

# NUVICO®

## ***COLOR BULLET CAMERA***

Bullet Camera

**CB-HD21N-L**

**CB-HD21P-L**



# INSTALLATION MANUAL

## Disclaimer

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- While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions.
- NUVICO reserves the right to change the specifications of the hardware and software described herein at any time without prior notice.
- No part of this guide may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without prior written permission of NUVICO.
- NUVICO makes no warranties for damages resulting from corrupted or lost data due to a mistaken operation or malfunction of the cameras, peripheral devices, or unapproved/un supported devices.

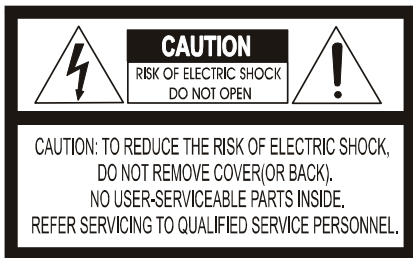
## Warning and Caution

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### WARNING!

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OPENINGS ON THE EQUIPMENT.

### CAUTION!



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

## Important Safeguards

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- Read these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this equipment near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the equipment.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this equipment during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **CAUTION - THIS MANUAL IS FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
- Use Certified/Listed Class 2 power supply transformer only.

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# Introduction

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## ABOUT THIS MANUAL

*Thank you for purchasing our camera.*

Before installing and using this camera, please read this manual fully and carefully, and be sure to keep it handy for later use.

## Key Features

- 1/3" CCD Sensor
- 550 TV Lines (Color), 600 TV Lines (B/W)
- 2.8~10mm DC Auto Iris Lens
- Day/Night Functionality w/ ICR
- 0.1 Lux(Color), 0.00 Lux (B/W, IR LEDs On)
- 36 IR LEDs
- Built-in IR LEDs On/Off Dip Switch
- Dip Switch Menu
- Service Monitor Output
- 12VDC/24VAC Dual Voltage

# Content Verification

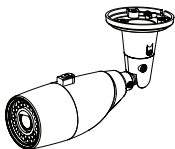
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Before installing the camera, please make sure that all of the following items are included in the box.

## **IR LED Bullet CAMERA**

1. Bullet Camera
2. Bullet Camera Sun Shield
3. Installation Manual
4. Service Monitor Cable - Model#: CA-SMC30
5. Assembly & Mounting Accessories

- **(x1) L-Wrench**
- **(x3) Philips ST5x26 Mounting Screws**  
These screws are used to firmly attach the bracket to a wall or ceiling.
- **(x1) Bolt**  
This bolt is used to affix the Sun Shield to the Bullet Camera.



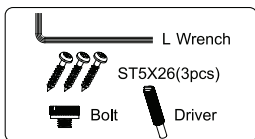
IR LED Bullet Camera



Sun Shield

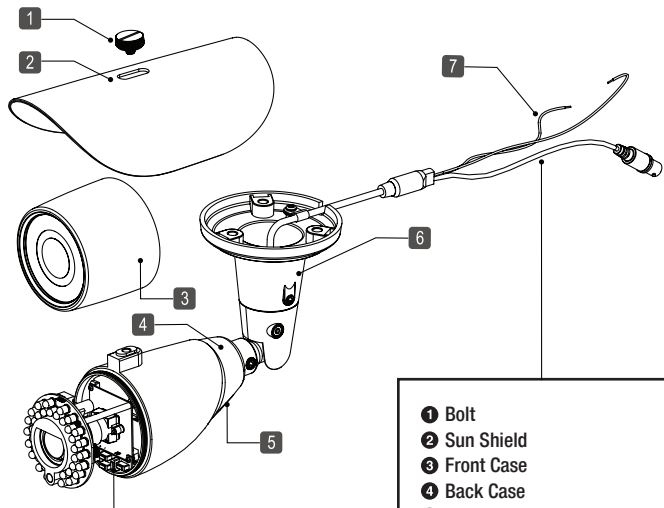


Service Monitor Cable  
(CA-SMC30)



Assembly & Mounting Accessories

## Parts & Descriptions



**24VAC / 12VDC**

VIDEO-OUT



POWER



- ❶ Bolt
- ❷ Sun Shield
- ❸ Front Case
- ❹ Back Case
- ❺ Service Monitor Output Cap
- ❻ Bracket
- ❼ Power Input (24VAC / 12VDC) Video Output Connector

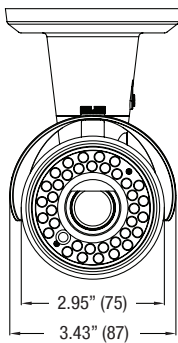
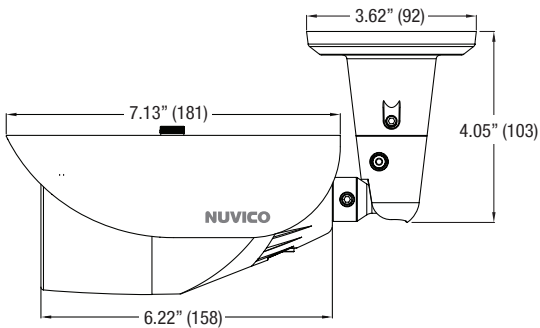


For longer, more consistent performance, avoid installation locations prone to direct sunlight.

## Dimensions Unit: Inch (mm)

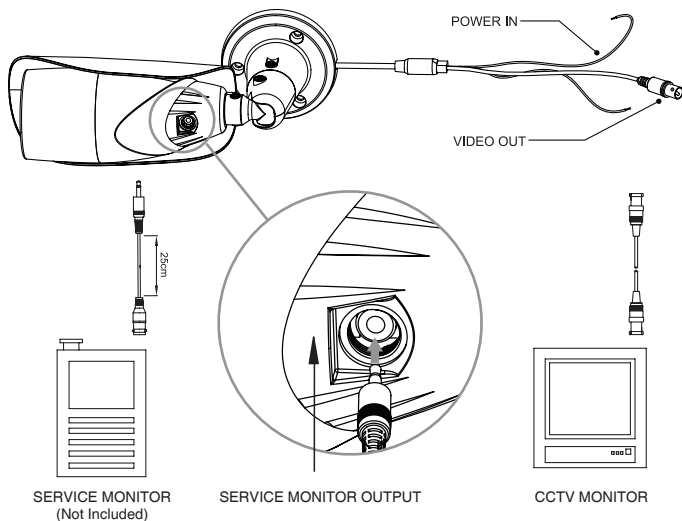
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See the diagrams below for the exact dimensions of the color bullet camera.



## Connecting to Monitors

Follow the diagram below to make proper connections to the CRT Monitor or the Service Monitor.



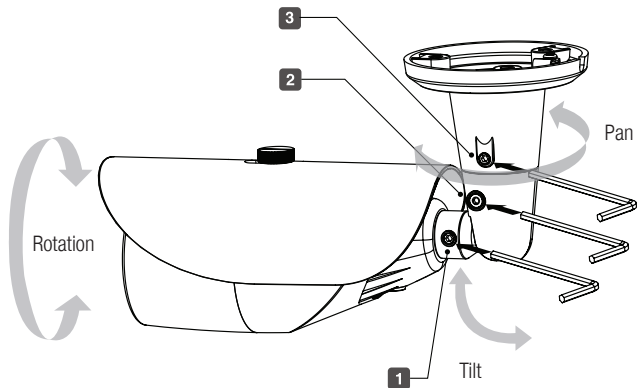
- Power Connection - 12VDC/24VAC Dual Voltage (Auto polarity detection and protection)
- This camera is equipped with a service monitor output on the camera module.

## Adjusting the Pan, Tilt and Rotation

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Loosen the corresponding screws before attempting to make Pan, Tilt and Rotation adjustments.

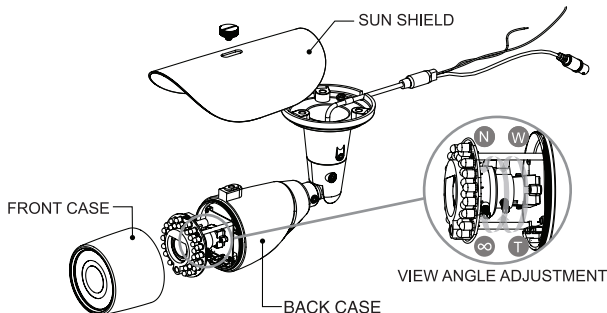
- 1** Rotation Screw
- 2** Tilt Screw
- 3** Pan Screw



## Adjusting the Vari-focal DC Auto Iris Lens

Follow the instructions provided below to make any lens adjustments.

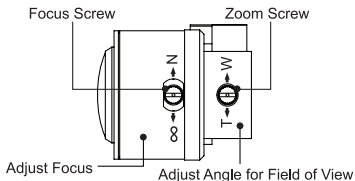
1. Unscrew the front case from the back case.



2. Loosen the Zoom and Focus screws and make the desired adjustments as shown below.

- Field of View: Tele(T) to Wide(W)
- Focus: Near(N) to Infinity( $\infty$ )

3. For brighter screen turn the DC Iris level counter-clockwise. For a darker screen, turn the DC Iris level clockwise.

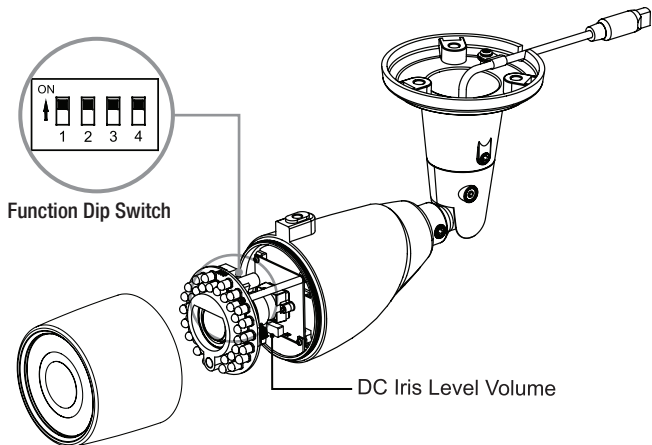


4. Screw the front case back to its original position at the back case.

5. Cover the camera housing with the Sun Shield and affix it to the back case using the bolt provided with your mounting accessories.

## Dip Switch Functions and Operation

Follow the instructions provided below to switch ON/OFF the various available camera functions and modes.



### Function Dip Switch

Each Dip Switch represents the various functions and modes. Switch On/Off the various functions and modes by following the Dip Switch position on the right.

DIP Switch Functions	1	2	3	4
IR LEDs On	On			
IR LEDs Off	Off			
FLK On		On		
FLK Off		Off		
BLC On			On	
BLC Off			Off	
ATW				On
AWC				Off

# Dip Switch Menu Control Terms

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## A. Switching OFF/ON the IR LEDs

This function is used to switch OFF, or switch back ON the IR LEDs.

Too much IR reflection from a subject causes over-exposure on the most focused area causing 'Hot Spots' within the picture. Switching-off the IR LEDs at times can avoid such problems.

- **OFF:** Select the OFF setting if the subject in the picture has extreme IR LEDs reflection.
- **HIGH:** Select the HIGH setting if the subject in the picture has no IR LEDs reflection.

## B. FLK Mode

This function is used to correct flickering of the screen when the camera is operating under certain fluorescent lighting. Flickering most commonly occurs if the fluorescent light uses a 50Hz power supply.

- **OFF:** Select the OFF mode if the flickering is observed.
- **ON:** Select the ON mode for normal operation (Default).

## C. BLC (Back Light Compensation)

This function is used to compensate for exposure problem associated with extremely bright backgrounds causing the subjects to bloom or silhouette.

- **OFF:** The Backlight Compensation function is turned OFF.
- **ON:** Select the ON setting for strong backlit environments.

## D. WHITE BALANCE (Automatic White Balance)

This function is used to control the white balance under different lighting conditions. Adjust this setting to calibrate the camera for correct color rendering. *The factory default of 'ATW' is recommended for optimal performance.*

- **ATW (Auto Tracking White Balance):** Select the ATW mode, the camera will continuously monitor changes in the ambient color temperatures and automatically set the White Balance according to the color temperature.
- **AWC (Auto White Balance Control):** Select the AWC mode and the camera will calibrate the White Balance to the most optimal setting to the present lighting condition. This setting will NOT monitor changes in the ambient color temperatures automatically.

## Technical Specifications | NTSC / PAL

Technical Specifications	CB-HD21N-L	CB-HD21P-L
Video Format	NTSC	PAL
Image Sensor	1/3" CCD	1/3" CCD
Horizontal Resolution	550 TVL (Color), 600 TVL (B/W)	550 TVL (Color), 600 TVL (B/W)
Day / Night Functionality	Yes w/ ICR	Yes w/ ICR
Lens Type (DC Auto Iris)	Vari-focal 2.8mm-10mm	Vari-focal 2.8mm-10mm
Angle of View	132.1°(W) ~ 36°(T)	132.1°(W) ~ 36°(T)
IR LEDs	36	36
IR LEDs Distance	Up to 100ft.	Up to 100ft.
LEDs Illumination Angle	80°	80°
Sync System	Internal	Internal
Effective Pixels (HxV)	768 x 494	752 x 582
Scanning System	525 Lines. 2:1 Interlaced	625 Lines. 2:1 Interlaced
Electronic Shutter	1/60	1/50
Main Video Output	1.0 Vp-p Composite, 75 ohm	1.0 Vp-p Composite, 75 ohm
Service Monitor Output	1.0 Vp-p Composite, 75 ohm	1.0 Vp-p Composite, 75 ohm
Minimum Illumination (lux)	0.1 (Color), 0.00 (B/W, IR LEDs On)	0.1 (Color), 0.00 (B/W, IR LEDs On)
S/N Ratio	More than 48dB (AGC Off)	More than 48dB (AGC Off)
Camera Control & Setup	Dip Switch Menu	Dip Switch Menu
<b>General Information</b>	<b>CB-HD21N-L</b>	<b>CB-HD21P-L</b>
Operating Temperature	23°F ~ 113°F	23°F ~ 113°F
Operating Humidity	Within 90% RH	Within 90% RH
Power Consumption	1 Amp (LEDs On), 500 mA (Camera)	1 Amp (LEDs On), 500 mA (Camera)
Input Voltage	12VDC/24VAC Dual Voltage	12VDC/24VAC Dual Voltage

\*specifications are subject to change without any prior notice.

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