Panasonic

WV-SPN311
WV-SPN310

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Lens : optional

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i-PRO SmartHD 3 Series NEW

Onvif S

SD ENHANCED Super Dynamic   VIQS Variable Image Quality on Specified area   H.264 JPEG   HD High Definition 720/60p   day/night IR removable (WV-SPN311)   HLC   Fog sand Compensation   Auto Back Focus (WV-SPN311)   i-VMD (Optional)

HD / 1,280 x 720 60 fps H.264 Network Camera featuring *Super Dynamic*

Key Features

- **720p** HD images up to **60 fps**[1]
- Approximate 1/3 inches, high sensitivity MOS Sensor
- **Multiple H.264 (High profile) streams (max. 4 streams)** and JPEG streams ensure simultaneous real time monitoring and high resolution recording by new enhanced "UniPhier®", Panasonic's proprietary System LSI platform.
- *Enhanced Super Dynamic*[1] and ABS (Adaptive Black Stretch) technologies deliver **133 dB** wider dynamic range compared to conventional cameras.
- **Multi process NR & 3D-DNR** ensures noise reduction in various conditions.
- High sensitivity with Day & Night (IR) function (WV-SPN311 only) : 0.01 lx (Color), 0.003 lx (B/W) at F1.4
- **ABF (Auto Back Focus)** ensures easy installation. (WV-SPN311 only)
- **VIQS** (Variable Image Quality on Specified area) technology allows the designated **eight areas** to retain higher image quality while the excluded area will have a decreased image quality, which enables to use lower image file size and bit rate.
- Cropping function enables to provide whole image and the part image simultaneously.
  Up to 4 image capture areas can be specified, and it is also possible to control the sequence.
- *Face Super Dynamic* technology ensures clear face image.
- Electronic sensitivity enhancement: Auto (Up to 16/30s) / OFF
- Selectable light control modes :
  Outdoor scene,Indoor scene (50 Hz) / Indoor scene (60 Hz),Fix shutter Indoor scene (50 Hz/60 Hz) : Flicker caused by fluorescent lightning will be automatically compensated.
- 2x, 4x digital zoom controlled by browser
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Privacy Zone can mask up to 8 private areas, such as house windows and entrances/exits.
- Camera title display : Up to 20 alphanumeric characters on the browser
- Alarm sources including 3 terminal input, VMD and Panasonic alarm command can trigger actions such as SDXC/SDHC/SD memory recording, FTP image transfer, E-mail notification, Indication on browser, Alarm terminal output, and Panasonic alarm protocol output.

- Full duplex bi-directional audio allows interactive communication between camera site and monitoring site. (WV-SPN311 only)
- JPEG Image compression ratio can be changed by alarm so that higher quality image can be provided.
- Prioritized stream control : One of the video streams can be prioritized when multiple recorders or client PCs are accessing the camera so that the recorder or the client PC can maintain the frame rate.
- Face detection function detects the position of human face and the information is sent by XML or video stream. (Extension Software)
- Can be added new intelligent extension software in addition to built-in VMD (Video Motion Detection), alarm function.
- **Fog compensation function** equipped as standard.
- **Super Chroma Compensation** function realizes a better color reproducibility even in low illumination. (WV-SPN311 only)
- H.264 max. bit rate/client and Total bit rate control allows flexible network traffic management. Frame rate priority mode controls bit rate and compression ratio to provide the specified frame rate.
- Internet mode : H.264 images can be transmitted over HTTP protocol.
- Multi-language : English / Italian / French / German / Spanish / Portuguese / Russian / Chinese / Japanese
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- HLC (High Light Compensation) :
  If a bright light source such as car headlights points in the direction of a camera, the camera corrects for strong lights and their surroundings to provide clear images of the areas.
- Onvif compliant model

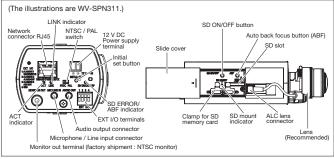*1 Super Dynamic function is automatically set off on 60 fps mode

Specifications

Camera

Item	Specification
Image Sensor	Approx. 1/3 type MOS image sensor, Built-in primary color filter
Effective Pixels	Approx. 1.3 mega pixels
Scanning Mode	Progressive scan
Scanning Area	5.38 mm (H) x 3.02 mm (V) {7/32 inches(H) x 1/8 inches(V) }
Minimum Illumination	SPN311 Color : 0.01 lx, BW : 0.003 lx (F1.4, Maximum shutter : Max. : Off(1/30s),Gain : On(High)) Color : 0.0007 lx, BW : 0.0002 lx (F1.4, Maximum shutter : Max.16/30s,Gain : On(High))[1] SPN310 Color : 0.01lx, BW : 0.008 lx (F1.4, Maximum shutter : Max. : Off(1/30s),Gain : On(High)) Color : 0.0007 lx, BW : 0.0005 lx (F1.4, Maximum shutter : Max.16/30s,Gain : On(High))[1]
White Balance	AWC (2,000 ~ 10,000 K), ATW1 (2,700 ~ 6,000 K), ATW2 (2,000 ~ 6,000 K)
Light Control Mode	Outdoor scene, Indoor scene (50 Hz) / Indoor scene (60 Hz) : ELC / Fix shutter
Shutter Speed	[1.3 mega pixel 16 : 9] (60 fps mode] OFF(1/60), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000,1/10000 Other than [1.3 mega pixel 16 : 9] (60 fps mode] OFF(1/30), 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250,1/500, 1/1000, 1/2000, 1/4000, 1/10000
Super Dynamic[2]	On(High) / On(Normal) / Off
Face Super Dynamic	On/Off (only when Super Dynamic : On)
Adaptive Black Stretch	On/Off (only when Super Dynamic : Off)
Fog compensation	On/Off (only when Super Dynamic / Adaptive black stretch : Off)
High light compensation (HLC)	On/Off (only when Super Dynamic / Back light compensation : Off)
AGC	On (Low) / On (Mid) / On (High) / Off
Maximum shutter	max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 2/120 s, max. 1/100 s, max. 2/100 s, max. 1/60 s, max. 1/30 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s
Day & Night	WV-SPN311(IR) : Off/On (Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC) WV-SPN310(Electrical) : On/Off
Dynamic Range	133 dB typ. (Super Dynamic : On)
Digital Noise Reduction	High / Low
Video Motion Detection	On/Off, 4 areas, Sensitivity : 15 steps, Detection size : 10 steps
Privacy Zone	On/Off (up to 8 zones available)
VIQS	On/Off (up to 8 zones available)
Camera Title (OSD)	On/Off, Up to 20 characters (alphanumeric characters, marks)
Auto focus (WV-SPN311 only)	Auto/ Preset/ Fix

Browser GUI

Item	Specification
Cropping	Off / JPEG(1) / JPEG(2) / JPEG(3) / H.264(1) / H.264(2) / H.264(3) / H.264(4) / H.264(all) Alarm action : On/Off Up to 4 image capture areas can be specified
Camera Control	Brightness, AUX On/Off
Display Mode	Spot, Quad : Image from 16 cameras can be displayed in 4 different Quad screens or 16 split screen (JPEG only). 20 characters camera title available.
Digital Zoom	1x, 2x, 4x controlled by browser GUI
Clock Display	Time : 12H/24H, Date : 5 formats on the browser, Summer time (Manual)
Alarm Control	Reset
One Shot Capture	A still picture will be displayed on a newly opened window.
Audio	Mic (Line) Input : On/Off Volume adjustment : Low / Middle / High Audio Output : On/Off Volume adjustment : Low / Middle / High
SD Memory Data Download	Still or motion Images recorded in the SDXC/SDHC/SD memory card can be downloaded.
GUI / Setup Menu Language	English, Italian, French, German, Spanish, Portuguese, Russian, Chinese, Japanese
System Log	Up to 100 (Internal) Up to 4,000 (SDXC/SDHC/SD memory when the recording format is set to JPEG.) error logs
Supported OS [3]	Microsoft® Windows® 8.1, Microsoft® Windows® 8 Microsoft® Windows® 7, Microsoft® Windows Vista®
Supported Browser	Windows® Internet Explorer® 11 (32-bit) Windows® Internet Explorer® 10 (32-bit) Windows® Internet Explorer® 9 (32-bit) Windows® Internet Explorer® 8 (32-bit) Windows® Internet Explorer® 7 (32-bit)

Network

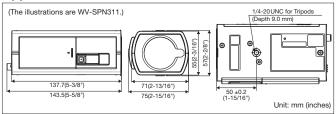| Item		Specification
Network IF		10Base-T / 100Base-TX, RJ45 connector
Image Resolution	Image Capture Mode: 1.3 mega pixel [16:9] (30/60fps)	1,280 x 720 / 640 x 360 / 320 x 180 / 160 x 90
	Image Capture Mode: 1.3 mega pixel [4:3] (30fps)	1,280 x 960 / 800 x 600 / 640 x 480 / 400 x 300 / 320 x 240 / 160 x 120
H.264 [4]	Transmission Mode	Constant bitrate / VBR / Framerate priority / Best effort / Advanced VBR
	Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 / 60 fps
	Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 6,144 / 8,192 / 10,240 / 12,288 / 14,336 / 16,384 / 20,480 / 24,576 / 30,720 / 40,960 kbps
	Image Quality	Constant bit rate, Best effort : Low(Motion priority) / Normal / Fine(Image quality priority) VBR : 0 Super fine / 1 Fine / 2 / 3 / 4 / 5 Normal / 6 / 7 / 8 / 9 Low
	Refresh interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5s
	Transmission Type	Unicast / Multicast
JPEG	Image Quality	10 steps
	Refresh interval	0.1 fps - 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)
	Transmission Type	Pull / Push
Audio Compression		G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps / AAC-LC[5]
Audio Mode		Off / Mic input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)
Authentication for Audio		Level 1 only / Level 2 or higher / All users
Bandwidth control		64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps / Unlimited
Supported Protocol		IPv6 : TCP/IP, UDP/IP, HTTP, HTTPS, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, RTP, MLD, ICMP, ARP IPv4 : TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP,FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP
FTP Client		Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SDXC/SDHC/SD memory card is available.
No. of Simultaneous Users		Up to 14 users (Depends on network conditions)
SDXC/SDHC/SD Memory Card (Option) * Manufactured by Panasonic (SD speed class 4 or higher) * Use the SD memory card that complies with UHS-1 (Ultra High Speed-1) in the case of SD Speed Class 10.		H.264 recording : Manual REC / Alarm REC (Pre/Post) / Schedule REC / Backup upon network failure Compatible JPEG recording : Manual REC / Alarm REC (Pre/Post) / Backup upon network failure Compatible SD (SDHC/SDXC) card: Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64GB** model *SDHC card, ** SDXC card (except miniSD card and microSD card)

Network (right column)

Item		Specification
Network	Cellular Phone Compatibility	JPEG image, AUX control (by access level)
	Mobile Terminal Compatibility[6]	iPad, iPhone, iPod touch (iOS 4.2.1 or later), Android™ Terminal
Alarm	Alarm Source	3 terminals input, VMD, Command alarm, Audio detection alarm
	Alarm Actions	SDXC/SDHC/SD memory recording, E-mail notification, HTTP alarm notification Indication on browser, FTP image transfer, Panasonic protocol output
	Alarm Log	With SDXC/SDHC/SD memory card : Up to 50,000 logs for each SD memory card
Schedule	Schedule mode	Alarm permission / VMD permission / Access permission / H.264 recording / Audio detection permission / Scene file / FTP periodic image transmission
Input/Output	Monitor Output (for adjustment)	VBS: 1.0 V [p-p] / 75 Ω, composite, RCA jack An NTSC or PAL signal can be outputted from camera. (use the selector switch or software to select either NTSC or PAL signal).
	Microphone Input (WV-SPN311 only)	ø3.5 mm monaural mini jack Input impedance : Approx. 2 kΩ (unbalanced) Recommended applicable microphone : Plug-in power type Supply voltage : 2.5 V ±0.5 V Recommended sensitivity of microphone : -48 dB±3 dB (0 dB=1 V/Pa, 1 kHz)
	Built-in microphone (WV-SPN310 only)	Electret condenser microphone
	Line Input (WV-SPN311 only)	Input level : Approx. –10 dBV
	Audio Output (WV-SPN311 only)	ø3.5 mm stereo mini jack (monaural output) Output impedance : Approx. 600 Ω (unbalanced) Output level : -20 dBV
	External I/O Terminals	WV-SPN311 : ALARM IN 1 (DAY/NIGHT IN), ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT) WV-SPN310 : ALARM IN 1, ALARM IN 2 (ALARM OUT), ALARM IN 3 (AUX OUT)
General	Safety	UL (UL60950-1), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1
	EMS	FCC (Part15 ClassA), ICES-003 ClassA, EN 55032 ClassB, EN55024
	Power Source and Power Consumption	WV-SPN311 : DC 12 V / 350 mA / Approx. 4.2 W PoE DC 48 V : 140 mA / Approx. 6.8 W (Class 2 device) WV-SPN310 : DC 12 V / 310 mA / Approx. 3.8 W PoE DC 48 V : 120 mA / Approx. 5.8 W (Class 2 device)
	Ambient Operating Temperature	-10°C ~ +50°C (14 °F ~ 122 °F)
	Ambient Operating Humidity	20 ~ 90 % (no condensation)
	Dimensions	75.0 mm (W) x 57.0 mm (H) x 143.5 mm (D) {2-15/16 inches (W) x 2-1/4 inches (H) x 5-21/32 inches (D)} (excluding lens / power cord plug)
	Mass (approx.) excluding lens	WV-SPN311 : Approx. 400 g {0.88 lbs} WV-SPN310 : Approx. 370 g {0.82 lbs}
	Finish	Main body : PC / ABS resin (Sail white)

*1 Converted value
*2 Super Dynamic function is automatically set off on 60 fps mode.
*3 For further information about PC system requirements and precautions for when using Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, or Windows® Internet Explorer®, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".
*4 Transmission for 4 streams can be individually set.
*5 When recording audio on an SD memory card, only AAC-LC (Advanced Audio Coding - Low Complexity) can be used.
*6 For further information about compatible devices, refer to our website
(http://security.panasonic.com/pss/security/support/info.html).

Part Names and Functions

(The illustrations are WV-SPN311.)

Appearance

(The illustrations are WV-SPN311.)

Unit: mm (inches)

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Important
– Safety Precaution: Carefully read the Important Information, Installation Guide and operating instructions before using this product.
– Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

• Masses and dimensions are approximate. • Specifications are subject to change without notice.