

JVC



4K

SRT
SECURE
RELIABLE
TRANSPORT

**H.265/
HEVC**

NDI|HX

NDI|HX3

A New Line of IP-Controlled PTZ Cameras provide Optimal Quality in Streaming and Remote Production over the Internet

CONNECTED CAM™

Wide angle, NDI® |HX, SRT, VITC provide optimal streaming image quality and performance for Remote Production over the Internet.

House of Worship



■ Wide Field of View

Super-wide horizontal angle of view is 80° which is ideal for use in houses of worship, sports, and event venues.

KY-PZ510/N series	3
KY-PZ400N series	4

■ Supports various protocols

Supports industry standard control protocols such as NDI®, Pelco, and JVC API, as well as SRT for streaming distribution.

KY-PZ510/N series	3
KY-PZ400N series	4
KY-PZ200/N series	4

Classrooms



■ SMART Auto Tracking

SMART (Subject Movement And Recognition Tracking) technology enables the camera to recognize and follow a specific person even within a small group in the frame.

KY-PZ510/N Series	3
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Studios



■ 4K60p50p IP Streaming

4K 60p50p output capability for both IP streaming and HDMI, ideal for live productions, sporting events, and broadcasts.

KY-PZ510/N series	3
KY-PZ400N series	4 (up to 4K30p25p)

■ HDMI output supports YUV 4:2:2 12bit and RGB 4:4:4 8bit.

KY-PZ510/N series	3
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Sports Venues



■ 30x Power Zoom

KY-PZ200/N series	3 (up to 20x)
KY-PZ100 series	4

■ Multi-Camera Synchronization with VITC and NTP

Synchronization of live video streams is ideal for the mixing and streaming of concerts, shows, and sporting events.

KY-PZ510/N series	3
KY-PZ400N series	4
KY-PZ200/N series	4

offices



■ UVC

Provides Webcam function via USB connection.

KY-PZ510/N series	3
KY-PZ200/N series	4

■ Zero Config

Enables automatic camera detection for easy connection and set-up with JVC Live Production and Streaming Systems (KM-IP Series).

KY-PZ400N series	4
KY-PZ200/N series	4

4K PTZ REMOTE CAMERA (NDI®|HX) KY-PZ510NW/NB

4K PTZ REMOTE CAMERA KY-PZ510W/B

4K 60p50p H.265/HEVC streaming, NDI® 5, SRT, and advanced auto tracking provides optimal image quality and performance for remote production over the internet.



4K

NDI|HX



H.265/HEVC



NDI|HX3

KY-PZ510NW
KY-PZ510NB

The KY-PZ510N has the NDI® HX3 mode which delivers maximum quality and near zero latency transmission at a reduced bandwidth compared to NDI® High Bandwidth.

KY-PZ510N NDI®HX3 mode					
NDI®HX3 (H.264)			NDI®HX3 (H.265)		
Resolution	rate	Bitrate	Resolution	rate	Bitrate
1920x1080	50p	52 Mbps	1920x1080	50p	41 Mbps
	60p	62 Mbps		60p	50 Mbps

Super-Wide 80-degree Field of View

Focal Length is 3.47mm to 41.7mm (21.8 mm to 261.8 mm, 35mm equivalent).

Super-wide horizontal angle of view is 80°

which is ideal for use in offices, classrooms, studios, event facilities, sports venues and houses of worship.



YUV 4:2:2 12bit

HDMI output supports YUV 4:2:2 12bit and RGB 4:4:4 8bit.

*Some switchers may not support the above signals.

4K 60p50p Streaming to YouTube

You can stream 4K(2160p60) from KY-PZ510/N to YouTube.

4K60p H.265/HEVC Streaming

H.265/HEVC

Ultra-high resolution 4K60p streaming is ideal for viewing sports and events.

Highly efficient H.265/HEVC compression technology also produces similar or better image quality than H.264 at 50% of the bitrate.

SMART Auto Tracking

SMART (Subject Movement And Recognition Tracking) technology enables the camera to recognize and follow a specific person even within a small group in the frame. The target subject can be selected using the included remote control.



NDI® 5

NDI|HX

KY-PZ510N (Built-in NDI®|HX) support NDI®5. NDI®5 support Reliable UDP (RUDP) transmission protocol. RUDP ensure reliability through retransmission with high-speed communication, such as UDP.

UVC (USB Video Class)

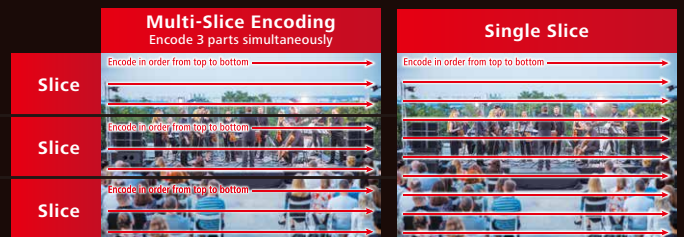
Multi-Camera Synchronization with VITC and NTP

Save Setup Files

You can save the menu settings as a setup file on a PC.

Multi-Slice Encoding Technology

Multi-slice encoding technology increases performance and efficiency while reducing latency to achieve optimal image quality of live transmissions in 4K60p HEVC mode.



Still Image Capture

Up to four still images can be recorded internally. This is useful for storing the image from the camera's current location or recalling its previous field of view.

H.264/H.265/Motion JPEG and Dual Streaming

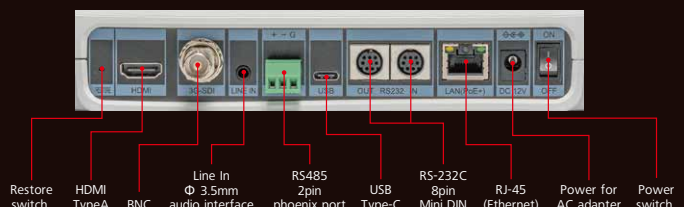
2-Color Tally Useful for Studio Shooting

IP Address Display

192.168

Internal Microphone

Rear Panel



4K PTZ REMOTE CAMERA (NDI®|HX) KY-PZ400NW/NB



4K

NDI|HX



H.265/
HEVC

HD PTZ REMOTE CAMERA (NDI®|HX) KY-PZ200NW/NB



NDI|HX



H.265/
HEVC



4K 1/2.5-inch CMOS Image Sensor

The KY-PZ400N is equipped with a 4K 1/2.5" CMOS image sensor with 8.51M effective pixels. The KY-PZ200N/PZ200 is equipped with an HD 1/2.8" CMOS image sensor with 2.07M effective pixels.

Wide Horizontal Angle of View: 71° KY-PZ400N

Wide horizontal angle is good for use in offices, classrooms, studios, and houses of worship.



Powerful Optical Zoom:

12x KY-PZ400N

20x KY-PZ200N/KY-PZ200



A performer's technique can be captured clearly, even in a large hall.



KY-PZ400N

Optical Zoom 12x
f= 4.4mm – 52.8mm
Approx. 26.4mm – 316.8mm
(35mm equivalent)
Digital zoom: 16x



KY-PZ200N/KY-PZ200

Optical Zoom 20x
f= 4.4mm – 88.5mm
Approx. 30.2mm – 606.9mm
(35mm equivalent)
Digital zoom: 16x

Quality Streaming with NDI® and SRT

For reliable, stable streaming, all models feature various QoS capabilities.



NDI®|HX is a high quality, low latency IP video transmission standard pioneered by NewTek.



SRT advanced streaming uses automatic repeat request (ARQ) and forward error correction (FEC) to prevent packet loss typical for internet connections. SRT also offers stream encryption for content protection.

Barco ClickShare

KY-PZ200N/KY-PZ200

KY-PZ200/N series and ClickShare Conference system together provide an optimal one-click meeting experience for presenters as well as participants in a variety of remote and in-person collaboration applications.

Still Image Capture

Up to four still images can be recorded internally. This is useful for storing the image from the camera's current location or recalling its previous field of view.

H.264/H.265/Motion JPEG and Dual Streaming

In addition to H.264, a video codec widely used in PCs, smartphones, or tablets, H.265 is also supported. Moreover, the dual streaming capability enables workflows such as editing videos with low load using low-resolution substreams and simultaneously generating edited videos with high-resolution mainstreams.

2-Color Tally Useful for Studio Shooting

KY-PZ400N



A tally LED is available on top of the lens mount. It lights in either red or green depending on the mode, allowing you to easily check the program status or standby mode even while camera is panning.

UVC (USB Video Class) Support for Webcam Usage

KY-PZ200N/KY-PZ200



USB 3.0 with UVC Support

Photo shows KY-PZ200N/
KY-PZ200.

Using an optional USB cable, you can connect the KY-PZ200N/KY-PZ200 directly to a PC and use it as a webcam. This allows for web conferencing and remote lectures with high quality, high magnification images.

HD PTZ REMOTE CAMERA KY-PZ100W/B

Your IP-Controlled HD Video Streaming and Delivery Solution



Wide Horizontal Angle of View: 63.7° Powerful Optical Zoom: 30x



Equipped with 30x optical zoom, the KY-PZ100 is capable of capturing distant subjects. Even in a grand hall or auditorium, the speaker's expressions and handwriting on a board will be clearly captured. 12x digital zoom is also available.



Super Fast Pan/Tilt of max. 480°/sec*.

With maximum 480°/sec*. movement offers the scene transition sharply. *In case with AC adapter. 400°/sec. with PoE+.

Super Slow Pan/Tilt of min. 0.1°/sec.

Extremely slow movement of 0.1°/sec. offers a good look at the scene even at high zoom rates.

0.02 lx of Minimum Illumination for Precise Color Reproduction

In High-Sensitivity mode, minimum illumination is 0.02 lx. Superior color reproduction is ensured even at low light.

The Night Mode is also available for even darker environments (0.003 lx of minimum illumination).



Normal color reproduction

High Sensitivity mode

Direct Drive Mechanism for Accurate and Quiet Pan/Tilt

The KY-PZ100 incorporates JVC's Direct Drive Motor that offers precise, highly responsive pan/tilt and silent movement compare to the normal stepping motor mechanism.

Operating noise of Direct Drive is approx. 20% lower than normal stepping motor system, which is especially suitable for the usage of classic concert, church and so on.



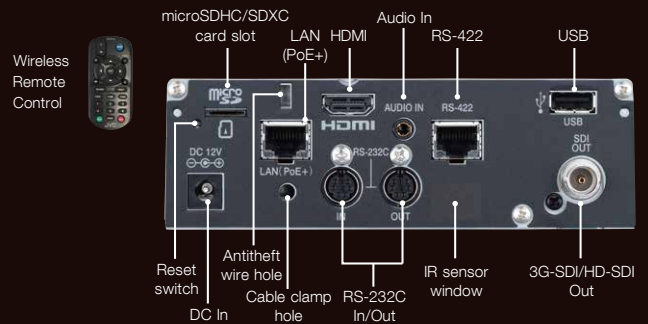
High Accuracy of +/-0.03° for Preset Positions

Adjusts to preset positions with high accuracy, offset less than 0.03°. Maintains precise shooting positions even at high magnification with virtually no deviation.

Simultaneous Output of 3G-SDI and HDMI in addition to IP

microSDHC/microSDXC Card Recording and File Upload Capability

The KY-PZ100 features a built-in digital recorder that records HD from 5Mbps to 50Mbps directly to microSDHC/microSDXC card. Recordings can be uploaded from the camera to an external server.



Comparison

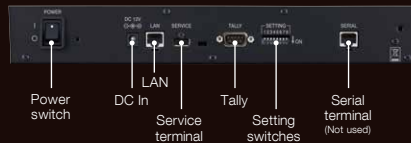
	KY-PZ510N	KY-PZ510	KY-PZ400N	KY-PZ200N	KY-PZ200	KY-PZ100
Camera						
Resolution	3840x2160 60p50p		3840x2160 30p25p		1920x1080 60p50P	1920x1080 60p50P
Horizontal Angle	80°		71°		60.7°	63.7°
Optical Zoom	12x		12x		20x	30x
Unique Feature	<ul style="list-style-type: none"> Smart Auto Tracking IP Address Display Internal Microphone 					<ul style="list-style-type: none"> Direct Drive Mechanism Recording (microSDHC,SDXC card)
Network						
IP Streaming	3840x2160 60p50p		3840x2160 30p25p		1920x1080 60p50P	1920x1080 60p50P
NDI® HX3	NDI® HX3 (KY-PZ510N only)					
NDI®	NDI® 5 (KY-PZ510N built in NDI® HX)		NDI® 4.x (KY-PZ400N built in NDI® HX)		NDI® 4.x (KY-PZ200N built in NDI® HX)	
SRT	Caller/Listener/Rendezvous		✓			
UVC	3840x2160 30p25p			Caller/Listener	1920x1080 30p25p	
Multi-Camera Synchronization	✓		✓		✓	

RM-LP100



This advanced controller connects to your network and provides complete IP control of multiple cameras on your network and over the Internet. Touch panel and control lever operation give you total control. Operate up to a hundred cameras from the controller.

- 7" touch-panel LCD for PTZ and CCU functions
- Professional zoom lever for smooth, variable speed zoom control
- Heavy duty control lever for precise pan/tilt control
- Focus dial with push-auto function
- User assignable function keys
- IP control of up to 100 cameras
- Tally Input/Output (D-Sub)



Peripheral devices and Partners

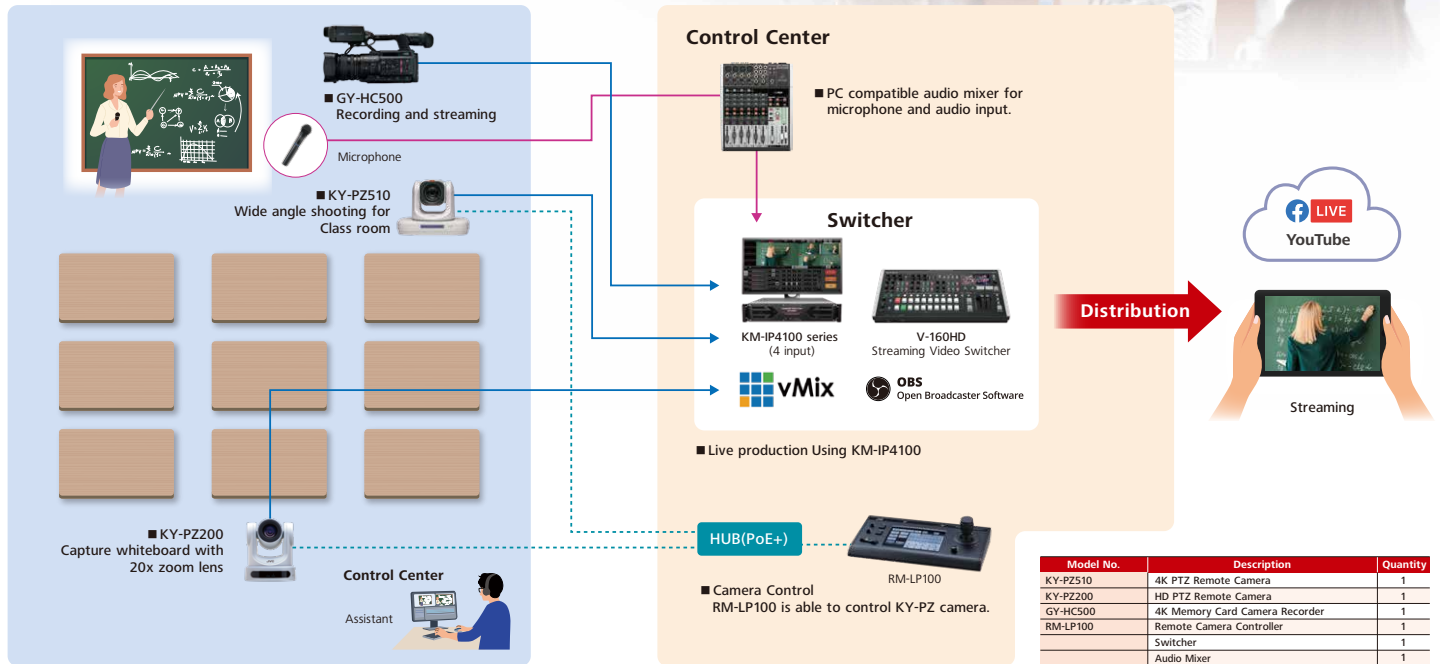
<p>COMPATIBLE WITH POLYMOTION CHAT BY MRM</p> <p>MRMC BROADCAST</p>	<p>IDS - 4RU Control Panel</p> <p>DENSITRON</p>	<p>Pro Convert Decoder Family (NDI® included)</p> <p>MAGEWELL®</p>		
<p>V-160HD Streaming Video Switcher</p> <p>Roland</p>	<p>Live Streaming Production Suite KM-IP6000 KM-IP4100 KM-IP4000/S* *for Americas market</p> <p>ProHD</p>	<p>Extron control panels</p> <p>Extron®</p>		
<p>Haivision Makito X4 4K and HDR Video Decoder</p> <p>HAIVISION</p>	<p>Haivision Play 2000 4K Set-Top Box</p>	<p>MGW ACE Decoder 4K HEVC, H.264 & MPEG-2 Decoder</p> <p>VITEC</p>	<p>BR-DE900 ProHD HD/SD Decoder</p> <p>ProHD</p>	

*We do not guarantee our products will work with all functions of peripheral devices. Some functions may not be available depending on the device and settings.

System configuration example

Live classroom streaming system with 3x cameras and microphone. Capture whiteboards and classroom and deliver them to Students.

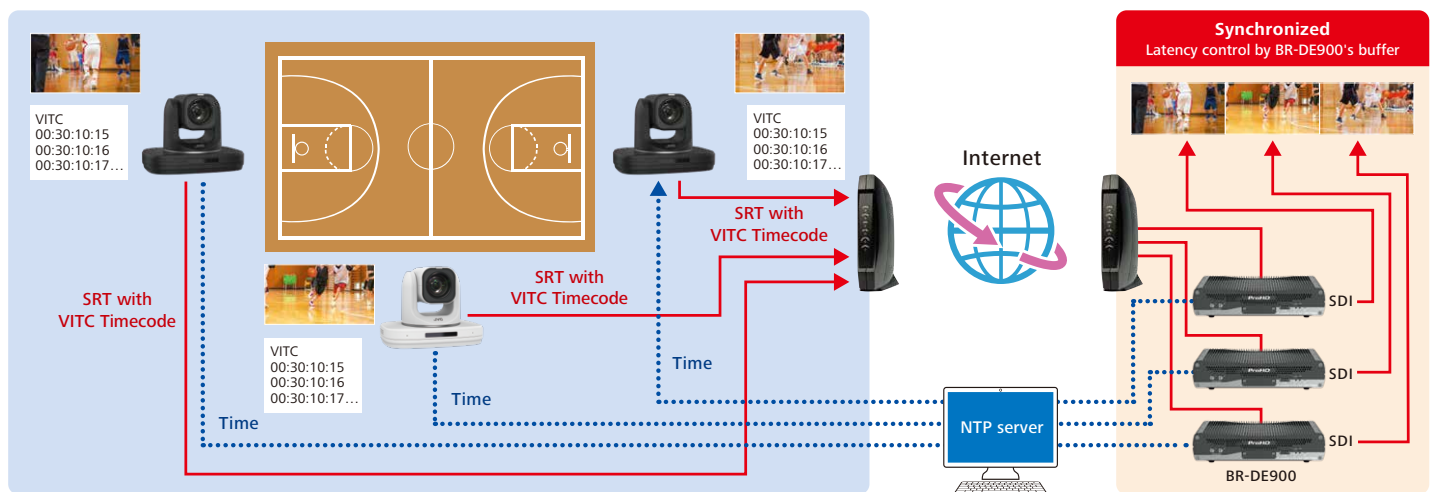
- Purpose : Live Streaming the classes
- Audio : 1 x Microphone for instructor speech
- Camera : 1 x for shooting whiteboard, 1 x for classroom, 1 x for recording and streaming
- Distribution : The assistant will operate the switcher and stream video to YouTube, etc.



Multi-Camera Synchronization with VITC and NTP

KY-PZ510/N, KY-PZ400N, KY-PZ200/N series

Multi-camera synchronization of live video streams is made possible with the VITC (Vertical Interval Time Code) and NTP (Network Time Protocol) used in 1920x1080 60p50p mode. This feature is ideal for the mixing and streaming of concerts, shows, and sporting events where image synchronization is critical.



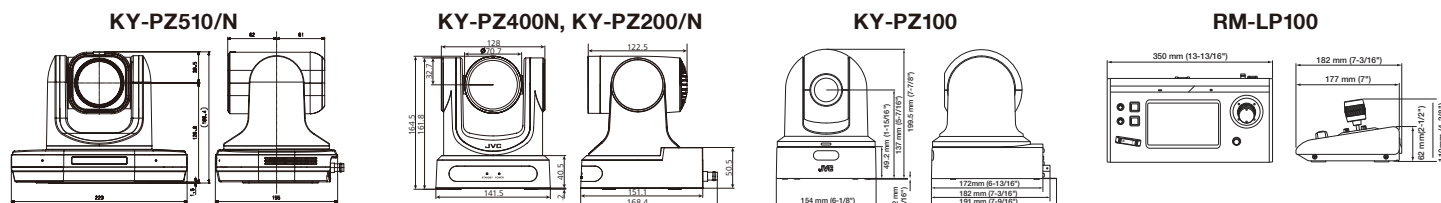
Command list on JVC web site

- 1) HTTP_CGI_Command support table
- 2) JVC Camcorder Web API Reference
- 3) Standard Command support table

Feature	Address Set	Command name	Command	Instructions
Other	Address Set		88 30 01 FF	
Zoom	Zoom In		8x 01 04 07 02 FF	
Zoom	Zoom Out		8x 01 04 07 03 FF	
Zoom	Zoom In (Fast)		8x 01 04 07 3p FF	p = 0(low) - 7(high)
Zoom	Zoom Out (Fast)		8x 01 04 07 3p FF	p = 0(low) - 7(high)
Zoom	Zoom Stop		8x 01 04 07 00 FF	
Zoom	Zoom Direct		8x 01 04 47 0e 0a 0r 0s FF	para: Zoom Position 0000h-4000h
Zoom	Zoom Focus Direct		8x 01 04 47 0e 0a 0r 0s 0v 0w FF	para: Zoom Position 0000h-4000h tuw: Focus Position 0000h - 149Ch
Focus	Focus Par		8x 01 04 08 02 FF	
Focus	Focus Zoom		8x 01 04 08 03 FF	

General Specification

	KY-PZ510N	KY-PZ510	KY-PZ400N	KY-PZ200N	KY-PZ200	KY-PZ100
Camera						
Sensor	1/2.8 inch CMOS, effective pixels: 8.40M	1/2.5 inch CMOS, effective pixels: 8.51M	1/2.5 inch CMOS, effective pixels: 8.51M	1/2.8 inch, CMOS, effective pixels: 2.07M	1/2.8 inch, CMOS, effective pixels: 2.07M	1/2.8 inch, CMOS, effective pixels: 2.13M
Lens	F1.8 to F3.7, f = 3.4 to 41.6mm 35mm equivalent (approx.): 21.8 to 261.8mm	F1.8 to F2.6 f=4.4 to 52.8mm 35mm equivalent (approx.): 26.4 to 316.8mm	F1.8 to F2.6 f=4.4 to 52.8mm 35mm equivalent (approx.): 26.4 to 316.8mm	F1.8 to F2.8 f=4.4mm to 88.5mm 35mm equivalent (approx.): 30.2 to 606.9mm	F1.8 to F2.8 f=4.4mm to 88.5mm 35mm equivalent (approx.): 30.2 to 606.9mm	F1.6 to F4.7 f=4.3 to 129mm 35mm equivalent (approx.): 30.5 to 915 mm
Optical Zoom	12x	12x	12x	20x	20x	30x
Digital Zoom	16x	16x	16x	16x	16x	12x
Minimal Illumination	0.5lx @ (F1.8, AGC ON)			0.5lx @ (F1.8, AGC ON)		High sensitive mode ON: 0.02 lx
Gain	0 dB to 45 dB			0 dB to 48 dB		0 dB to 48 dB
Shutter		[60Hz] 1/30s ~ 1/10000s [50Hz] 1/25s ~ 1/10000				1/6(E model) or 1/8(U model) to 1/10000
White Balance		Auto, Indoor, Outdoor, One Push, Manual				FAW, AWB, AWB Paint, Indoor, Outdoor, Manual
Angle of View	Horizontal: 80° to 8°		Horizontal: 71° to 8.2°		Horizontal: 60.7° to 3.36°	Horizontal: 63.7° to 2.3°
Rotation Range	Horizontal ±162.5°, Vertical -30° to +90°			Horizontal ±170°, Vertical -30° to +90°		Horizontal ±175°, Vertical -30° to +90°
Pan Tilt Speed	PAN: 1.8°/s to 80.5°/s, TILT: 1.5°/s to 49°/s			PAN: 1.7°/s to 100°/s, TILT: 1.7°/s to 69.9°/s		PAN: 0.1°/s to 480°/s (AC adapter) TILT: 0.1°/s to 300°/s (AC adapter)
Image		H/V flip, Image freeze, H/V auto inverting function				H/V flip, Image freeze
Preset Accuracy		Number of preset: 255, Preset accuracy: 0.1°				Number of presets: 100 Preset accuracy: 0.03°
Input / Output Interfaces						
HDMI Output	TYPE A, Max 3840x2160 60p50p YUV4:2:2 12bit RGB4:4:4 8bit		TYPE A, Max 3840x2160 30p25p		TYPE A, Max 1920x1080 60p50p	TYPE A, Max 1920x1080 60p50p
3G-SDI Output						BNC type (3G-SDI), Embedded audio Video: SMPTE 424M, SMPTE 292M Audio: SMPTE 299M, Max 1920x1080 60p50p
Network Interface(LAN)						RJ45: 10BASE-T/100BASE-TX/1000BASE-T
Audio Interface	Φ3.5mm mini jack x1 LINE IN : Unbalanced Stereo Internal Microphone			Φ3.5mm mini jack x1 LINE IN : Unbalanced Stereo LINE OUT : Unbalanced Stereo		Φ3.5mm mini jack x1 LINE IN: Balanced Mono / Unbalanced Stereo MIC IN: Balanced Monaural MIC IN: Unbalanced stereo plug-in power 2.5V
USB	C type for UVC, Host mode is not supported, UAC UVC 1.1 to 1.5,		A type for maintenance		A type for maintenance B type USB3.0 for UVC 1.1 to 1.5,	A Type HOST x 1 for Network Connection
Communication Interface			RS232 IN: 8-pin mini DIN, Protocols: Standard/Pelco-D/Pelco-P RS232 OUT: 8-pin mini DIN, Protocols: Use only Standard protocol RS485: 2-pin Phoenix port Protocols: Standard/Pelco-D/Pelco-P			RS232 IN: 8-pin mini DIN RS232 OUT: 8-pin mini DIN RS422: Serial Control (RJ-45)
Network						
Video Compression			H.265/HEVC, H.264, MotionJPG			H.264
Video Stream			Main Stream Resolution: 640x360 to 3840x2160 (KY-PZ510N/KY-PZ400N) 1920x1080 (KY-PZ200/N), Frame Rate: 25p to 60p Sub Stream Resolution: 320x240 to 720x480, Frame Rate: 25p to 60p			Main Stream
TC		VITC		VITC		LTC
Streaming Protocol : Video Compression / Protocol / Resolution / Maximum Frame rate / Maximum bit rate *Streaming quality depends on network environment						
H.265/HEVC	NDI@ HX3 1920x1080 60p50p (KY-PZ510N only) NDI@ 5 (KY-PZ510N built in NDI@ HX) 3840x2160 60p50p 60Mbps 3840x2160 30p25p 60Mbps SRT 3840x2160 60p50p 60Mbps with VITC 3840x2160 30p25p 60Mbps with VITC RTSP/RTP 3840x2160 60p50p 60Mbps with VITC 3840x2160 30p25p 60Mbps with VITC	NDI@ 4.x (KY-PZ400N built in NDI@ HX) 1920x1080 60p50p 60Mbps SRT 1920x1080 60p50p 60Mbps with VITC RTSP/RTP 3840x2160 30p25p 60Mbps	NDI@ 4.x (KY-PZ200N built in NDI@ HX) 1920x1080 60p50p 60Mbps SRT 1920x1080 60p50p 60Mbps with VITC RTSP/RTP 1920x1080 60p50p 60Mbps with VITC			
H.264	NDI@ HX3 1920x1080 60p50p (KY-PZ510N only) NDI@ 5 (KY-PZ510N built in NDI@ HX) 3840x2160 60p50p 60Mbps SRT 3840x2160 60p50p 60Mbps with VITC RTSP/RTP 3840x2160 60p50p 60Mbps with VITC RTMP, RTMPS 3840x2160 60p50p 60Mbps UVC 3840x2160 30p25p	NDI@ 4.x (KY-PZ400N built in NDI@ HX) 1920x1080 60p50p 60Mbps SRT 3840x2160 30p25p 60Mbps with VITC RTSP/RTP 3840x2160 30p25p 60Mbps with VITC RTMP, RTMPS 3840x2160 30p25p 60Mbps	NDI@ 4.x (KY-PZ200N built in NDI@ HX) 1920x1080 60p50p 60Mbps SRT 1920x1080 60p50p 60Mbps with VITC RTSP/RTP 1920x1080 60p50p 60Mbps with VITC RTMP, RTMPS 1920x1080 60p50p 60Mbps UVC 1920x1080 30p25p			RTSP/RTP 1920x1080 60p50p RTMP, RTMPS 1920x1080 60p50p
Motion JPEG	RTSP/RTP 1920x1080 60p50p UVC 3840x2160 30p25p	RTSP/RTP 1920x1080 60p50p	RTSP/RTP 1920x1080 60p50p			
Others	MPEG2-TS/RTP, MPEG2-TS/UDP					MPEG2 TS/UDP, MPEG2 TS/RTP, Zixi
Remote Protocol			NDI@ (KY-PZ510N, KY-PZ400N, KY-PZ200N), Standard, Pelco, JVC (WEB API, RM-LP100)			Standard, JVC (WEB API, RM-LP100)
General						
LED	Tally in top of lens : Green x1, Red x 1 Power in front : Blue x 1	Tally in top of lens : Green x1, Red x 1 Power: Blue x 1, Standby: Yellow-green x 1		Power: Blue x 1, Standby: Yellow-green x 1		Tally: Red x 1
Power	DC12V(AC adapter) , KY-PZ510N PoE+(IEEE802.3af standard) , KY-PZ400 KY-PZ200/N PoE+(IEEE802.3af standard)					DC12V (AC adapter), PoE+
Current consumption	0.95A A (AC adapter) 0.25 A (PoE+)	Approx. 0.62A (AC Adapter) Approx. 0.18A (PoE)		Approx. 0.65A (AC Adapter) Approx. 0.19A (PoE)		1.2 A (AC adapter) 0.4 A (PoE+)
Temperature	Operating: 0°C ~ 40°C Storage: -40°C ~ 60°C			Operating: 0°C to 40°C Storage: -20°C to 50°C		Operating: 0°C to 40°C Storage: -20°C to 50°C
Humidity	Operating: 30% to 80% Storage: Under 85%			Operating: 30% to 80% Storage: Under 85%		Operating: 30% to 80%
Dimensions (WxHxD)	223.0mm x 166.4 x 163.0mm		142mm x 165mm x 169mm			154mm x 200.7mm x 191mm
Net Weight	Approx. 2.0 kg		Approx. 1.7kg		Approx. 1.5kg	Approx. 2.0 kg



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For Instruction Manual

JVC Professional Video website



http://www.32.jvckenwood.com/jvc/manual_e/index.asp



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