ONVIF | S G

i-PRO SmartHD

TRUE 4K

VIQS — Variable Image Quality on Specified area

H.264 JPEG

day/night ICR | Vandal Resistant | RAIN WASH COATING | NO HUMIDIFICATION

IR LED | HLC | Fog sand Compensation | Auto Back Focus | IP66 standard

<with Base Bracket>

4K (3,840 x 2,160) H.264 Vandal Resistant Dome Network Camera

Key Features

- **4K (3,840 x 2,160)** images up to 30 fps, **12M pixel (4,000 x 3,000)** images up to 15 fps
- Newly developed 1/1.7 type high sensitivity MOS image sensor
- **Ultrawide x6 zoom lens** with the newly developed **3-drive lens** system (Horizontal Angle: 100.0°(wide) to 17.0°(tele)) [4 : 3 mode]
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording.
- Digital Noise Reduction: 3D-DNR ensures noise reduction in various conditions.
- **Smart coding Technology : Group of Pictures (GOP) control** function removes unnecessary information from the frame for realizing efficient encoding. **Auto VIQS** (Variable Image Quality on Specified area) function recognizes the no movement area in a video automatically and lowering the resolution of it to reduce the data size. **GOP control** and **Auto VIQS** can save the network bandwidth and the disk space of recorder effectively.
- High sensitivity with Day/Night (ICR*) function: 0.3 lx (Color), 0.04 lx (B/W) at F1.6 * ICR: IR Cut filter Removal
- Smart **IR LED** equipped: The equipped infrared LED makes it possible to take pictures at zero lx. **The IR LED** is controlled to match the environment, thereby the camera provides clear images of human faces without white blur.
- Camera attachment bracket allows an easy camera installation toward all four directions.
- **ABF (Auto Back Focus)** ensures easy installation.
- **VIQS** (Variable Image Quality on Specified area) technology allows the designated **eight locations** 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.
- 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
- 1x, 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.
- SDXC/SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (H.264 / JPEG). Realize long-term recording and auto backup function.
- **Fog compensation function** equipped as standard.
- **HLC (High Light Compensation) technology** reduces strong light sources such as vehicle headlights to prevent camera being blinded.
- **SCC (Super Chroma Compensation)** function realizes a better color reproducibility even in low illumination.
- 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.
- ONVIF compliant model
- IP66 rated water and dust resistant. Compatible with IEC60529 measurement standard, Type 4X(UL50), NEMA 4X compliant.
- Dehumidification device for use with various weather conditions
- Vandal resistant mechanism for high reliability (IK10)
- **Rain wash coating dome cover**

Specifications

Camera	Image Sensor		1/1.7 type MOS image sensor
	Scanning Mode		Progressive scan
	Scanning Area		7.40 mm (H) x 5.55 mm (V) {9/32 inches (H) x 7/32 inches (V)}
	Minimum Illumination		Color : 0.3 lx, BW : 0.04 lx, BW(with IR LED) : 0 lx (F1.6, Maximum shutter : Off (1/30s), Gain : High), Color : 0.02 lx (F1.6, Maximum shutter : Max. 16/30s, AGC : High) *1
	IR LED Light		Off / Auto(High / Mid / Low)
	IR LED irradiation distance		Approx. 30 m {98.43 feet} {at IR LED : Auto (High)}
	White Balance		ATW1 (2,700 - 6,000 K) /ATW2 (2,000 - 6,000 K) /AWC (2,000 - 10,000 K)
	Light Control Mode		Outdoor scene/ Indoor scene (50 Hz)/ Indoor scene (60 Hz)/ Fix shutter
	Maximum shutter		max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 1/100 s, max. 2/120 s, max. 2/100 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s
	Shutter Speed		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
	Wide Dynamic Range		On / Off
	Adaptive Black Stretch		On / Off (only when Wide dynamic range: off)
	Fog compensation		On / Off (only when Wide dynamic range/ Adaptive black stretch: Off)
	High light compensation(HLC)		On / Off (only when Wide dynamic range/ Back light compensation (BLC): Off))
	Gain (AGC)		On (High) / On(Mid) / On(Low) / Off
	Day/Night (ICR)		Off / On / Auto1 (Normal) / Auto2 (IR Light) / Auto3 (SCC)
	Digital Noise Reduction		High / Low
	Video Motion Detection (VMD)		On / Off, 4 areas available
	Privacy Zone		On / Off (up to 8 zones available)
	VIQS		On / Off (up to 8 locations)
	Camera Title (OSD)		On / Off Up to 20 characters (alphanumeric characters, marks)
	Focus Adjustment		ABF / Manual (Html only)
Lens	Vari Focal Length		4.2 mm - 25.2 mm {5/32 inches – 1 inch}
	Angular Field of View		[16 : 9 mode] Horizontal : 17 ° (TELE) - 96 ° (WIDE) 　　　　　　　 Vertical : 9.3 ° (TELE) - 54 ° (WIDE) [4 : 3 mode] Horizontal : 17° (TELE) - 100 ° (WIDE) 　　　　　　　 Vertical : 13 ° (TELE) - 75 ° (WIDE)
	Maximum Aperture Ratio		1 : 1.6 (WIDE) - 1 : 3.3 (TELE)
	Focusing Range		0.6 m - ∞
Adjusting Angle			Horizontal : ±180 ° Vertical : 0 to 85° Image tilt adjustment range : –45° (Left) to +300° (Right)
Browser GUI	Cropping		H.264(1) Ch1- Ch4 Up to 4 image capture areas can be specified. *only when Image capture mode : Cropping [16:9] (30fps mode)
	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 SDXC/SDHC/SD The recorded data 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) error logs
	Supported OS *2		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	Network IF		10Base-T / 100Base-TX, RJ45 connector
	Image Resolution		**•8 mega pixel [16 : 9] (30 fps mode)** H.264(1): 3,840 x 2,160, up to 30 fps JPEG(2): 640 x 360 **•8 mega pixel [16 : 9] (15 fps mode)** H.264(1): 3,840 x 2,160, up to 15 fps Compliant with H.264 H.264(2): 1,920 x 1,080 / 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps JPEG(1): Enables the setting of the resolution in the same way as 　　　　 for H.264 (1), H.264 (2), or JPEG (2). JPEG(2): 640 x 360 **•12 mega pixel [4 : 3] (15 fps mode)** H.264(1): 4,000 x 3,000, up to 15 fps H.264(2): 640 x 480 / 320 x 240, up to 5 fps JPEG(1): Enables the setting of the resolution in the same way as 　　　　 for H.264 (1), H.264 (2), or JPEG (2). JPEG(2): 640 x 480 **•5 mega pixel [4 : 3] (30 fps mode)** H.264(1): 2,560 x 1,920 / 2,048 x 1,536 / 1,600 x 1,200 / 　　　　　 1,280 x 960 / 800 x 600, up to 30 fps H.264(2): 1,280 x 960 / 800 x 600 / 640 x 480 / 320 x 240, up to 30 fps JPEG(1): Enables the setting of the resolution in the same way as 　　　　 for H.264 (1), H.264 (2), or JPEG (2). JPEG(2): 640 x 480 **•4 mega pixel [16 : 9] (30 fps mode)** H.264(1): 2,560 x 1,440 / 1,920 x 1,080 / 1,280 x 720, up to 30 fps H.264(2): 1,920 x 1,080 / 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps H.264(3): 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps H.264(4): 640 x 360, up to 30 fps **•Cropping [16 : 9] (30 fps mode)** H.264(1): Ch1 1,280 x 720 / 640 x 360, up to 30 fps Cropping H.264(1): Ch2 1,280 x 720 / 640 x 360, up to 30 fps Cropping H.264(1): Ch3 1,280 x 720 / 640 x 360, up to 30 fps Cropping H.264(1): Ch4 1,280 x 720 / 640 x 360, up to 30 fps Cropping H.264(2): 1,920 x 1,080 / 1,280 x 720 / 640 x 360 /320 x 180, up to 30 fps JPEG(1): Enables the setting of the resolution in the same way as 　　　　 for H.264 (2) or JPEG (2). JPEG(2): 640 x 360
	H.264	Transmission priority	Constant bit rate / Variable bit rate / Frame rate / Best effort / Advanced VBR

Network	H.264	Frame Rate <When Variable bit rate, Frame rate, or Advanced VBR is selected>	1 / 3 / 5* / 7.5* / 10* / 12* / 15* / 20* / 30* fps * The frame rate is limited to "bit rate". 　When a value with an asterisk (*) is selected, the actual frame 　rate may be lower than the value selected.
		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 * The available range of the H.264 bit rate varies depending on 　the setting selected for "image capture size".
		Image Quality	<When Constant bit rate or Best effort is selected> 　Low / Normal / Fine <When Variable bit rate is selected> 　0 Super Fine / 1 Fine / 2 / 3 / 4 / 5 Normal / 6 / 7 / 8 / 9 Low
		Smart Coding mode	On (Low / Mid / High) / Off (Only when "Variable bit rate" is selected)
		Refresh Interval	0.2 / 0.25 / 0.33 / 0.5 / 1 / 2 / 3 / 4 / 5 s
		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 *3 64 kbps / 96 kbps / 128 kbps
	Audio transmission/ reception		Off / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)
	Authentication for Audio		Level 1 only / Level 2 higher / All users
	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 SDXC/SDHC/SD memory card is available.)
	Maximum concurrent access number		Up to 14 users (Depends on network conditions)
	SDXC/SDHC/SD Memory Card (Option) * Use the SD memory card manufactured by Panasonic (SD speed class 4 orhigher), and in the case of SD Speed Class 10, that complies with UHS-1(Ultra High Speed-1).		H.264 recording: Manual REC / Alarm REC (Pre/Post) / 　　　　　　　　　Schedule REC / Backup upon network failure JPEG recording: Manual REC / Alarm REC (Pre/Post) / FTP error / 　　　　　　　　　Backup upon network failure Compatible SD (SDHC/SDXC) card: 　Panasonic 2 GB, 4 GB*, 8 GB*, 16 GB*, 32 GB*, 64 GB** model *SDHC card, ** SDXC card　(except miniSD card and microSD card)
	Cellular Phone Compatibility		JPEG image, AUX control (by access level)
	Mobile Terminal Compatibility*4		iPad, iPhone, iPod touch (iOS 4.2.1 or later), AndroidTM mobile terminals
Alarm	Alarm Source		3 terminals input, VMD, Command alarm
	Alarm Actions		SDXC/SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output
	Alarm Log		With SDXC/SDHC/SD memory card: 50,000 logs
	Schedule		Alarm / VMD / Access permission / H.264 recording / Scene file / FTP periodic image transmission
Input/ Output	Monitor Output (for adjustment)		VBS: 1.0 V [p-p] / 75 Ω, NTSC / PAL composite, RCA jack
	Microphone/Line Input		ø3.5 mm stereo mini jack Input impedance: Approx. 2 kΩ (unbalanced)
		For microphone input	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)
		For line input	Input level: Approx. –10 dBV
	Audio Output *5		ø3.5 mm stereo mini jack Output impedance: Approx. 600 Ω (unbalanced) / Output level: –20 dBV Can be used as the monitor output by switching browser GUI.
	External I/O Terminals		ALARM IN1 (DAY/NIGHT IN), ALARM IN2 (ALARM OUT), ALARM IN3 (AUX OUT, DAY/NIGHT OUT)
General	Safety		UL (UL60950-1, UL60950-22), C-UL (CAN/CSA C22.2 No.60950-1), CE, IEC60950-1
	EMC		FCC (Part15 ClassA), ICES003 ClassA, EN55023 ClassB, EN55022 ClassB, EN55024
	Power Source and Power Consumption *6		DC12 V : 1050 mA / Approx. 12.6 W PoE (IEEE802.3af compliant) / PoE DC48 V : 265 mA / Approx. 12.95 W (Class 0 device)
	Ambient Operating Temperature		–45 °C to +50 °C {–49 °F to 122 °F}
	Ambient Operating Humidity		10 to 90 % (no condensation)
	Impact Protection		Compliant with IK10 (IEC 62262)
	Water and Dust Resistance *7		Main body: IP66 (IEC60529), Type 4X (UL50), NEMA 4X compliant
	Dimensions		When using the attachment plate : ø228 mm x 189 mm (H) {ø8-31/32 inches x 7-7/16 inches (H)}, Dome radius 80 mm {3-5/32 inches} When using the base bracket : ø228 mm x 225 mm (H) {ø8-31/32 inches x 8-27/32 inches (H)}, Dome radius 80 mm {3-5/32 inches}
	Mass (approx.)		When using the attachment plate : Approx. 3.2 kg {7.05 lbs} When using the base bracket　　 : Approx. 3.7 kg {8.16 lbs}
	Finish		Main body : Aluminum die cast, light gray, Dome section : Clear polycarbonate resin Dome cover : Clear polycarbonate resin (Rain wash coating)
	Others		Tamper-resistant enclosure *8

*1 Converted value
*2 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".
*3 AAC-LC (Advanced Audio Coding - Low Complexity) is only used when recording audio on an SD memory card.
*4 For further information about compatible devices, refer to our website
(http://security.panasonic.com/support/info/).
*5 In order to be able to switch the monitor output, "8 mega pixel [16:9](15fps mode)", "5 mega pixel
[4:3](30fps mode)", or "12 mega pixel [4:3](15fps mode)" must be selected for "Image capture mode".
For information about usage limitations, refer to "2.3.1 Configure the basic settings [Basic]" in the
"Operating Instructions".
*6 Refer to our website (http://security.panasonic.com/support/info/) for further information about
Power source and Power consumption information.
*7 Only when installation work is properly performed according to the instructions in this book and
appropriate waterproof treatment is performed.
*8 Component that has a structure on which the screws that are accessible after installation cannot
be screwed or unscrewed using an ordinary screwdriver.

Part Names and Functions

Base bracket (accessory)
Attachment plate (accessory)
Light-blocking rubber ring
Camera
IR LED

Cap for the female thread for the conduit
Panning table
Tilting table
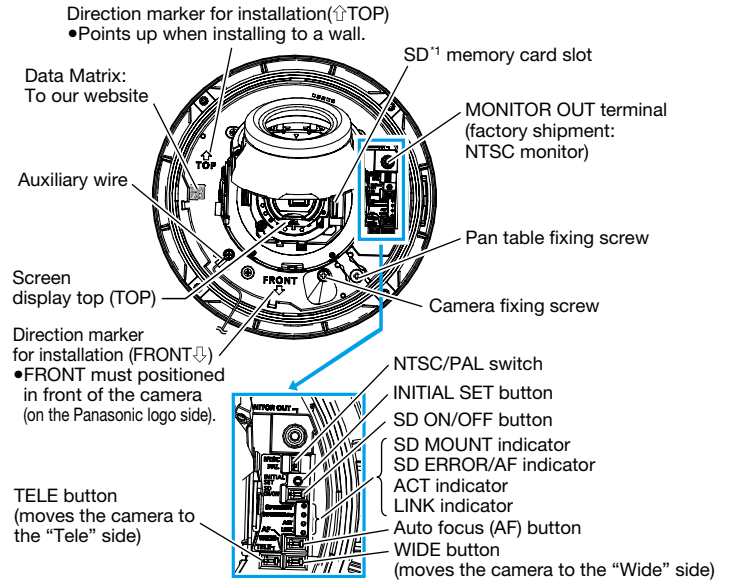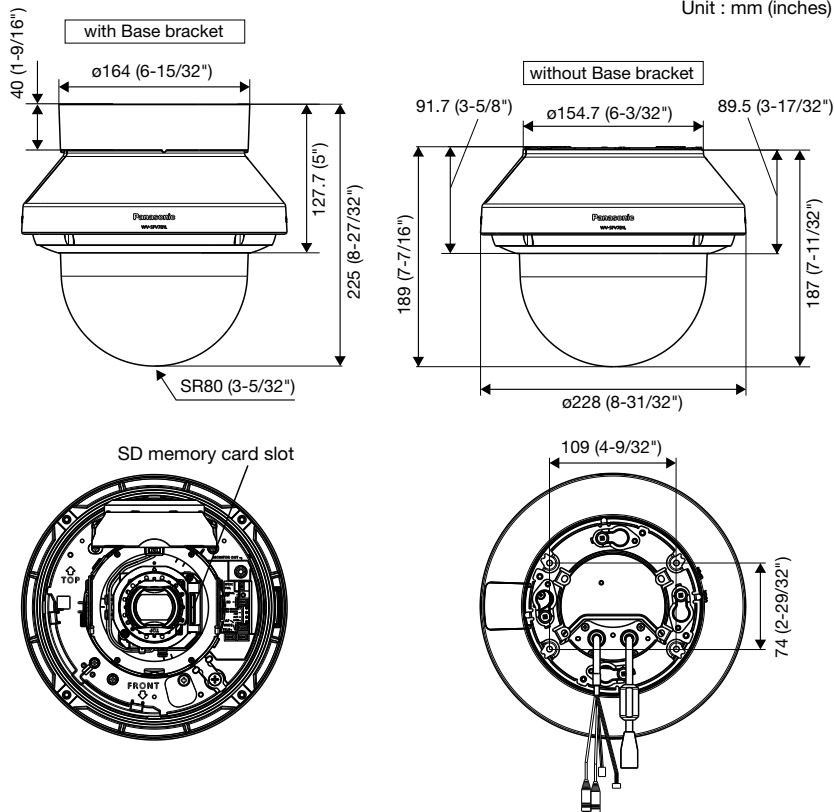**Fixing screws for attachment plate (accessory)**
Tilt fixing screw
Dome cover (Rain wash coating)
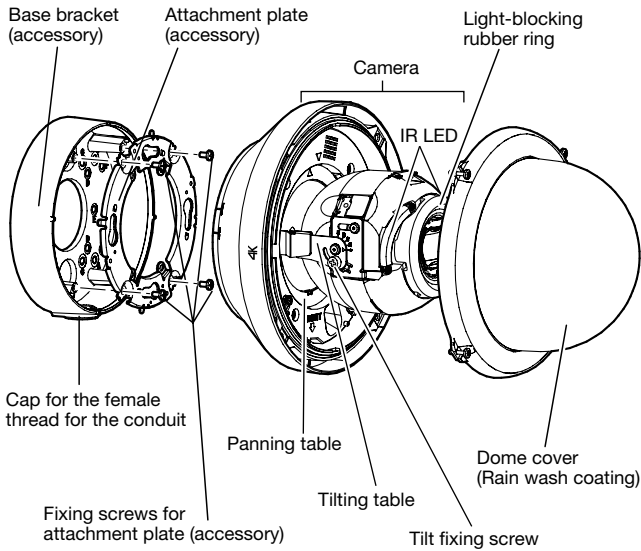
Inside the dome cover (with IR LED mounting section opened)

Direction marker for installation(⇧TOP)
•Points up when installing to a wall.

Data Matrix: To our website

Auxiliary wire

Screen display top (TOP)

Direction marker for installation (FRONT⇩)
•FRONT must be positioned in front of the camera (on the Panasonic logo side).

TELE button (moves the camera to the "Tele" side)

SD[*1] memory card slot

MONITOR OUT terminal (factory shipment: NTSC monitor)

Pan table fixing screw

Camera fixing screw

NTSC/PAL switch
INITIAL SET button
SD ON/OFF button
SD MOUNT indicator
SD ERROR/AF indicator
ACT indicator
LINK indicator
Auto focus (AF) button
WIDE button (moves the camera to the "Wide" side)

*1 SDXC/SDHC/SD memory card is described as SD memory card

Appearance

Unit : mm (inches)

with Base bracket

40 (1-9/16")
ø164 (6-15/32")
127.7 (5")
225 (8-27/32")
SR80 (3-5/32")

without Base bracket

91.7 (3-5/8")
ø154.7 (6-3/32")
89.5 (3-17/32")
189 (7-7/16")
187 (7-11/32")
ø228 (8-31/32")

SD memory card slot

109 (4-9/32")
74 (2-29/32")

Standard Accessories

- Important Information .... 1 pc.
- Installation Guide .... 1 set.
- CD-ROM *1 .... 1 pc.
- Code label *2 .... 1 pc.

The following parts are used during installation procedures.
- Attachment plate .... 1 pc.
- Base bracket .... 1 pc.
- Fixing screws for attachment plate (M4 x 8 mm) ....
  .... 5 pcs. (of them, 1 for spare)
- Template A (for the attachment plate) ....1 sheet.
- Template B (for the base bracket) ....1 sheet.
- Bit (Hex wrench, screw size 6.35 mm {1/4 inches} T20) ......1 pc.
- Waterproof tape .... 1 pc.
- 4P alarm cable .... 1 pc.
- 2P power cable .... 1 pc.
- LAN connector cover .... 1 pc.
- MONITOR OUT conversion plug *3 .... 1 pc.
- Protection cover .... 1 pc.

*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.
*2 This label may be required for network management.
   The network administrator shall retain the code label.
*3 This can be used as MONITOR OUT by switching the audio/monitor output cable of the unit using software switching.
   Connect the MONITOR OUT conversion plug to the audio/monitor output cable and use it when converting the ø3.5 mm stereo mini jack to the RCA pin jack output.

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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.

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(2A-139BL)