BOLIN

EX-ULTRA
Outdoor PTZ Line Flagship

Redefining The Outdoor PTZ Camera Experience

IMAGE MODULE

The EX-Ultra series outdoor PTZ camera has three imaging solutions: a large 1" 4K image sensor provides FHD amazing image quality with 48X long zoom range, a 4K60 sensor with exceptional performance in high-speed environments, or the Full HD option with great low light and superior image stabilization for tough (challenging) environments. There is an image option for every scenario.
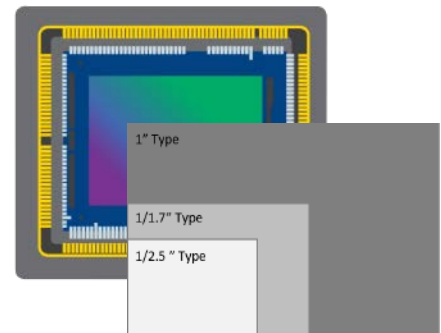
SKU: EXU248F
1080p60

Sony Image Block

- 1 inch type Exmor R CMOS large sensor
- 14.4 Megapixels
- Best FHD Image Quality in its Class
- Long range 48X zoom
- 4K resolution @30fps available for outputting with 18X zoom range
- Optical Image Stabilizer
- Black Level
- Color Matrix
- ND Filter
- True WDR

Size of the 1 Inch Sensor Comparison

SKU: EXU230H
1080p60

Sony Image Block

- 1/1.8 inch STARVIS 2 sensor
- Pro AV Optimised High Resolution Image Quality
- 30X 8M High Resolution Optical Zoom Lens
- Advanced AF Performance
- High Color Performance in Super Low Light Conditions
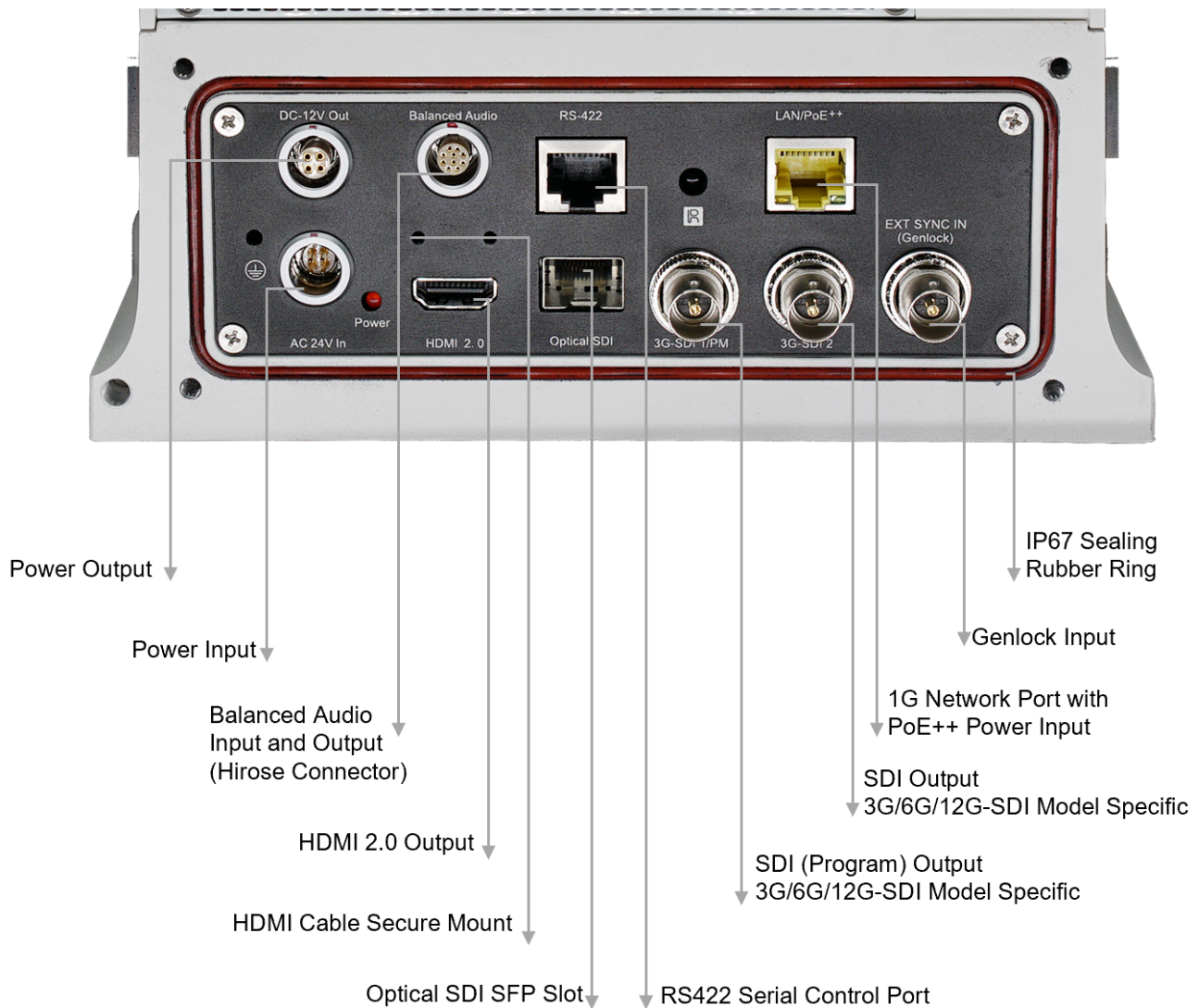- Super Image Stabilization

SKU: EXU420F
4K60

Sony Sensor

- 1/2.5 Inch CMX715 High Class Sensor
- Crisp and Clean UHD Image Quality
- Crisp with 20X High Resolution Optical Zoom
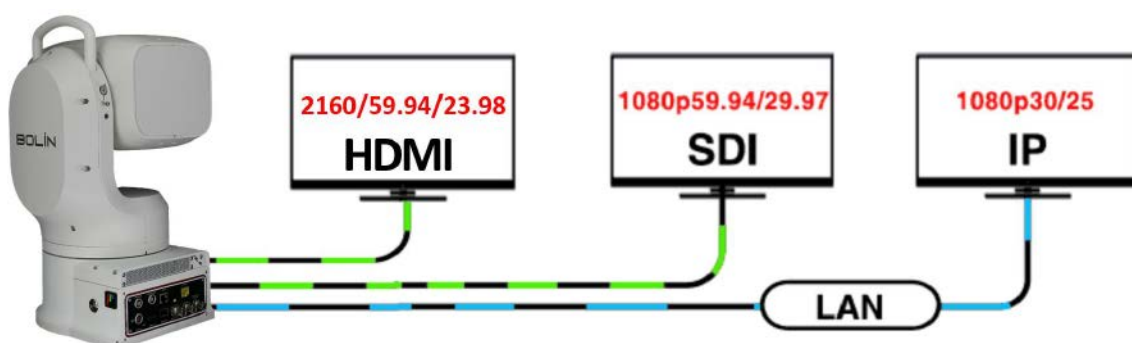- AI Face Detection Auto Focus/Exposure

OUTPUT

Power Output

Power Input

Balanced Audio
Input and Output
(Hirose Connector)

HDMI 2.0 Output

HDMI Cable Secure Mount

Optical SDI SFP Slot

RS422 Serial Control Port

SDI (Program) Output
3G/6G/12G-SDI Model Specific

SDI Output
3G/6G/12G-SDI Model Specific

1G Network Port with
PoE++ Power Input

Genlock Input

IP67 Sealing
Rubber Ring

DC-12V Out | Balanced Audio | RS-422 | LAN/PoE++ | EXT SYNC IN (Genlock)

AC 24V In | Power | HDMI 2.0 | Optical SDI | 3G-SDI 1/PM | 3G-SDI 2

- ▪ Dual 12G-SDI
- ▪ HDMI 2.0
- ▪ 4K IP Streaming - AVC/HEVC
- ▪ SFP Optical SDI

- ▪ External Synchronization Genlock
- ▪ Audio embedded with all video output
- ▪ XLR broadcast audio input/output
- ▪ On-screen character generator

True Tri-Output
IP, SDI, and HDMI can be set to independent formats for different application use

2160/59.94/23.98
HDMI

1080p59.94/29.97
SDI

1080p30/25
IP

LAN

Full Broadcast SDI Format and Standard (Model Specific)

3840x2160/59.94/60p
3840x2160/50p
3840x2160/29.97/30p
3840x2160/25p
3840x2160/23.98p
3840x2160/24p
1920x1080/59.94p/60p
1920x1080/59.94i/60i
1920x1080/50p
1920x1080/50i
1920x1080/29.97p/30p
1920x1080/25p
1920x1080/23.98p/24p
1280x720/59.94p/60p
1280x720/50p

SMPTE 292(1.5Gb/s)
SMPTE 424
SMPTE 425-A(3Gb/s)
SMPTE 2081(6Gb/s)
SMPTE 2082-0/1(12Gb/s)
with SMPTE 352 SDI Metadata
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SITUATION-USING SDI/HDMI (Tradition AV Syatem)

Planning an AV system structure or installation using SDI/HDMI video cables?
Do these issues sound familiar?

- Signal loss over long distances
- The need for multiple SDI/HDMI amplifiers and splitters.
- Adding hardware workaround using SDI/HDMI matrixes and routers.
- Having to extend an AV installation, by adding cables, display, and endpoints.
- Looking to utilize advanced AV Over IP solutions, but the video bandwidth is too high for a standard 1G network infrastructure.
- Large cable count and hardware management issues within the space
- Unstable/high failure rate due to too many connected devices

If the answer is "Yes",
- A FAST HEVC solution could easily replace a traditional SDI/HDMI installation saving you time and money, by having almost no compromises on the ultimate video signal quality of an SDI/HDMI installation.

SDI/HDMI REPLACEMENT - FAST HEVC

SDI (12G-SDI)	Key Words	Key Words	IP Streaming (4K60) - FAST HEVC Codec
Uncompressed video/Audio delivery	Analog/Traditional	IT/Future	Codec based format (AVC/HEVC) audio/video delivery
AV signal running around 12 Gigabits/per second	High bit rate	Adaptive bitrate	Fast adaptive bitrate AV encoding
Uncompressed up to 4K/60 delivery	High cost	Lower cost	Slightly compressed UHD 4K delivery
Negligeable latency AV delivery	No-Latency	Visually No-Latency	Ultra low latency - less than 2 frame/s (30ms, visualy zero-latency)
High-quality AV delivery	Lossless	Visually Lossless	4K60 (4:2:2 – 8/10/12bit, visually lossless)
One cable - One signal AV delivery	1 to 1	1 to Many	20-200Mbps bandwidth (45Mbps at streaming 4K60 4:2:2/12bit, visually lossless)
Robust, reliable BNC connector and costly coaxial cable	Expensive	More affordable	Ethernet connector (RJ45) and CAT6 network cable
Up to 260ft (80m) range cable run without signal loss	Limited	Flexible Build	Flexible network infrustructure up to 290ft (90m)
Hardware device based, high power consumption	High heat	Low heat	Hardware FPGA codec with low power consumption and software decode application applicable
Supports all ancillary data	Vintage	Modern	Support some ancillary and metadata
Point to point hardware connection	1 To 1	1 To Many	Flexible one to many possibilities-Multicast
Costly solution for long distance broadcast	Expensive Build	Flexible Build	Highly flexible and lower cost IP streaming plus PoE
Predictable and very reliable	Rigid	Agile	Agile, flexible, and scalable
High quality audio	Hi-Fi	High Quality	Various high quality audio codecs

Two options of IP streaming codec:

1. Standard AVC/HEVC (H.264/265), software SOC based codec
2. Fast AVC/HEVC (H.264/265), hardware FPGA based codec

- Up to 4K60
- SDI Replacement
- Dual stream, Multicast Support
- RTSP, RTMP, RTMPS, SRT, ONVIF
- IP Control protocol: Visca Over IP, Onvif
- Compatible With Standard AVC/HEVC
- Software Decode and Hardware Decode
- H.264/265 open platform, codec from Xilinx MPSoC

FPGA hardware codec,
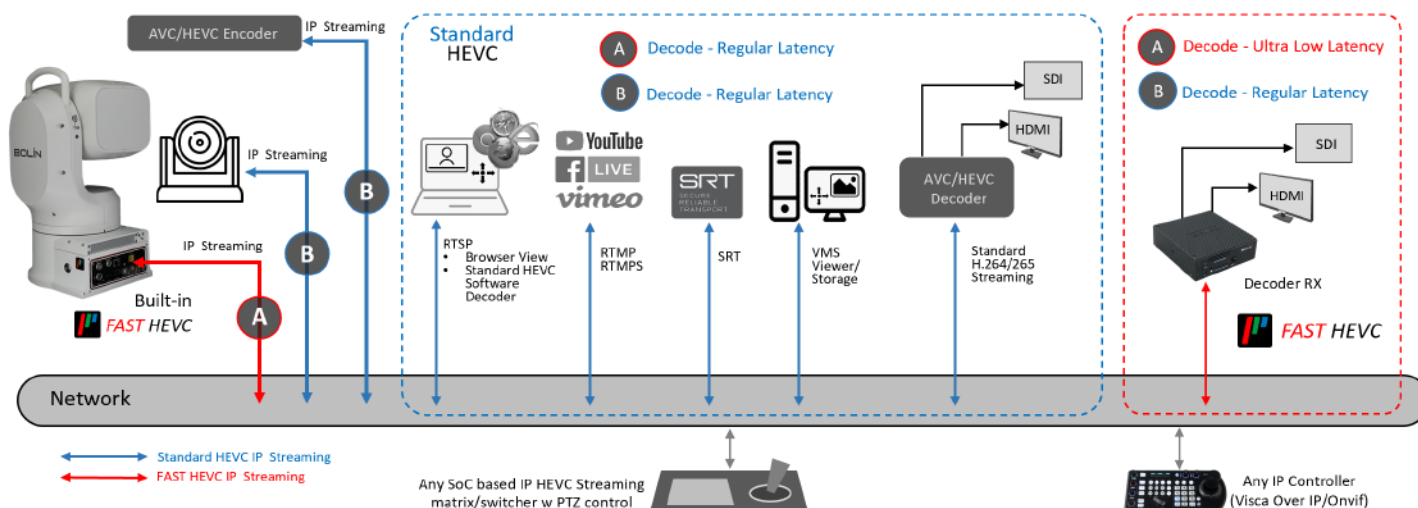*utilizing Xilinx Zynq™ UltraScale+™ EV MPSoC to deliver*

Only 45Mbps bandwidth that streaming 4K60 at 4:2:2 12bit
in less than 2 frame/s (32ms) latency

*Comparison-The Facts of FAST HEVC Performance

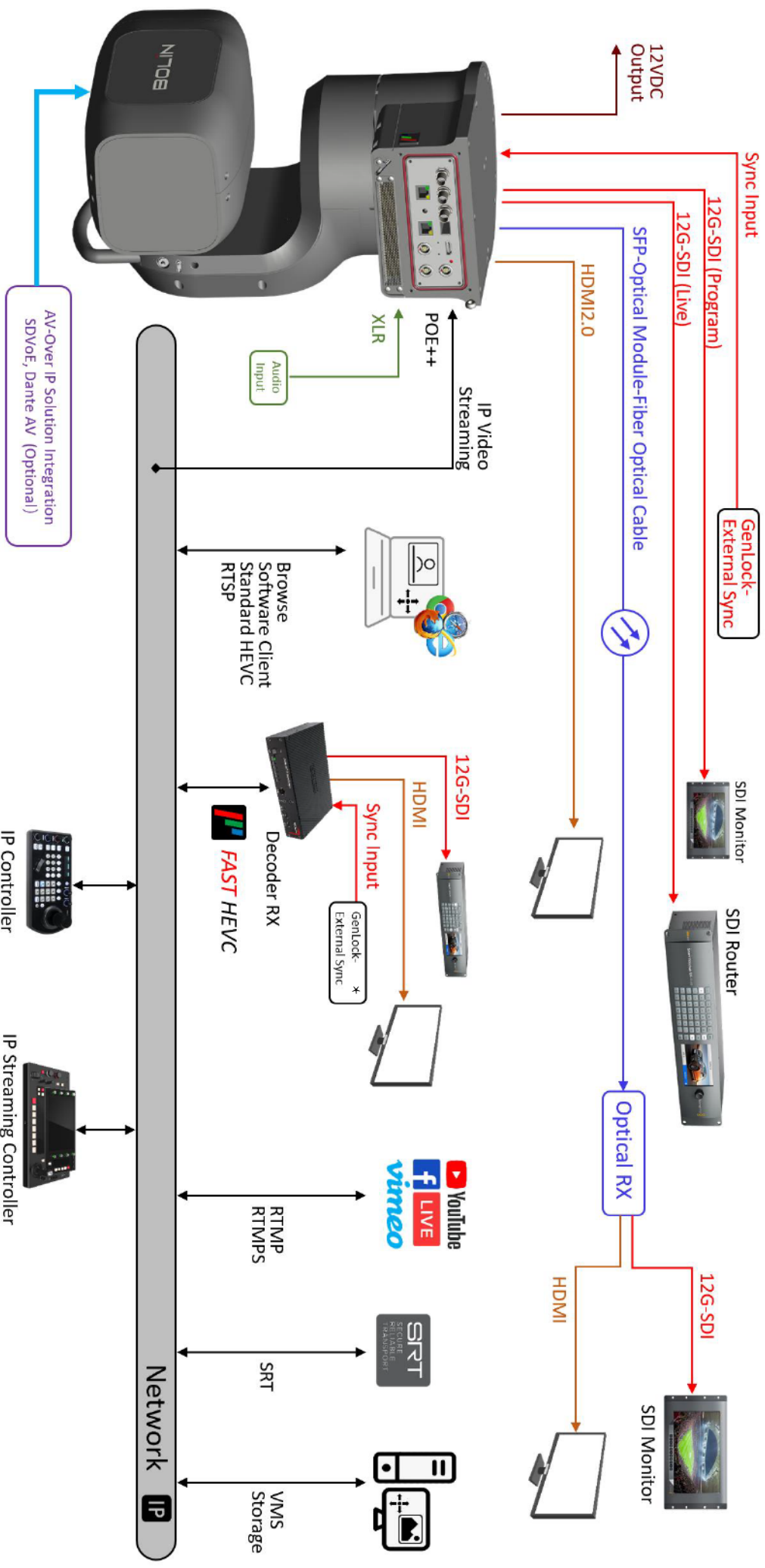| Fundation	Platform	Codec	1080p59.94/60			2160p59.94/60		
			Quality (Up To)	Latency (Point-to Point)	Bandwidth	Quality (Up To)	Latency (Point-to Point)	Bandwidth
H.264/265 AVC/HEVC	Software SOC	Stand HEVC	420SP(NV12)	4 frame/70ms	8Mbps	420SP(NV12)	25 frame/430ms	16Mbps
	Hardware SOC	Stand HEVC	4:2:2/12bit	2 frame/30ms	8Mbps	NA		
	Hardware FPGA	FAST HEVC	4:2:2/12bit(NV16)	2 frame/25ms	8-30Mbps	4:2:2/12bit(NV16)	2 frame/30ms	16-65Mbps
NDI	Hardware FPGA	Full NDI	4:2:2/10bit	3 frame/50ms	150Mbps	4:2:2/10bit	4 frame/70ms	300Mbps
Dante AV-Ultra	Hardware FPGA	JPEG 2K	4:2:2/12bit	1 frame/6ms	250Mbps	4:2:2/12bit	1 frame/8ms	550Mbps

*Results may vary depending on network configuration and management settings.

Open Platform

Bolin FAST HEVC codec camera can be decoded by standard HEVC decoder but not having Ultra Low Latency

HEVC codec camera/device can be decoded by Bolin FAST HEVC decoder but not having Ultra Low Latency

12VDC Output

Sync Input

12G-SDI (Program)

12G-SDI (Live)

GenLock- External Sync

SDI Monitor

SFP-Optical Module-Fiber Optical Cable

HDMI2.0

SDI Router

XLR

Audio Input

POE++

IP Video Streaming

Optical RX

HDMI

12G-SDI

SDI Monitor

Browse Software Client Standard HEVC RTSP

12G-SDI

HDMI

Sync Input

GenLock- External Sync *

Decoder RX

FAST HEVC

IP Controller

IP Streaming Controller

RTMP RTMPS

YouTube LIVE

vimeo

SRT SECURE RELIABLE TRANSPORT

SRT

VMS Storage

Network IP

AV-Over IP Solution Integration SDVoE, Dante AV (Optional)

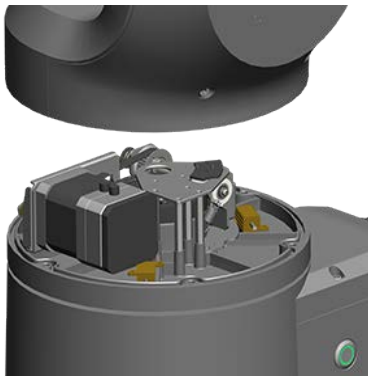*Genlock Input On Decoder is model specific
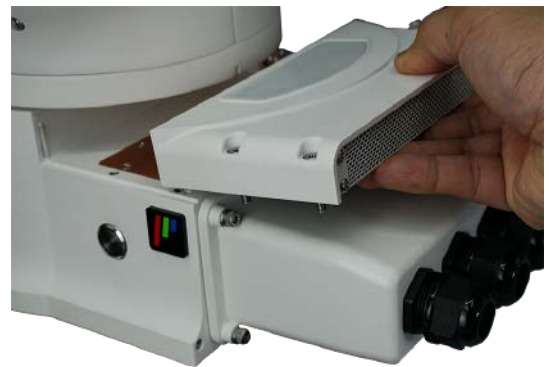
RUGGED and DURABLE

Sun Shield and
Hidden-Type Rain Wiper

Nitrogen Filled Image Module Housing
and Carrier Handle

All stainless Steel/brass/metal
interior mechanical parts

Modular IP67 waterproof heat
dissipation cooling part, replace
without camera uninstallation

Aluminum + Grivory GV body material,
finishing with C5 class salt air
corrosion resistant coat

Entire body IP67 rated
dustproof and waterproof

- Wind Load Durability, Non-Destructive and steady operation at 60 m/s or less
- Heater, Defroster built-in
- –40 °C to 60 °C (-40°F to 140°F) operational

MOVEMENT

Smooth and Accurate Movement

- PAN: 340° (-170° to +170°); Fully proportional speed 0.01° to 60°/s
- TILT: 210° (-90° to +120°); Fully proportional speed 0.01° to 60°/s
- Preset: 255 positions, Speed 100°/s,
  0~5 Level Adjustable, Accuracy: 0.03°
- Picture Profile Preset
- Motionless Preset
- PTZ Trace Memory
- Quietness less than NC35
- ZDP (Zero Deviation Positioning),
  Position Deviation Self-Correction

FEATURES

- On-screen character generator
- All firmware upgrade via IP
- Tally Light
- POE++ and 24VDC/AC
- Power Output: 12VDC
- Optional laser IR illuminator
- Available Color: Dark Gray, White

With Laser IR Illuminator Installed

Tally Light

- 360 degree viewable tally light
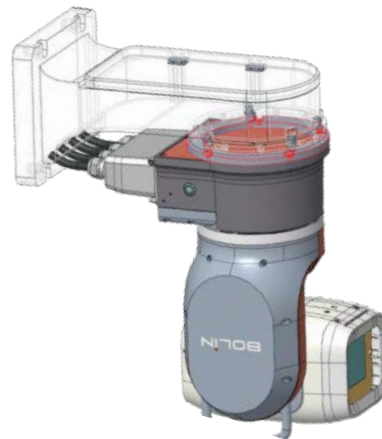- Removable when tally light is not required

- Upright Mount
- Pendant Mount

Easy Permanent Installation

- IP67 wall mount bracket
- Quick release locking adaptor
- Waterproof compartment for accessories
- Wiring conduit/pipe interface

Vibration Absorption Platform

- Use on Stage, Vehicle, Moving Platform, Vibration Prone Environments

Live Production

- Tripod mount
- Tripod mount waterproof rear panel cover
- ¼", 3/8" tripod holes
- Tripod quick mount/release locking adaptor

SPECIFICATIONS

Model No.	EXU230H	EXU248F	EXU420F
Codec	HEVC	🅸🅿 FAST HEVC	🅸🅿 FAST HEVC
Camera Image	30X Full HD	48X/18X FHD/4K	20X 4K60
Image Maker	Sony	Sony	Bolin
Image Sensor	CMOS image sensor 1/1.8 type STARVIS 2 sensor	1.0-type back-illuminated Exmor R CMOS sensor	IMX715, CMOS image sensor 1/2.8 type
Number of effective pixels	2712 x 1538, 4.17M [pixels]	14.2 Megapixels	8.29MP
Picture elements	2688 x 1520, 4.09M [pixels]	3840 x 2160, 8.29 Megapixels	3840x2160
Lens	Enhanced optical zoom 30X	Zeiss Vario-Sonnar T lens, Zoom range 48X(FHD)/18X(4K)	20X
Tele Convert Mode	-	When turn on, gain 2X zoom range with 1080p resolution	-
Digital Zoom	12X	-	16X
Horizontal Angle of View	58.1˚ (Wide) - 2.3˚ (Tele),	64.6˚ (Wide) - 6.1˚ (Tele),	78.59° (W)~4.92° (T)
Vertical Angle of View	34.9˚ (Wide) - 1.7˚ (Tele),	39.2˚ (Wide) - 3.4˚ (Tele),	48.39° (W)~2.79° (T)
Focal Length	f= 6.5 mm (WIDE) to 162.5 mm (TELE)	f=9.3 to 111.6mm, F2.8(Wide) ,F4.5(Tele)	f= 3.55 mm (WIDE) to 63.58 mm (TELE)
Min. object distance	100mm (Wide), 1200mm (Tele)	80mm (Wide), 1000mm (Tele)	50cm
Aperture	F1.6 (Wide) to F4.8 (Tele), 16 steps	F2.8 Constant (W)~F4.5(T), 16 Steps	F2.0 (Wide) to F3.8 (Tele)
Min. Illumination	ICR-Off, 0.009 lx (1/30 sec, 50%, High Sensitivity On); ICR-On, 0.00008 lx (1/30 sec, 50%, High Sensitivity On)	0.5 lx (1/30 sec, 50%, High Sensitivity On) 2.0 lx (1/30 sec, 50%, High Sensitivity Off)	0.5lux（color），0.1lux（black）
Shutter Speed	1/1 sec to 1/10000 sec (22 steps)	1/1 sec to 1/10000 sec (28 steps)	1/1 sec to 1/10000 sec (22 steps)
Focus	Spot Focus, Auto / Manual / One Push Trigger /Full Scan one push trigger / Near Limit / Spot Light Avoidance	Spot Focus, Auto Focus(Trigger/Interval), Manual Focus(Variable Speed), One Push Trigger, Near Limit,	Auto, Push, Manual
White Balance	Auto / ATW / Indoor / Outdoor / One Push WB / Manual / One push Triger / Outdoor Auto / Sodium Vapor Lamp Auto / Sodium Vapor Lamp / Sodium Vapor Lamp Outdoor Auto	AUTO, ATW, Indoor, Outdoor, One Push WB, Manual WB, Outdoor Auto, Sodium Vapor Lamp (Fix/Auto/Outdoor Auto)	Auto, Indoor, Outdoor,OPW,ATW, Manual
Exposure	Full Auto / Gain Limit Setting / Shutter Priority / Iris Priority / Manual / EV compensation	Full Auto, Gain, Shutter Priority, Iris Priority, Manual, Bright	Auto, Manual, Shutter /Iris /Brightness priority
Features	High Sensitivity, Backlight Compensation, HLC, E-FLIP, Mirror, Day/Night	High Sensitivity, Backlight Compensation, HLC, E-FLIP, Mirror, Day/Night	Backlight Compensation, E-FLIP, Mirror, Day/Night, Flicker ,Contrast, Effect, SHARPNESS
WDR	Yes	YES(130dB), Shown as VISIBILITY ENHANCER in OSD	120db
ND Filter	-	Yes	-
Image Stabilizer	Yes, Super, Super+	YES, Optical Image Stabilizer	Yes
Color Gain	Yes (15 step)	Yes (15 step)	Yes
Color Hue	Yes (15 step)	Yes (15 step)	Yes
Gamma	Standard / Straight gamma	Standard/Straight/Pattern	Yes
Gamma Level	-	Yes (15 step)	0-4
Black Level	-	Yes (97 step)	-
Black Gamma	-	Yes (15 step)	-
Color Matrix	-	Off/Standard/High Saturation/FL light	Yes
Noise Reduction	On/Off (level 5 to 1 / Off, 6 steps), 3D / 2D	On/Off (level 5 to 1 / Off, 6 steps), 2D/3D	On/Off (level 5 to 1 / Off, 6 steps), 3D / 2D
S/N Ratio	≥50db	≥50db	≥50db
HLC	Yes	Yes	-
E-Flip	Yes	Yes	Yes
Privacy Zone Masking	Yes	Yes	-
Defog	Yes, (off, low, mid, high)	Yes, (off, low, mid, high)	Yes
High Sensitivity	Yes	Yes	Yes
Slow AE Response	Yes	Yes	-
Day/Night	Yes	Yes	Yes
Backlight Compensation	Yes	Yes	Yes
Low Latency Mode	Yes	-	-
AI Face Detection Focus	-	-	Yes
AI Face Auto Exposure	-	-	-
Scene Style	-	-	Default, Clear, Bright, Soft, Bolin
Focus Zone	-	-	Face Priority, All Area, Upper/Central/Lower Area
Mechanical			
Pan Movement	PAN: 340° (-170° to +170°); Fully proportional 0.01° to 60°/s		
Tilt Movement	TILT: 210° (-90° to +120°); Fully proportional 0.01° to 60°/s		
Speed Proportional	Pan/Tilt Speed proportional to zoom range		
Preset Position	255 positions, Speed 100°/s, 0~5 Level Adjustable, Accuracy: 0.03°		
Preset Memory	Picture Profile Preset-Preset Memory for image parameters: Backlight Compensation, White Balance, R-Gain/B-Gain, Auto Exposure, Bright, Iris, Shutter, Gain, Aperture, Effect, Noise Reduction, Mirror, Gamma, Ex-COMP, Color Hue, Contrast etc.)		
Motionless Preset	YES, ON/OFF		
PTZ Trace Memory	YES, 12		
Cruise	YES, 4		
Quietness	NC55(45/35) or less when operating speed is 60°/30°/15°/sec or less		
Home Position	Yes		
FreeD	Yes, FreeD protocol for AR/VR camera tracking, via serial control/IP (Via fw upgrade)		
Position Deviation Correction	Optical		
Turning Radius	PAN: Φ 400 mm TILT: Φ 480 mm		
Environmental	Outdoor, IP67 compliant for Waterproof and Dust Proof		
Finish	C5 Class Salt resistant coating		
Wind Load Durability	Wind Load Durability, Non-Destructive and steady operation at 60 m/s or less		
Wiper	Yes		
Heater	Yes		
Defroster	Yes		
Nitrogen Fill Isolation	Nitrogen filled within image housing		
Illumination	Laser IR. The adaptive IR Laser can be synchronized with different zoom angle. Illumination distance is up to 500 Meters. Optional,		

SPECIFICATIONS

	EXU230H	EXU248F	EXU420F
Codec	HEVC	⏩ FAST HEVC	⏩ FAST HEVC

Interface

	EXU230H	EXU248F	EXU420F
HDMI Video Output	HDMI 2.0 Type A		
SDI Video Output	3G-SDI, SMPTE424M /SMPTE292M /SMPTE 296M standards, 75Ω BNC x 2，SDI/PM for output to has OSD display	6G-SDI, SMPTE424M /SMPTE292M /SMPTE 296M / SMPTE 274M /SMPTE ST-2081 standards, 75Ω BNC x 2，SDI/PM for output to has OSD display	12G-SDI, SMPTE424M /SMPTE292M /SMPTE 296M / SMPTE 274M /SMPTE ST-2081 /SMPTE ST-2082 standards, 75Ω BNC x 2，SDI/PM for output to has OSD display
SDI Optical Fiber Output	Optical 12G-SDI (Module Excluded). Detachable slot, Connector: Duplex LC (optional via ST, LC or SMPTE) Laser Unit: Single-mode 1,310nm DFB-LD transmitter and PIN receiver Complaint with MSA SFP+ Specification SFF-8402.		
Network LAN Port	RJ45X1, Standard 10M/100M/1000M Base-TX Ethernet, LAN connector for IP control/video output/audio output/System FW Upgrade		
Synchronization System	Internal/External synchronization (BBS/Tri-level sync)		
External Sync Input	Genlock, BNC connector, BBS (Black Burst Sync), tri-level sync supported		
Audio Input	• 2 channels, XLR balanced input (Mini XLR - Hirose Connector) • Input signal level: 0 dBu, • Volume variable range: –40 dB to +12 dB (can be changed in 1 dB steps in the menu)		
Audio Output*	• 2 channels, XLR balanced input (Mini XLR - Hirose Connector); Embedded with main HDMI, 24bit Stereo, Embedded with SDI, 24bit Stereo • 4 channels, superimposed over SDI & HDMI output, Sampling frequency: 48 kHz (synchronized to video) • Quantization bit rate: 24-bit (LPCM) • Audio compression format (IP): G.726, AAC-LC (High quality)		
Tally Light	Red, Green Color, Front		
System Firmware Upgrade	Upgrade via IP for camera system MCU, Driver, FPGA and Encoder		
Power Connector Type	INPUT: DC24V,Pin connector INPUT: RJ45, PoE++ (IEEE802.3bt) OUTPUT: 12VDC, Pin connector		
Control Interface	RJ45X1-RS422, RJ45X1-IP Control, IR Remote Control		
Control Protocol	Serial: VISCA, PELCO P/D, FreeD; IP: VISCA Over IP, ONVIF		

HDMI Video Signal System

	EXU230H	EXU248F	EXU420F
HDMI Video Format	1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p	1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p 3840 x 2160/29.97p/30P 3840 x 2160/25p 3840 x 2160/23.98p 3840 x 2160/24p	3840 x 2160/59.94p/60P 3840 x 2160/50p 3840 x 2160/29.97p/30P 3840 x 2160/25p 3840 x 2160/23.98p 3840 x 2160/24p 1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p
Color Precision	12bit(HDMI), YUV4:2:2, YUV4:2:0		
Color Space	YUV、RGB		
OSD Menu Display	Yes, with image insert		
On-Screen Title	Yes, video embedded On-Screen title character generator		

SDI Signal Format

	EXU230H	EXU248F	EXU420F
SDI Video Format	1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p	3840 x 2160/29.97p/30P 3840 x 2160/25p 3840 x 2160/23.98p 3840 x 2160/24p 1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p	3840 x 2160/59.94p/60P 3840 x 2160/50p 3840 x 2160/29.97p/30P 3840 x 2160/25p 3840 x 2160/23.98p 3840 x 2160/24p 1920 x 1080/59.94p/60p 1920 x 1080/59.94i/60i 1920 x 1080/50p 1920 x 1080/50i 1920 x 1080/29.97p/30p 1920 x 1080/25p 1920 x 1080/23.98p/24p 1280 x 720/59.94p/60p 1280 x 720/50p
Color Precision	10bit(SDI), YUV 4:2:2		
Color Space	YUV		
Standard	SMPTE 292M，SMPTE 296M (1.5Gb/s), SMPTE 424M, SMPTE 274M，SMPTE 425-A (3Gb/s), SMPTE 2081(6Gb/s), SMPTE 2082-1（12Gb/s）standard / 75 Ω (BNC x 1), With SMPTE352 SDI Metadata Supported		
True Dual Output	HDMI and SDI signal can be output with different format		
OSD Menu Display	Yes		
On-Screen Title	Yes, video embedded On-Screen title character generator		

Network

	EXU230H	EXU248F	EXU420F
Video Compression (Codec)	MJPEG,H.264/H.265 by SoC	AVC-H.264/HEVC-H.265/MJPEG/MP4 by FPGA	
IP Resolution/Frame Rate	1920x1080p60/50/30/25, 1280x720p60/50	3840x2160p30/25, 1920x1080p60/50/30/25, 1280x720p60/50	3840x2160p/60/50/30/25, 1920x1080p60/50/30/25, 1280x720p60/50
True Dual Output	IP, HDMI, and SDI signal can be set with different format	IP, HDMI, and SDI signal can be set with different format	
IP Protocols	TCP/IP, ICMP, ARP, RTP, UDP, HTTP, DNS, DHCP, FTP, NTP, SRT	TCP/IP, IGMP, ICMP, ARP, QoS, SNMP, UDP, HTTP, DNS, DHCP, FTP, NTP, UPNP, SRT	
Application Protocols	RTMP(S)、RTSP、RTSP Encryption、SRT、MP2TS over UDP (Unicast, Multicast)	RTMP, RTSP, RTP Streaming (Unicast, Multicast), MP2TS over UDP (Unicast, Multicast) , TS over RTP, TS over SRT, WebRTC, RTSP Encryption	
Color Format	-	10bit, YUV 4:2:2	
Multi-stream	3 stream	2 stream	
Audio Compression	AAC-LC,G.711A/G.711U Broadband Audio Encoding(Duplex Communicate Supported, Audio/Video synchronization)	64Kbps(G.711) / 16Kbps(G.722.1) / 16Kbps(G.726) / 32-128Kbps(MP2L2) / 32-128Kbps(AAC-LC) Selectable	
OSD	Customized OSD	Customized OSD	
Compatible Integration	ONVIF2.4 (Profile S), VISCA Over IP	ONVIF2.4 (Profile S/G/T), VISCA Over IP	
Bandwidth (results may vary depending on network	8Mbps, 1080p60	30-50Mbps, 4kp60 10 bit 4:2:2 10-20Mbps, 1080p60 10 bit 4:2:2	
Latency (Overall latency may increase depending on network configurations)	10 frame (e.g. 1080p60 latency is < 170ms glass to glass	2-3 frame (e.g. 2160p60 latency is < 45ms glass to glass	
Browser Support	Cross Browser Compatibility - HTML5 support for Microsoft Edge, Google Chrome, Firefox, and Safari		

General

	EXU230H	EXU248F	EXU420F
Operating Temperature	–40 °C to 60 °C (-40°F to 140°F), (PoE is not suggested to be used and camera preheating automatically will be processed when -15°C (5°F) or less)		
Operating Humidity	100% Suitable for Use (no condensation)		
Power Input	DC24V, PoE++(Compatible with IEEE802.3bt, Type 4 Class8) Suggest that not to use POE when environment temperature is -10°C lower		
Power Consumption	Min: 30W(Static state with no movement); Max: 60W （Fully loaded operation with heater on）		

SPECIFICATIONS

Model No.	EXU230H	EXU248F	EXU420F
Installation Method	Stand-alone (Upright) or suspended (Pendent), • To ensure safety, the unit must be secured using the mount bracket supplied.		
Mount	Ceiling mount, Wall mount, Heavy duty tripod		
Handle	Built-in for portable use application		
Wiper	Yes, hidden type		
Size of Tripod Screw Hole	1 x 3/8", 1 x 1/4" + secure lock point		
Body Color	Dark Gray, White		
Dimension-Camera	PAN: Φ 400 mm TILT: Φ 480 mm		
Weight	10kg（22lb)		
Mass	Approx. 12kg (26.5lbs)		
Accessories Included	IR Controllerx1, Drop-prevention wirex1, Drop-prevention wire mounting screwx1, Cable coverx1, Seal ringx12, Quick install panel boltx4,		
Accessories Optional	Wall mount bracket		
	Quick mounting plate		
	Tripod mount adaptor		
	Cable Connection Junction Box		
	Stabilizer Platform		
	Laser Illuminator		

ACCESSORIES

VCC-RC-2
IR Remote Controller

VCC-P12-4
12VDC 4A Power Adapter

VCC-CC45RS
RJ45 To RS232/RS422/485 Adapter

C-WM3B
*Wall Mount Bracket-Size 3

VCC-WM
Wall Mount Bracket-Optional

VCC-CM
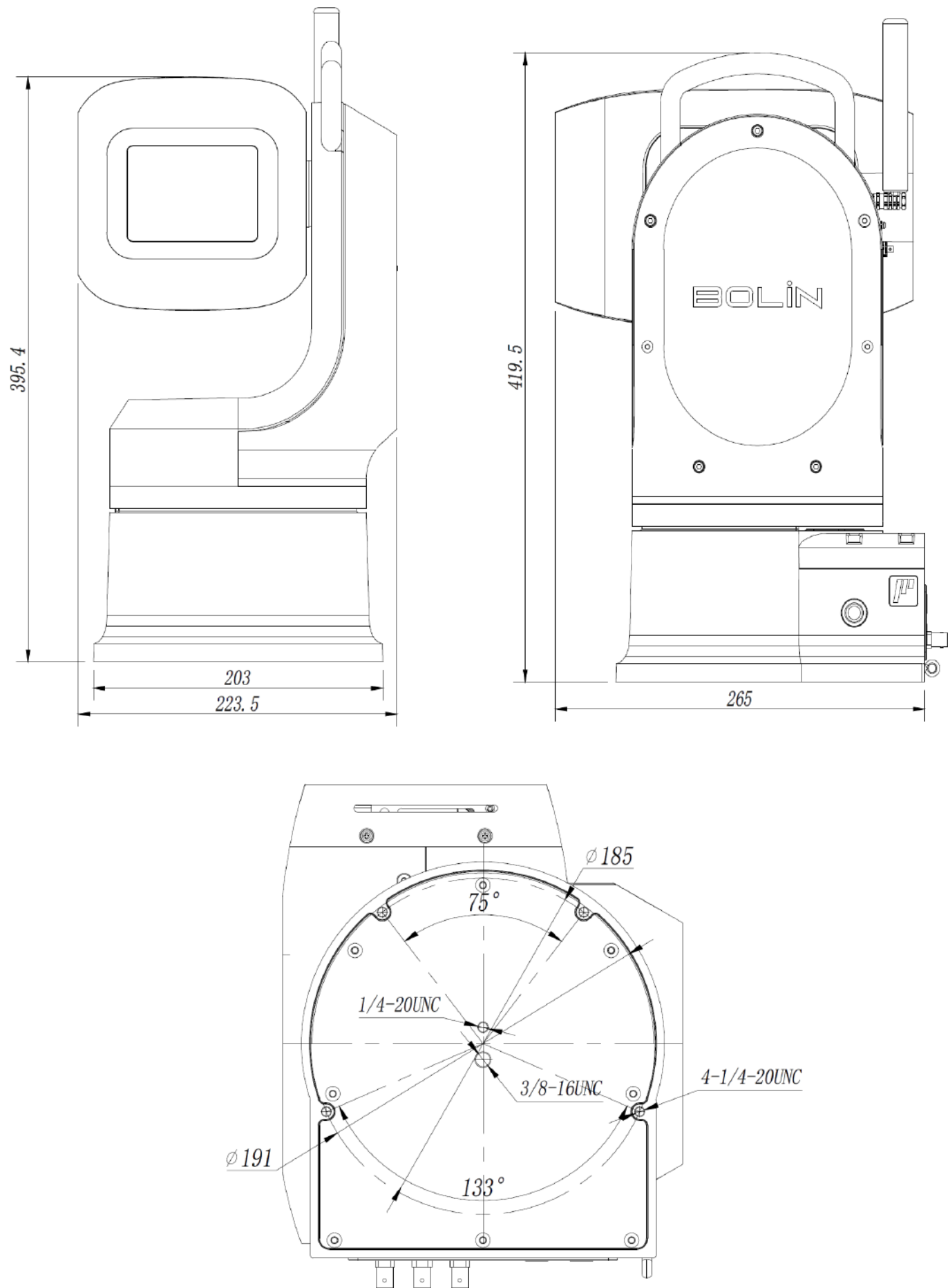Ceiling Mount Bracket-Optional

BL-PP97
*97W POE POWER INJECTOR

C-PMSB
*Pendant Mount for Drop Ceiling
/Hard Surface Ceiling

ORDER INFORMATION

- EXU248F   (FHD/4K30, 48X/18X, FAST HEVC, White)
- EXU420F   (4K60, 20X, FAST HEVC, White)
- EXU230H   (Full HD, 30X, HEVC, White)
- EXU248F/G   (FHD/4K30, 48X/18X, FAST HEVC, Grey)
- EXU420F/G   (4K60, 20X, FAST HEVC, Grey)
- EXU230H/G   (Full HD, 30X, HEVC, Grey)

DIMENSIONS

Unit: mm

395.4

203

223.5

419.5

265

Ø185

75°

1/4-20UNC

3/8-16UNC

4-1/4-20UNC

Ø191

133°

BOLIN