SECTION 27 41 16

INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

GUIDE SPECIFICATION

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Specifier: Please see PART 4 for a listing of products specified in this Guide Specification.

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# GENERAL

NOT USED in this Guide Specification. Specifier shall Specify PART 1 administrative and procedural requirements as needed.

## Description: Intelligent Video Cameras and Switches

# PRODUCTS

## Camera Type 1

Specifier Note:

*The IV‑CAMA3‑20‑N is a high quality intelligent PTZ IP camera that automatically tracks and frames a presenter based on facial and motion detection. Ideal for lecture capture or conferences, the IV‑CAMA3‑20‑N camera makes it possible to automate camera operations with no personnel and still have the viewing experience of a manned camera. All the tracking intelligence is built into the camera – no external system is needed. Intelligent tracking automatically detects the presenter and keeps them in the optimal part of the frame. It is easily set up to prevent tracking other subjects or displays.*

### Basis of Design

#### Crestron IV-CAMA3-20-N

Specifier Note:

IV-CAMA3-20-N
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMA3-20-N-W-1B

### Device Definition

#### PTZ IP Camera that automatically tracks and frames a presenter based on facial and motion detection through a dual-camera setup

##### Smooth tracking and quiet operation

##### Supports 20x optical zoom for tracking distances up to 50 ft. from the participants

#### Outputs NDI|HX and 3G-SDI at resolutions up to 1080p60 for use with video conferencing codecs and capture appliances

##### Connects directly to a codec or recording/streaming device with no external computer required

##### Compatible with popular conferencing platforms such as Microsoft Teams® and Zoom Rooms™

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, control, and NDI|HX video provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall or ceiling mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.3 in. x 6.4 in. (226 mm x 211 mm x 163 mm)

##### Weight: 4.3 lb. (1.96 kg)

#### Mounting

##### 1/4 in. threaded mount hole

##### Compatible with wall mount and j-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor

###### Tracking Camera: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

###### Reference Camera: 1/2.8 in. CMOS, f=3.4 mm, Horizontal: 92°, Vertical: 50°

##### Recommended Range: 15-50 ft. from subject, 7-12 ft. from ground

##### Focal Lens & Iris: f = 4.7 - 94 mm, F1.6 - F3.5

##### Field of View: 59.5° - 2.9°

##### Focus System: Auto, Manual, One Push

##### Minimum Illumination: 0.5 Lux (30 FPS), 0.1 Lux (60 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### Other Supported Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 20x Optical, 20x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI (Tracking and Reference), NDI|HX over Ethernet

Specifier Note:

The IV-CAMA3-20-N camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.265, H.264 (Four Streams) (IP Stream Only)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p60, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC (IP Stream Only)

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 2

Specifier Note:

*The IV‑CAMA3‑20 is a high quality intelligent PTZ IP camera that automatically tracks and frames a presenter based on facial and motion detection. Ideal for lecture capture or conferences, the IV‑CAMA3‑20 camera makes it possible to automate camera operations with no personnel and still have the viewing experience of a manned camera. All the tracking intelligence is built into the camera – no external system is needed. Intelligent tracking automatically detects the presenter and keeps them in the optimal part of the frame. It is easily set up to prevent tracking other subjects or displays.*

### Basis of Design

#### Crestron IV-CAMA3-20

Specifier Note:

IV-CAMA3-20
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMA3-20-W-1B

### Device Definition

#### PTZ IP Camera that automatically tracks and frames a presenter based on facial and motion detection through a dual-camera setup

##### Smooth tracking and quiet operation

##### Supports 20x optical zoom for tracking distances up to 50 ft. from the participants

#### Outputs 3G-SDI at resolutions up to 1080p60 for use with video conferencing codecs and capture appliances

##### Connects directly to a codec or recording/streaming device with no external computer required

##### Compatible with popular conferencing platforms such as Microsoft Teams® and Zoom Rooms™

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, and control of camera through one (1) ethernet cable connection

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall or ceiling mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.3 in. x 6.4 in. (226 mm x 211 mm x 163 mm)

##### Weight: 4.3 lb. (1.96 kg)

#### Mounting

##### 1/4 in. threaded mount hole

##### Compatible with wall mount and j-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor

###### Tracking Camera: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

###### Reference Camera: 1/2.8 in. CMOS, f=3.4 mm, Horizontal: 92°, Vertical: 50°

##### Recommended Range: 15-50 ft. from subject, 7-12 ft. from ground

##### Focal Lens & Iris: f = 4.7 - 94 mm, F1.6 - F3.5

##### Field of View: 59.5° - 2.9°

##### Focus System: Auto, Manual, One Push

##### Minimum Illumination: 0.5 Lux (30 FPS), 0.1 Lux (60 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### Other Supported Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 20x Optical, 20x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI (Tracking and Reference)

Specifier Note:

The IV-CAMA3-20 camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.265, H.264 (Four Streams) (IP Stream Only)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p60, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC (IP Stream Only)

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

##  Camera Type 3

Specifier Note:

*The IV‑CAMFR‑12‑N is a high quality intelligent PTZ IP camera that automatically frames all meeting participants in the room. The IV‑CAMFR‑12‑N is ideal for small to medium sized conference rooms. Autoframing technology eliminates the limitations of presets or the need to adjust the camera by automatically detecting and framing all meeting participants in the room. The IV‑CAMFR‑12‑N‑SLVR‑1B camera automatically adjusts as participants enter or leave the room and uses optimal framing to eliminate empty space when a room is not full.*

### Basis of Design

#### Crestron IV-CAMFR-12-N

Specifier Note:

IV-CAMFR-12-N
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMFR-12-N-SLVR-1B

### Device Definition

#### PTZ IP Camera that automatically frames all meeting participants in a room

##### Optimizes the video frame as participants enter and exit the room

##### Supports 12x optical zoom

##### Suitable for small to medium sized conference rooms, optimal distance 5-25 feet.

#### Outputs NDI|HX, 3G-SDI, DVI, and USB 3.0 at resolutions up to 1080p60 for use with video conferencing codecs and capture appliances

##### Connects directly to a codec or recording/streaming device with no external computer required

##### Compatible with popular conferencing platforms such as Microsoft Teams® and Zoom Rooms™

#### Can be configured using proprietary camera manager software

##### Optional manual control through VISCA commands, control system from same manufacturer, USB, or serial when autoframing is disabled, operates as a standard PTZ camera.

#### Power via PoE+, monitoring, configuration, control, and NDI|HX video provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 9.6 in. x 8.3 in. x 6.4 in. (244 mm x 211 mm x 163 mm)

##### Weight: 2.64 lb. (1.2 kg)

#### Mounting

##### 1/4 in. threaded mount hole for 90° Wall Mount

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Recommended Range: 5-25 ft. from subject, 4-6 ft. from ground

##### Focal Lens & Iris

###### Tracking Camera: f = 3.9 - 46.8 mm, F1.6 - F2.8

###### Wide-Angle Camera: f = 2.4 mm

##### Field of View

###### Tracking Camera: 72.5° - 6.3°

###### Wide-Angle Camera: Horizontal 86°, Vertical 52°

##### Focus System

###### Tracking Camera: Auto, Manual, PTZ Push, One Push

###### Wide-Angle Camera: Fixed

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain

###### Tracking Camera: Auto, Manual

###### Wide-Angle Camera: Auto

##### White Balance

###### Tracking Camera: Auto, Indoor, Outdoor, One Push, Manual

###### Wide-Angle Camera: Auto

##### Exposure

###### Tracking Camera: Auto, Manual, Shutter Priority, Iris Priority, Brightness Priority

###### Wide-Angle Camera: Auto

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D), USB 3.0

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle

###### Tracking Camera: Tilt: 30° - 90°, Pan: 170° - 170°

###### Wide-Angle Camera: N/A

##### Tilt / Pan Speed

###### Tracking Camera: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

###### Wide-Angle Camera: N/A

##### Zoom

###### Tracking Camera: 12x Optical, 12x Digital

###### Wide-Angle Camera: N/A

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI (Tracking and Reference), DVI-D/HDMI®, USB 3.0, NDI|HX over Ethernet

Specifier Note:

The IV-CAMFR-12-N camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p60, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 4

Specifier Note:

*The IV‑CAMFR‑12 is a high quality intelligent PTZ IP camera that automatically frames all meeting participants in the room. The IV‑CAMFR‑12 is ideal for small to medium sized conference rooms. Autoframing technology eliminates the limitations of presets or the need to adjust the camera by automatically detecting and framing all meeting participants in the room. The IV‑CAMFR‑12‑SLVR‑1B camera automatically adjusts as participants enter or leave the room and uses optimal framing to eliminate empty space when a room is not full.*

### Basis of Design

#### Crestron IV-CAMFR-12

Specifier Note:

IV-CAMFR-12
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMFR-12-SLVR-1B

### Device Definition

#### PTZ IP Camera that automatically frames all meeting participants in a room

##### Optimizes the video frame as participants enter and exit the room

##### Supports 12x optical zoom

##### Suitable for small to medium sized conference rooms, optimal distance 5-25 feet.

#### Outputs 3G-SDI, DVI, and USB 3.0 at resolutions up to 1080p60 for use with video conferencing codecs and capture appliances

##### Connects directly to a codec or recording/streaming device with no external computer required

##### Compatible with popular conferencing platforms such as Microsoft Teams® and Zoom Rooms™

#### Can be configured using proprietary camera manager software

##### Optional manual control through VISCA commands, control system from same manufacturer, USB, or serial when autoframing is disabled, operates as a standard PTZ camera.

#### Power via PoE+, monitoring, configuration, and control of camera through one (1) ethernet cable connection to camera

##### DC power supported with included adapter

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 9.6 in. x 8.3 in. x 6.4 in. (244 mm x 211 mm x 163 mm)

##### Weight: 2.64 lb. (1.2 kg)

#### Mounting

##### 1/4 in. threaded mount hole for 90° Wall Mount

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Recommended Range: 5-25 ft. from subject, 4-6 ft. from ground

##### Focal Lens & Iris

###### Tracking Camera: f = 3.9 - 46.8 mm, F1.6 - F2.8

###### Wide-Angle Camera: f = 2.4 mm

##### Field of View

###### Tracking Camera: 72.5° - 6.3°

###### Wide-Angle Camera: Horizontal 86°, Vertical 52°

##### Focus System

###### Tracking Camera: Auto, Manual, PTZ Push, One Push

###### Wide-Angle Camera: Fixed

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain

###### Tracking Camera: Auto, Manual

###### Wide-Angle Camera: Auto

##### White Balance

###### Tracking Camera: Auto, Indoor, Outdoor, One Push, Manual

###### Wide-Angle Camera: Auto

##### Exposure

###### Tracking Camera: Auto, Manual, Shutter Priority, Iris Priority, Brightness Priority

###### Wide-Angle Camera: Auto

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D), USB 3.0

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle

###### Tracking Camera: Tilt: 30° - 90°, Pan: 170° - 170°

###### Wide-Angle Camera: N/A

##### Tilt / Pan Speed

###### Tracking Camera: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

###### Wide-Angle Camera: N/A

##### Zoom

###### Tracking Camera: 12x Optical, 12x Digital

###### Wide-Angle Camera: N/A

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI (Tracking and Reference), DVI-D/HDMI®, USB 3.0

Specifier Note:

The IV-CAMFR-12-N camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p60, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 5

Specifier Note:

*The IV‑CAMPTZ‑20‑N is a high quality PTZ IP camera that can output up to 1080p60 resolution video via the 3G‑SDI or HDMI® ports. It is ideal for any meeting where one camera needs to capture several areas of the room. Combine with 1 Beyond Automate VX for a multi-camera speaker (presenter) tracking solution. The IV‑CAMPTZ‑20‑N camera supports a single Ethernet connection and provides power (PoE+), monitoring, control, and NDI®|HX video.*

### Basis of Design

#### Crestron IV-CAMPTZ-20-N

Specifier Note:

IV-CAMPTZ-20-N
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMPTZ-20-N-SLVR-1B

### Device Definition

#### PTZ IP Camera

##### Supports 20x optical zoom

##### Image flip allows for optional inverted mounting

#### Outputs 3G-SDI and HDMI at resolutions up to 1080p60, and NDI|HX at resolutions up to 1080p30

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, control, and NDI|HX video provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.1 in. x 6.3 in. (226 mm x 206 mm x 160 mm)

##### Weight: 3.74 lb. (1.7 kg)

#### Mounting

##### 1/4 in. threaded mount hole, compatible with Wall Mount and J-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Focal Lens & Iris: f = 4.7 - 94 mm, F1.6 - F3.5

##### Field of View: 59.5° - 2.9°

##### Focus System: Auto, Manual, PTZ Trigger, One Push

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 20x Optical, 20x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI, HDMI, NDI|HX over Ethernet

Specifier Note:

The IV‑CAMPTZ‑20‑N camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50/30/25

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p30, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

#### Audio input: 1x Line in

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 6

Specifier Note:

*The IV‑CAMPTZ‑20 is a high quality PTZ IP camera that can output up to 1080p60 resolution video via the 3G‑SDI or HDMI® ports. It is ideal for any meeting where one camera needs to capture several areas of the room. Combine with 1 Beyond Automate VX for a multi-camera speaker (presenter) tracking solution. The IV‑CAMPTZ‑20 camera supports a single Ethernet connection and provides power (PoE+), monitoring, and control.*

### Basis of Design

#### Crestron IV-CAMPTZ-20

Specifier Note:

IV-CAMPTZ-20
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMPTZ-20-SLVR-1B

### Device Definition

#### PTZ IP Camera

##### Supports 20x optical zoom

##### Image flip allows for optional inverted mounting

#### Outputs 3G-SDI and HDMI at resolutions up to 1080p60

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, and control provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.1 in. x 6.3 in. (226 mm x 206 mm x 160 mm)

##### Weight: 3.74 lb. (1.7 kg)

#### Mounting

##### 1/4 in. threaded mount hole, compatible with Wall Mount and J-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Focal Lens & Iris: f = 4.7 - 94 mm, F1.6 - F3.5

##### Field of View: 59.5° - 2.9°

##### Focus System: Auto, Manual, PTZ Trigger, One Push

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 20x Optical, 20x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI, HDMI

Specifier Note:

The IV‑CAMPTZ‑20 camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50/30/25

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p30, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

#### Audio input: 1x Line in

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 7

Specifier Note:

*The IV‑CAMPTZ‑12‑N is a high quality PTZ IP camera that can output up to 1080p60 resolution video via the 3G‑SDI or HDMI® ports. It is ideal for any meeting where one camera needs to capture several areas of the room. Combine with 1 Beyond Automate VX for a multi-camera speaker (presenter) tracking solution. The IV‑CAMPTZ‑12‑N camera supports a single Ethernet connection and provides power (PoE+), monitoring, control, and NDI®|HX video.*

### Basis of Design

#### Crestron IV-CAMPTZ-12-N

Specifier Note:

IV-CAMPTZ-12-N
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMPTZ-12-N-SLVR-1B

### Device Definition

#### PTZ IP Camera

##### Supports 12x optical zoom

##### Image flip allows for optional inverted mounting

#### Outputs 3G-SDI and HDMI at resolutions up to 1080p60, and NDI|HX at resolutions up to 1080p30

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, control, and NDI|HX video provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.1 in. x 6.3 in. (226 mm x 206 mm x 160 mm)

##### Weight: 3.74 lb. (1.7 kg)

#### Mounting

##### 1/4 in. threaded mount hole, compatible with Wall Mount and J-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Focal Lens & Iris: f = 3.9 - 46.8 mm, F1.6 - F2.8

##### Field of View: 72.5° - 6.3°

##### Focus System: Auto, Manual, PTZ Trigger

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 12x Optical, 12x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI, HDMI, NDI|HX over Ethernet

Specifier Note:

*The IV‑CAMPTZ‑12‑N camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.*

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50/30/25

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p30, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

#### Audio input: 1x Line in

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 8

Specifier Note:

*The IV‑CAMPTZ‑12 is a high quality PTZ IP camera that can output up to 1080p60 resolution video via the 3G‑SDI or HDMI® ports. It is ideal for any meeting where one camera needs to capture several areas of the room. Combine with 1 Beyond Automate VX for a multi-camera speaker (presenter) tracking solution. The IV‑CAMPTZ‑12 camera supports a single Ethernet connection and provides power (PoE+), monitoring, and control.*

### Basis of Design

#### Crestron IV-CAMPTZ-12

Specifier Note:

IV-CAMPTZ-12
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMPTZ-12-SLVR-1B

### Device Definition

#### PTZ IP Camera

##### Supports 12x optical zoom

##### Image flip allows for optional inverted mounting

#### Outputs 3G-SDI and HDMI at resolutions up to 1080p60

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Power via PoE+, monitoring, configuration, and control provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Compatible with multicamera system from same manufacturer to be used in a multicamera setup

#### Wall mountable

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.1 in. x 6.3 in. (226 mm x 206 mm x 160 mm)

##### Weight: 3.74 lb. (1.7 kg)

#### Mounting

##### 1/4 in. threaded mount hole, compatible with Wall Mount and J-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Device Architecture

#### Physical Form factor

##### Dimensions: 8.9 in. x 8.1 in. x 6.3 in. (226 mm x 206 mm x 160 mm)

##### Weight: 3.74 lb. (1.7 kg)

#### Mounting

##### 1/4 in. threaded mount hole, compatible with Wall Mount and J-mount ceiling bracket

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

##### Focal Lens & Iris: f = 3.9 - 46.8 mm, F1.6 - F2.8

##### Field of View: 72.5° - 6.3°

##### Focus System: Auto, Manual, PTZ Trigger

##### Minimum Illumination: 0.5 Lux (30 FPS)

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: RS-485, RS-232 (VISCA, PELCO-D)

##### IP Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: 30° - 90°, Pan: 170° - 170°

##### Tilt / Pan Speed: Tilt: 0.1° - 90° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 12x Optical, 12x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 3G-SDI, HDMI

Specifier Note:

*The IV‑CAMPTZ‑12‑SLVR‑1B camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.*

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50/30/25

##### IP Video Compression: H.264 (Dual Stream)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p30, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

#### Audio input: 1x Line in

### Power

#### Power input: 12 VDC, <30 W PoE+

##### Minimum of shielded CAT5e cable to be used for PoE power in compliance with European Directive (CE).

##### Alternate power input via 12 VDC power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE+ and DC adapter not supported

#### PoE+ Rating: 25.5 W

## Camera Type 9

Specifier Note:

*The IV‑CAMHK‑12 is an intelligent participant tracking solution that uses two HD PTZ cameras to automatically cut to whoever is speaking in the room. Ideal for small to medium sized rooms, deploy the IV‑CAMHK‑12 when a close-up view of the meeting participants is desired. The IV‑CAMHK‑12 uses voice and facial recognition to automatically switch to a shot of the active speaking participant. With production‑style switching, the IV‑CAMHK‑12 allows remote participants to follow an in‑room conversation without excessive camera switching.*

### Basis of Design

#### Crestron IV-CAMHK-12

Specifier Note:

IV-CAMHK-12
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMHK-12-SLVR-1B

### Device Definition

#### Participant tracking solution that uses two HD PTZ cameras to automatically cut to whoever is speaking in the room

##### Ideal for small to medium sized rooms

##### Allows remote participants to follow an in-room conversation without excessive camera switching

##### Clean switching with broadcast-style cuts

##### Side-by-side dialog mode captures multiple participants in conversation

##### Intended for spaces up to 25 ft. from participants

#### Uses voice and facial recognition to automatically switch to a shot of the actively speaking participant

#### Works with a variety of microphones and audio speakers, offers echo cancel audio input.

#### Outputs 3G-SDI and HDMI at resolutions up to 1080p60

#### Compatible with Microsoft Teams®, Zoom Rooms™, Cisco WebEx®, MediaSite®, and Panopto® video conferencing platforms

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### Device takes DC power input

### Device Architecture

#### Physical Form factor

##### Dimensions: 19.69 in. x 6.4 in. x 5.71 in. (500 mm x 163 mm x 145 mm)

##### Weight: 6.61 lb. (3 kg)

#### Mounting

##### 3 x 1/4 in. threaded mount hole for 90° Wall Shelf Mount

##### Recommended Mounting: 5-25 ft. from the subject, 4-6 ft. from the ground

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor

###### Tracking Cameras: 1/2.8 in. Sony Exmor CMOS, 2.14 MP

###### Wide-Angle Camera: 1/2.8 in. CMOS, 2.14 MP

##### Focal Lens & Iris-Tracking Cameras: f = 3.9 - 46.8 mm, F1.6 - F2.8

##### Field of View

###### Tracking Cameras: 72.5° - 6.3°

###### Wide-Angle Camera: 86°

##### Focus System: Auto, Manual, PTZ Push, One Push

##### Minimum Illumination: 0.5 Lux (Color), 0.1 Lux (B/W)

##### Shutter Speed: 1/25 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, Indoor, Outdoor, One Push, Manual, Auto Track

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: PELCO-D, VISCA, PELCO-P

##### Control: TCP/IP

##### Control Protocols: HTTP, RTP, TCP, UDP, ONVIF

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Tilt / Pan Angle: Tilt: -30° - +90°, Pan: 90° - 90°

##### Tilt / Pan Speed: Tilt: 0.1° - 80° / sec, Pan: 0.1° - 120° / sec

##### Zoom: 12x Optical, 12x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Outputs: 1x HDMI output, 1x 3G-SDI output, convert to USB using certified adapter

Specifier Note:

*The IV‑CAMHK‑12 camera includes integrated circuits produced by HiSilicon (part numbers HI3516ARBCV100 and HI3516ARFCV200), a subsidiary of Huawei Technologies Company.*

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.265, H.264 (Four Streams)

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p60, User-selectable framesize/framerate/bitrate

#### IP Audio Compression: AAC

#### Audio Input: 2x Line In (one with echo cancellation), 1x line out

### Power

#### Power Input: 12 VDC <50 W

## Camera Type 10

Specifier Note:

*The IV‑CAMFL‑N‑W‑1B is a simple but powerful intelligent IP camera designed for small to medium size rooms. The IV‑CAMFL‑N‑W‑1B uses facial and motion detection to automatically track and frame the presenter. All the tracking intelligence is built into the camera – no external system is needed. The IV‑CAMFL‑N‑W‑1B camera supports a single Ethernet connection and provides power (PoE), monitoring, control, and NDI®|HX video.*

### Basis of Design

#### Crestron IV-CAMFL-N-W-1B

Specifier Note:

IV-CAMFL-N-W-1B
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-CAMFL-N-W-1B

### Device Definition

#### ePTZ IP camera that uses facial and motion detection to automatically track and frame the presenter

##### Ideal for small to medium sized rooms

##### Intended for spaces up to 25 ft. from participants

##### Locks on to a single presenter, not distracted by background events

##### Tracking of new presenter when previous presenter leaves tracking zone

##### Camera returns to home position when not tracking a speaker

#### Power via PoE, monitoring, configuration, control, and NDI|HX video provided through one (1) ethernet cable connection to camera

##### DC power supported with included adapter if power source is less than 10 ft. (3 m) from camera

#### Up to 1080p60 resolution output over NDI|HX from 4K full room view

#### Up to 256 pan, tilt, and zoom (PTZ) configuration preset points available

#### Can be configured using proprietary camera manager software or controlled through VISCA over IP via control system from same manufacturer

#### With auto tracking turned off, camera operates like a standard ePTZ camera and is controllable through either USB or IP

### Device Architecture

#### Physical Form factor

##### Dimensions: 5.87 in. x 2.99 in. x 2.28 in. (149 mm x 76 mm x 58 mm)

##### Weight: 0.92 lb. (0.42 kg)

#### Mounting

##### 2 x 1/4 in. threaded mount hole

##### Recommended Mounting: 7-12 ft. Height, 15-25 ft. from the presenter

##### Color: White

#### Environmental Operating Conditions

##### 32° to 104° F (0° to 40° C)

### Functions

#### The camera shall feature the following optics and processing capabilities:

##### Image Sensor

###### 1/2.5 in. CMOS, 8.57 megapixel

##### Focal Lens & Iris: f = 7.9 mm (ePTZ camera)

##### Field of View: 68° - 41° (ePTZ camera)

##### Focus System: Fixed

##### Minimum Illumination: 1 Lux

##### Shutter Speed: 1/1 – 1/10,000 sec

##### Gain: Auto, Manual

##### White Balance: Auto, One Push, Manual

##### Exposure: Auto, Manual, Shutter Priority, Iris Priority

##### Number of Presets: Up to 256

##### Serial Control: PELCO-D, VISCA

##### Protocols: HTTP, TCP, UDP, ONVIF

##### Address: 0-63

#### The camera shall feature the following Pan, Tilt, Zoom capabilities:

##### Zoom: 2x Digital

#### Ethernet Connectivity: RJ45, 100 Mb

#### The camera shall support the following video signal characteristics:

##### Video Output: NDI|HX over Ethernet

##### Signal Formats (HD): 1080p60/50/30/25, 1080i60/50, 720p60/50

##### IP Video Compression: H.265, H.264

##### Streaming: RTSP, RTMP

##### Streaming Resolution: Up to 1080p30 (Tracking Image-Dual Stream, Full View Image-Dual Stream)

#### IP Audio Compression: AAC

#### Audio Input: 1x Line In

### Power

#### Power Input: 12 VDC <9 W, PoE

##### Alternate power input via 12 VDC 1 A power adapter supported at distances less than 10 ft. (3 m) from power source

###### Simultaneous power from both PoE and DC adapter not supported

#### PoE Rating: 15.4 W

## Switch Type 1

Specifier Note:

*The IV-SAM-VXS-1B Automate™ VX is a voice-activated camera switching solution that brings the full multi-camera studio experience to meetings, town halls, and classrooms.*

### Basis of Design

#### Crestron IV-SAM-VXS-1B

Specifier Note:

IV-SAM-VXS-1B
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-SAM-VXS-1B

### Device Definition

#### Voice-activated, multi-camera switching solution

##### Camera switching and movement is done automatically based on the location of the active speaking participant, using data from room microphones

##### Support for up to twelve (12) cameras

##### NDI® Compatible (IP video over the network)

##### Three (3) HD-SDI inputs

#### Connected cameras can be positioned in room as needed, and room configurations can be set to accommodate different furniture layouts

#### Support for combining multiple sources, title superimposition, and custom graphics and layouts.

#### Compatible with control modules from same manufacturer, API available for custom user interfaces and control systems from third-party manufacturers

#### Built-in encoder and recorder to enable multiple live streams and over one hundred (100) hours of recording

#### Design and configuration through proprietary web interface program

#### Accepts AC power input

### Device Architecture

#### Physical Form factor

##### Dimensions

###### Height: 3.5 in. (89 mm)

###### Width: 16.75 in. (425 mm)

###### Depth: 14.5 in. (368 mm)

###### Weight: 14 lb. (6.35 kg)

### Functions

#### Device Capabilities

##### Titles, Graphics, Layouts: Titles, logos, backgrounds can be added; graphic designer to create any multi-source layout

##### Program Record: MP4 file (H.264 codec). User-selectable bitrate up to 10 Mbps

##### Recording Capacity: Records to internal 500 GB SSD storage

##### Streaming Encoder: Can stream to any RTMP server. Presets included for popular CDNs

##### NDI Support: For inputs and program output

##### Camera Control: Can control proprietary PTZ and tracking cameras over IP

##### System Control: RESTful API over Network (TCP) for third party control

##### Compatible Codecs: Output via HD-SDI for connection to external conferencing codec or via USB adapter to external systems running Microsoft Teams® software, Zoom Rooms™ software, etc.

##### Configuration: Browser-based configuration with secure log-in and user administration. Customizable preset options for sleep, wake, and scenario actions.

#### Connectivity

##### Network Ports: Two (2) RJ45 Gigabit Ethernet

#### Video

##### Video Inputs: Three (3) HD-SDI Inputs

##### Video Output: Up to 1080p60; one (1) HD-SDI (SDI to HDMI® converter included), NDI|HX®, virtual webcam

##### Desktop Output: Four (4) DisplayPort™ outputs for setup and maintenance

#### Audio

##### Audio Input: 3.5 mm line in, USB, Dante® input

##### Refer to manufacturer website for lists of compatible Mic Systems and DSPs.

#### Power: 400 W, 100-240 VAC

## Switch Type 2

Specifier Note:

*The IV‑SAM‑VXP‑1B Automate™ VX Pro is a voice-activated camera switching solution that brings the full multi-camera studio experience to meetings, town halls, and classrooms.*

### Basis of Design

#### Crestron IV-SAM-VXP-1B

Specifier Note:

IV-SAM-VXP-1B
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-SAM-VXP-1B

### Device Definition

#### Voice-activated, multi-camera switching solution

##### Camera switching and movement is done automatically based on the location of the active speaking participant, using data from room microphones

##### Support for up to twelve (12) cameras

##### NDI® Compatible (IP video over the network)

##### Seven (7) HD-SDI inputs

#### Connected cameras can be positioned in room as needed, and room configurations can be set to accommodate different furniture layouts

#### Support for combining multiple sources, title superimposition, and custom graphics and layouts.

#### Compatible with control modules from same manufacturer, API available for custom user interfaces and control systems from third-party manufacturers

#### Built-in encoder and recorder to enable multiple live streams and over one hundred (100) hours of recording

#### Design and configuration through proprietary web interface program

#### Accepts AC power input

### Device Architecture

#### Physical Form factor

##### Dimensions

###### Height: 3.5 in. (89 mm)

###### Width: 16.75 in. (425 mm)

###### Depth: 14.5 in. (368 mm)

###### Weight: 14 lb. (6.35 kg)

### Functions

#### Device Capabilities

##### Titles, Graphics, Layouts: Titles, logos, backgrounds can be added; graphic designer to create any multi-source layout

##### Program Record: MP4 file (H.264 codec). User-selectable bitrate up to 10 Mbps

##### Recording Capacity: Records to internal 1 TB SSD storage

##### Streaming Encoder: Can stream to any RTMP server. Presets included for popular CDNs

##### NDI Support: For inputs and program output

##### Camera Control: Can control proprietary PTZ and tracking cameras over IP

##### System Control: RESTful API over Network (TCP) for third party control

##### Compatible Codecs: Output via HD-SDI for connection to external conferencing codec or via USB adapter to external systems running Microsoft Teams® software, Zoom Rooms™ software, etc.

##### Configuration: Browser-based configuration with secure log-in and user administration. Customizable preset options for sleep, wake, and scenario actions.

#### Connectivity

##### Network Ports: Two (2) RJ45 Gigabit Ethernet

#### Video

##### Video Inputs: Seven (7) HD-SDI Inputs; Up to twelve (12) cameras with NDI|HX® interface

##### Video Output: Up to 1080p60; one (1) HD-SDI (SDI to HDMI® converter included), NDI|HX®, virtual webcam

##### Desktop Output: Four (4) DisplayPort™ outputs for setup and maintenance

#### Audio

##### Audio Input: 3.5 mm line in, USB, Dante® input

##### Refer to manufacturer website for lists of compatible Mic Systems and DSPs.

#### Power: 400 W, 100-240 VAC

## Switch Type 3

Specifier Note:

*The IV‑SAM‑VXP‑1B Automate™ VX Plus is a voice-activated camera switching solution that brings the full multi-camera studio experience to meetings, town halls, and classrooms.*

### Basis of Design

#### Crestron IV-SAM-VXN-1B

Specifier Note:

IV-SAM-VXN-1B
https://www.crestron.com/Products/Workspace-Solutions/Intelligent-Video/1-Beyond-Intelligent-Video/IV-SAM-VXN-1B

### Device Definition

#### Voice-activated, multi-camera switching solution

##### Camera switching and movement is done automatically based on the location of the active speaking participant, using data from room microphones

##### NDI® Compatible (IP video over the network)

##### Support for up to twelve (12) NDI sources

##### Support for Three (3) HD-SDI inputs

#### Connected cameras can be positioned in room as needed, and room configurations can be set to accommodate different furniture layouts

#### Support for combining multiple sources, title superimposition, and custom graphics and layouts.

#### Compatible with control modules from same manufacturer, API available for custom user interfaces and control systems from third-party manufacturers

#### Built-in encoder and recorder to enable multiple live streams and over one hundred (100) hours of recording

#### Design and configuration through proprietary web interface program

#### Accepts AC power input

### Device Architecture

#### Physical Form factor

##### Dimensions

###### Height: 3.5 in. (89 mm)

###### Width: 16.75 in. (425 mm)

###### Depth: 14.5 in. (368 mm)

###### Weight: 14 lb. (6.35 kg)

### Functions

#### Device Capabilities

##### Titles, Graphics, Layouts: Titles, logos, backgrounds can be added; graphic designer to create any multi-source layout

##### Program Record: MP4 file (H.264 codec). User-selectable bitrate up to 10 Mbps

##### Recording Capacity: Records to internal 500 GB SSD storage

##### Streaming Encoder: Can stream to any RTMP server. Presets included for popular CDNs

##### NDI Support: For inputs and program output

##### Camera Control: Can control proprietary PTZ and tracking cameras over IP

##### System Control: RESTful API over Network (TCP) for third party control

##### Compatible Codecs: Output via HD-SDI for connection to external conferencing codec or via USB adapter to external systems running Microsoft Teams® software, Zoom Rooms™ software, etc.

##### Configuration: Browser-based configuration with secure log-in and user administration. Customizable preset options for sleep, wake, and scenario actions

#### Connectivity

##### Network Ports: Two (2) RJ45 Gigabit Ethernet

#### Video

##### Video Inputs: 3x HD-SDI Inputs, 12x NDI Inputs, 1x USB Type-A Input

##### Video Output: Up to 1080p60; one (1) HD-SDI (SDI to HDMI® converter included); NDI|HX® and virtual webcam

##### Desktop Output: Four (4) DisplayPort™ outputs for setup and maintenance

#### Audio

##### Audio Input: 3.5 mm line in, USB, Dante® input

##### Refer to manufacturer website for lists of compatible Mic Systems and DSPs.

#### Power: 400 W, 100-240 VAC

# EXECUTION

NOT USED in this Guide Specification. Specifier shall Specify PART 3 On-Site work as needed.

# APPENDICES

## SPECIFIED PRODUCTS

### Crestron IV-CAMA3-20-N

### Crestron IV-CAMA3-20

### Crestron IV-CAMFR-12-N

### Crestron IV-CAMFR-12

### Crestron IV-CAMPTZ-20-N

### Crestron IV-CAMPTZ-20

### Crestron IV-CAMPTZ-12-N

### Crestron IV-CAMPTZ-12

### Crestron IV-CAMHK-12

### Crestron IV-CAMFL-N-W-1B

### Crestron IV-SAM-VXS-1B

### Crestron IV-SAM-VXP-1B

### Crestron IV-SAM-VXN-1B