# Panasonic
## ideas for life

**Preliminary**



(WV-SW316)  (WV-SW316L)

*i-PRO SmartHD*

MEGA *Super Dynamic*

ONVIF

IP66 standard

day/night IR removable

H.264 MPEG-4 JPEG

HD High Definition

Face Detection

Auto Back Focus

# HD / 1,280 x 960 H.264 Network Camera featuring *Super Dynamic*

## Key Features

- 720p HD images up to 30 fps
- Newly developed 1.3 Megapixel high sensitivity MOS Sensor
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by "UniPhier®", Panasonic's proprietary System LSI platform.
- Full frame (Up to 30 fps) transmission at 1,280 x 960 image size
- *Super Dynamic* and ABS (Adaptive Black Stretch) technologies deliver 128x wider dynamic range compared to conventional cameras.
- *Face Super Dynamic* Range technology ensures clear face image.
- H.264 and MPEG-4 are selectable for system migration.
- High sensitivity with Day/Night(IR) function:
  WV-SW316L : 0.3 lx (Color), 0 lx (B/W) at F1.3 (Wide) when the IR LED is lit
  WV-SW316 : 0.3 lx (Color), 0.05 lx (B/W) at F1.3 (Wide)
- Motorized varifocal lens equipped:
  The zoom ratio can be changed and adjusted to an optional photographic area through the operation buttons on this unit and the setup menu.
- IR LED equipped: The equipped infrared LED makes it possible to take pictures at zero lx.(WV-SW316L)
- VIQS (Variable Image Quality on Specified area) technology allows the designated area 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.
- ABF (Auto Back Focus) ensures easy installation.
- Digital Noise Reduction: 3D-DNR ensures noise reduction in various conditions.
- Electronic sensitivity enhancement: Auto (Up to 16x) / OFF
- Up to 6.4x Extra Optical Zoom under VGA resolution.
  3.1-10 mm, 3.2x vari-focal auto iris lens (6.2-20 mm, 6.4x with Extra Optical Zoom at VGA)
- VMD (Video Motion Detector) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Face detection function detects the position of human face and the information is sent by XML or video stream.
- Meta data for VMD is supplied to work with the WJ-NV200 /WJ-ND400 playback VMD function.
- Privacy Zone can mask up to 2 private areas, such as house windows and entrances/exits.
- Alarm sources including 1 terminal input, VMD and Panasonic alarm command can trigger actions such as SDHC/SD memory recording, FTP image transfer, E-mail notification, Indication on browser, Alarm terminal output, and Panasonic protocol output.

- Full duplex bi-directional audio allows interactive communication between camera site and monitoring site.
- 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.
- SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (JPEG)
- H.264/MPEG-4 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.
- Multi-language: English / Italian / French / German / Spanish / Russian / Chinese / Japanese
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- ONVIF compliant model
- Analog Monitor output for easier installation
- IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard.

## Standard Accessories

- Installation Guide .........................1 pc.
- CD-ROM*1 .....................................1 pc.
- Code Label*2.................................1 pc.

The followings are for installation.
- 4P alarm cable.............................1 pc.
- 2P power cable ............................1 pc.

- Camera mount bracket .................. 1 pc.
- Mount bracket cover ......................1 pc.
- Waterproof tape .............................1 pc.
- Camera fixing screw (M4 x 8)
  ...................4 pcs. (of them, 1 for spare)
- Mount bracket cover screw (M3 x 6)
  ...................3 pcs. (of them, 1 for spare)

*1 The CD-ROM contains the operating instructions (PDFs) and different kinds of tool software programs.
*2 This label may be required for network management.
   The network administrator shall retain the code label.
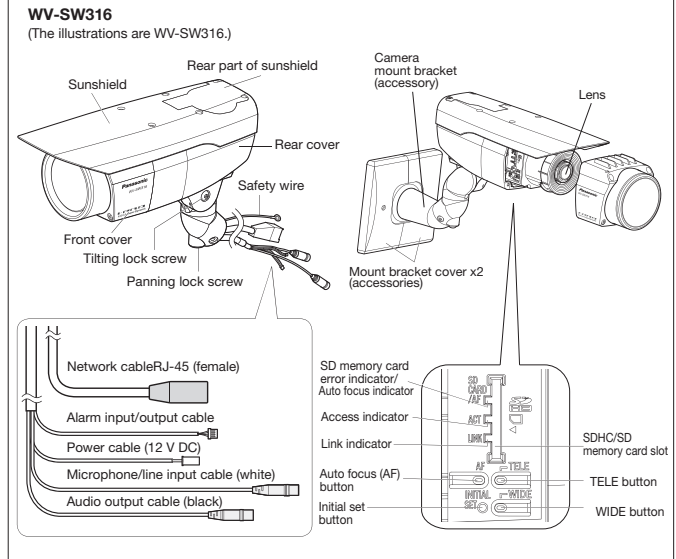
## Optional Accessory

Adapter Box
**WV-Q120**

# Specifications

| TV System | | NTSC | PAL |
|---|---|---|---|
| Camera | Image Sensor | 1/3 type MOS Sensor | |
| | Effective Pixels | Approx. 1.3 megapixels | |
| | Scanning Mode | Progressive scan | |
| | Scanning Area | 4.80 mm (H) x 3.60 mm (V) (3/16"(H) x 5/32"(V)) | |
| | Minimum Illumination | WV-SW316L: Color: 0.3 lx, B/W: 0 lx at F1.3 (Shutter: 1/30 s, AGC: High, when the IR LED is lit), Color: 0.019 lx, at F1.3 (Shutter: 16/30 s, AGC: High) WV-SW316: Color: 0.3 lx, B/W: 0.05 lx at F1.3 (Shutter: 1/30 s, AGC: High), Color: 0.019 lx, B/W: 0.003 lx at F1.3 (Shutter: 16/30 s, AGC: High) | |
| | IR LED Light | WV-SW316L: Off/Auto(High/Mid/Low) | |
| | IR LED irradiation distance | WV-SW316L: 15 m {49.21 feet} | |
| | White Balance | AWC (2,000 ~ 10,000 K), ATW1 (2,700 ~ 6,000 K), ATW2 (2,000 ~ 6,000 K) | |
| | Light Control Mode | Outdoor: Automatic integration of ALC and ELC Indoor [50 Hz]: Automatic integration of ALC and ELC (up to 1/100 s) Indoor [60 Hz]: Automatic integration of ALC and ELC (up to 1/120 s) | |
| | Shutter Speed | Fix shutter: 1/30, 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250,1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000 (only at Super-Dynamic Off) | |
| | Super Dynamic | ON / OFF | |
| | Face Super Dynamic | ON / OFF (Only at Super Dynamic: ON) | |
| | Adaptive Black Stretch | ON / OFF (Only at Super Dynamic: OFF) | |
| | AGC | ON (LOW, MID, HIGH) / OFF | |
| | Electronic Sensitivity UP | OFF / AUTO (Max. 2x (2/30 s), 4x (4/30 s), 6x (6/30 s), 10x (10/30 s), 16x (16/30 s)) | |
| | Day & Night (IR) | Mode: AUTO1 / AUTO2 / ON / OFF, Level:High / Low, with external control | |
| | Dynamic Range | 52 dB typ. (Super Dynamic: On, Light control mode: indoor scene) | |
| | Digital Noise Reduction | High / Low | |
| | Video Motion Detection | 4 areas, Sensitivity: 15 steps, Detection size: 10 steps | |
| | Privacy Zone | Up to 2 zones, Gray | |
| | VIQS | ON / OFF | |
| | Camera Title (OSD) | Up to 20 characters (alphanumeric characters, marks) | |
| | Focus Adjustment | ABF / MANUAL | |
| Lens | Focal Length | 3.1 mm ~ 10 mm, 3.2x (6.2 mm ~ 20 mm, 6.4x with extra optical zoom (at VGA)) | |
| | Angular Field of View | H: 27.7° (TELE) ~ 100.3° (WIDE), V: 20.8° (TELE) ~ 73.6° (WIDE) | |
| | Maximum Aperture Ratio | 1 : 1.3 (WIDE) ~ 1 : 3.0 (TELE) | |
| | Focusing Range | 0.3 m ~ ∞ | |
| Adjusting Angle | | Horizontal: ±100° (Camera mount bracket) Vertical: +30°, -90° (Camera mount bracket) | |
| Browser GUI | 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 | |
| | Camera Title | Up to 20 alphanumeric characters | |
| | 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 SDHC/SD memory card can be downloaded. | |
| | GUI/Setup Menu Language | English, French, Italian,Spanish, German, Russian,Chinese, Japanese | |
| | System Log | Up to 100 (Internal), Up to 4,000 (SDHC/SD memory when therecording format is set to JPEG.) error logs | |
| | Supported OS [*1] [*2] | Microsoft® Windows® 7 Professional 64 bit/32 bit, Microsoft® Windows Vista® Business SP1 32 bit, Microsoft® Windows® XP Professional SP3 | |
| | Supported Browser | Windows® Internet Explorer® 8.0 32 bit (Microsoft® Windows® 7 Professional 64 bit/32 bit), Windows® Internet Explorer® 7.0 (Microsoft® Windows Vista® Business SP1 32 bit), Microsoft® Internet Explorer® 6.0 SP3 (Microsoft® Windows® XP Professional SP3) | |
| Network | Network IF | 10Base-T / 100Base-TX, RJ-45 connector | |

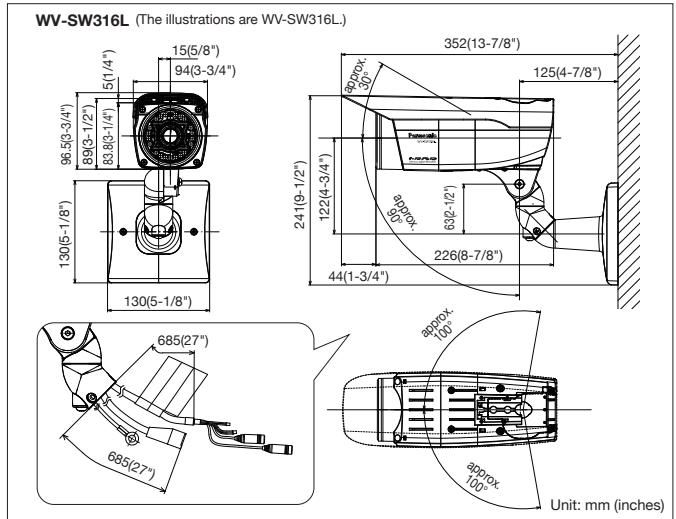| | | | | NTSC | PAL |
|---|---|---|---|---|---|
| Network | Image Resolution [*4] | Aspect ratio: [4 : 3] | H.264: 1,280 × 960 / VGA (640 × 480) / QVGA (320 × 240), up to 30 fps MPEG-4: VGA (640 × 480) / QVGA (320 × 240), up to 30 fps JPEG (M-JPEG): 1,280 × 960 / VGA (640 × 480) / QVGA (320 × 240), up to 30 fps | | |
| | | Aspect ratio: [16 : 9] [*3] | H.264: 1,280 × 720 / 640 × 360 / 320 × 180, up to 30 fps JPEG (M-JPEG): 1,280 × 720 / 640 × 360 / 320 × 180, up to 30 fps | | |
| | H.264/MPEG-4 [*5] [*6] | Transmission Mode | Constant bitrate / Framerate priority / Best effort | | |
| | | Frame Rate | 1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps | | |
| | | Bit Rate/Client | 64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 8,192* kbps * H.264 mode only | | |
| | | Image Quality | LOW / NORMAL / FINE | | |
| | | Refresh Interval | 0.2 s ~ 5 s | | |
| | | Transmission Type | UNICAST / MULTICAST | | |
| | JPEG | Image Quality | 10 steps | | |
| | | Refresh Interval | 0.1 fps ~ 30 fps | | |
| | | Transmission Type | PULL / PUSH | | |
| | Audio Compression | | G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps | | |
| | Audio Mode | | OFF / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex) | | |
| | Authentication for Audio | | Level 1 only / Level 2 higher / All users | | |
| | Total Bit Rate | | 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, RTP, FTP, SMTP, DNS, NTP,SNMP, DHCPv6, 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 SDHC/SD memory card is available.) | | |
| | No. of Simultaneous Users | | Up to 14 users (Depends on network conditions) | | |
| | SDHC/SD Memory Card (Option) | | H.264 recording: Manual REC / Alarm REC (Pre/Post) / Schedule REC JPEG recording: Manual REC / Alarm REC (Post) / Backup upon network failure Compatible SD (SDHC) card: Panasonic 256 MB, 512MB, 1 GB, 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB* model * SDHC card | | |
| | Face Detection | | ON / OFF (with XML notification) | | |
| | Cellular Phone Compatibility | | JPEG image, AUX control (by access level) | | |
| | Mobile Terminal Compatibility [*7] | | iPad, iPhone, iPod touch (iOS 4.2.1 or later) Android™ mobile terminals | | |
| Alarm | Alarm Source | | 1 terminal input, VMD, Command alarm | | |
| | Alarm Actions | | SDHC/SD memory recording, E-mail notification, Alarm terminal output, Indication on browser, FTP image transfer, Panasonic protocol output | | |
| | Alarm Log | | With SDHC/SD memory card: 5,000 logs, without SDHC/SD memory card: 1,000 logs | | |
| | Schedule | | Alarm / VMD / Access permission / H.264 recording / Forcible black & white mode(WV-SW316L) | | |
| Input/ Output | Monitor Output (for adjustment) | | VBS: 1.0 V [p-p]/75 Ω, NTSC composite, RCA Jack | VBS: 1.0 V [p-p]/75 Ω,PAL composite, RCA Jack | |
| | Microphone/Line Input | | MIC IN and Line IN are selectable. ø3.5 mm stereo mini jack (monaural input) (Applicable microphone: Plug-in power type) Supply voltage: 2.5 V ±0.5 V Input impedance: approx. 2 kΩ | | |
| | Audio Output | | ø3.5 mm stereo mini jack (monaural output) Line level | | |
| | External I/O Terminals | | ALARM IN, DAY/NIGHT IN, ALARM OUT, AUX OUT | | |
| General | Safety/EMC Standard | | UL (UL60950-1), FCC (Part15 ClassA), C-UL (CAN/CSA C22.2 No.60950-1), DOC (ICES003 ClassA) | CE (EN55022 ClassB, EN55024) |

| TV System | | NTSC | PAL |
|---|---|---|---|
| General | Power Source and Power Consumption | 12 V DC: 850 mA * FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY. PoE (IEEE 802.3af compliant) 48 V: 200 mA (Class 0 device) | |
| | Ambient Operating Temperature | –40 °C ~ +50 °C (–40 °F to 122 °F) | |
| | Ambient Operating Humidity | 90 % or less (without condensation) | |
| | Water and Dust Resistance | IP66, IEC60529 measuring standard compatible | |
| | Dimensions | 94 mm (W) × 89 mm (H) × 226 mm (L) (including projection of base cover fixing screw) (3-7/10" (W) × 3-1/2" (H) × 8-7/8" (L)) | |
| | Mass (approx.) | 1.4 kg (3.09 lbs.) | |
| | Finish | Main body: Aluminum die cast/resin, metallic silver coating Front cover section clear part: Polycarbonate resin | |

*1 For further information about PC system requirements and precautions for when using 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".
*2 When using IPv6 for communication, use Microsoft Windows 7 or Microsoft Windows Vista.
*3 MPEG-4 is not supported.  *4 [4 : 3] and [16 : 9] are alternative.
*5 H.264 and MPEG-4 are alternative.  *6 Transmission for 2 streams can be individually set in the same compression method.
*7 For information on the camera models of the supported operating systems, refer to our website at http://panasonic.net/pss/security/support/info.html.

## Part Names and Functions



### WV-SW316
(The illustrations are WV-SW316.)

Sunshield · Rear part of sunshield · Camera mount bracket (accessory) · Lens · Rear cover · Safety wire · Front cover · Tilting lock screw · Panning lock screw · Mount bracket cover x2 (accessories)

Network cableRJ-45 (female) · Alarm input/output cable · Power cable (12 V DC) · Microphone/line input cable (white) · Audio output cable (black)

SD memory card error indicator/ Auto focus indicator · Access indicator · Link indicator · Auto focus (AF) button · Initial set button · SDHC/SD memory card slot · TELE button · WIDE button

## Appearance



### WV-SW316L (The illustrations are WV-SW316L.)

Unit: mm (inches)

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