suprema

# FaceLite **USER GUIDE**

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## Safety Instructions

Observe the following instructions to use the product safely and prevent any risk of injury or property damage.

## **M**Warning

Noncompliance with instructions can lead to serious injury or death.

### Installation

Do not install the product in a location with direct sunlight, moisture, dust, or soot.

- Fire or electric shock may occur.
- Do not install the product in a location with heat from an electric heater.
- Fire or electric shock may occur due to overheating.

### Install the product in a dry location.

• Otherwise, product damage or electric shock may occur due to moisture.

### Install the product in a location with no electromagnetic interference.

- Otherwise, product damage or electric shock may occur.
- The user should not install or repair the product independently.
- Fire, electric shock, or personal injury may occur.
- If the product has been damaged due to independent installation or repair of the product by the user, free A/S service will not be provided.

### Operation

### Do not allow liquids such as water, beverages, or chemicals get into the product.

• Fire, electric shock, or product damage may occur.

## **A**Caution

Noncompliance of instructions could lead to minor injury or product damage.

### Installation

Do not install the power supply cable in a location where people pass by.

- Product damage or physical injury may occur.
- Do not install the product near a highly magnetic object such as a magnet, TV, monitor (especially CRT), or speaker.
- Product failure may occur.
- Use only a D.C 24 V and 2.5 A or higher power supply adaptor.
- If the proper power supply is not used, the product may not operate properly.

### Use a separate power supply for the Secure I/O 2, electric lock, and FaceLite, respectively.

• If connecting and using the power supply to these devices together, the devices may malfunction.

### Keep the minimum separation distances between the devices when install multiple devices.

• Otherwise, RF performance is affect to the other device, the devices may not operate normally.

### Operation

Do not drop the product or apply an impact to the product.

• Product failure may occur.

Manage the password with care; do not to disclose it to others and change it periodically.

• Otherwise, illegal intrusion may occur.

Do not press the buttons on the product forcibly or using a sharp tool.

- Product failure may occur.
- When cleaning the product, wipe the product with a soft and dry cloth. Do not apply water, benzene, or alcohol.
- These may cause product failure.

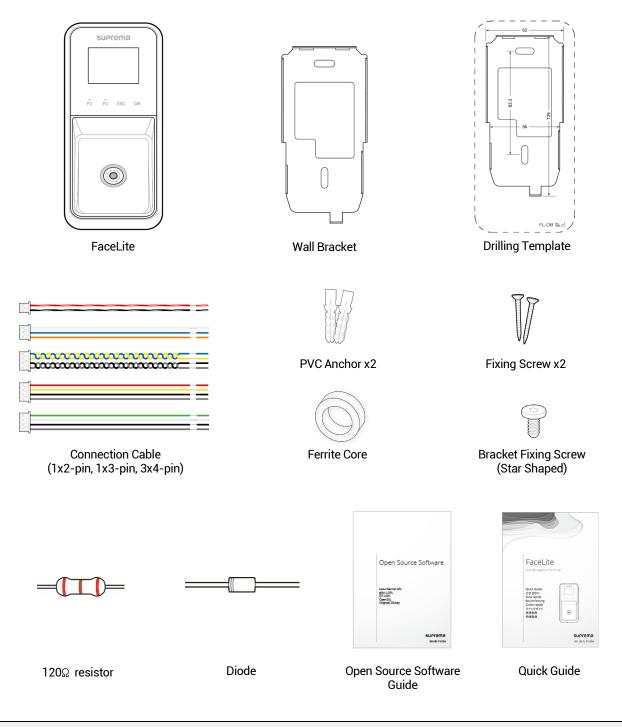
FaceLite uses a capacitive screen and buttons. If the environment is moist from wet weather, or the product surface is smeared with a large amount of water, wipe the product off with a dry towel before using it.

### **RTC battery**

Replacing the battery with an incorrect type of battery may cause explosion. Discard the battery according to appropriate regional or international waste regulations.

## Introduction

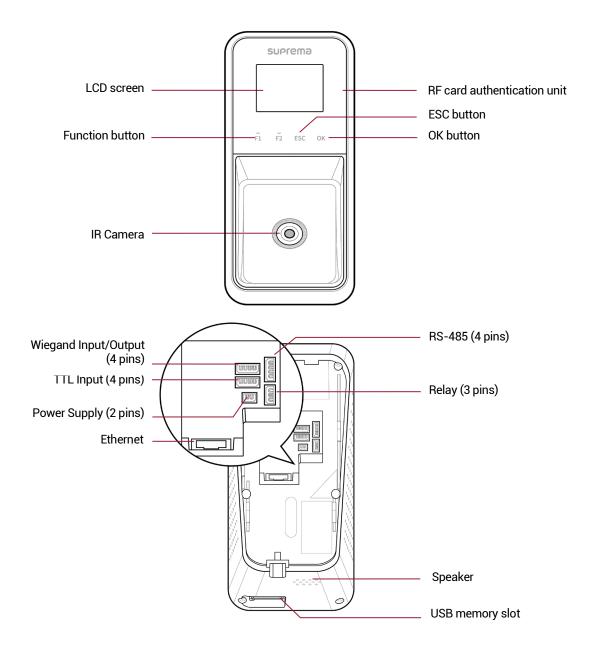
### Components



### NOTE

- Components may vary according to the installation environment.
- When assembling the product with the bracket, you can use the included bracket fixing screw (Star Shaped) instead of the product fixing screw for enhanced security.
- For additional content regarding product installation, visit the Suprema website (www.suprema.co.kr) and view the installation guide.

## Name and function of each part



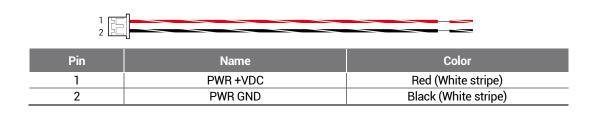
Name	Description
LCD screen	Provides UI for operation.
Function buttons	Used for T & A key or entering characters. When entering characters, a short push of the function button moves left and right, and a long push moves up and down.
IR Camera	Capture the infrared face image.
OK button	Used for selecting and setting T&A Mode. If a job code is set, you can change the job code of the user by pressing this button long.
ESC button	Used for opening the menu, moving to the previous screen or canceling input.
RF card authentication unit	Part to scan the card for entrance.
Wiegand input/output (4 pins)	Connect the Wiegand input/output cable.

## Introduction

TTL input (4 pins)	Connect the TTL input cable.
Power supply (2 pins)	Connect the power supply cable.
Ethernet	Connect the Ethernet cable.
USB memory slot	Connect USB memory.
Speaker	Delivers sound.
Relay (3 pins)	Connect the relay cable.
RS-485 (4 pins)	Connect the RS-485 cable.

### **Cables and connectors**

### Power



Relay



Pin	Name	Color
1	RLY NO	White
2	RLY COM	Blue
3	RLY NC	Orange

### RS-485



Pin	Name	Color
1	485 TRXP	Blue
2	485 TRXN	Yellow
3	485 GND	Black
4	SH GND	Gray

### TTL input

1		
Pin	Name	Color
1	TTL IN0	Red
2	TTL IN1	Yellow
3	TTL GND	Black
4	SH GND	Gray

### Wiegand input and output

1 문득1		
75	)(	
4 [25]		

Pin	Name	Color
1	WG D0	Green
2	WG D1	White
3	WG GND	Black
4	SH GND	Gray

## Correct face registration and authentication method

### Cautions for registering a face

- When registering a face, maintain a distance of 40cm to 80cm between the device and the face.
- Be careful not to change the facial expression. (smiling face, drawn face, wink, etc.)
- If you do not follow the instructions on the screen, the face registration may take longer or may fail.
- Be careful not to cover the eyes or eyebrows.
- Do not wear hats, masks, sunglasses or eyeglasses.
- Be careful not to display two faces on the screen. Register one person at a time.
- It is recommended for a user wearing glasses to register both faces with and without glasses.

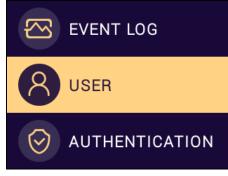
### Cautions for authenticating a face

- Ensure that the face appears inside the guideline displayed on the screen of the device.
- If glasses have been changed, authentication may fail. If the face without glasses has been registered, authenticate the face without glasses. If only the face with glasses has been registered, authenticate the face with the previously worn glasses again.
- If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses authentication may fail. Do not cover the face; allow the device to recognize both the eyebrows and the face.

## Admin Menu

### **All Menus**

- 1 Press ESC and authenticate with the Admin level credential.
- **2** Select the desired menu.



NOTE

• If the administrator has not been designated, the menu screen will be displayed when you press ESC.

### User

## User

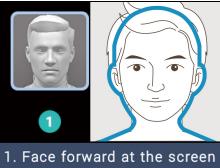
### **Registering user information**

The user information, including the face, can be registered.

- **1** Press **ESC** and authenticate with the Admin level credential.
- 2 Select User > Add User and press OK. The face registration wizard will begin.



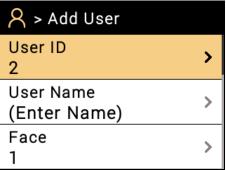
- **3** To proceed with the face registration wizard, press **OK**. To skip, press **ESC** and go to step 5.
- 4 If you have pressed **OK**, adjust the distance so that the face appears on the guideline of the screen and stare directly at the camera of the device.



#### NOTE

- When registering a face, maintain a distance of 40cm to 80cm between the device and the face.
- Be careful not to change the facial expression. (smiling face, drawn face, wink, etc.)
- If you do not follow the instructions on the screen, the face registration may take longer or may fail.
- Be careful not to cover the eyes or eyebrows.
- Do not wear hats, masks, sunglasses or eyeglasses.
- Be careful not to display two faces on the screen. Register one person at a time.
- It is recommended for a user wearing glasses to register both faces with and without glasses.
- To register high-quality face templates, disable Quick Enroll. When you set Quick Enroll to Disabled, the face registration procedure is set to 3 steps.

### 5 Select and set the desired item.



- User ID: Enter a number between 1 and 429467295 to register as the user ID. If User ID Type set to Alphanumeric, a combination of alphanumeric characters and symbols (\_, -) can be used for the ID. Up to 32 characters can be input.
- User Name: Enter the user name.
- Face: Register a face for user authentication. Press OK and register a face according to the instructions on the screen.
- Card: Register a card for user authentication. Press OK and scan the card that will be assigned to the user. To register an additional card, press + Add Card.
- PIN: Enter the PIN you wish to use. Enter the PIN you wish to use, and then reenter the same PIN for confirmation. Enter a number between 4 and 16 digits to prevent leaking.
- Operator Level: Select the level you wish to assign to a user.
- Start Date: Set a start date to use the user account.
- Expiry Date: Set an expiry date to use the user account.
- Private Auth Mode: Change the authentication method according to the user.

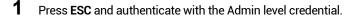
#### NOTE

- Available menus vary according to the set operator level.
- None: This is the general user level; menus cannot be accessed.
- Full Administrator: All menus can be accessed.
- Configuration: AUTHENTICATION, DISPLAY & SOUND, DEVICE, NETWORK and EVENT LOG menus can be accessed.
- User Management: USER and EVENT LOG menu can be accessed.

6 To save settings, press OK.

## Modifying user information

User Management or Administrator can modify the registered user information. A user's face or card can be added, and the PIN and level can be modified.



- 2 Select User > Search User and press OK.
- 3 Select your search terms. You can search for a user by All, User ID, User Name, Face and Card.
- 4 Select a user you wish to modify and press Edit.
- 5 Modify the information by referring to **Registering user information** and press **Save**.
  - To select a user, press **Delete** and then press **OK**.

NOTE

• Access Group can be registered in BioStar 2. For detailed contents regarding registering an access group, refer to the BioStar 2 Administrator Manual.

### **Delete All Users**

You can delete all registered users at once.

- Press **ESC** and authenticate with the Admin level credential.
- 2 Select User > Delete All Users and press OK.
- **3** When you press **OK**, all registered users will be deleted.

### View User Usage

You can see the number of registered users, faces, and cards at a glance.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select User > User Usage and press OK.

R > User Usage	
User	2
	30,000
Face	2
	30,000
Card	0
	30,000

**3** To return to the previous screen, press **ESC**.

## Authentication

## Auth Mode

### Face Mode

You can set the schedule to be used for each authentication method using a face.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select AUTHENTICATION > Auth Mode > Face Mode and press OK.
- **3** Set the desired authentication mode and select a schedule.
  - 💮: Mode allowing authentication with a face only.
  - 💮+ 🖉: Mode to authenticate with a face and PIN.
- 4 To save settings, press Apply.

### Card Mode

You can set the schedule to be used for each authentication method using a card.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select AUTHENTICATION > Auth Mode > Card Mode and press OK.
- **3** Set the desired authentication mode and select a schedule.

  - - + Mode allowing authentication with a card and then with a face.
  - — + 🗢 :: Mode allowing authentication with a card and PIN.
  - 👝 + 💮 / 🗢: Mode allowing authentication with a card and then with a face or PIN.
  - — + 💮 + 🔊: Mode allowing authentication with a card and then with both a face and PIN input.
- 4 To save settings, press Apply.

### NOTE

- A schedule can be set in BioStar 2. If there is no set schedule, only Always can be selected.
- For detailed contents regarding setting a schedule, refer to BioStar 2 Administrator's manual.

## T&A Mode

You can set how to register T&A Mode.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select AUTHENTICATION > T&A and press OK.
- **3** Select and set the desired item.

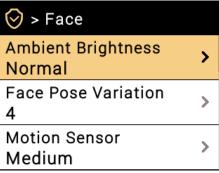
⊘ > T&A	
T&A Mode	~
By User	
T&A Required	
Disabled	-
T&A Fixed	
N/A	

- T&A Event: View the set T&A event.
- **T&A Mode**: Set the method to use T&A mode.
- T&A Required: Set to require a user to select a T&A event when authenticating.
- T&A Fixed: Set to use only a T&A event selected by the administrator. This option can be used when Fixed is set for T&A Mode.
- Job Code: Select whether or not to use Job Code.
- **4** To save settings, press **Apply**.

### Face

You can change settings regarding the face authentication.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select AUTHENTICATION > Face and press OK.
- **3** Select and set the desired item.



- Ambient Brightness: Detect the ambient brightness and adjust the intensity of IR LED. Change settings according to the installation environment.
- Face Pose Variation: Set the sensitivity for the position, angle, and distance of a face when registering the face. Set high if you wish to obtain a detailed face template
- Motion Sensor: Set the sensitivity for detecting motion near the device. If Motion Sensor is set to OFF, press and hold the ESC button to authenticate the face.
- Enroll Timeout: If a face is not registered during the set time, the face registration will be canceled.
- Auth Timeout: If the authentication is not completed during the set time, the authentication will fail.
- Security Level: Set the security level for 1:N authentication.
- Group Matching: Check whether or not to use Group Matching. If Group Matching is used, you can increase the authentication speed by designing various user's faces in a group.
- Enhanced fake face enrollment block: You can detect user enrollment using fake faces such as photos. The strength can be set from Level 1 to Level 3. The higher the level, the stronger the level of detection.

- Quick Enroll: Set whether or not to use a Quick Enroll. When you set this option to Enabled, the face registration procedure is set to 1 step. If you set the option to Disabled, it is set to 3 steps.
- IR Auth Guide: Set the guideline to be displayed on the screen when authenticating a face. If you set IR Auth Guide to Not Used, the guideline will not be displayed on the screen. If you set Use, the guideline will be displayed when Auth Timeout is exceeded. When set to Always, guide line is always displayed on the screen during authentication.

### NOTE

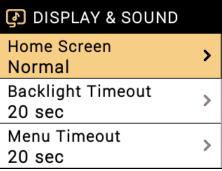
- Group Matching can be set in BioStar 2. For detailed contents, refer to the BioStar 2 Administrator Manual.
- If you set **Enhanced fake face enrollment block** to high level, the enrollment of real face may be rejected. If you fail to enroll, try again or lower your detection strength.
- To register high-quality face templates, disable Quick Enroll.

4 To save settings, press Apply.

## **Display & Sound**

You can change the display and sound settings of the device.

- Press ESC and authenticate with the Admin level credential.
- 2 Select DISPLAY & SOUND and press OK.
- **3** Change the desired item.



- Home Screen: Select items to be displayed in the background of the home screen.
- Backlight Timeout: Set the time (in seconds) to automatically turn off the lighting of the LCD screen.
- Menu Timeout: Set the time (in seconds) for the menu screen to disappear automatically. If there is no button input during a set time, the screen will return to the home screen.
- Message Timeout: Set the time (in seconds) for a setting complete message or information message to disappear automatically.
- Language: Set the language you wish to use.
- Voice Instruction: Set to use the voice instruction instead of alarm sounds.
- Server Private Msg.: Set whether or not to use a Private Message, which will be displayed on the screen when the user authenticates. You can set the Server Private Msg. on the server. If you have not set it on the server, the device does not display a message when authentication is successful even if Server Private Msg. is enabled on the device.
- Volume: Set the volume.

4 To save settings, press Apply.

## Device

### Date & Time

You can set date and time. Set the date and time accurately in order to collect accurate log data.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Date & Time and press OK.
- **3** Change the desired item.

🕞 > Date & Time	
Date	
2019.02.07	
Time	
06:42:03	
Time Zone	
UTC	

- Date: Check the current date. To modify it directly, disable Time Sync.
- Time: Check the current time. To modify it directly, disable Time Sync.
- Time Zone: Set the time reference of the current location.
- Time Sync: Synchronize the server and the time. If you wish to synchronize the server and the time, enable Time Sync.
- Date Format: Set the date format. You can select among YYYY/MM/DD, MM/DD/YYYY and DD/MM/YYYY.
- Time Format: Set the time format. You can select either 24-Hour or AM/PM.
- 4 To save settings, press Apply.

## **Daylight Saving Time**

You can use the device by applying daylight saving time. Set the start and end time correctly.

- **1** Press **ESC** and authenticate with the Admin level credential.
- 2 Select DEVICE > DST and press OK.
- **3** Select the desired item and change the setting.
- 4 To save settings, press Apply.

### **Relay**

You can set the open time and the input port of the exit button in the device.

- Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Relay and press OK.
  - Relay: You can set whether relay is enabled or not. To set the open time and the input port of the exit button, set to Enabled.
  - **Open Time**: Set the duration for the door to remain open when standard user authentication has been carried out.
  - Exit button: Select the input port where the exit button is connected.
- **3** To save settings, press **Apply**.

## **Device Info**

You can view the model name, firmware version of Device ID, and MAC address.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Device Info and press OK. You can view the information including Model Name, Device ID, HW, FW, Kernel, and MAC.
- **3** To return to the previous screen, press **ESC**.

### **Memory Usage**

View the status of memory usage.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Memory Usage and press OK. You can view the memory usage status of the device.
- **3** To return to the previous screen, press **ESC**.

### **USB Memory**

Connect USB Memory and import user information to the device or export log and user information from the device. Upgrade the firmware.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > USB Memory and press OK.
- **3** Select the desired item and change the setting.
  - Import: Import user information from the connected USB memory.
  - Export: Select information you wish to export to the connected USB memory.
  - FW Upgrade: Upgrade the firmware if the firmware files are saved in the connected USB memory.
- 4 To save settings, press Apply.

### NOTE

The type of supported USB memory is as follows. If you use a different type of USB memory, the function may not operate normally.

- Samsung Electronics: SUM-LSB 8GB, SUM-PSB 8GB, SUM-PSB 16GB, SUM-BSG 32GB
- LG Electronics: XTICK J3 WINDY 8GB, SMART USB MU1 White 8GB, MU 1 USB 32GB, MU28GBC 32GB, XTICK MOBY J1 16GB
- SanDisk: Cruzer 16GB, Cruzer Blade CZ50 4GB, Cruzer Blade CZ50 32GB, CZ48 Ultra USB 3.0 64GB, CZ80 USB3.0 64GB, CZ52 64GB, Cruzer Glide Z60 128GB, Cruzer Force CZ71 32GB
- Sony: Micro Vault Click 8GB, MicroVault CLICK 16GB, USM-SA1 32GB
- Transcend: JetFlash 760 8GB, JetFlash 760 32GB, JetFlash 500 8GB
- Memorette: MINI500 8GB
- A-DATA: S102 PRO 8GB
- Trigem Pastel 8GB

### Secure Tamper

When the tamper is turned on, you can set to delete the entire user, the entire log, and the security key.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Secure Tamper, then change the settings.
- **3** To save settings, press **Apply**.

## **Restart Device**

The user can restart the device.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > Restart Device and press OK.
- **3** To restart the device, press **OK**. To return to the previous screen, press **ESC**.

## **Restore Default**

Device settings, network settings, and operator levels will be reset.

- **1** Press **ESC** and authenticate with the Admin level credential.
- 2 Select DEVICE > Restore Default and press OK.
  - Reset All settings: You can reset all settings stored on the device. Press OK to reset all device settings.
  - Quick Reset: You can reset all settings except network settings. Press OK to reset all settings except network settings.
  - Factory Default: You can delete all the information saved in the device and the root certificate and restore default settings.
  - Delete the Root Certificate: You can delete the root certificate saved in the device.
- **3** If you proceed to restore the defaults, the device will restart.

### NOTE

- When you reset, the operator level will be reset as well. After resetting, make sure to set the operator level again.
- Language setting will not change after resetting.
- Factory Default menu can be used when the root certificate is saved in the device.
- Delete the Root Certificate menu can be used only when the root certificate is saved in the device and Administrator has been designated.

## User ID Type

You can set the type of user ID to be registered on the device to a combination of alphabetic characters, numbers, and symbols  $(\_, -)$ .

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select DEVICE > User ID Type and press OK.
- **3** Change to the desired item and press **OK**.
- 4 To save settings, press Apply.

## Network

### **Network Settings**

You can change the network settings of the device.

### TCP/IP

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select NETWORK > TCP/IP and press OK.

< > TCP/IP	
Port	>
51211	-
DHCP	
Enabled	
IP Address	
192.168.14.170	

- Port: Set the device port.
- DHCP: Set whether or not to use DHCP. If DHCP setting is disabled, the user can modify Port, IP Address, Gateway, Subnet Mask, and DNS.
- IP Address: View the IP address of the device. To modify, disable DHCP setting.
- Gateway: View the gateway of the device. To modify, disable DHCP setting.
- Subnet Mask: View the subnet mask of the device. To modify, disable DHCP setting.
- DNS: Set the DNS server address.

**3** To save settings, press **Apply**.

### Server

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select NETWORK > Server and press OK.

📽 > Server	
Connection Mode Server -> Device	>
Server URL	
Server IP	

- Connection Mode: When you select Device -> Server, you can send a connection signal from the device to a server with the input information directly. When you select Server -> Device, Server IP, Server URL and Server Port cannot be entered.
- Server URL: Enter server URL instead of Server IP. Input is accepted only when Device -> Server is set for Connection Mode.
- Server IP: Enter the IP address of the PC on which BioStar 2 is installed. Input is accepted only when Device -> Server is set for Connection Mode.
- Server Port: Enter the port of the PC on which BioStar 2 is installed. Input is accepted only when Device -> Server is set for Connection Mode.
- **3** To save settings, press **Apply**.

### RS-485

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select NETWORK > RS-485 and press OK.

📽 > RS-485		
Mode Default	>	
Baud Rate 115200	>	
Apply		

- Mode: Select the RS-485 mode.
- Baud Rate: Select the desired baud rate.
- **3** To save settings, press **Apply**.

## **Event Log**

## Search Log

You can set a condition and search a log.

- Press ESC and authenticate with the Admin level credential.
- 2 Select EVENT LOG and press OK.
- **3** Press **Search** and change the condition. When you press **OK**, a log that matches the condition will be displayed on the screen.

🔁 > Search	
Start Date 2019.02.07	>
Start Time 00:00:00	>
End Date 2019.02.07	>

**4** Press **Apply**. A log that matches the condition will be displayed on the screen.

## **Delete All Logs**

You can delete all saved logs.

- **1** Press **ESC** and authenticate with the Admin level credential.
- 2 Select EVENT LOG and press OK.
- 3 To delete all logs, select Delete All Logs and then press OK. To return to the previous screen, press ESC.

## View Log Usage

You can check the status of log usage.

- 1 Press ESC and authenticate with the Admin level credential.
- 2 Select EVENT LOG and press OK.
- **3** Select Log Usage and press OK. You can check the status of log usage.

Log Usage
2,799
5,000,000

4 To return to the previous screen, press **ESC**.

## Troubleshooting

## Checklist before reporting a failure

Classification	Problem	Solution
Power	The power is being supplied but the device does not operate.	<ul> <li>If the distance between the terminal and the bracket is too great, the device may not operate due to the temper switch.</li> <li>Check the adaptor or the power cable.</li> </ul>
I forgot my PIN. PIN I entered my PIN and pre the <b>OK</b> button, but I still cannot open the door.	l forgot my PIN.	<ul> <li>For a normal user PIN, request it from the administrator and reenter the PIN.</li> <li>If you have lost the Admin PIN, contact the installation company.</li> </ul>
	I entered my PIN and pressed the <b>OK</b> button, but I still	Check if you entered the registered PIN correctly.
		Check if you have changed your PIN recently.
	cannot open the door.	<ul> <li>If you cannot remember the PIN, request it from the administrator and reenter the PIN.</li> </ul>
Face	The face has been registered but face authentication cannot be done smoothly, and errors occur frequently.Face authentication has suddenly stopped working.	Check 'Cautions for registering a face' and register the face again.
		<ul> <li>If there are a large number of registered faces, change Matching Timeout and try again.</li> </ul>
		Check 'Cautions for authenticating a face' and try again.
Door Lock	The door does not lock when I close the door.	• The electric lock may be malfunctioning. Have an inspection performed by the installation company.
Time	The time has suddenly become incorrect.	• FaceLite is equipped with a built-in battery; however, if power is not supplied for a long period of time, the built-in battery may die, causing the time to become incorrect. For information on correcting the time, referring to <b>Date &amp; Time</b> .
Admin Access	I lost my Admin PIN, so I cannot access the Admin mode.	<ul> <li>The administrator grants access permission in FaceLite, so only the administrator can access the Admin menu.</li> <li>If you need to access the Admin menu, you can have a PIN issued through a special procedure. Ask the installation company for the procedure to issue the password.</li> </ul>

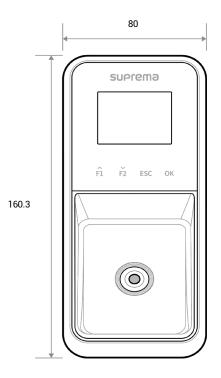
# **Product specifications**

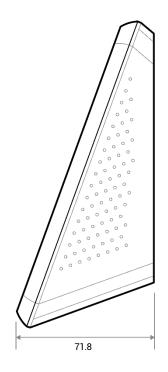
Category	Feature	Specification
Credential	Biometric	Face
	RF Option	FL-DB: 112.9 kHz EM & 13.56Mhz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa NFC & 2.4GHz BLE
	RF read range*	MIFARE/DESFire: 50 mm, EM/Felica: 30 mm, BLE: 50 mm
0	LFD	Supported
	CPU	1.2GHz Quad Core
	Memory	8GB Flash + 1GB RAM
	LCD type	2" color TFT LCD
	LCD resolution	320 x 240
	IR LED	8ea (940nm)
	Sound	24 bit Voice DSP
	Operating temperature	-20 °C - 50 °C
	Storage temperature	-40 °C - 70 °C
General	Operating humidity	0% - 80%, non-condensing
	Storage humidity	0% - 90%, non-condensing
	Camera type	CMOS
	Camera resolution	720 x 480
	Camera angle	IR Lens: Diagonal 58°
	Dimension (W x H x D)	80 mm x 160.3 mm x 71.8 mm
	54545	Device: 296 g
	Weight	Bracket: 41 g (Including washer and bolt)
	Certificates	CE, FCC, KC, RoHS, REACH, WEEE, BT SIG
	Max. User (1:1)	30,000
	Max. User (1:N)	3,000
Conscitu	Max. Template (1:1)	900,000
Capacity	Max. Template (1:N)	90,000
	Max. Text Log	5,000,000
	Max. Image Log	50,000
C	Wi-Fi	Not Supported
	Ethernet	Supported (10/100 Mbps, auto MDI/MDI-X)
	RS-485	1ch Host or Slave (Selectable)
Interface	Wiegand	1ch Input or Output (Selectable)
Intenace	TTL input	2ch Inputs
	Relay	1 Relay
	USB	USB 2.0 (Host)
	Tamper	Supported
	Power	Voltage: 24 VDC
	Power	Current: Max. 2.5 A
	Switch input VIH	Min.: 3 V
	Switch input VII	Max.: 5 V Max.: 1 V
	Switch input VIL Switch Pull-up resistance	$4.7 \text{ k}\Omega$ (The input pots are pulled up with 4.7 k $\Omega$ .)
Electrical	Wiegand output VOH	More than 4.8 V
	Wiegand output VOL	Less than 0.2 V
	Wiegand output VOL	
	resistance	Internally pulled up with 1 kΩ
	Relay	Voltage: Max. 30 VDC
	[Algerights]	Current: 1 A, Max. 2 A

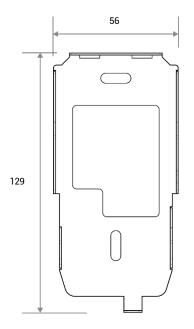
\* RF read range will vary depending on installation environment.

## Dimensions

(Unit: mm)







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This product is CE marked according to provisions of the Directive (2014/53/EU)

Suprema Inc. hereby declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

This device is a class 1 radio device according to the directive

Transmit power : -0.1 dBm

Bluetooth Frequency: 2402 MHz ~ 2480 MHz

For more information, contact us at the following contact information.

Suprema Inc.

Address: 16F, Parkview Office Tower, 248, Jeongjail-ro, Bundang-gu, Seongnam, Gyeonggi, South Korea

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#### Version 3, 29 June 2007

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.



Suprema Inc. 17F Parkview Tower, 248, Jeongjail-ro, Bundang- gu, Seongnam-si, Gyeonggi-do, 13554, Rep. of KOREA Tel: +82 31 783 4502 | Fax: +82 31 783 4503 | Inquiry: sales\_sys@supremainc.com

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