated ripple voltage/Ripple noise: 150 mV [P-P] or less
Overcurrent protection: Enabled (mandatory)

*2 The recognition time may differ depending on recognition condition.
*3 The recognition time may differ depending on capturing conditions, network conditions, or the total number of enrolled users.
*4 User Licence Software BM-EU30000 Series (option) is required.
*5 Refer to the dealer for available external devices.
*6 Our exclusive protocol is employed.
*7 Refer to the dealer for available external devices.

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Panasonic

Panasonic is the brandname of Matsushita Electric.

Printed in Japan   BM-JKET200C(2N-770)

Simple to configure and easy-to-use Iris Reader with recognition results in 0.3 seconds*

*Time required for recognition in a normal, ready-to-recognize condition after the eyes are aligned with the main unit mirrors.
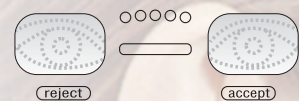
The BM-ET200 offers more-accurate, faster, non-contact entry/exit control utilizing biometric technology for iris recognition.
The system can be used to check IDs in a variety of applications, including airports and entry/exit control for many types of industries.

Fast, high-speed capture engine developed to obtain recognition in only 0.3 seconds

Panasonic developed a unique high-speed capture engine that obtains recognition in only 0.3 seconds after eye position alignment with the mirrors. If recognition is not achieved the first time, the operation is automatically repeated at high prompting speeds.

Dual-mirror configuration makes eye alignment easy

Two mirrors are mounted on the front panel. Eye position is less likely to be out of side to side alignment, making recognition easier. Positioning of either the left or right eye is simplified.

A distance guide indicator informs the user of proper iris capture distance

To adjust the camera for the most optimal eye distance, both voice instructions and a distance indicator lamp guide provide user guidance so the correct capture position is achieved.

Distance	Number of lighting lamps	Voice guidance
Too close	○○○○●	Please move back a little
Suitable	●●●●●	
Too far	●●○○○ ○○○○○ ○○○○○	Please move a little closer

High security, with false acceptance rate of 1 in 1.2 million*

Iris recognition uses individual differences in the complex patterns found within the iris of the human eye to authenticate individual identities. Iris recognition is the most precise of all biometric identification systems.
The false acceptance rate is so low that the probability of falsely identifying one individual as another is virtually zero.

Iris Characteristics
- An extremely complex pattern that differs even between identical twins.
- Patterns stabilize between six months and two years of age and then remain unchanged for life.
- They are extremely difficult to imitate.

"RECOGNIZING PERSONS BY THEIR IRIS PATTERNS" by Dr.John Daugman, University of Cambridge.

Retina Lens
Iris

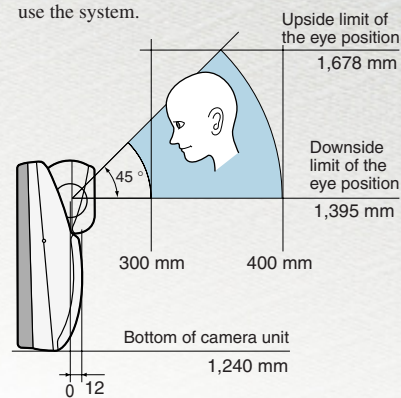## Voice guidance recognition procedure

A speaker on the front cover offers voice guidance for operational assistance and recognition results. Fourteen languages can be selected for each iris reader.
Supported languages: English, French, German, Spanish, Italian, Turkish, Arabic, Chinese, Korean, Russian, Portuguese, Dutch, Swedish, and Japanese.

Three settings for voice guidance

Simple : Only recognition results are announced.
Full : Voice guidance such as "Please move a little closer" and "Please move back a little" and also recognition results are given.
Mute : No voice guidance.

The camera unit swivels up and down

The angle of the two embedded cameras can be adjusted to accommodate users from 152 cm to 180 cm. Taller users can simply bend over to use the system.

Upside limit of the eye position 1,678 mm
Downside limit of the eye position 1,395 mm
45°
300 mm   400 mm
Bottom of camera unit 1,240 mm
0 12

Iris Reader
BM-ET200
Panasonic BM-ET200

Distance indicator
Lighting of the lamp indicates the proper capture distance between the user and the BM-ET200.

Mirrors (Dual)
Adjusts the eye position when registering or recognizing eyes.

Eye image capturing cameras
Located behind the mirrors, the camera captures images of the irises.

Live indicator
The light indicates the current operating condition.

Results indicator
The lamp lights when recognition is complete.

reject   accept

Tamper Detection

The tamper protection feature prevents data from being extracted from the system. An audible alarm is triggered via the integrated tamper switches. Alarm signals are also transmitted to the access control system and Administration Server.

25 User License Included

Iris data for up to 25 users can be registered with the Base Administration Software BM-ES200 within the network mode. With additional (optional) user licenses, the system can register and manage iris data for up to 10,025 users. Contact Panasonic directly for systems requiring more than 10,025 users. Up to 50 users are included in the stand alone mode.
50 user licenses included in the BM-ET200 in stand alone mode cannot be used in a network mode.

Access log can be searched by time

Using the time of image capture stored in the camera, you can search the access log of a specific user for the specified time.

SYSTEM DIAGRAMS

Network system

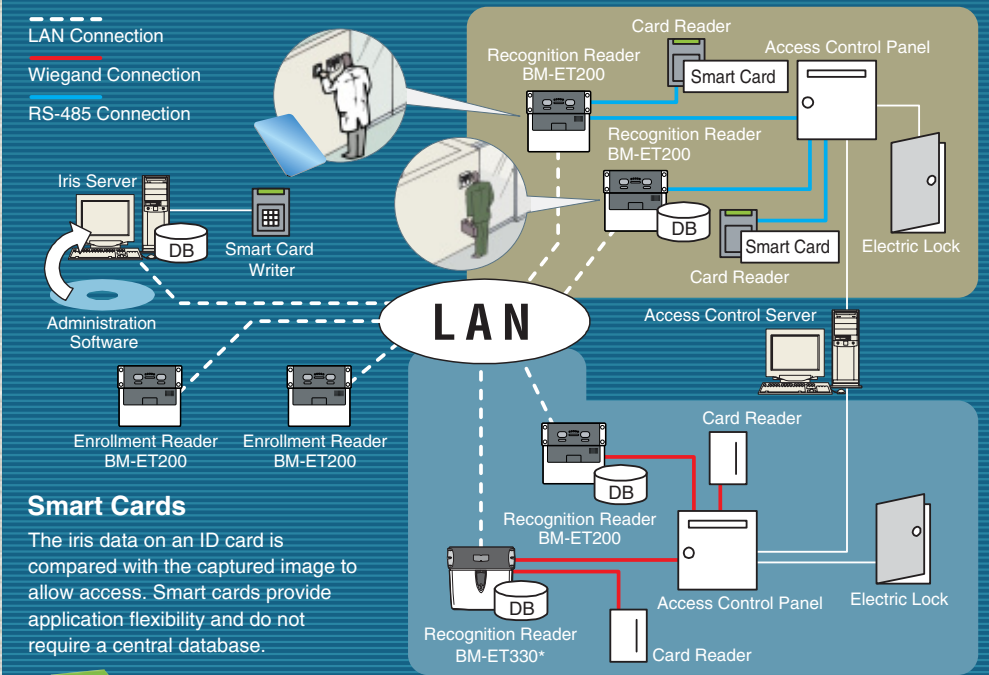#### Integrates with Wiegand-compatible Systems

Compatible with standard Wiegand interface protocol access control systems thus offering flexible system configuration. Legacy PROX cards are also supported.*

*Most card formats are supported-please check with your local Panasonic sales office.
*To handle the protocol, it is necessary to install the BM-ETA201 optional board (sold separately).

Maximum system specification	
Maximum number of iris readers	256 units
Number of users that can be registered	10,025 users
Local matching	5,025 users

LAN Connection
Wiegand Connection
RS-485 Connection

LAN Connection
Recognition Reader BM-ET200
Card Reader
Smart Card
Access Control Panel
Iris Server
Recognition Reader BM-ET200
Smart Card Writer
DB
Smart Card
Card Reader
Electric Lock
Administration Software
Access Control Server
Enrollment Reader BM-ET200
Enrollment Reader BM-ET200
Card Reader
LAN
Recognition Reader BM-ET200
DB
Recognition Reader BM-ET330*
DB
Access Control Panel
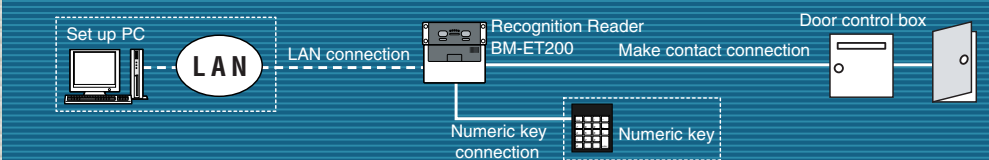Card Reader
Electric Lock

Smart Cards

The iris data on an ID card is compared with the captured image to allow access. Smart cards provide application flexibility and do not require a central database.

iCLASS by HID
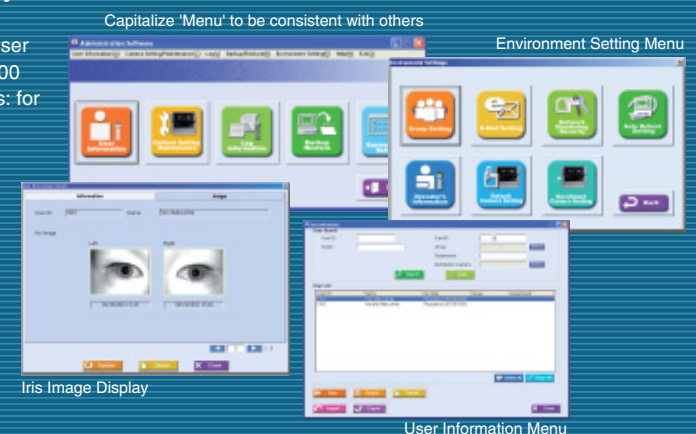*To handle the protocol, it is necessary to install the BM-ETA201 optional board (sold separately).

*The existing BM-ET330 system can be connected to the BM-ET200 system after upgrading the management software to BM-ES200 without changing existing data.

Stand alone system

Set up PC
LAN
LAN connection
Recognition Reader BM-ET200
Make contact connection
Door control box
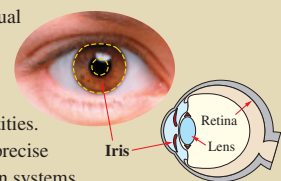Numeric key connection
Numeric key

For large and small systems

Flexible registration software supports incremental users. User License Software; BM-EU30000 Series comes in four key sizes: for 100 users, 1,000 users, 3,000 users, or 5,000 users. Easy operation and management from a iris server, all settings, registrations, updates, and information confirmation can be controlled from a PC display.

Environment Setting Menu
Iris Image Display
User Information Menu

APPLICATIONS

Offices
Data centre, material storage, safes, executive offices, secure meeting rooms

Laboratories and factories
Drug or dangerous materials storage rooms, night or holiday entry control

Financial institutions
Safes, safety deposit box rooms

Lifeline facilities
Power generator rooms, dam management offices, gas company control rooms

Traffic control centers
Expressway administration centres, railroad dispatcher rooms

Airport and harbor facilities
Staff gates, Immigration, workshops

- Police
- Prisons
- Courts
- Any and all security applications