ARCHITECT & ENGINEER SPECIFICATIONS
SECTION:
REMOTE CAMERA DEVICES AND SENSORS

BRC-X400
SRG-X400 / X120

IP 4K Pan Tilt Zoom camera with NDI | HX capability

(Software version 2.00 or later)

PRODUCTS

REMOTE CAMERA SPECIFICATIONS

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A. MAIN FEATURES:

1. IP 4K Pan Tilt Zoom camera with NDI | HX capability (via optional license).
   *4K capability is optional for SRG-X400 / X120.

2. The sensitive 1/2.5-type Exmor R sensor shall capture high-quality 4K images with very low noise, even in dimly-lit environments.

3. High quality 20x optical zoom and 30x (4K) or 40x (FHD) with Clear Image Zoom:
   The high quality lens with 20x optical zoom range shall cover wide angle shots as well as tight close-ups. Clear Image Zoom shall expand this range to 30x (4K) or 40x (FHD) without sacrificing detail. In addition, the Tele Convert Mode shall be able to double this range again, up to 80x zoom while maintaining a 1920 x 1080 resolution. (For BRC-X400)

   High quality 20x optical zoom and 30x (4K) or 40x (FHD) with Clear Image Zoom:
   The high quality lens with 20x optical zoom range shall cover wide angle shots as well as tight close-ups. Clear Image Zoom shall expand this range to 30x (4K) or 40x (FHD) without sacrificing detail. (For SRG-X400)

   High quality 12x optical zoom:
   The high quality lens with 12x optical zoom range shall cover wide angle shots as well as tight close-ups. (For SRG-X120)

4. The camera shall cover the whole scene in sports arenas and lecture theatres with a horizontal viewing angle of approx. 70°.

5. NDI | HX compatibility (via optional license) shall support efficient IP-based live production, allowing flexible configuration with other networked NDI-enabled devices.

6. PTZ and other camera functions shall be able to be controlled remotely via S700PTP (for BRC-X400 only), CGI and VISCA protocols.

7. The camera shall capture the presenter's movements with maximum 300°/s pan and tilt movement during preset recall.

8. The camera shall be able to be used in conjunction with the AI-based REA-C1000 Edge Analytics Appliance to smoothly track the speaker's movements and automatically generate a cut-out image of speaker.

9. PTZ Motion Sync function shall allow smooth blending of separate pan, tilt and zoom movements for seamless, professional-looking transitions.

10. Excellent low light sensitivity:
The camera shall be able to capture crisp, low noise color video images in light levels as low as 1.6 lx, making it an ideal choice for dimly-lit live hall and theater.

11. Flexible installation:
Integration shall be simplified in a wide range of environments, with PoE+ (Power over Ethernet) to reduce cabling requirements and IP based remote control (S700PTP (for BRC-X400 only)), VISCA control over IP and CGI command).

12. RCP/MSU Connectivity:
In a studio environment, the camera shall be able to be controlled via Sony's Remote Control Panel RCP-1500/1501/1530/3100 and MSU-1000/1500. The camera shall be able to connect to the control network via IP.
*The compatibility is described in Remote Camera System Guide.

13. Remote operation:
Pan/tilt/zoom and other camera settings shall be able to be controlled using the supplied IR remote commander, or with the optional RM-IP500 / IP10 Remote Control Unit that can control multiple cameras.

14. Genlock:
Genlock shall simplify integration with other systems in multi-camera broadcast environments. (For BRC-X400 only)

15. Versatile video outputs:
Greater installation flexibility in professional broadcast and AV environments with 3G-SDI and HDMI video outputs. In addition to SDI/HDMI output, IP network transmission shall be able to be performed simultaneously by streaming function (SDI output does not support 4K). For streaming function, ITU-T H.264/H.265 shall apply to video compression mode (video codec) and it shall achieve high compression rate while maintaining the image quality. Also, it shall decrease the network bandwidth load. Moreover, the camera shall support multi-streaming output. Up to 3 codec modes shall be able to be selected.

16. Front tally lamps:
Ideal for on-air broadcast use, the camera shall feature tally lamps on the front of the camera body. The front tally lamp shall have two brightness settings.

B. CAMERA:

1. The camera shall utilize a 1/2.5-type back-illuminated "Exmor R" CMOS sensor.

2. The number of effective pixels shall be approx. 8.5 Megapixels.

3. The camera shall require a minimum scene illumination of: 1.6 lx (1/30s 50IRE F2 high-sensitivity OFF)

4. The camera shall have a gain-controlled capability of Auto/Manual. It shall be selected from 0 dB to +48 dB manually.

5. The electronic shutter speed shall be set from 1/1 to 1/10000s (59.94 Hz / 29.98 Hz / 50 Hz).

6. White balance shall be selected among Auto1, Auto2, One Push WB, Indoor, Outdoor or Manual settings.

7. The camera shall have 20x optical zoom and 30x (4K) or 40x (FHD) with Clear Image Zoom capabilities. (For BRC-X400 and SRG-X400)

   The camera shall have 12x optical zoom. (For SRG-X400)

8. The viewing angle shall be: Horizontal: approx. 70 ˚ (wide)

9. The focal length shall be

   f = 4.4mm to 88.0mm, F2.0 (Wide) to F3.8 (Tele).
   f = 26.8 mm to 536.0 mm (35 mm camera conversion)
   (BRC-X400 and SRG-X400).

   f = 4.4 mm to 52.8 mm, F2.0 to F3.7
   f = 26.8 mm to 322.8 mm (35 mm camera conversion)
   (SRG-X120).

10. The minimum object distance shall be

    80mm (Wide) to 800mm (Tele).
    (BRC-X400 and SRG-X400)

    80mm (Wide) to 400mm (Tele).
    (SRG-X120)

11. The pan/tilt angle shall be Pan: ±170° Tilt: +90°/-20°

12. The maximum pan/tilt speed shall be
Pan: 1.1° to 101°/sec
Tilt: 1.1° to 91°/sec

13. The number of preset positions shall be 256 positions (CGI) and 100 positions (VISCA).

14. PTZ Trace Memory (for BRC-X400 only) shall be able to store up to 16 pan/tilt/zoom operation patterns.

C. CAMERA FEATURES:

1. The camera shall have an image flip function to support the ceiling mount.

2. The camera shall have a Day/Night (D/N) function to switch to Day mode (color mode) or Night mode (black and white mode).
The Day/Night ICR Auto mode shall be able to switch automatically between Day/Night by removing IR cut filter. (The threshold can be chosen from 0 to 255 to switch from Night mode to Day mode.)

3. The camera shall have Visibility Enhancer function to optimize the brightness and color reproduction of an image dynamically.

D. VIDEO:

1. The signal system shall be as follows.

   3840 × 2160/29.97p *1
   1920 × 1080/59.94p
   1920 × 1080/59.94i
   1920 × 1080/29.97p
   1280 × 720/59.94p
   3840 × 2160/25p *1
   1920 × 1080/50p
   1920 × 1080/50i
   1920 × 1080/25p
   1280 × 720/50p
   3840 × 2160/23.98p *1
   1920 × 1080/23.98p
   *1 BRC-X400 and SRG-X400/X120 (4K option must be installed)

2. The image size (resolution and frame rate) of the signals delivered through the SDI OUTPUT, the HDMI OUTPUT terminal and IP Streaming shall be able to be change with the SYSTEM SELECT switch.
   Switching of Level-A / Level-B of 3G-SDI shall be set by No.1 SDI format / level settings of CAMERA SETUP switches.

   SYSTEM SELECT switch settings are shown below:

SYSTEM SELECT — Select your desired video output format.
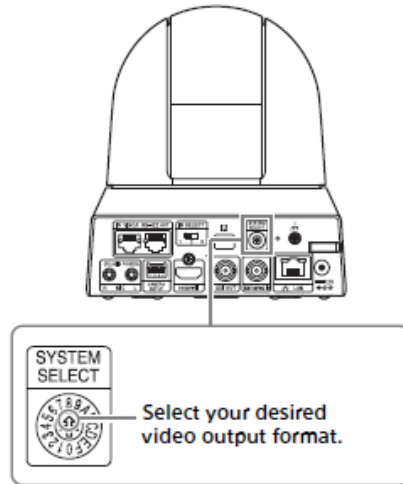
No.	Video output format/Frame rate	
	BRC-X400/X401 and SRG-X400/ X402/201M2/ X120/HD1M2 (with 4K Option)*2	SRG-X400/X402/ 201M2/X120/ HD1M2 (without 4K Option)*2
0	3840x2160/29.97p	1920x1080/59.94p
1	1920x1080/59.94p	1920x1080/59.94p
2	1920x1080/59.94i	1920x1080/59.94i
3	1920x1080/29.97p	1920x1080/29.97p
4	1280x720/59.94p	1280x720/59.94p
5	1920x1080/59.94p	1920x1080/59.94p
6	REMOTE*1	REMOTE*1
7	HDMI : 640x480/ 59.94p SDI : 1280x720/ 59.94p	HDMI : 640x480/ 59.94p SDI : 1280x720/ 59.94p
8	3840x2160/25p	1920x1080/59.94p
9	1920x1080/50p	1920x1080/50p
A	1920x1080/50i	1920x1080/50i
B	1920x720/50p	1920x720/50p
C	1280x720/50p	1280x720/50p
D	1920x1080/59.94p	1920x1080/59.94p
E	3840x2160/23.98p	1920x1080/59.94p
F	1920x1080/23.98p	1920x1080/23.98p

*1 You can change the setting from the OSD menu, Administrator menu, or VISCA/CGI command with Software version 2.00 or later.
*2 4K Option can be installed with Software version 2.00 or later. You need to purchase the license key to install 4K Option.

CAMERA SETUP switch settings
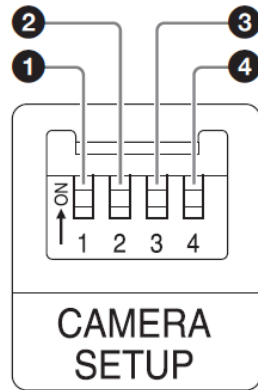
Switch state	SDI format/level
ON	Level-B
OFF	Level-A

E. SYSTEM REQUIREMENTS & NETWORK:

1. The supported OS (operating systems) and web browser shall be
   Windows
     OS version
         Windows 8.1 (64-bit version)
         Windows 10 (64-bit version)
     Web browser
         Microsoft Internet Explorer Ver. 11.0
         Google Chrome (Recommended)

   Mac OS
     OS version
         macOS 10.15
     Web browser
         Google Chrome (Recommended)

F. INTERFACES:

1. The camera shall have the following output terminals.

   HDMI OUT
         Terminal: HDMI connector (Type A) × 1
         Standards: Version 1.4b compatible
         Color space: YCbCr, 4:2:2 8bit RGB, 4:4:4 8bit
   SDI OUT
         Terminal: BNC connector × 1
         Standards: 3G-SDI

2. The camera shall have the following input and output terminals.

   VISCA RS-422
         Terminal: RJ45 × 2
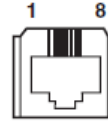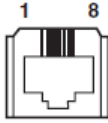   Standards: VISCA
   LAN
         Terminal: RJ45
         Standards: IEEE802.3at compatible (PoE+)

   Pin array and the connection diagram with remote control unit RM-IP10 are shown below:

Pin array of the VISCA RS-422 terminal and how to use it
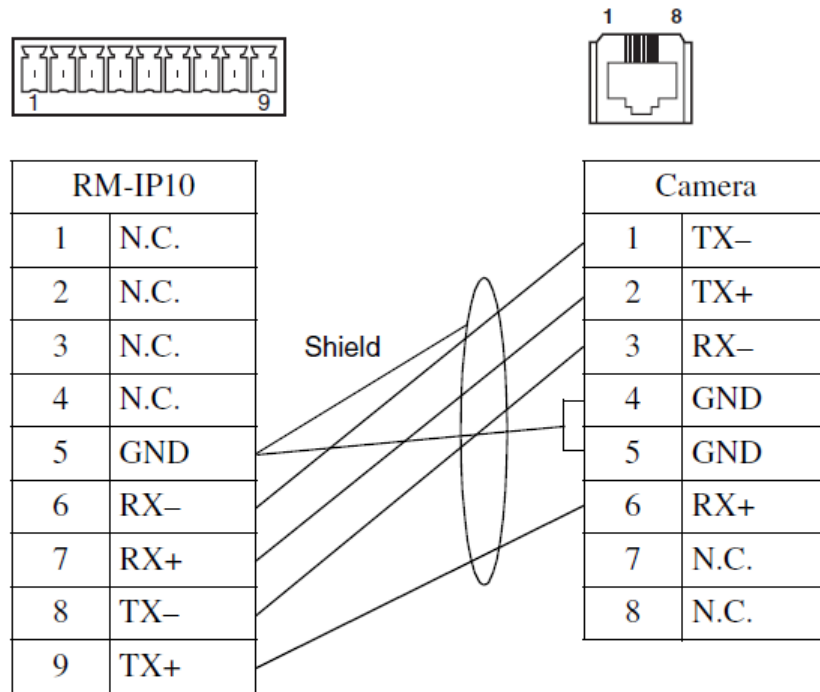
Pin array of VISCA RS-422 terminal

IN

Pin No.	Function
1	TX–
2	TX+
3	RX–
4	GND
5	GND
6	RX+
7	N.C.
8	N.C.

OUT

Pin No.	Function
1	RX–
2	RX+
3	TX–
4	GND
5	GND
6	TX+
7	N.C.
8	N.C.

Connection diagram with remote control unit RM-IP10

RM-IP10			Camera	
1	N.C.		1	TX–
2	N.C.		2	TX+
3	N.C.	Shield	3	RX–
4	N.C.		4	GND
5	GND		5	GND
6	RX–		6	RX+
7	RX+		7	N.C.
8	TX–		8	N.C.
9	TX+			

Notes

- Connect the GNDs of both devices together to stabilize the voltage level of the signal.
- When preparing cables, use network cables of category 5e or more. Use cables equivalent to or higher than shielded twisted pair cables.

3. The camera shall have the following input terminals..

EXT SYNC IN
    Terminal: BNC connector × 1 (BRC-X400 only)
MIC
    Terminal: Mini jack ø 3.5 (×2) (Plug in Power supported)
Power terminal
    IEC60130-10 (JEITA standard RC-5320A) TYPE 4

G. GENERAL SPECIFICATIONS:

1. The camera input power shall be IEEE802.3at compatible (PoE+) and DC 12 V ± 10%.

2. Power consumption for the camera shall be 23.8 W for DC 12 V and 25.5 W for PoE+.

3. The camera operating temperature shall be within the following range:
   +32 °F to +104 °F (0 °C to +40 °C)

4. The camera storage temperature shall be within the following range:
   -4 °F to +140 °F (-20 °C to +60 °C)

5. The camera dimensions (W x H x D) shall be approximately:
   6 1/4 × 7 × 8 inches (158.4 × 177.5 × 200.2 mm) (without protrusions)

6. The camera shall weigh approximately 3 lb 16 oz (1.8 kg).

7. The body color shall be black or white.

H. REGULATORY SPECIFICATIONS:

1. CB (IEC60950-1:05, Am1:09, Am2:13)

2. CB (IEC62368-1:14)

3. EMC (EN55032:2015(Class A), EN55035:2017)

4. EMC-TR (CU TR 020/2011(EMC-TR))

5. FCC/ISED (Class A Digital Device)

6. UL (UL60950-1, CSA C22.2 No60950-1)

7. UL (UL62368-1, CSA C22.2 No.62368-1)

8. VCCI (Class A)

9. KC（MSIT) (KN32(A), KN35)

10. KC（SDoC) (K60950-1)

11. RCM (EN55032:2015(A))

12. Morocco (DoC) (EN55032:2015(A), EN55035:2017)

I. SUPPLIED ACCESSORIES:

1. Safety Regulations (1)

2. AC adapter (1)

3. IR Remote commander (1)

4. Ceiling bracket (A) (1)

5. Ceiling bracket (B) (1)

6. Wire rope (1)

7. Mounting screws (□ M3 × 8) (9)

8. Mounting screws (□ M2.6 × 6 black) (1)

9. HDMI cable fixing plate (1)

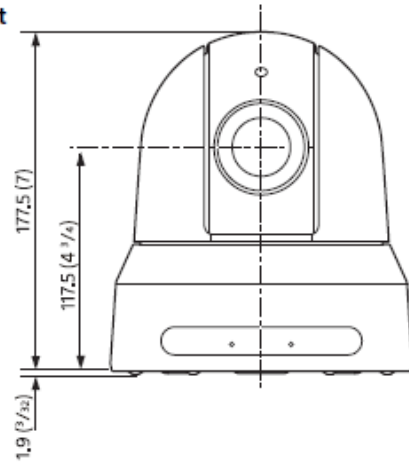## J. OPTIONAL ACCESSORIES:

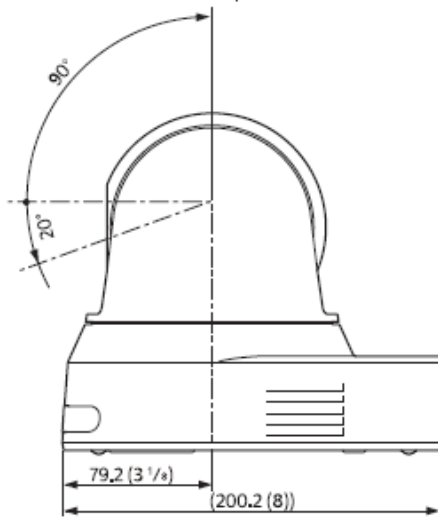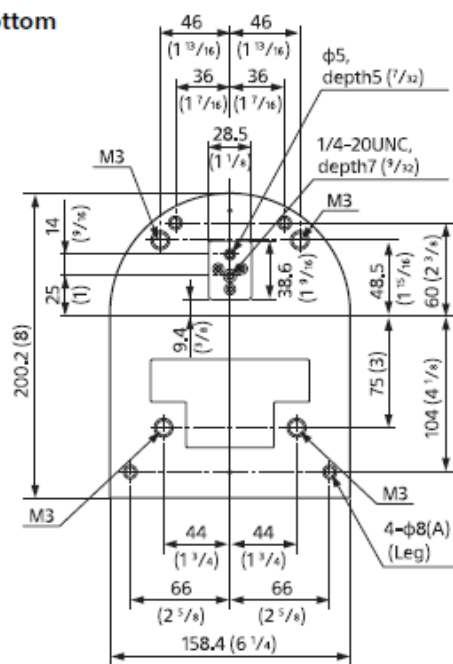1. Remote controller (RM-IP500/IP10)

K. DIMENSIONS:

Dimensions
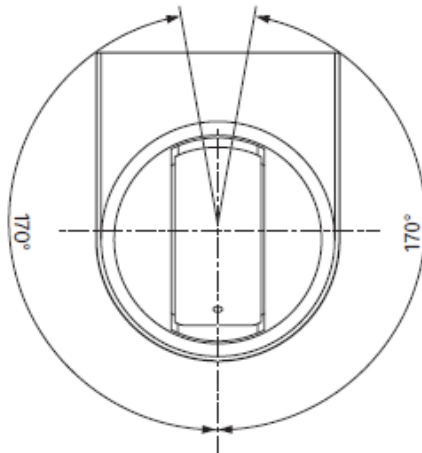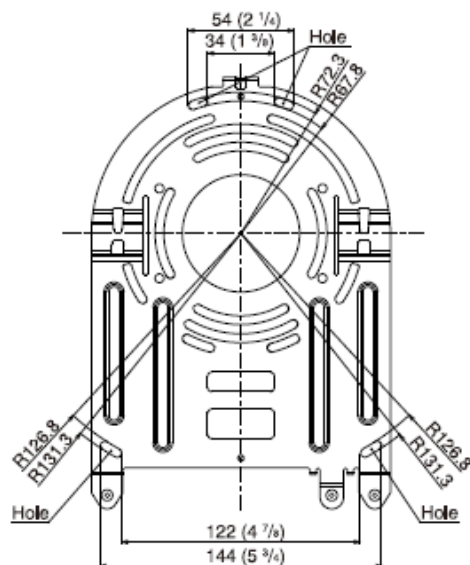
Unit: mm (inches)

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