

# Smartec STC- 3670 Zoom D/N Vandal-Proof IR LED Outdoor Camera



# **User Manual**

www.smartec-security.eu

## TABLE OF CONTENTS

## CONTENT VERIFICATION

Before installing the camera, please make sure that the following items are included in the box:

#### cv-z10:

- 1. Dome Camera
- 2. Remote Control
- 3. Instruction Manual
- 4. Mounting Hardware

#### CI-Z10 & 30-L:

- 1. Integrated Camera
- 2. Sunshield
- 3. Remote Control
- 4. Instruction Manual
- 5. Mounting Hardware

If any of these materials are missing, please contact the vendor or NUVICO customer service department immediately.

#### Available Accessories

- **CV-FH** Fan & Heater for CV-Z10
- CA-JB Junction Box
- CA-OM Outdoor Wall Mount for CV-z10
- **CA-PM** Pendant Mount for CV-Z10
- **CA-SMC30** Service Monitor Cables

## DISCLAIMER

- 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/unsupported devices.

## WARNING AND CAUTION

#### 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 OTHER OPENINGS ON THE EQUIPMENT.

### CAUTION



### **EXPLANATION OF GRAPHICAL SYMBOLS**



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.

## FCC COMPLIANCE STATEMENT

FCC INFORMATION: 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 THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

**CAUTION:** CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL EQUIPMENT COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

## CE COMPLIANCE STATEMENT

### WARNING

THIS IS A CLASS A PRODUCT. IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE MEASURES.

## **IMPORTANT SAFEGUARDS**

- 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 THESE SERVICING INSTRUCTIONS ARE 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.

## INTRODUCTION

### FEATURES

The Zoommatic Cameras feature high resolution 1/4" Interline Transfer CCD Imager for enhanced lowlight sensitivity. User-friendly, on-screen pull-down menus and short-cuts make it easy to setup and program functions.

- Super Resolution 550 TV Lines (Color), 600 TV Lines(B/W)
- True Night Shot function with ICR Day/Night function
- Auto Focus & Auto Iris
- 0.7 Lux(Color w/ Normal Mode), 0.03 Lux(B/W), 0.00 Lux(IR LED On)
- OSD for Camera Setup
- 8 Presets
- Home Function
- RS-485 Communication
- IR Remote Controller (Supplied)
- 3-Axis Camera View Adjustments
- Weatherproof IP66
- 24VAC

#### CV-Z10

- Built-in 10X (3.8~38mm) Optical Power Zoom.
- Fan & Heater (Optional)

#### CI-Z10 & 30 - L

- Built-in 10X (3.8~38mm) or 30X (3.3~99mm) Optical Power Zoom.
- 46 IR LEDs for 10X Optical Zoom and 78 IR LEDs for 30X Optical Zoom
- IR Adjustments: On/Off, & Brightness Level
- IR Distance: Up to 150 ft for the CI-Z10 and 300 ft for the CI-Z30.
- Fan & Heater (Built-in)

### SPECIFICATION

Item	CV-Z10N	CV-Z10P	
Video Format	NTSC	PAL	
Image Sensor	1/4" CCD		
Sync System	Internal / Line Lock(Optional)		
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)	
Scanning system	525 Lines, 2 : 1 Interlaced		
Electronic Shutter	1/60 ~ 1/120,000 sec.		
Main Video Output	1.0 Vp-p Composite, 75 ohm		
Service Monitor Output	1.0 Vp-p Composite, 75 ohm		
Horizontal Resolution	550 TV Lines(Color), 600 TV Lines(B/W)		
Min. Illumination	0.7 Lux(Color w/ Normal Mode), 0.02 Lux(B/W)		
	0.005 Lux(DSS On)		
S/N Ratio	50dB (AGC Off)		
Day/Night Function	ICR		
Lens	10X A/F Optical Zoom Lens(3.8~38mm)		
	10X Digital Zoom(Total: 100X), Auto Focus & Auto Iris		
Angle of View	5.6°(TELE) ~ 51°(WIDE)		
Min. Focus Distance	1.5m		
Camera Setup	OSD Menu		
Presets	8		
Communication	RS-485		
Camera Control	IR Remote Controller, Controller Keyboard, NUVICO DVRs		
Operating Temperature	0°C ~ +45°C(Normal), -25°C ~ +60°C(w/ Fan & Heater)		
Operating Humidity	Within 90% RH		
Weatherproof	IP66		
Power Consumption	Camera - 1Amp		
	Fan & Heater - 20VA(24VAC Only)		
Camera Power Requirement	12VDC/24VAC Dual Voltage		

Item	CI-Z10-L		CI-Z30-L	
	CI-Z10N-L	CI-Z10P-L	CI-Z30N-L	CI-Z30P-L
Video Format	NTSC	PAL	NTSC	PAL
Image Sensor	1/4" CCD		1/4" CCD	
Sync System	Internal / Line Lock(Optional)		Internal / Line Lock(Optional)	
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)	768(H) x 494(V)	752(H) x 582(V)
Scanning system	525, 2 : 1 Interlace		2 : 1 Interlace	
Electronic Shutter	1/60 ~ 1/120,000 sec.		1/60 ~ 1/120,000 sec.	
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	
Horizontal Resolution	550 TV Lines(Color), 600 TV Lines(B/W)		550 TV Lines(Color), 600 TV Lines(B/W)	
Min. Illumination	0.7 Lux(Color w/ Normal Mode), 0.03 Lux(B/W) 0.00 Lux(IR LED On)		0.7 Lux(Color w/ Normal Mode), 0.03 Lux(B/W)	
			0.00 Lux(IR LED On)	
S/N Ratio	50dB (AGC Off)		50dB (AGC Off)	
Day/Night Function	ICR		ICR	
IR LEDs	LED Distance : Up to 150 ft.		LED Distance : Up to 300 ft.	
Lens	10X A/F Optical Zoom Lens(3.8~38mm)		30X A/F Optical Zoom Lens(3.3~99mm)	
	10X Digital Zoom(Total: 100X), Auto Focus & Auto Iris		10X Digital Zoom(Total: 300X), Auto Focus & Auto Iris	
Angle of View	5.6°(TELE) ~ 51°(WIDE)		2.2°(TELE) ~ 58°(WIDE)	
Min. Focus Distance	1.5m		1.5m	
Camera Setup	OSD Menu		OSD Menu	
Presets	8 w/ Home Function		8 w/ Home Function	
Communication	RS-485		RS-485	
Camera Control	IR Remote Controller, Controller Keyboard, NUVICO DVRs		IR Remote Controller, Controller Keyboard, NUVICO DVRs	
Operating Temperature	0°C ~ +45°C(Normal), -25°C ~ +60°C(w/ Fan & Heater)		0°C ~ +45°C(Normal), -25°C ~ +60°C(w/ Fan & Heater)	
Operating Humidity	Within 90% RH		Within 90% RH	
Weatherproof	IP66		IP66	
Power Requirement	24VAC (40VA)		24VAC (40VA)	

## CV-Z10 3 AXIS GIMBAL ADJUSTMENTS







## CI-Z10 & CI-Z30 3 AXIS BRACKET ADJUSTMENTS







## WIRING DIAGRAM: GENERAL OVERVIEW



Use minimum of AC 24V / 40VA power source.

- Connect the VIDEO-OUT jack to the VIDEO-INPUT of the device.
- As the connecting method varies with the equipment, refer to the manual supplied with the equipment.
- Always make sure that the camera's power is off when connecting the cables.
- The camera is supplied with second video output on the camera housing. To use this feature along with a service monitor, second monitor cable is required.

Using a RS-485 communication, it will be able to control the ZOOM/FOCUS and OSD menu from the controller (NVCK-3X) or through the DVR. RS-485 does not allow star connection layout. It must be in a daisy-chain configuration. An amplifier/repeater is required to extend over 1.2km in distance.

WIRING DIAGRAM: CONNECTING TO THE CONTROLLER (NVCK-3X)



WIRING DIAGRAM: CONNECTING TO THE DVR



## REMOTE CONTROLLER (SUPPLIED)

- 1. POWER
  - Power on/off.
- 2. NUMBERS
  - Numeric keypads (0~9),
- 3. CAM
  - Change camera ID.
- 4. SAVE
  - Saves preset position.
- 5. PRESET
  - Recall preset.
- 6. HOME
  - Recall Home function.
- 7. MENU
  - OSD menu on.
- 8. DOWN / UP / LEFT / RIGHT
  - Moves up/down in the menu.
  - Moves left/right in the menu.
  - Decreases/increases control.
- 9. ZOOM
  - Zoom In / Out
- 10. FOCUS
  - Controls Focus.
- 11. IRIS
  - Controls Iris.



## REMOTE CONTROLLER INSTRUCTIONS

- 1. POWER Not used
- 2. NUMBERS Use Numbers when changing the ID of the remote controller. They are also used to save or recall presets.
- 3. Camera Address (ID) Use CAM button to change the ID of the remote controller when controlling multiple cameras.

Example: To control CAM ID#2, Press 2 and CAM button in sequence.

4. WRITE PRESET - Saves preset position.

Example: To save Preset #1, Press 1 and WRITE in sequence.

5. PRESET - Recall preset.

Example: To recall Preset #1, Press 1 and PRESET in sequence.

- 6. HOME Immediately calls Home function.
- 7. MENU Recalls On Screen Display Menu.
- 8. DOWN / UP / LEFT / RIGHT Moves up/down in the menu. Moves left/right in the menu. Decreases/increases control.
- 9. ZOOM Zoom In / Out
- 10.FOCUS Adjusts focus.
- 11.IRIS Adjusts Iris.

## ADJUSTING THE LENS & SETUP MENU

### VIA IR REMOTE CONTROL



Point the Remote Controller to the Camera to control the zoom. You can also use the remote controller to enter and make changes in the OSD Setup Menu.

## VIA CONTROLLER (NVCK-3X)



Use the controller to adjust the zoom by twisting the joystick. You can also enter and make changes in the OSD Setup Menu.

### VIA DVR



Use the DVR's PTZ menu to adjust the zoom using the + and -. You can also enter and make changes in the OSD Setup Menu.

**NOTE:** Make sure that the RS485 connection is connected to the Controller or DVR.

## MENU CONFIG INSTRUCTIONS

#### MENU CONFIGURATION



## NAVIGATING THE MENU

- 1. Press the **MENU** button to access the main setup mode.
  - Main setup menu is displayed on the monitor screen.
- 2. Select the desired feature.
- 3. Pressing up and down of the directional buttons on the remote control, DVR, or from the joystick moves the indicator to the desired feature.
- 4. Move the arrow indicator to the desired feature item.
- 5. Change the status of the selected feature by pressing → (Right) on the Remote Control or Twist Right using the joystick.
- 6. When finished, move the arrow indicator to 'EXIT' and press Right on the remote control or twist joystick to Right

**FOCUS** 



MODE: You can select the most suitable zoom mode.

- AUTO: Focus is automatically adjusted with moving zoom.
- **ONE PUSH:** Focus is automatically adjusted just once, after zoom position is set.
- MANUAL: After the desired field of view is set, focus can be manually adjusted.

**ZOOM TRK:** The focus is adjusted with the zoom while in operation. **ZOOM SPEED:** Configure zoom speed using this feature.

- FAST: To move zoom fast.
- **SLOW:** To move zoom slowly.

**D-ZOOM:** Configure magnification limit from x2~x10 using this feature. When this feature is set to ON, it will digitally magnify images after the optical magnification has reached its limit.

LENS INIT: Use this feature to initialize the lens (1x, WIDE).

END: To revert to the main setup menu.

## WHITE BALANCE CONTROL



MODE: The three white balance control modes are as follows:

- OUTDOOR: This mode can be used within the color temperature range 1800~10500°K (Ex: fluorescent light, outdoor, sodium vapor lamp or inside tunnels)
- INDOOR: This mode can be used within the color temperature range  $3000 \mbox{K}{\sim} 10500\mbox{\,}{\circ} \mbox{K}{\cdot}$
- AWC (Auto White Balance Control): The white balance is automatically adjusted in a specific environment.
- MANUAL: To fine tune, select the Manual mode. You can increase or decrease the red or blue factor while monitoring the difference on the screen. Increase or decrease the value of red(R-Gain) and blue(B-Gain), to achieve the best color while watching the changes in the picture.

### **EXPOSURE**



**BRIGHTNESS:** Use this feature to adjust image brightness. Position the indicator over 'BRIGHTNESS'. Then increase or decrease brightness level using the left or right directional buttons while verifying the changes on screen. Select **END** once desired level is obtained.

**IRIS:** Set 'IRIS' to 'AUTO' or 'MANUAL'. Position the indicator over 'IRIS', and then select the desired iris mode.

- AUTO: The iris of the lens is automatically adjusted.
- MANUAL: Manual iris configuration. Set 'IRIS' to 'MANUAL' using the directional buttons. Then increase or decrease iris level while verifying the changes on screen.

SHUTTER: Control image brightness by adjusting shutter speed.

Position the indicator over 'SHUTTER'. Then select the desired shutter mode (1/60, MANUAL, A.FLK).

- FLK. (NTSC: 1/100, PAL: 1/120): Flicker-free mode.
- ESC (NOR): Automatic shutter speed setting (optimal).
- 1/60(1/50): Fixed (1/60 or 1/50) shutter speed setting.

**AGC (Auto Gain Control):** Amplifies video signal under low Lux environment to achieve brighter images. Position the indicator over 'AGC'. Set 'AGC' to the desired mode.

- HIGH: Wide range gain value adjustment
- NORMAL: Normal range gain value adjustment.
- **OFF:** Disabled

**DNR (Digital Noise Reduction):** Reduces video noise under low Lux environment. Position the indicator over 'DNR'. Set 'DNR' to the desired mode.

- LOW: Low noise reduction
- MIDDLE: Medium noise reduction
- HIGH: High noise reduction
- **OFF:** Disabled

**DSS (Digital Slow Shutter):** This feature ensures clear images at low Lux environment. Position the indicator over 'DSS'. Set 'DSS' to the desired mode.

- **X2 X64:** Select this mode for use in night time or under low lighting conditions.
- **OFF:** Disabled

## SPECIAL



**BACKLIGHT:** You can adjust the sensitivity of Backlight Compensation. Position the indicator over to 'BACKLIGHT'. Set 'BACKLIGHT' to the desired mode.

- HIGH
- MIDDLE
- LOW
- 0FF

DAY/NIGHT: Select from COLOR, BW or AUTO modes.

- COLOR: Color mode.
- **B/W:** B/W mode.
- AUTO-L, M, H\*: The camera automatically detects lighting conditions and selects the mode accordingly. You can adjust the sensitivity for the IR Cut Filter lighting conditions.

SYNC: Two synchronization modes are available INTERNAL and EXTERNAL LINE-LOCK.

In LINE-LOCK mode, it synchronizes the camera's video out signal to the external SYNC signal.

- INT: Internal synchronization.
- LL\*: External line-lock synchronization.

If you choose 'LL', you can adjust the desired phase.

You can adjust the desired phase from 0 to 359.

**IMAGE ADJUST:** Includes image quality or special function factors.



**FREEZE:** Use this feature to freeze an image.

**H-REV:** Use this feature to horizontally inverse the screen.

**V-REV:** Use this feature to vertically inverse the screen.

SHARPNESS: Increasing this value sharpens object edges. Too high of a setting, however, produces noise and may obscure the image.

**COMMUNICATION:** Use this feature to select communication protocol. Position the indicator over 'COMMUNICATION'.



ID: Assign ID number to the camera. It is available to set an ID from 1 to 99. BAUDRATE: Configure baud rate from 2400, 4800, 9600, 19200, 38400bps. PROTOCOL: Assign protocol to the camera. It is available to set at AUTO, NUVICO, Pelco-D, and Pelco-P. TERMINATION: Every device that is connected at the end of the communication data line must be terminated.

FACTORY DEFAULT: To reset your camera to factory default condition.

ACCESS CONTROL: Use this mode to limit access to the Remote Controller.



REMOTE CONTROL: тһе REMOTE CONTROL ''ON'', feature is set to REMOTE CONTROL free operating mode. But, if it is set to "OFF", it is REMOTE CONTROL for limited operating mode. **PASSWORD CHECK:** The PASSWORD CHECK feature is set to "ON", pressing MENU to enter the main menu setup mode will display the password confirmation screen. The factory default for the password is "9 PRESET 9 PRESET 9 PRESET 9 PRESET".

**CHANGE PASSWORD:** Use this feature to change password.

### DISPLAY



**CAMERA TITLE:** Use this feature to designate a name for the camera, which will display on the monitor screen.

TITLE: CAMERA ABCDEFGHIJKLMNOPQRS ТUVWXYZabcdefghijklm nopgrstuvwxyz0123456 789()<>[]+-=/#\*!?,.: <>↑↓:Sel TELE/WIDE:Move MEMU or ENTER:Complete ON/OFF:Ins/Del ESC:Quit

**EDIT TITLE:** You can enter up to 15 characters.

**CAMERA ID:** Use this feature to designate an ID for the camera, which will display on the monitor screen.

**FUNCTION NAME:** Use this feature to designate a preset for the camera, which will display on the monitor screen.

**ZOOM MAGNIFICATION:** Use this feature to adjust zoom level for the camera, which will display on the monitor screen.

### FUNCTION



**HOME PRESET:** The HOME function invokes predefined Preset function after the remote controller or the controller has been idle for programmed time.



FUNCTION: Use this feature to designate
preset number for the home.
WAITING TIME: Use this feature to set
the dwell time before it goes into Home
Function.
OPERATION: Use this feature to

designate operation on/off for the home.

**PRESET:** Preset memorizes zoom, focus, iris and backlight, title settings. Once programmed, pressing combination of

PRESET	SETUP	
NO. FOCUS IRIS BACKLIGHT TITLE END	1 ONE-PUSH AUTO OFF PRESET 1	

 $1 \sim 8$  numbers and a **PRESET** button on your remote control or the controller automatically calls up the preset position. Presets may be assigned to alarm or motion actions. NO.: Use this feature to designate preset number for preset. FOCUS: Use this feature to designate focus mode (ONE-PUSH, MANUAL, AUTO) for preset. **IRIS:** Use this feature to designate IRIS mode for preset. **BACKLIGHT:** Use this feature to designate backlight mode for preset. **TITLE:** Use this feature to designate preset name for preset.

ALARM: Magnetic, PIR or other external sensor devices can be used to signal the camera reacting to an event.

ALARM SET	UP
TYPE INPUT OUTPUT PRESET HOLD TIME(SEC END	ALARM1 OFF ON 1 )03

TYPE: Use this feature to designate alarm number for alarm input. INPUT: Use this feature to designate dry contact relays (OFF, N/O and N/C) for alarm input. OUTPUT: Use this feature to designate relay output for alarm. PRESET: Use this feature to designate preset number for alarm output. HOLD TIME: Use this feature to designate dwell time of the alarm and/or relay output for alarm output. **MOTION:** This camera has a feature that allows you to observe movements of objects on the screen, and the words 'ALARM : M' appear on the screen when movement is detected.

MOTION SETUP OPERATION ON ON OUTPUT ESET OLD TIME (SEC.) 03 END

OPERATION: Use this feature to designate operation on/off for MOTION. OUTPUT: Use this feature to designate relay output mode for MOTION. PRESET: Use this feature to designate preset number for MOTION. HOLD TIME: Use this feature to designate dwell time of the motion and/or relay output.

**PRIVACY MASK:** Mask privacy area using this feature. The mask area expand/contract upon the zoom position.



ZONE NO.: Use this feature to designate
zone number for mask privacy.
ENABLE: Use this feature to enable
on/off for mask privacy.



MASK SIZE: Use this feature to designate mask size for mask privacy. MASK TONE: Use this feature to designate mask tone for mask privacy. Configure mask tone from 0~9 using this feature.

### **IR RADIATOR**



Use this feature to adjust IR brightness. LINE-1 is the outer IR and LINE-2 is the inner IR. On the CI-Z30, there are LINE 1 ~ LINE 4. O means that IR is turned off and 9 is the at IR's brightest mode. Increase or decrease IR level while verifying the changes on screen. Select END once desired level is obtained.