

**ARCHITECT & ENGINEER SPECIFICATIONS
SECTION:
REMOTE CAMERA DEVICES AND SENSORS**

SRG-A40 / A12

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

(Software version 1.0 or later)

PRODUCTS

REMOTE CAMERA SPECIFICATIONS

Table of Contents

A. MAIN FEATURES.....	2
B. CAMERA	5
C. CAMERA FEATURES	7
D. VIDEO	8
E. SYSTEM REQUIREMENTS & NETWORK	11
F. INTERFACES.....	12
G. GENERAL SPECIFICATIONS.....	15
H. REGULATORY SPECIFICATIONS	16
I. SUPPLIED ACCESSORIES	17
J. OPTIONAL ACCESSORIES.....	17
K. DIMENSIONS.....	18

A. MAIN FEATURES:

1. IP 4K Pan Tilt Zoom camera with PTZ Auto Framing and NDI | HX capability (via optional license).
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.
4. The camera shall cover the whole scene in sports arenas and lecture theatres with a horizontal viewing angle of approx. 70°.
5. PTZ Auto Framing function shall automatically rotates the camera up, down, left, right, and zooms in or out. It keeps shooting a moving subject under an optimum composition. The camera automatically shoots natural and smooth video as if there were skilled operators operating the camera.

- Skeleton detection and head detection determine the optimal angle of view while detecting the subject regardless of the subject's posture (backwards, sitting, etc.) or hiding (mask, sunglasses, etc.)

- Grasp the color/texture of clothes with detailed feature extraction, and keep tracking the target subject even when people overlap or cross each other

- With face recognition, the face of the selected subject can be automatically registered and automatically recovered when tracking is lost.

- You can choose from 3 angles of view (full body, waist, close-up). You can also fine-tune the position (vertical, horizontal) and size of the subject within the angle of view. Close-ups are supported up to an angle of view where the height of the head is about 45% of the angle of view.

- It is possible to automatically start tracking a subject that enters a pre-specified area.

- It is possible to automatically stop tracking when the subject being tracked turns around for a certain period of time.
 - When auto framing is running, you can see that it is working by issuing a green tally lamp.
 - Realizes stable camera work without following subtle movements such as light bows
6. NDI | HX compatibility (via optional license) shall support efficient IP-based live production, allowing flexible configuration with other networked NDI-enabled devices.
 7. The camera shall capture the presenter's movements with maximum 300°/s pan and tilt movement during preset recall.
 8. PTZ Motion Sync function shall allow smooth blending of separate pan, tilt and zoom movements for seamless, professional-looking transitions.
 9. 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.
 10. Flexible installation:
Integration shall be simplified in a wide range of environments, with PoE++ (Power over Ethernet Plus Plus) to reduce cabling requirements and IP based remote control(VISCA control over IP and CGI command).
 11. 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.
 12. 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.

13. Front tally lamps:

Ideal for on-air broadcast use, this camera features a red tally lamp on the front of the camera body. It also has a green tally lamp that displays the tracking status during PTZ Auto Framing operation. The front tally lamp can be set to 2 levels of brightness.

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.
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) (SRG-A40).

 - 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-A12).
10. The minimum object distance shall be
 - 80mm (Wide) to 800mm (Tele). (SRG-A40)

 - 80mm (Wide) to 400mm (Tele). (SRG-A12)
11. The pan/tilt angle shall be Pan: $\pm 170^\circ$ Tilt: $+90^\circ/-20^\circ$
12. The maximum pan/tilt speed shall be
 - Pan: 1.1° to $101^\circ/\text{sec}$
 - Tilt: 1.1° to $91^\circ/\text{sec}$

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

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:

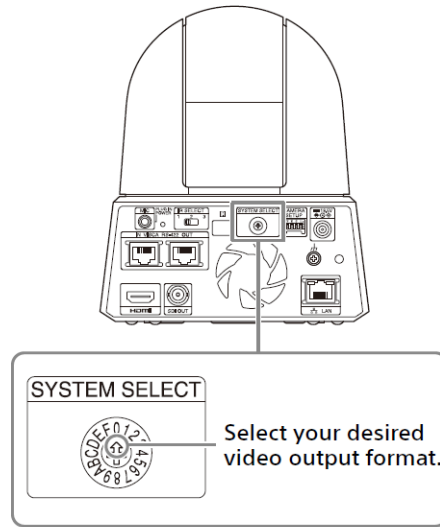
1. The signal system shall be as follows.

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

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.

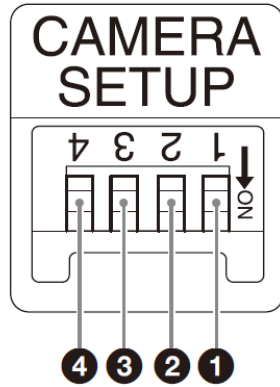
Switching of Level-A / Level-B of 3G-SDI shall be set by No.1 SDI format / level settings of CAMERA SETUP switches.

SYSTEM SELECT switch settings are shown below:



No.	Video output format/Frame rate
0	3840x2160/29.97p
1	1920x1080/59.94p
2	1920x1080/59.94i
3	1920x1080/29.97p
4	1280x720/59.94p
5	RESERVE
6	REMOTE
7	HDMI : 640x480/59.94p SDI OUT : 1280x720/59.94p
8	3840x2160/25p
9	1920x1080/50p
A	1920x1080/50i
B	1920x1080/25p
C	1280x720/50p
D	RESERVE
E	3840x2160/23.98p
F	1920x1080/23.98p

CAMERA SETUP switch settings



Switch No.	Setting items
1	SDI format/level settings
2	RESERVED
3	VISCA connect setting
4	Baud Rate settings of RS-422 for VISCA communication

E. SYSTEM REQUIREMENTS & NETWORK:

1. The supported OS (operating systems) and web browser shall be

Windows

OS version

Windows 11 (64-bit version)

Windows 10 (64-bit version)

Web browser

Google Chrome (Recommended)

Microsoft Edge

Mac OS

OS version

macOS 11

macOS 12

Web browser

Google Chrome

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

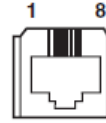
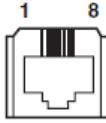
Terminal: RJ45

Standards: IEEE802.3bt type4 Class8 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



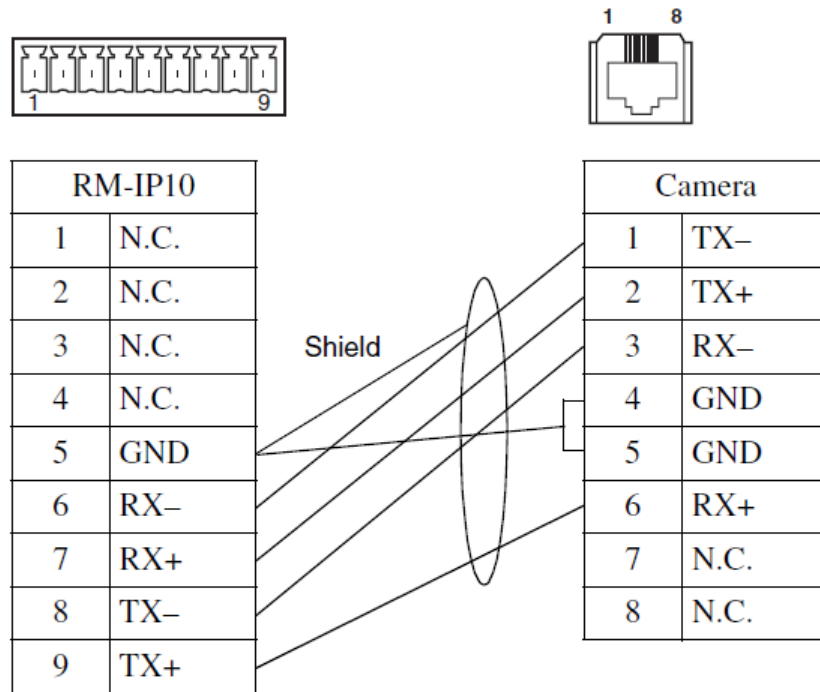
IN

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



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..

MIC

Terminal: Mini jack \varnothing 3.5 (\times 2) (Plug in Power supported)

Power terminal

IEC60130-10 (JEITA standard RC-5320A) TYPE 5

G. GENERAL SPECIFICATIONS:

1. The camera input power shall be IEEE802.3bt type4 Class8 compatible (PoE++) and DC 19.5 V.
2. Power consumption for the camera shall be 80W for DC 12 V and 71.3 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 x 7 1/4 x 7 7/8 inches (156.7 x 184.0 x 200.0 mm) (without protrusions)
6. The camera shall weigh approximately 4 lb 6.5 oz (2.0 kg).
7. The body color shall be black or white.

H. REGULATORY SPECIFICATIONS:

1. CB (IEC62368-1:14)
2. EMC (EN55032:2015(Class A), EN55035:2017)
3. FCC/ISED (Class A Digital Device)
4. UL (UL62368-1, CSA C22.2 No.62368-1)
5. VCCI (Class A)
6. BIS 616 (IEC60065)
7. NOM-001
8. KC (MSIT) (KN32(A), KN35)
9. KC (SDoC) (K62368-1))

10. I. SUPPLIED ACCESSORIES:

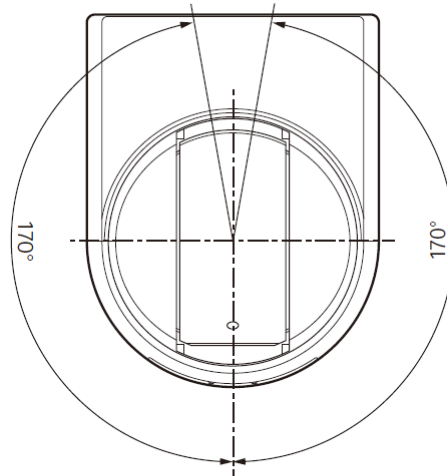
1. Safety Regulations (1)
2. AC adapter (1)
3. IR Remote commander (1)
4. Ceiling bracket (A) (1)
5. Ceiling bracket (B) (1)
6. Wire rope (1)
7. Mounting screws (□ M3 × 8) (9)
8. Mounting screws (□ M2.6 × 6 black) (1)
9. HDMI cable fixing plate (1)

J. OPTIONAL ACCESSORIES:

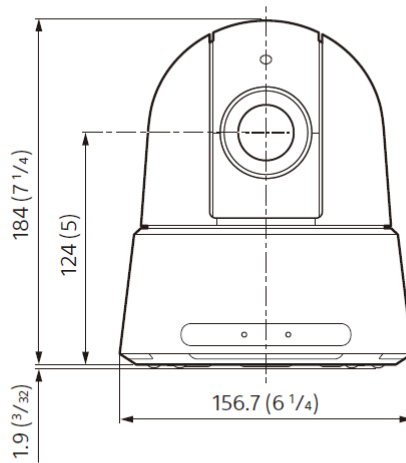
1. Remote controller (RM-IP500/IP10)

K. DIMENSIONS:

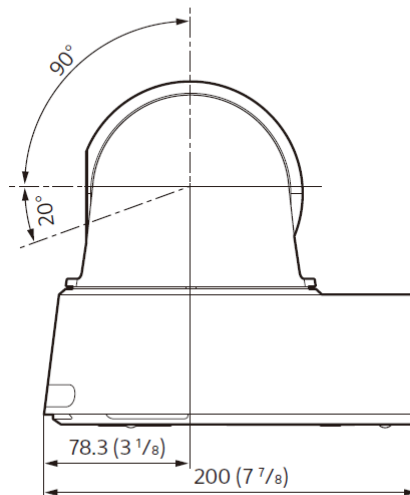
Top



Front

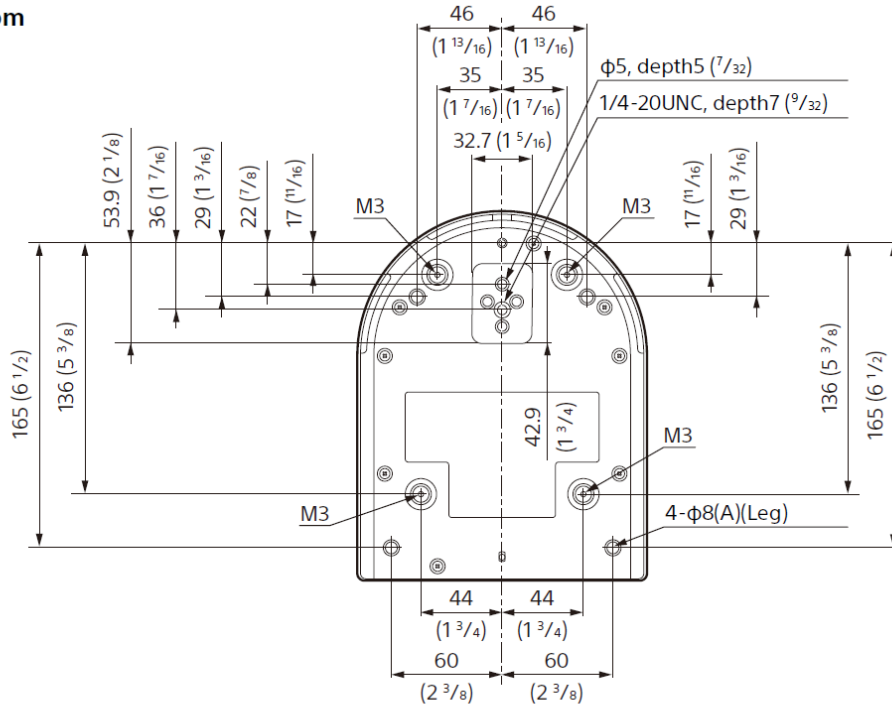


Side

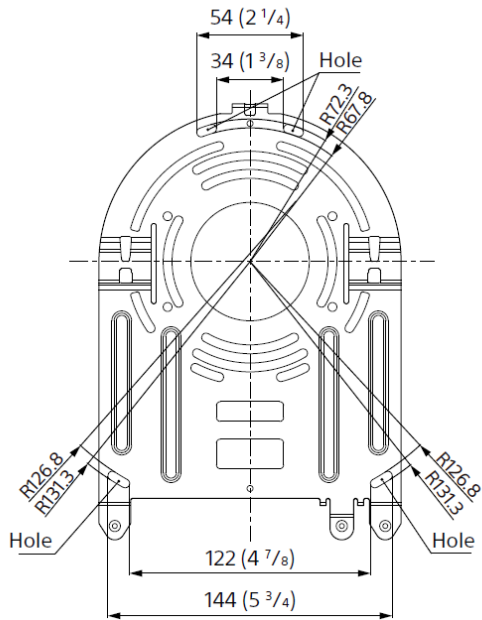


Unit: mm (inches)

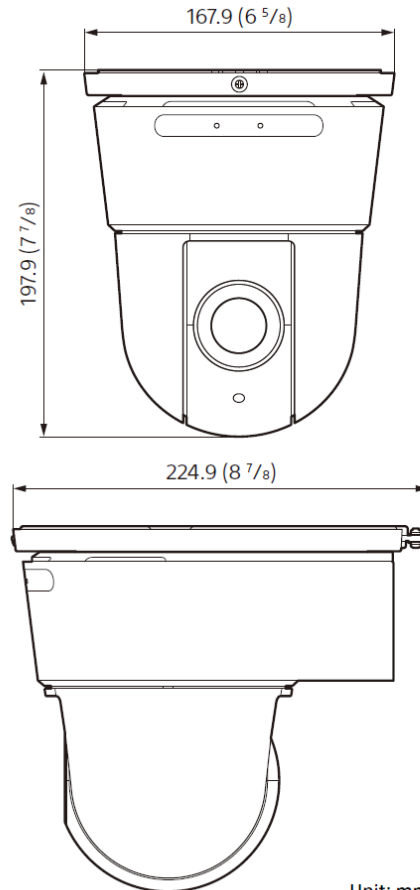
Bottom



Ceiling bracket (B)



With the ceiling bracket installed



Unit: mm (inches)

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