GOHD20U

USB 3.0 High Definition PTZ Camera

User Manual

Precautions

- Do not subject the camera to moisture or extreme humidity.
- Do not attempt to disassemble the unit. Electric shock may occur.
- Do not operate with a third party power supply.
- Avoid vibration in transport, storage and installation.
- Do not grasp the camera head when carrying the camera. Do not attempt to turn the camera head by hand. Doing so may result in mechanical damage.
- Do not power on the camera before installation is completed.

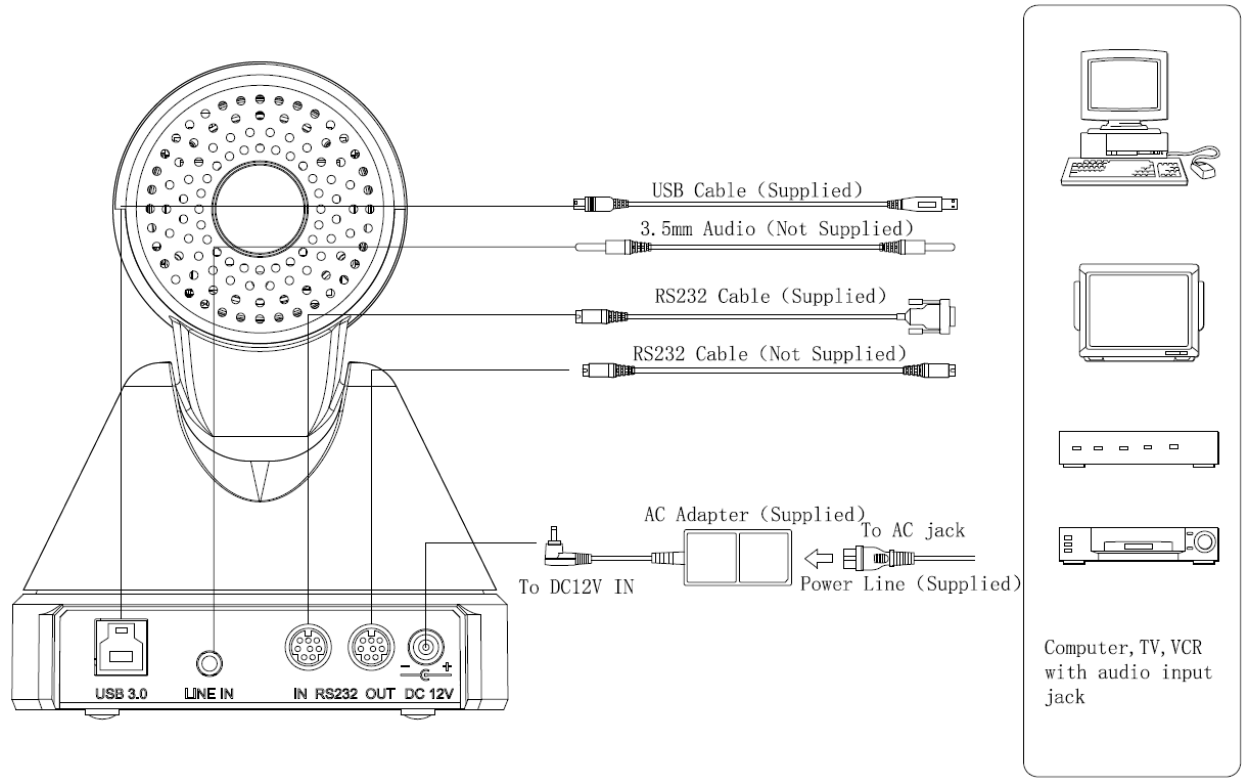
Package Contents

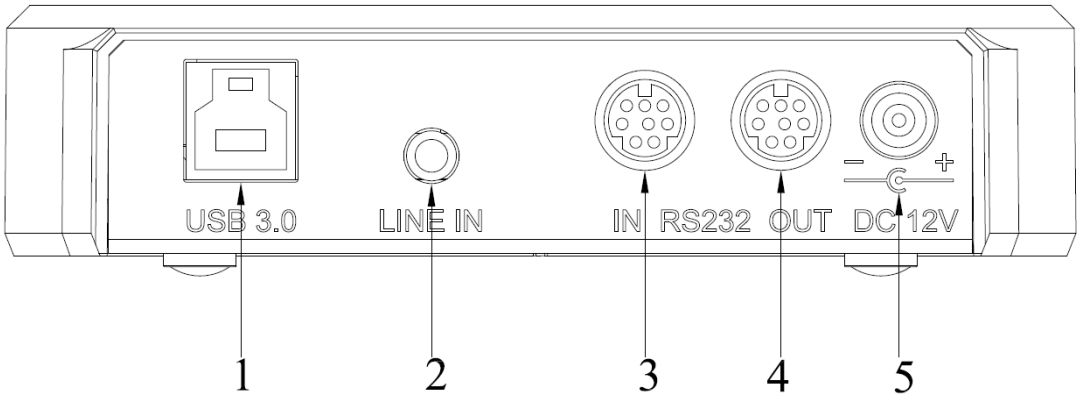
- Camera
- AC power adapter
- Power cord
- RS232 cable
- USB 3.0 cable
- IR remote control
- User Manual

Features

- **Full-Function USB Interface** - USB 3.0 and USB 2.0 compatible. Supports audio, compressed video and UVC/UAC protocol.
- **Built-in Microphone** - Optional high-sensitive built-in microphone. Up to 5-meter pick-up distance.
- **1080P Full HD** - Maximum 1920x1080 high resolution.
- **Ultra-High Frame Rate** - Output frame rate up to 60fps in 1080p.
- **Wide-Angle Zoom Lens** - 72.5° wide angle lens with 12x optical zoom and 32x digital zoom.
- **Low-Light** - High SNR of CMOS sensor combined with 2D and 3D noise reduction algorithm, effectively reduces the noise producing a clean and clear picture even under low-light conditions.

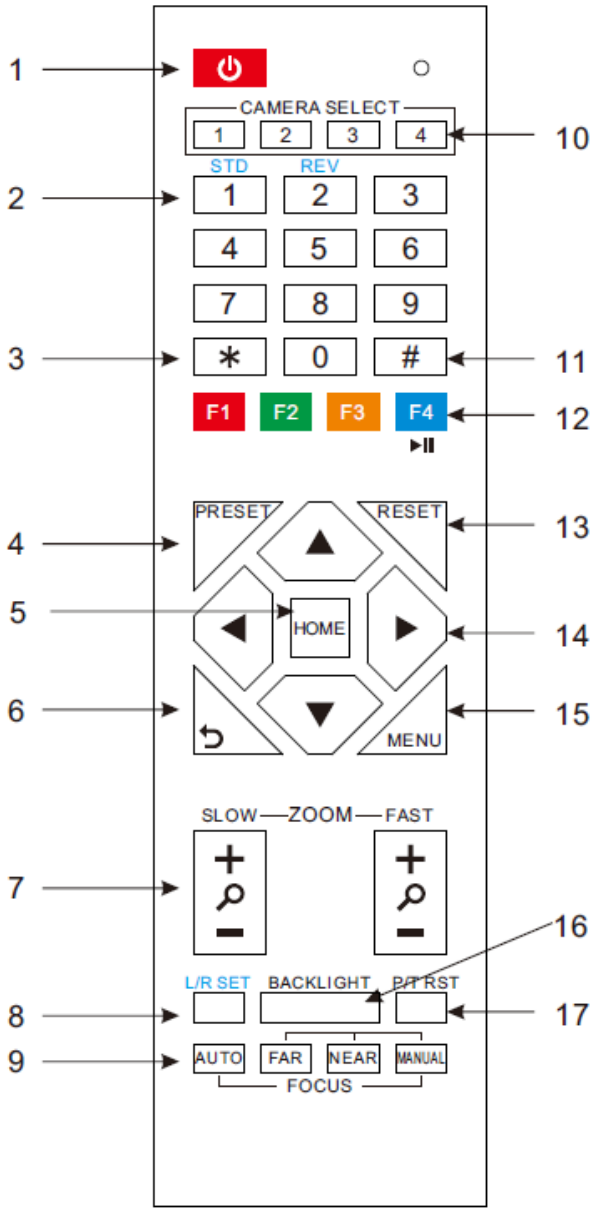
Connections





1. USB 3.0/USB 2.0
2. 3.5MM AUDIO IN
3. RS232 IN (connects to joystick controller)
4. RS232 OUT (connects to next camera in daisy-chain for control)
5. DC IN 12V

IR Remote



1. STANDBY Button
Press this button to enter Standby Mode. Press it again to enter Normal Mode. (Note: Power consumption in Standby Mode is approximately half of Normal Mode)

2. POSITION Buttons
Press any of the numeric buttons 0-9 directly to recall stored preset positions and settings.
Note: No action is executed if a relative preset position is not stored

3. * Button

4. PRESET Button
To set a preset position press [SET PRESET] + Numeric button (0-9)

5. HOME Button
Return camera to home position: Press [HOME]

6. BACK Button
Returns OSD menu to previous screen.

7. ZOOM Buttons
Choose between slow or fast zoom speed.
Zoom Out: Press [ZOOM+]
Zoom In: Press [ZOOM-]
Press and hold the ZOOM button: Camera will continue zooming in or zooming out until the button is released.

8. L/R SET Button
[L/R SET] + Numeric button [1] (STD): Sets pan-tilt movement to standard direction.
[L/R SET] + Numeric button [2] (REV): Sets pan-tilt movement to opposite direction.

9. FOCUS Buttons
Press [AUTO] to adjust focus automatically.
Press [MANUAL] to adjust focus manually.
Adjust focus manually with [FAR] (focus far) and [NEAR] (focus near) buttons.
Press and hold the [FAR] and [NEAR] buttons: Focus continues until the button is released.
Note: [FAR] and [NEAR] buttons can only be used in manual focus mode.

10. CAMERA SELECT Buttons
Press the button corresponding to the camera you want to operate with the remote controller.

11. # Button

12. CAMERA IR ADDRESS Buttons
[*] + [#] + [F1]: Address 1
[*] + [#] + [F2]: Address 2
[*] + [#] + [F3]: Address 3
[*] + [#] + [F4]: Address 4

13. RESET Button
Reset Preset Position: To erase a preset position press [RESET] + Numeric button (0-9)
To erase all presets at once press [*]+[#]+[RESET]

14. PAN/TILT CONTROL Buttons
Move up: Press [▲]
Move down: Press [▼]
Move left: Press [◄]
Move right: Press [►]
Press and hold the up/down/left/right button: Camera will continue rotating from slow to fast; the camera stops as soon as the button is released.

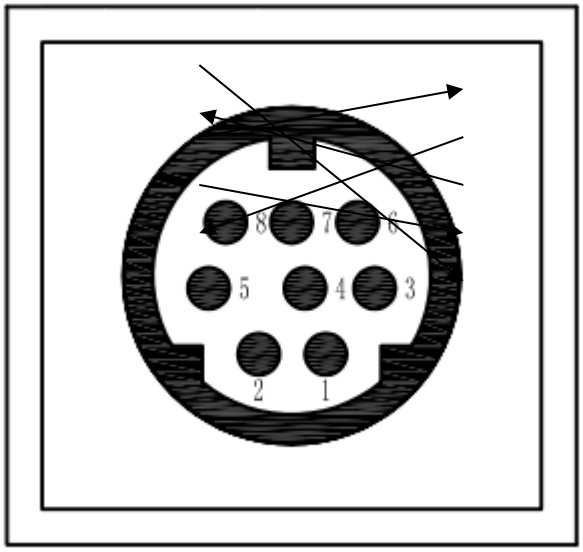
15. MENU Button
Press [MENU] to enter or exit the on-screen display (OSD) menu.

16. BACKLIGHT Button
Press [BACKLIGHT] to enable/disable backlight compensation.
Example: If the subject appears dark due to a light behind the subject, press the [BACKLIGHT] button to turn on backlight compensation. To cancel this function, press the [BACKLIGHT] button again.

17. P/T RST Button
Pan-tilt self-test.

SHORT CUTS
[*]+[＃]+[1]: OSD menu default English
[*]+[＃]+[3]: OSD menu default Chinese
[*]+[＃]+[4]: Default IP address
[*]+[＃]+[5]: Save OSD
[*]+[＃]+[6]: Recover default
[*]+[＃]+[8]: Look up camera version
[*]+[＃]+[9]: Invert camera image

RS232 Interface



CAMERA	DB9
1. DTR	1. CD
2. DSR	2. RXD
3. TXD	3. TXD
4. GND	4. DTR
5. RXD	5. GND
6. GND	6. DSR
7. IR OUT	7. RTS
8. NC	8. CTS
	9. RI

CAMERA	MINI DIN
1. DTR	1. DTR
2. DSR	2. DSR
3. TXD	3. TXD
4. GND	4. GND
5. RXD	5. RXD
6. GND	6. GND
7. IR OUT	7. NC
8. NC	8. NC

Serial Control Communication

In default working mode, the camera is able to connect to a VISCA controller with RS232C serial interface.

RS232 Control Parameters:

- Baud rate: 2400/4800/9600 bits/s
- Start bit: 1 bit
- Data bit: 8 bits
- Stop bit: 1 bit
- Parity bit: none

RS485 Control Parameters (half-duplex mode):

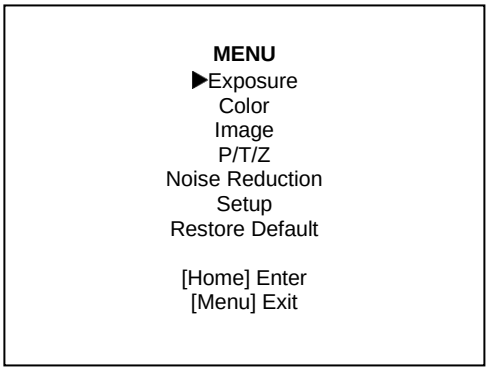
- Baud rate: 2400/4800/9600 bits/s
- Start bit: 1 bit
- Data bit: 8 bits
- Stop bit: 1 bit
- Parity bit: none

The camera will rotate to the maximum top-right position when powered up and then return to the center home position upon completion of initialization. Note, if position preset '0' has been stored, the camera will move to this preset position (not the center home position) when initialization process is complete.

Menu Settings

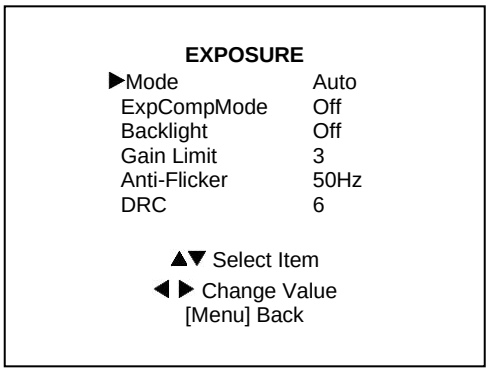
MENU

Press [MENU] button to display the main menu (below). Use arrow buttons to move the cursor to the item to be set. Press [HOME] button to enter the corresponding sub-menu.



EXPOSURE

Move the cursor to Exposure in the main menu and press [HOME] to open the Exposure menu:



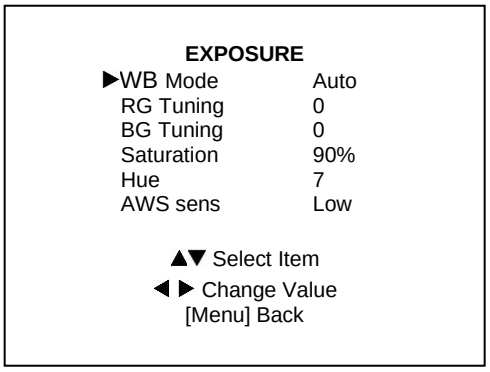
Mode - Exposure Mode
Options: Auto, Manual
ExpCompMode - Exposure Compensation Mode
Options: On, Off (effective only in Auto mode)

EXPOSURE (cont'd)

ExpComp - Exposure Compensation Value
Options: -7 to 7 (effective only when ExpCompMode is 'On')
Backlight - Backlight Compensation
Options: On, Off (effective only in Auto mode)
Gain Limit - Maximum Gain Limit
Options: 0 to 15 (effective only in Auto, AAE, Bright mode)
Anti-Flicker
Options: Off, 50Hz, 60Hz (effective only in Auto, Bright mode)
DRC - DRC Strength
Options: 0 to 8
Bright - Intensity Control
Options: 00 to 17 (effective only in Bright mode)
Iris - Aperture Value
Options: F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0, Close (effective only in Manual, AAE mode)
Shutt - Shutter Value
Options: 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10000 (effective only in Manual, SAE mode)

COLOR

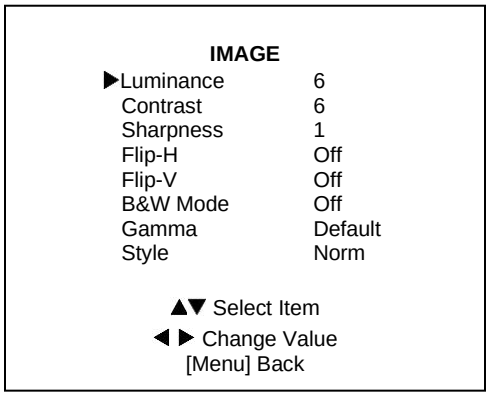
Move the cursor to Color in the main menu and press [HOME] to open the Color menu:



WB Mode - White Balance Mode
Options: Auto, 3000K/Indoor, 4000K, 5000K/Outdoor, 6500K-1, 6500K-2, 6500K-3, One Push, Manual
RG - Red Gain
Options: 0 to 255 (effective only in Manual mode)
BG - Blue Gain
Options: 0 to 255 (effective only in Manual mode)
RG Tuning - Red Gain Fine Tuning
Options: -10 to +10 (effective only when AWB sens is set to Low)
BG Tuning - Blue Gain Fine Tuning
Options: -10 to +10 (effective only when AWB sens is set to Low)
Sat - Saturation
Options: 60% to 200%
Hue - Chroma Adjustment
Options: 0 to 14
AWB sens - White Balance Sensitivity
Options: Normal, High, Low

IMAGE

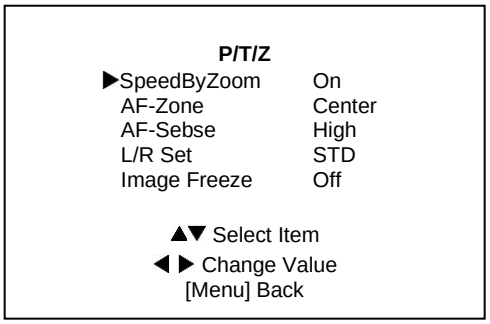
Move the cursor to Image in the main menu and press [HOME] to open the Image menu:



Luminance - Brightness Adjustment
Options: 0 to 14
Contrast - Contrast Adjustment
Options: 0 to 14
Sharpness - Sharpness Adjustment
Options: 0 to 15
Flip-H - Horizontal Image Flip
Options: On, Off
Flip-V - Vertical Image Flip
Options: On, Off
B&W Mode - Image Color
Options: On, Off
Gamma
Options: 0.45, 0.5, 0.56, 0.63
Style
Options: Norm, Clarity, Bright, Soft, V500
LDC - Lens Distortion Correction
Options: On, Off
(1080p60 and 1080p50 not supported with lens distortion 'On')

P/T/Z

Move the cursor to P/T/Z in the main menu and press [HOME] to open the P/T/Z menu:

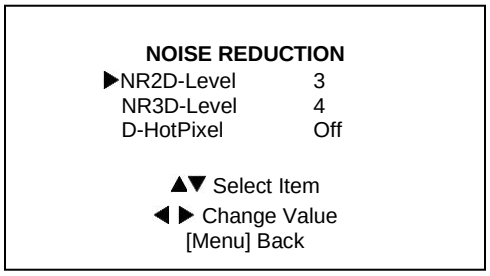


SpeedByZoom - P/T Movement Proportional to Zoom Ratio
Options: On, Off
Example: When lens is in Tele position, P/T speed is slowed down to allow camera to trace target smoothly.
AF-Zone - Auto Focus Zone
Options: Top, Center, Bottom
AF-Sense - Auto Focus Sensitivity
Options: Low, Normal, High
L/R Set
Options: STD, REV
Image Freeze
Options: On, Off
Fast Zoom
Options: On, Off

NOISE REDUCTION

Move the cursor to Noise Reduction in the main menu and press [HOME] to open the Noise Reduction menu:

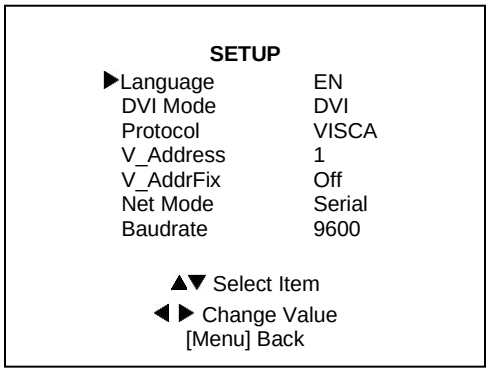
NOISE REDUCTION (cont'd)



NR2D-Level - 2D Noise Reduction
Options: Off, Auto, 1 to 5
NR3D-Level - 3D Noise Reduction
Option: Off, Auto, 1 to 8
D-HotPixel - Dynamic Bad Points
Options: Off, 1 to 5

SETUP

Move the cursor to Setup in the main menu and press [HOME] to open the Setup menu:



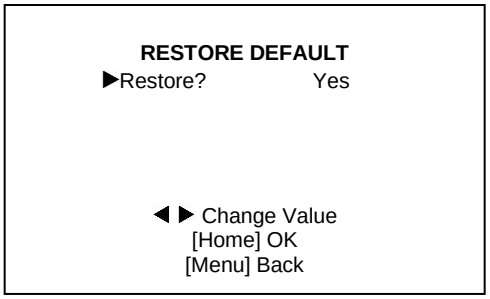
Language - Menu Language
Options: English, Chinese, Russian
DVI Mode
Options: DVI, HDMI
Protocol: Control Protocol
Options: AUTO, VISCA, PELCO-D, PELCO-P

SETUP (cont'd)

V_Address - Protocol Address
Options: 1 to 7 (effective when protocol set to Auto or VISCA)
P_D_Address - PELCO-D Protocol Address
Options: 0 to 254
P_P_Address - PELCO-P Protocol Address
Options: 0 to 31
V_AddrFix
Options: On, Off
Net Mode - Serial Port Control Networking
Options: Serial, Parallel
Baudrate - Serial Port Baud Rate
Options: 2400, 4800, 9600

RESTORE DEFAULT

Move the cursor to Restore Default in the main menu and press [HOME] to open the Restore Default menu:



Restore - Restore Factory Settings
Options: Yes, No
Press [Home] to confirm. All parameters will be restored to default settings including IR remote address and VISCA address.
Save - Save Options
Options: Yes, No

USB 3.0

- Supports UVC protocol, USB 2.0 and USB 3.0 compatible
- USB 3.0 maximum output: 1920 x 1080p60
- USB 2.0 maximum output: 960 x 540p60
- Compatible OS: Windows XP/2003/ VISTA/7/8 and more, Mac, Linux
- Software:
    - Windows: AMCAP, VLC, Debut Video Capture, etc.
    - Mac OS: FaceTime, iChat, Photo Booth, Debut Video Capture, etc.
    - Linux: V412 software driver and VLC media player, etc.
- UVC drivers will automatically install when camera is first connected to computer via USB

Product Specifications

CAMERA SPECIFICATIONS	
Video System	HD: 1080p60, 1080p50, 1080i60, 1080i50, 1080p30, 1080p25, 720p60, 720p50, 720p30, 720p25
Sensor	1/2.7", CMOS, Effective Pixel: 2.07M
Scanning Mode	Progressive
Lens	12x, f3.5mm to 42.3mm, F1.8 to F2.8
Digital Zoom	32x
Minimal Illumination	0.5 lux @ F1.8. AGC ON
White Balance	Auto, 3000K/Indoor, 4000K, 5000K/Outdoor, 6500K_1, 6500K_2, 6500K_3, One Push, Manual
Backlight Compensation	Support
Digital Noise Reduction	2D & 3D Digital Noise Reduction
Video S/N	≥55dB
Horizontal Angle of View	72.5° to 6.9°
Vertical Angle of View	44.8° to 3.9°
Horizontal Rotation Range	±170°
Vertical Rotation Range	-30° - +30°
Pan Speed Range	1.7° to 100°/s
Tilt Speed Range	1.7° to 69.9°/s
H & V Flip	Supported
Image Freeze	Supported
Number of Preset Positions	255
Preset Accuracy	0.1°

USB SPECIFICATIONS	
Operating System	Windows XP, Windows Vista, Windows 7, Windows 8, Mac OS X, Linux
Color System Compression	YUV 4:2:2 / H.264 / MJPEG
Video Format	USB 3.0: 1080p60, 1080p50, 1080p30, 1080p25, 720p60, 720p50, 720p30, 720p25 USB 2.0: 1080p30, 1080p25, 1080p15, 1080p10, 720p30, 720p25, 960x540p30, 960x540p25, 640x360p60, 640x360p50
Audio on USB	Supported
USB Video Communication Protocol	UVC 1.0 to UVC 1.5
UVC PTZ	Supported

INPUT/OUTPUT INTERFACE	
USB Interface	1x USB 3.0 Type B female jack
Audio Interface	1-Channel 3.5mm audio interface, line in
Communication Interface	1x RS232 In: 8-pin Mini DIN, Maximum Distance: 30m, Protocol: VISCA/Pelco-D/Pelco-P
	1x RS232 Out: 8pin Mini DIN, Maximum Distance: 30m, Protocol: VISCA network use only
	1x RS485: Share with RS232 Out, Maximum Distance: 1200m, Protocol: VISCA/Pelco-D/Pelco-P
Power Jack	JEITA type (DC IN 12V)

GENERAL SPECIFICATIONS	
Input Voltage	DC 12V
Current Consumption	1.0A (Max)
Operating Temperature	-10°C to 40°C (14°F to 104°F)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)
Power Consumption	12W (Max)
MTBF	>30000h
Size	128.5mm x 118mm x 156.2mm
Net Weight	0.91kg

Maintenance and Troubleshooting

Care of Unit

- If camera will not be used for an extended period of time, turn off the power switch and disconnect the AC power cord of AC adaptor from the outlet.
- Use soft cloth or tissue to clean the camera cover.
- Use soft dry cloth to clean camera lens. If camera is very dirty, clean it with diluted neutral detergent. Do not use any type of solvents which may damages the surface.

Operation and Storage Locations

- Do not shoot images that are extremely bright (e.g., light sources, the sun, etc.) for long periods of time.
- Do not operate or store where camera is subject to unstable (flickering, etc.) lighting conditions.
- Do not operate or store where camera is subject to powerful electromagnetic radiation, such as TV or radio transmitters, etc.

Troubleshooting

- No image.
    1. Check that the power cord is connected, voltage is correct, POWER lamp is lit.
    2. Verify that the camera "self-tests" when powered on.
    3. Check the BOTTOM switch and make sure both switches are set to OFF.
    4. Check that the video cable is connected correctly.
- Abnormal display of image.
    1. Check that the video cable is connected correctly.
- Image dithering even at widest zoom position
    1. Check that camera is mounted securely.
    2. Verify that camera is not mounted near any vibrations.
- IR remote does not control the camera
    1. Verify the camera working mode (BOTTOM switches set to OFF).
    2. Verify that the correct camera number is selected (1, 2, 3 or 4) on the remote for the camera you want to control.
    3. Change the remote controller battery.
    4. Verify that the IR sensor on the front base of camera is not blocked.
- Serial communication does not control the camera
    1. Verify the camera working mode.
    2. Check that the control cable is connected correctly.

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