**IDIS**®

# DC-T Series

*DC-T6223HRL*

*DC-T6224HRXL*

*DC-T6223HRL-A*

*DC-T6224HRXL-A*

Powered by **Direct IP**®

# Before reading this manual

This is a basic installation manual for use of an IDIS network camera. Users who are using this product for the first time, as well as users with experience using comparable products, must read this manual carefully before use and heed to the warnings and precautions contained herein while using the product. Safety warnings and precautions contained in this manual are intended to promote proper use of the product and thereby prevent accidents and property damage and must be followed at all times. Once you have read this manual, keep it at an easily accessible location for future reference.

- The manufacturer will not be held responsible for any product damage resulting from the use of unauthorized parts and accessories or from the user's failure to comply with the instructions contained in this manual.
- The information in this document is believed to be accurate as of the date of publication. The manufacturer is not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.
- It is recommended that first-time users of this network camera and individuals who are not familiar with its use seek technical assistance from their retailer regarding product installation and use.
- If you need to disassemble the product for functionality expansion or repair purposes, you must contact your retailer and seek professional assistance.
- Both retailers and users should be aware that this product has been certified as being electromagnetically compatible for commercial use. If you have sold or purchased this product unintentionally, please replace with a consumer version.

## Safety Symbols

| Symbol | Type | Description |
|--------|------|-------------|
| --- | IEC60417, No.5031 | Direct current |
| ∼ | IEC60417, No.5032 | Alternating current |

## In-Text

| Symbol | Type | Description |
|--------|------|-------------|
| ⚠ | Caution | Important information concerning a specific function. |
| ✓ | Note | Useful information concerning a specific function. |

# Safety Precautions

<div style="border:1px solid">

## WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

**WARNING**: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

</div>

## Important Safeguards

**1. Read Instructions**

All the safety and operating instructions should be read before the appliance is operated.

**2. Retain Instructions**

The safety and operating instructions should be retained for future reference.

**3. Cleaning**

Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

**4. Attachments**

Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

**5. Water and/or Moisture**

Do not use this equipment near water or in contact with water.

**6. Placing and Accessories**

Do not place this equipment on an wall or ceiling that is not strong enough to sustain the camera. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

Do not place this equipment in an enclosed space. Sufficient ventilation is required to prevent an increase in ambient temperature which can cause malfunction or the risk of fire.

**7. Power Sources**

This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

You may want to install a UPS (Uninterruptible Power Supply) system for safe operation in order to prevent damage caused by an unexpected power stoppage. Any questions concerning UPS, consult your UPS retailer.

This equipment should be remain readily operable.

**8. Power Cord**

Operator or installer must remove power and TNT connections before handling the equipment.

**9. Lightning**

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges. If thunder or lightning is common where the equipment is installed, use a surge protection device.

**10. Overloading**

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

**11. Objects and Liquids**

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

**12. Servicing**

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

**13. Damage requiring Service**

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

A. When the power-supply cord or the plug has been damaged.

B. If liquid is spilled, or objects have hit the equipment.

C. If the equipment has been exposed to rain or water.

D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.

E. If the equipment has been dropped, or the cabinet damaged.

F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

**14. Replacement Parts**

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

**15. Safety Check**

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

**16. Field Installation**

This installation should be made by a qualified service person and should conform to all local codes.

**17. Correct Batteries**

Warning: Risk of explosion if battery is replaced by an incorrect type.

Replace only with the same or equivalent type.

Dispose of used batteries according to the instructions.

The battery shall not be exposed to excessive heat such as sunshine, fire or the like.

**18. Tmra**

A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

## FCC Compliance Statement

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE. **WARNING**: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT. THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE CAUSING EQUIPMENT REGULATIONS.

## WEEE (Waste Electrical & Electronic Equipment)

***Correct Disposal of This Product***
***(Applicable in the European Union and other European countries with separate collection systems)***

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

## Copyright

## Registered Trademarks

IDIS is a registered trademark of IDIS Co., Ltd.

Other company and product names are registered trademarks of their respective owners.

The information in this manual is believed to be accurate as of the date of publication even though explanation about some functions may not be incorporated. We are not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

This product contains software built partially on open-source content. You may obtain the complete corresponding source code depending on whether or not the source is publicly available under a license policy. For more information, refer to **System > General** page. This product includes software developed by the University of California, Berkeley and its contributors, and software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/). Also, this product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

# Table of Contents

# Part 1 – Introduction

## Product Features

**DC-T6223HRL/DC-T6224HRXL/DC-T6223HRL-A/ DC-T6224HRXL-A** is an IP-based network camera that compresses and transmits video over ethernet. You can use the IDIS Discovery program to change network camera settings or the IDIS Solution Suite Compact program to manage multiple network cameras.

> In this manual, the term **Remote System** refers to the computer on which the remote program (IDIS Solution Suite Compact or IDIS Web) is running.

- Supports ONVIF protocol (Profile S)
- Supports 4-stage video compression rate and multiple compression resolutions
- IP filtering, HTTPS, SSL, IEEE 802.1X, and configurable user authority levels for greater security
- Easy network access via UPnP (Universal Plug and Play) function and embedded mDNS (Multicast DNS) protocol
- Quick and easy firmware upgrade over the network
- Redundant firmware and auto recovery features for improved system stability
- Network-based integrated management of multiple network cameras
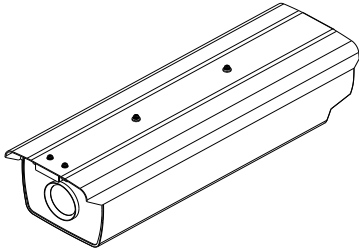
> Remote monitoring and recording via multistreaming are available using the IDIS Solution Suite Compact program. For more information on using IDIS Solution Suite Compact, refer to its **operation manual**.
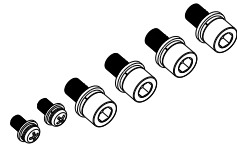
> ⚠ There is a limit to the number of users allowed to connect remotely via the Internet at the same time.
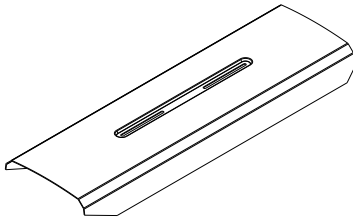
## Accessories

Upon purchasing the product, check inside the box to make sure all the following accessories are included. External appearances and colors of the accessories may vary depending on the model.
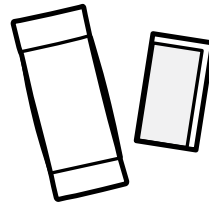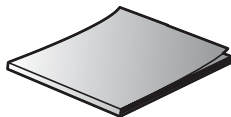
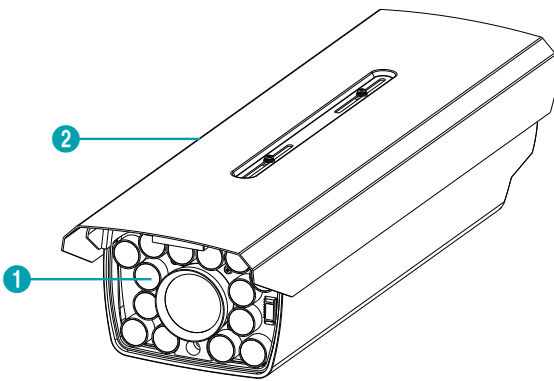| | |
|---|---|
|  |  |
| Network Camera | Screws (6ea) |
|  |  |
| Sunshield | Desiccant, double-sided tape |
|  | |
| Quick Guide | |

# Overview

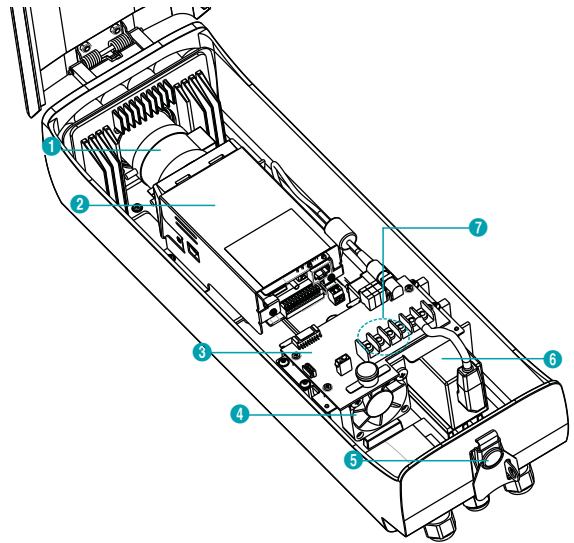| ✓ | Product color and design may vary depending on the model. |

## Outside



| ❶ | IR LED |
| ❷ | Sunshield |

- **IR LED**
  Activates the IR LED during low-lighting conditions or night.

- **Sunshield**
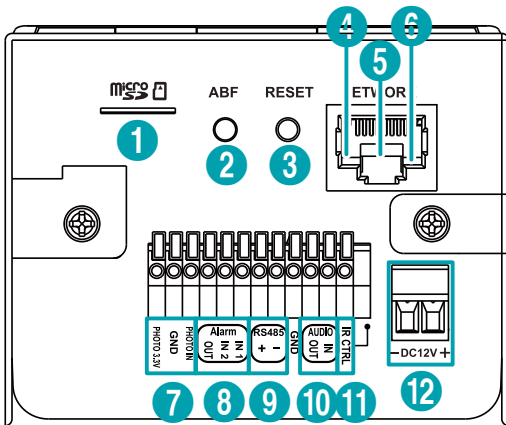  Protects the camera body from direct sunlight exposure.

# Inside



| ❶ | Lens |
| ❷ | Camera Body |
| ❸ | Control Board |
| ❹ | FAN |
| ❺ | Fastening Clasp |
| ❻ | Power |
| ❼ | Power Connection Terminal |

- **IR LED**
  A zoom lens is installed.

- **Camera Body**
  The camera body is included.

- **Control Board**
  Operates LEDs and heaters, and distributes AC power.

- **FAN**
  A fan is installed to circulate the internal air.

- **Fastening Clasp**
  Closes the cover of the camera and secure it with a separate lock.

- **Power**
  Provides power to the camera.

- **Power Connection Terminal**
  Connects the AC power.

> It is recommended MJPEG (transmission quality-best) for NVR recording settings when using license plate recognition.

> ⚠ • Do not remove the SD memory card while the system is in operation. Removing the card while the system is in operation can cause the system to malfunction and/or corrupt data stored on the SD memory card.
> • An SD memory card is a consumable product with a finite service life. Prolonged use will damage the card's memory sectors and result in data loss or memory card failure. Test the SD memory card regularly and replace it whenever necessary.

## Back



| ❶ | SD Memory Card Slot |
|---|---|
| ❷ | ABF(Auto Back Focus) |
| ❸ | Factory Reset Switch |
| ❹ | Network LED |
| ❺ | Network Port |
| ❻ | Power LED |
| ❼ | Photo Sensor Power, Photo Sensor In |
| ❽ | Alarm I/O |
| ❾ | RS485 Port |
| ❿ | Audio I/O |
| ⓫ | IR Control Port |
| ⓬ | Power |

• **SD Memory Card Slot**

Pull on the connection cover and then insert a microSD memory card into the slot. (An SLC (Single Level Cell) or MLC (Multi Level Cell) card by SanDisk or Transcend is recommended)

• **ABF(Auto Back Focus)**

Finds the best focus position automatically.

• **Factory Reset Switch**

Restores the camera's default factory settings. For more information, refer to the **Factory Reset**.

• **Network LED**

Indicates the network connection status. For more information, refer to the **LED Status Indications**.

• **Network Port**

Connect a Cat5e cable with an RJ-45 connector to this port. You can configure, manage, and upgrade this camera and monitor its images from a remote computer over the network. For more information on network connection setup, refer to the **IDIS Discovery operation manual**.
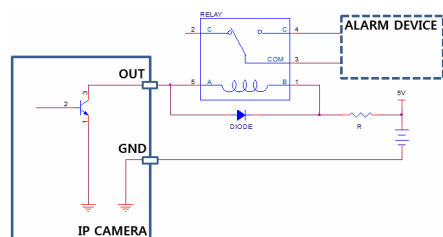
• **Power LED**

Indicates the system's operating status. For more information, refer to the **LED Status Indications**.

• **Photo Sensor Power, Photo Sensor In**

This port receives the photosensor input.

• **Alarm I/O**

- **Out**: It is the BJT (Bipolar Junction Transistor) - open collector output. If the voltage and current exceed the specification limit (Max load: 30mA, Max Voltage: 5VDC), the product could be damaged. When connecting the device which exceeds the specification limit, refer to the picture (circuit) below.

If used with an external inductive load (e.g. relay), a diode must be connected in parallel with the load for protection. Otherwise, the product could be damaged.

- **In**: Connect an alarm-in device to this port. (Mechanism: Choose between an NC (Normally Closed) type or an NO (Normally Open) type) Connect a mechanical or electrical switch to the alarm in port and the GND (ground) connector. Alarm in range is 0V to 5V. In order to detect alarm input from an electrical switch, the signal must be higher than 4.3V from an NC switch or less than 0.3V from an NO switch and must last for longer than 0.5 seconds.

- **RS485 Port**

  Connect a pan/tilt driver to this port. Connect the driver's TX+/RX+, TX-/RX- to the network camera's +/—. For more information on RS485 connections, refer to the pan/tilt driver manufacturer's **operation manual**.

- **Audio I/O** *DC-T6223HRL, DC-T6224HRXL models only*
  - **Out**: Connect an amplifier to this port (line out). This device does not feature a built-in audio amplifier unit and therefore requires the user to purchase a separate speaker system with a built-in amplifier.
  - **In**: Connect an audio source (line in). A built-in microphone is featured on the front.

- **IR Control Port**

  Controls the IR LED.

- **Power**
  - **DC12V -/+**: Connect the two wires of the power adapter to these ports. Be careful not to cross the + and - wires. Booting will commence once connected to a power supply.

Organize the power cable so that it will not cause people to trip over or become damaged from chairs, cabinets, desks, and other objects in the vicinity. Do not run the power cable underneath carpet or a rug or plug the cable into a power outlet shared by a number of other devices.

When inserting a RS485 connector, hold down the button and push the connector in through the exposed hole. Release the button and then gently pull on the wire to ensure a secure connection. To disconnect the cable, press down on the button again and pull the cable out.

- Check your local laws and regulations on making video or audio recordings. The user will be held liable for any violation of the law.
- The network connector is not designed to be connected directly with cable or wire intended for outdoor use.

## Factory Reset

Only use the factory reset switch to restore the camera to its factory default settings.

A factory reset will clear all camera settings configured by the user.

*1* Shut off the power supply, insert a straight pin into the switch hole, and press down on the reset switch.

*2* Hold the switch down and reconnect the power adapter.

*3* Once the device turns back on and its LEDs start blinking, wait 5 seconds and then remove the pin.

*4* The device will go through the resetting process and reboot. All camera settings will be restored to their factory defaults after the reboot.

It's also possible to do a factory reset by pressing and releasing the reset switch while the camera is turned on or using the IDIS Discovery program from a remote location. A factory reset will reboot the system. For more information on factory reset, refer to the **IDIS Discovery operation manual**.
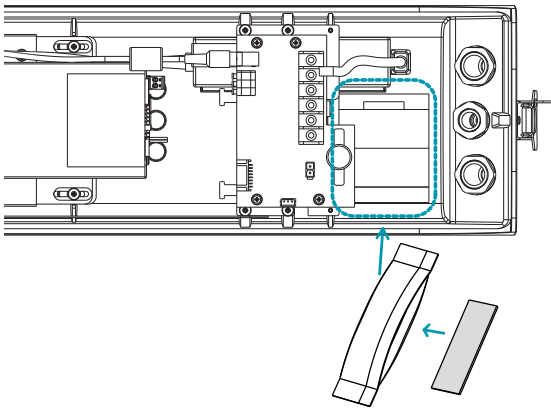
## LED Status Indications

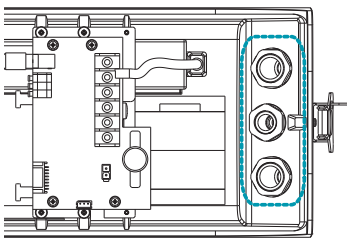| LED Status | | Description |
|---|---|---|
| **Power LED** | **Off** | Power not connected |
| | **Flashing** | Booting |
| | **Off** | Powered on |
| **Network LED** | **On** | Not connected to network |
| **Power LED/ Network LED** | **Flashing (sequentially)** | Software upgrade in progress |

# Installation

⚠️ Install the camera in a shaded area. If the camera is installed in direct sunlight, it may be affected adversely.

## Installation

*1*  Attach the double-sided tape to the desiccant first, and attach it to the specified position inside the dome cover as shown below.
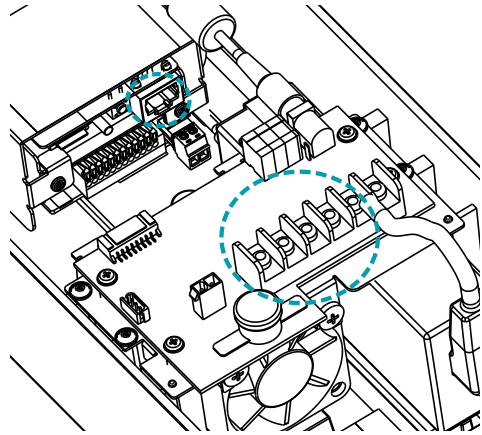


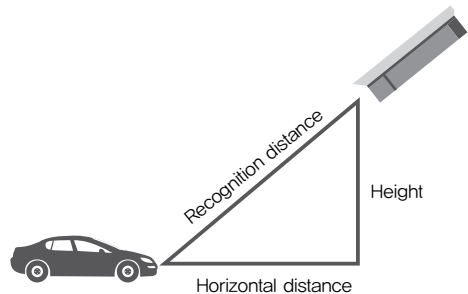✓ To prevent leakage inside the product, close the cable grand before use.



It is designed to connect the cable through the connection part (compression fitting) on the bottom of the housing. Loosen the compression fitting nut on the back of the housing and insert the power cable and network cable as their size from the outside of the housing to the inside.

*2*  Connect the AC power and the network cable.



✓ When installing the bracket, use the appropriate fixing screw to fix it according to the situation.

*3*  Calculate the horizontal distance, angle, and height of the camera taking into account the recognition distance. (LED maximum recognition distance: 20m)
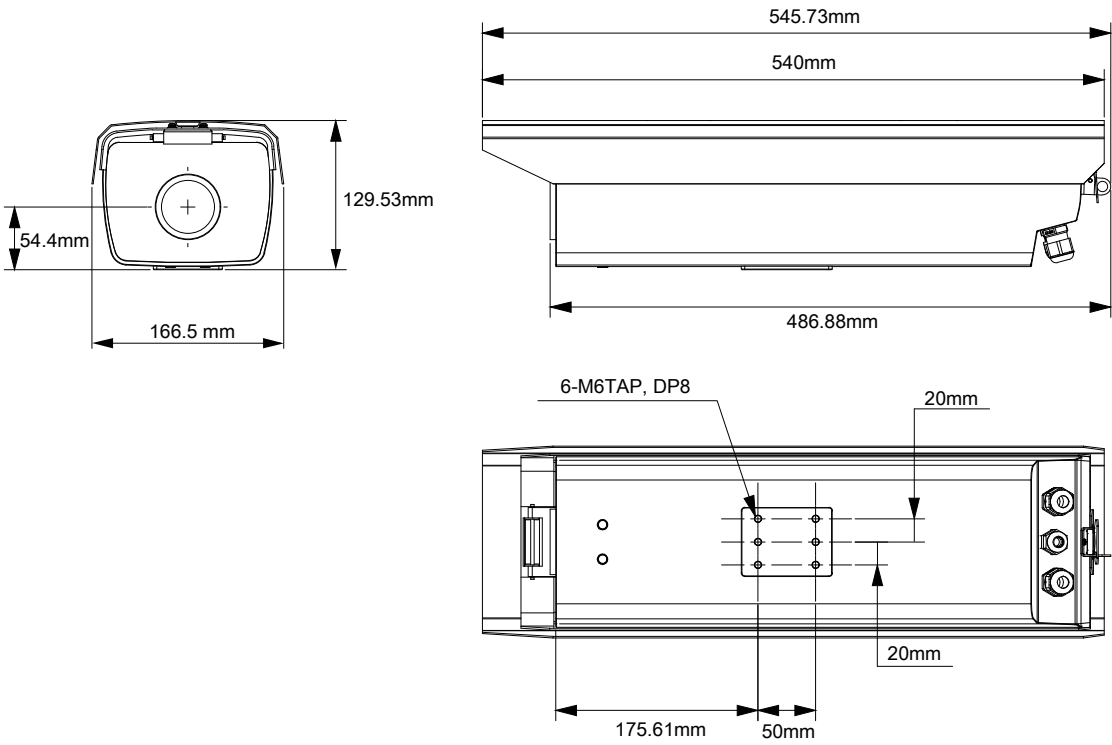


✓ • Focus on the angle of view and focus by referring to the conditions below for accurate number recognition.
   – Installation angle: vertical (top and bottom) 0~30°, horizontal (left and right) 0~15°
   – License plate height: Adjusted to be single-line license plate (minimum 30 pixels, recommended 60 pixels or more), double-line license plate (minimum 60 pixels, recommended 90 pixels or more)
• Adjust the height and angle so that the vehicle's lights do not shine directly on the camera.
• Be sure to press the hook of the connector firmly when connecting or disconnecting a cable. It may be damaged.
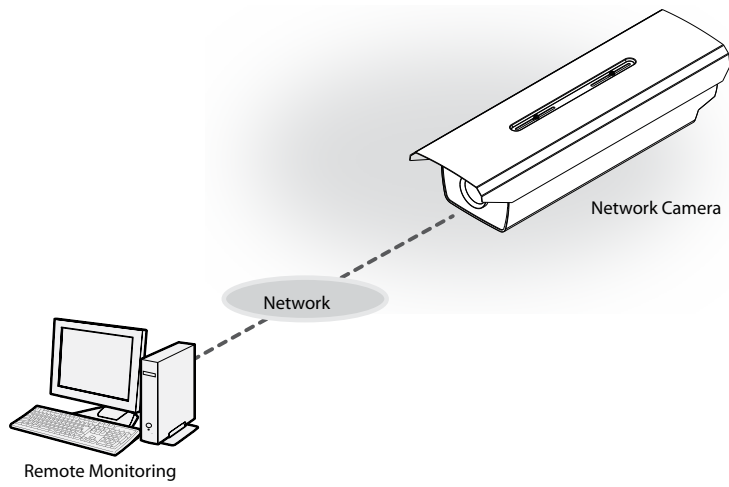
*4*  Focus on angle of view. Press the ABF button for precise auto-adjustment.

✓ Rotate the lens' iris ring and then adjust accordingly.

## Dimensions

545.73mm

540mm

129.53mm

54.4mm

166.5 mm

486.88mm

6-M6TAP, DP8

20mm

20mm

175.61mm

50mm

# Part 2 - Camera Connection

Network Camera

Network

Remote Monitoring

# Part 3 - Appendix

## Troubleshooting

| Problem | Check |
|---|---|
| **The main unit won't turn on.** | • Check the power cable connection.<br>• Check the power outlet. |
| **I can't see Live videos.** | • Check the camera's power status.<br>• Check the network connection status of the computer and the network camera. |
| **Images are blurry.** | • Make sure the lens is clean. If not, clean it using a soft piece of cloth or a brush.<br>• Make sure the lens is in focus. Adjust the focus during daytime.<br>• If there is too much light coming into the camera or the camera is picking up an overly bright light source, adjust the camera's position/angle accordingly. |
| **Video color appears incorrect.** | Check the white balance settings. If using the **Auto** option, it may take some time for the white balance to be adjusted. |
| **Images are blinking.** | If the camera is pointed at the sun or a fluorescent lamp, adjust the camera's angle away. |
| **Lost the admin ID and password and unable to connect to a network camera.** | You must perform a factory reset. A factory reset will revert all settings, including network settings, to their factory defaults. After performing a factory reset, make a memo of the admin ID and password as a safety precaution. |
| **Unable to launch IDIS Web.** | If the IDIS Web login screen is not loading, check which version of Microsoft Internet Explorer you are using. IDIS Web may not launch properly on versions 8.0 or below. |

## Specifications

✓ These product specifications may change without prior notice.

Camera

| Image Sensor | | 1/2" CMOS |
|---|---|---|
| Max. Resolution | | 1920 x 1080 |
| Scanning Mode | | Progressive Scan |
| Lens type | | HV1250P.IR-B1-S |
| Focal Length | | f=12 - 50mm |
| Aperture | | F1.5 - 1.9 |
| Angular Field of View | | Wide : 33°(H), 18°(V), 38°(D)<br>Tele : 9°(H), 5°(V), 10°(D) |
| Electronic Shutter Speed | DC-T6223HRL(-A) | Auto / Manual (1/120 ~ 1/10,000) |
| | DC-T6224HRXL(-A) | Auto / Manual (**30ips mode**: 1/30 ~ 1/10,000, **25ips mode**: 1/25 ~ 1/10,000) |
| IR Distance (LEDs) | DC-T6223HRL(-A) | Recognition mode: 20m (14ea) |
| | DC-T6224HRXL(-A) | Identification mode: 20m (14ea)<br>Normal mode: 100m (14ea) |
| Dynamic Range | | 120dB, True WDR |
| Day & Night | | IR cut filter with auto switch |

Network

| Video Compression | H.265, H.264(MP), M-JPEG |
|---|---|
| Bitrate Control | CBR / VBR |
| Max. Frame Rate | 25ips : 1920 x 1080<br>30ips : 1920 x 1080 |
| Audio Compression  *DC-T6223HRL, DC-T6224HRXL models only* | ADPCM 16K, G.726, G.711 u-Law, G.711 a-Law |
| Supported Resolution | 352x240, 640x360, 704x480, 1280x720, 1920x1080 |
| Multi-Video Streaming | Quadruple |
| Ethernet | RJ45(10/100Based Ethernet) |
| Edge Storage* (Optional) | **microSD** (micro SD/SDHC/SDXC memory card (class 6 or higher, max. 512GB)) |

\* An SLC (Single Level Cell) or MLC (Multi Level Cell) card by SanDisk or Transcend is recommended to ensure stable recording performance.

\* An SD memory card is a consumable product with a finite service life. Prolonged use will damage the card's memory sectors and result in data loss or memory card failure. Test the SD memory card regularly and replace it whenever necessary.

* microSD Logo is a trademark of SD-3C, LLC.

I/O

| Audio In/Out *DC-T6223HRL, DC-T6224HRXL models only* | Line-in 1ea / Line-out 1ea |
|---|---|
| Alarm In | 2 TTL, NC/NO Programmable, 4.3V(NC) or 0.3V(NO) threshold, 5V DC |
| Alarm Out | 1 TTL open collector, Max. load: 30mA, Max. voltage: 5VDC |

General

| Operating Temperature | -40℃ ~ +60℃ (-40°F ~ +140°F) |
|---|---|
| Boot Up Temperature | -20℃ ~ +60˚C (-4˚F ~ +140˚F) |
| Operating Humidity | 0% ~ 90% |
| Power Source | 100-240V~, 50/60Hz, 1.0-0.5A |
| Power Consumption | 100-240V~, 50/60Hz, 1.0-0.5A, 50W |
| Approval | FCC, CE, IP66 |
| External Dimensions (W x H x D) | 166.5mm x 129.5mm x 540mm (6.55" x 5.09" x 21.25") |
| Weight (Main Unit) | 4.65kg (10.25lb) |

License Plate Recognition

| Constraint | Installation Angle | Vertical (top and bottom) 0~30°<br>Horizontal (left and right) 0~15° |
|---|---|---|
| | License Plate Height in Video | Single-line license plate (minimum 30 pixels, recommended 60 pixels or more)<br>Double-line license plate (minimum 60 pixels, recommended 90 pixels or more) |

**IDIS Co., Ltd.**

For more information, please visit at
**www.idisglobal.com**