Hanshow

Hanshow Polaris-C Series Product Manual

V1.0.1

HS-ESL-EPDP001

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STATEMENT

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ABOUT THE MANUAL

This document describes Polaris-C series, including features, specification, package, and precautions.

Please read this manual carefully before using the device for the first time, retain the manual for subsequent use or for the next owner. If the instructions contained in this manual are insufficient to resolve issues that occur during device operation or maintenance, please contact Hanshow Technical Customer Service Center (China: 400-0365-365; Netherlands: 0800-022-5037; Belgium: 0800-77-335; France: 0800-902-530; Thailand: 1800-011-183; Germany: 0800-182-7358; Australia: 0061-1800-953-008) directly, we will provide you with multi-channel technical services.

TARGET USERS

This document provides engineers with necessary data and related guidelines of Polaris-C series. Users have to master the basic knowledge on communication and network and so on. This manual is applicable for the below engineers:

- Testing Engineer
- Technical Support Engineer
- After Sales Engineer
- Installation Engineer

SYMBOL DESCRIPTION

Icon	Description
⚠	Information indicated with this icon should be paid special attention and attached great importance by the reader.
🕮	Information indicated with this icon is the explanation on the formal text for the readers to comprehend the text better.
[X X	It means special hour definition is provided here.

EXPLANATION OF TERMS

Acronym	Expanded form	Description
PriSmart	PriSmart Smart Retail System	Manage all store product data and issue price update commands, as well as support multi-store management.
ESL Working	ESL Working System	Manage all the APs and ESLs in store, and ESL Working 3.0 and above supports multi-store management.
ESL Controller	ESL Controller	Also called AP that is used for data interaction between ESL Working and ESL Controller.
ESL	Electronic Shelf Label	Used for displaying product information like promotion information, price, and grade.

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1 Overview

The Polaris-C series is the next generation of Electronic Shelf Labels (ESLs) developed by Hanshow Technology. This series uses electronic ink screens and operates on the 2.4GHz wireless communication frequency band to implement various functions such as price changes, page switching, and flashing lights. The Polaris-C series boasts advantages such as ultra-thin design, long lifespan, and high-definition visual effects, making it widely suitable for traditional retail, new retail, department store, fashion, pharmaceutical & health, cultural and entertainment sectors.

1.1 System architecture

Hanshow ESL system is composed by ESLs, ESL Controller (also referred to as AP), ESL-Working, PriSmart, Database, Integration server, CloudMonitor and Handheld Terminal (PDA), as shown in *Figure 1-1*. Specifically, the ESLs are used for electronically displaying product information such as name and price, and services available for customers.

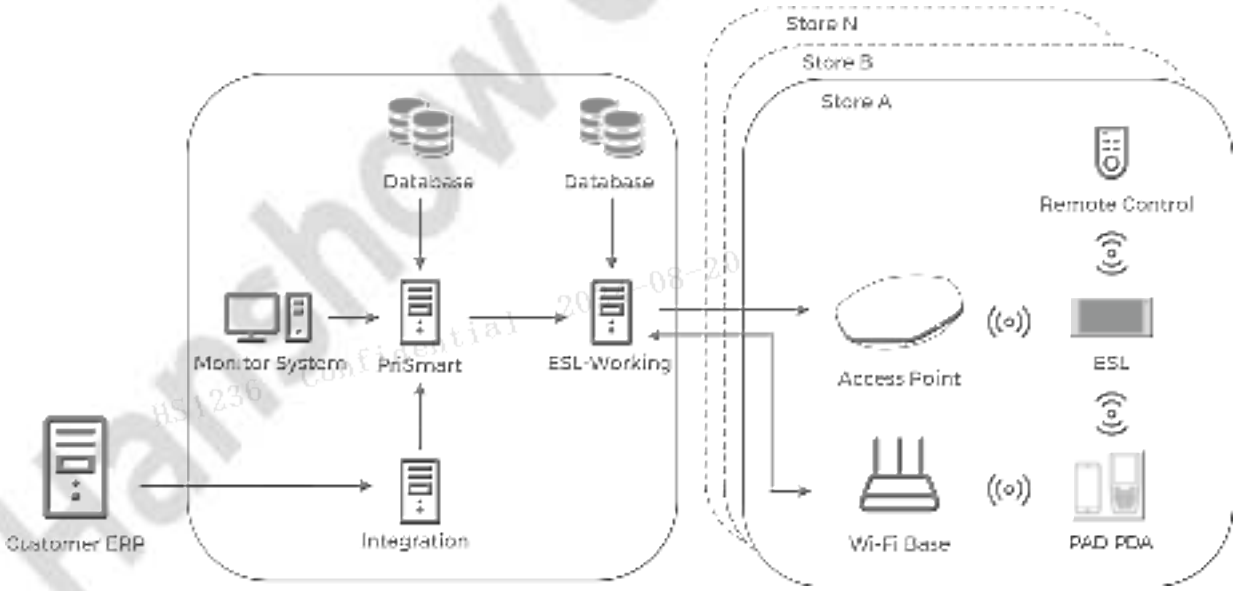

Figure 1-1 Hanshow ESL system architecture

1.2 Features

The features of Polaris-C series are as follows:

- Polaris-C ESLs come in 3 ESL sizes: 1.6", 2.0" and 2.3".
- Display colors: Black, white and red.
- Operating frequency band: 2,402MHz ~ 2,480MHz.
- IP5X waterproof and dustproof design.
- Built-in LED indicator: 7-color display assists in product searching, promotion reminder, out-of-stock reminder, and low power reminder.
- Polaris-C ESLs support multiple functions, including associating/disassociating, updating, instant flashing, multi-page storage, page switching, geolocation, temperature collection and so on.
- Supports AES-128 encryption.
- Supports wireless upgrade.

2 Product view

This chapter describes Polaris-C series' appearance and composition.

2.1 Product appearance

Figure 2-1 displays Polaris-C family.

Figure 2-1 Polaris-C family

Each section of Polaris-C and its relative description is shown in *Figure 2-2* and *Table 2-1*.

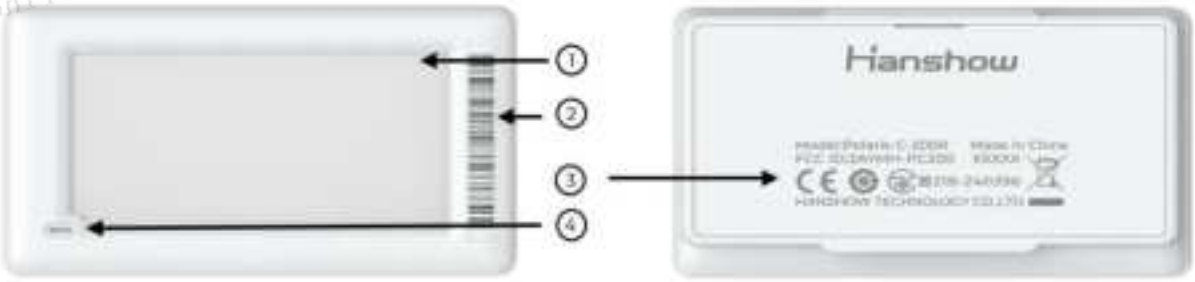

Figure 2-2 Polaris-C Key Area Diagram

Table 2-1 Each area description of Polaris-C

No.	Name	Description
1	Display area	• Supports BWR display or E ink screen. • Flexibly display text, numbers, images, barcode, QR code and others. • Product information display such as name, price, origin, unit, grade, phone number, barcode, and QR code. Supports customized display position and font size. • Supports 8 page storage and page switching functionality.
2	Barcode area	18 digit barcode used for product association and maintenance.
3	Nameplate	Product information mark, including model, origin and certifications such as CE and FCC.
4	LED indicator	Supports 7 color flashing.

2.2 Dimensions

This section covers the dimensions of Polaris-C series.

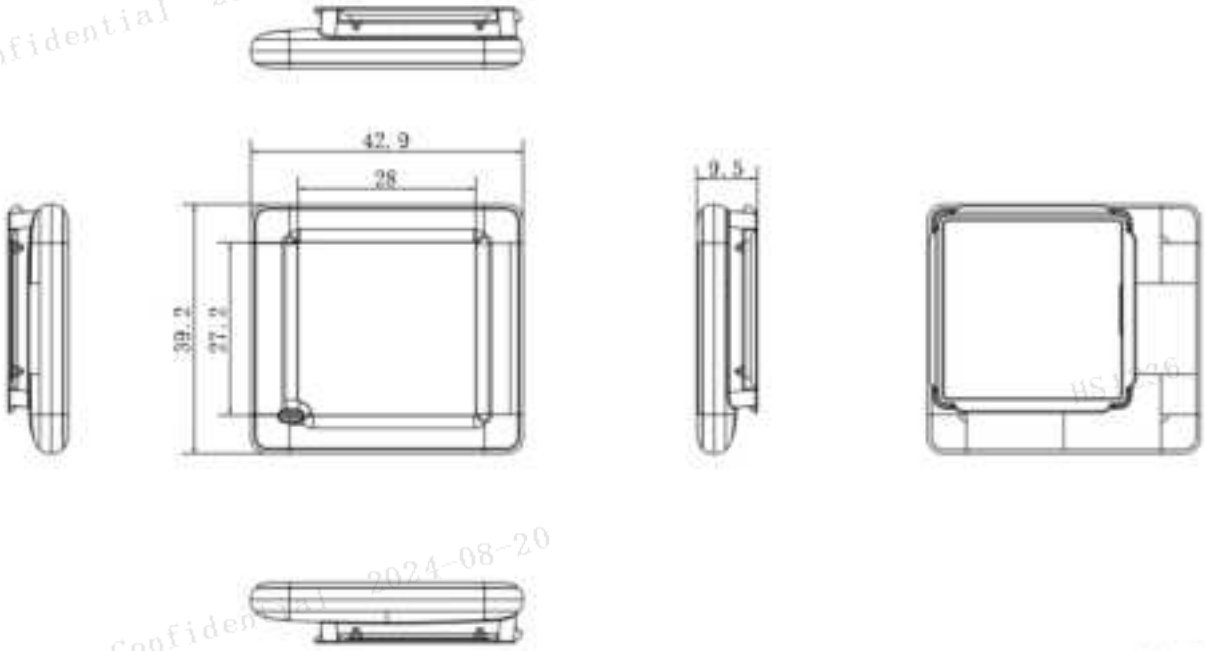

Figure 2-3 1.6" dimension

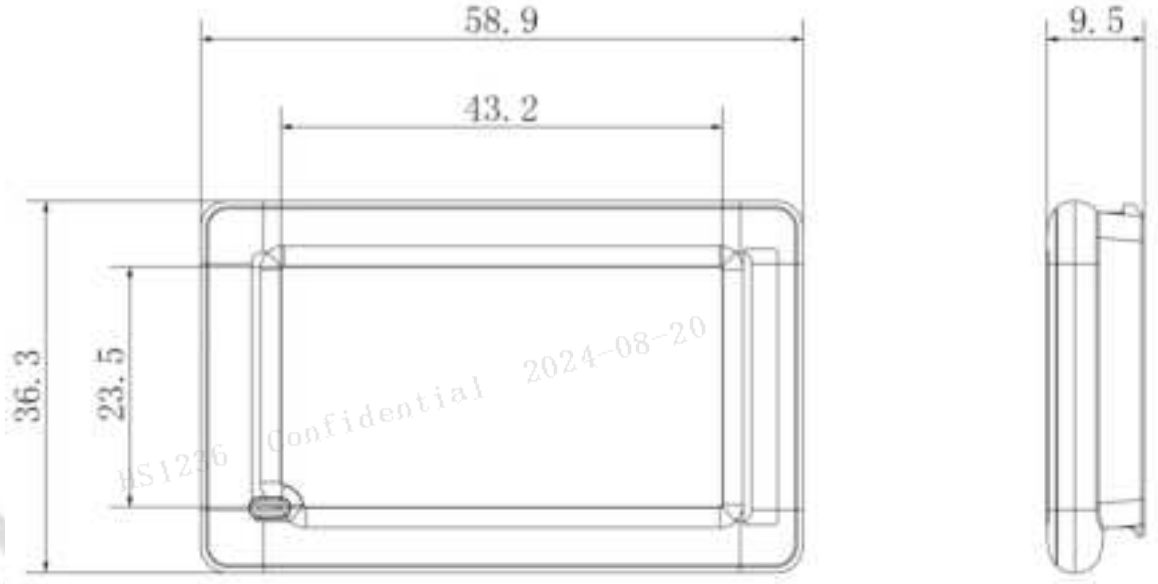

Figure 2-4 2.0" dimension

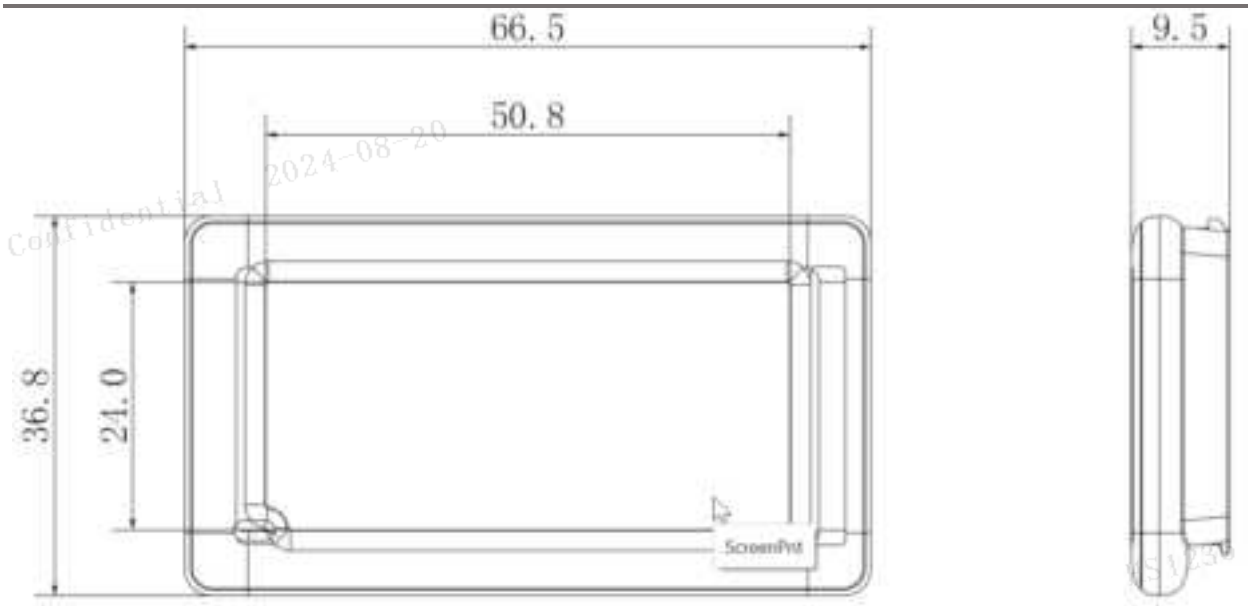

Figure 2-5 2.3" dimension

3 Hardware performance

3.1 Specifications

Table 3-1 lists the Polaris-C specifications.

Table 3-1 Polaris specifications

Name	Dimensions (mm*mm*mm)	Active Display Area	Size (inch)	Resolution (pixel)[3-1]	DPI[3-1]	Display Color	Viewing Angle	Battery Life[3-2]	Page Switch	Protection Level	Operating Temperature[3-3] (°C)	Storage Temperature[3-3] (°C)	Humidity (%RH)
1.6"	42.9*39.2*9.5	28*27.2	1.6	200*200	193	BWR	Nearly 180 degrees	8 years	8 pages	IP5X	0~40	0~40	45~65
2.0"	58.9*36.3*9.5	43.2*23.5	2.0	128*250	144								
2.3"	56.5*36.8*9.5	50.8*24.0	2.3	122*250	125								

Note:

- [3-1]: The resolution and DPI may vary depending on the screen provided by the supplier.
- [3-2]: Battery life is calculated based on the following scenarios: The battery life is 8 years if updated once a day for the following sizes: 1.6"/2.0"/2.3".
- [3-3]: Room-temperature ESLs operate within 0°C ~ 40°C, however low temperatures (0°C ~ 10°C) might significantly impact the ESL lifespan.

3.2 Identifying your ESLs

You can identify your ESLs from the following Polaris-C naming rules:

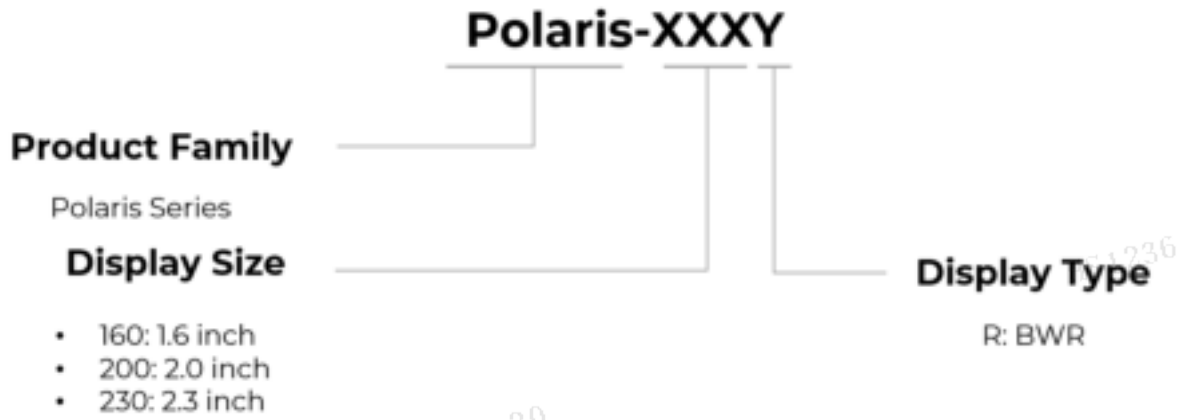

Figure 3-1 Naming rules for Polaris-C series

3.3 Product nameplate

Taking Polaris-C-200R as an example, *Figure 3-2* shows the nameplate of Polaris-C series.

Figure 3-2 Nameplate of Polaris-C Product

Note: Each ESL has a unique S/N number. The above is for reference only, actual label information might vary.

4 Packaging and accessories

This chapter describes Polaris-C series' packaging and required accessories.

4.1 Packaging

Polaris-C family packaging and the specific ESL quantity is shown in *Figure 4-1*.

Screen size (inch)	ESL QTY per inner box (pcs)	Num. of Inner Boxes (PCs)	ESL QTY per Box (PCs)	Inner Box Dimensions (mm)	Total (pcs)
1.6	35	8	700	354*53*47	372*255*242
2.0	35	15	525	354*68*45	372*247*236
2.3	25	14	350	364*89*49	373*282*211

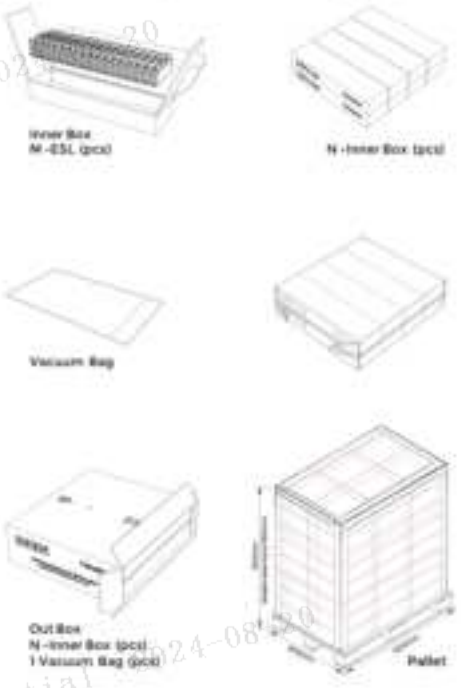

Figure 4-1 Polaris-C family packaging

4.2 Product accessories

Common accessories of Polaris-C series are shown in *Table 4-1*.

Table 4-1 Common accessories of Polaris-C series

Guide rail	
Table stand	
Hook	
Basket clip	

5 Application scenarios

Polaris-C series are available to various zones and shelves of hypermarket, supermarket and retail stores. The ESLs are applicable to areas with different fixtures:

- Shelves
- Hooks
- Fences
- Tables

6 Precautions

During transportation and usage of Polaris-C series, please note the following precautions.

6.1 Transportation considerations

All transport precautions are listed below:

- During transportation, ensure that the ESLs do not get wet to avoid damaging the electronic components.
- Do not compress the ESLs during transportation to prevent screen damage.
- Maintain an environmental temperature not exceeding 40°C during transportation.

6.2 Precautions for use

Follow the precautions:

- The room-temperature ESLs operate best in normal operating and storage environment, 0°C ~ 40°C, 45% ~ 65%RH.
- Keep ESLs within the specified temperature range, otherwise ESL screens might be damaged and the battery life might be shortened.
- The output capacity will degrade at low temperature.
- Frequent communications or updates might shorten battery life during the use.
- Avoid dropping or tossing ESLs.
- Do not disassemble ESLs without permission.
- Do not disassemble ESL batteries.
- Do not scratch ESL bodies with sharp objects.
- Use Polaris-C dedicated disassembly tools when disassembling.

- The mineral substances in rainwater, moisture or liquids might corrode the electronic circuit. Avoid water on the product as much as possible.
- Regularly clean the ESL to ensure the neat and clear of ESL appearance.
- Promptly clean any cosmetics, perfumes, organic solvents, or similar substances from the price tag's exterior or surface to avoid affecting the screen display and causing permanent damage to the casing and lens.
- Do not use chemical cleaners to wipe the screen.
- Direct exposure to sunlight or incandescent light is prohibited.
- Do not install the ESL in a strong magnetic environment.
- Do not place the ESL near fire sources or throw it into fire.
- Avoid placing the ESL near heating kitchen appliances (e.g., stove or microwave).
- The ESL system uses the 2.4GHz frequency band for wireless communication. Its wireless performance may be affected by interference from other wireless communication systems operating in the same frequency band, such as Wi-Fi, Bluetooth, Zigbee, etc.

7 FCC ID warning

7.1 Warning for nameplate

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.

7.2 Warning for product manual

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

7.3 RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

7.4 MIC Certificates

Polaris-C 160"

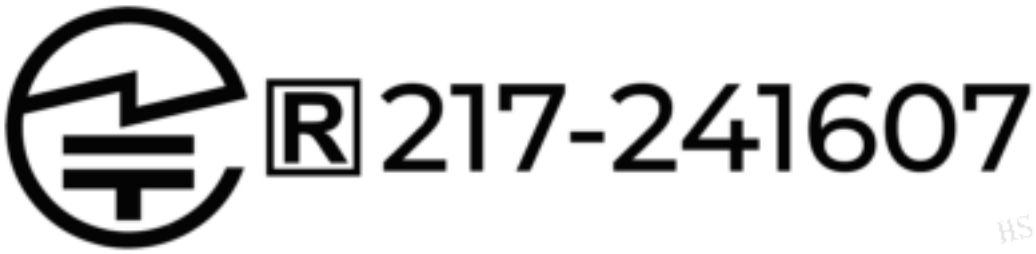

Figure 7-1

Polaris-C 200"

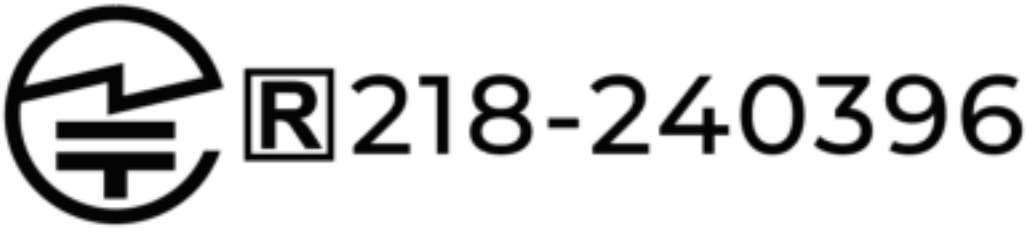

Figure 7-2