



Advanced Optics

- Superior 1080p image quality
- Powerful 30x optical zoom with 12x digital zoom (360x total)
- Image defog/dehaze analytics
- Electronic image stabilization (EIS)
- Dark scene enhanced intensity
- Bright source whiteout reduction
- Presets, tours, sectors and privacy zones

Rugged Construction

- Operates in hurricane force winds
- Built-in electrical transient/surge protection to CISPR 24 levels
- Precision positioning of 0.05°
- Pressurized IP68 Ingress Protection
- NEMA TS2 temperature range, -40°C to 75°C
- Three Year Standard Warranty
- Lifetime Warranty on moisture ingress into camera head enclosure

Installation and Interoperability

- ONVIF Profile S compliant
- NTCIP 1205 compliant
- Hybrid IP/analog video-serial PTZ operation
- H.264 Base/Main/High profiles and MJPEG encoding
- Web server configuration, operation and viewing
- Inverted mounting capability
- Single CAT5e cable with PoE++
- Pendent, wall, pole and corner mounting bracket options

Command Core™ Action Engine

- Automated system responses
- Preset/Tour activations
- Digital I/O triggers and actions
- FTP/EMAIL image delivery
- Built-in configuration wizards
- Three trigger queuing modes

CohuHD Costar's RISE 4220HD dome positioning system combines crystal clear HD image quality, bandwidth efficient H.264 compression, smooth variable speed positioning and IP68 protection delivering the CohuHD quality and performance you expect!

The RISE 4220HD provides full 1080p imaging with 30x optical zoom, delivering full frame rate HD images over the entire zoom range for very cost effective long-range surveillance applications.

True day/night technology using a removable IR cut filter produces exceptional low light sensitivity down to 0.00025 fc.

For installations subject to wind or vibration, electronic image stabilization assures steady, clear images.

The RISE 4220HD includes defog/dehaze image processing, enhancing video

performance in foggy and hazy conditions encountered in surveillance and traffic monitoring applications.

The RISE 4220HD includes variable hi-speed pan and tilt drive, with 360° continuous pan and +5° to -90° tilt. Fast positioning speeds result in 180° movements in less than 1.5 seconds.

Providing multiple video stream profiles, the RISE 4220HD delivers up to 5 or more independently configured H.264/MJPEG streams as well as analog video output with serial RS422 camera PTZ control.

Use of the IP and analog output allows integrating with analog systems today while providing a smooth transition to HD video over IP tomorrow.

The RISE 4220HD provides a full function web server, allowing complete administrative and operator control capabilities.

The RISE action engine generates automated system responses to input triggers including digital inputs, date/time schedules and repetitive timers that can activate output actions including presets, image snapshots with FTP/EMAIL uploads, OSD displays and digital outputs.

The RISE 4220HD is designed to operate in harsh weather with its IP68 enclosure protection. This eliminates the effects of water intrusion, pollutants and corrosives.

CohuHD delivers years of clean, reliable images and backs it with a world class three-year warranty.



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RISE 4220HD Series with Command Core™

H.264 High-Definition, IP68 Dome Positioning System



CAMERA

Sensor	1/2.8" CMOS
Scanning	Progressive
Resolution	1,920 x 1,080
	640 x 360 @ 3x dig. zoom
Digital Formats	YUV 4:2:2 SMPTE 274M, BT.709, BT.1120, 1080p, 1080i, 720p
Frame Rate	30 fps
Camera Format	Day/Night (IR Cut Filter)
Day/Night Modes	Auto, Color, B/W
S/N Ratio	>50 db
Motion Detection	Off/On [Area of Detection]

SENSITIVITY

Standard	(f1.4, 1/30, 30 IRE)
Color	0.25 lux (0.025 fc)
B/W	0.024 lux (0.0024 fc)
Digital Slow Shutter	(f1.4, 1/2, 30 IRE)
Color	0.015 lux (0.0015 fc)
B/W	0.0015 lux (0.00015 fc)

OPTICS

Zoom Lens	30x, 4.4 to 132mm effective 264mm with 2x digital zoom
Aperture	f1.4 -> f4.6
HAFOV	63.4° to 2.1° @ 1920x1080 63.4° to 0.7° @ 640 x 360
Focus	Auto/Manual [Near, Far]
Focus Search	Normal, Bright, Point Source
Focus Sensitivity	Low, Normal, High
Iris	Auto/Manual [Open/Close]
Lens Speed	Three [Slow, Medium, Fast]
Digital Zoom	12x, Off/On [Depth]

IMAGE PROCESSING

Defog Mode	Off/Auto/Manual [3 Levels, Strength and Color Adj.]
Image Stabilization	Off/On
Enhanced Intensity	Off, Enhanced, Whiteout Reduction
Dynamic Range	>90dB Off/On [3 Levels, Normal, Combo, Contrast]
Back Light Comp	Off/On [Level Setting]
Shutter (AES)	Auto/Manual [1/2 -> 1/30,000]
Slow Shutter	Off/On [1/15->1/2] with Limit Setting
White Balance	Auto/Manual [Red/Blue Adjustment]
(WB) Modes	Normal, Mercury, Sodium Vapor
AGC	1 to 48db, Adjustable
Sharpness	Soft, Normal, Sharp, Sharpest
Noise Reduction	Normal, Medium, Strong, Fixed

IP STREAM

Video Streams	5 or more video streams dependent on available processing budget
Video Codec	H.264 Base, Main and High Profiles, MJPEG
Video Protocols	RTSP/RTP RTSP Interleave HTTP Tunneling RTP Multicast
Video Resolution	1080p, 720p, D1, VGA, CIF
Video Frame Rate	1 to 30 fps, 30 fps default
Video Data Rate	256Kbs to 8Mbs
Video Rate Cntrl	Variable or Constant
Video GOV	1 to 600, 30 default
Video Latency	Four frames (0.133 sec.)
Video Trans.	99.999% error free

NETWORK INTERFACE

Network Format	802.3u 100Base-T, MDI-X auto-sensing, full duplex
Network Protocol	TCP, UDP, IPv4, ICMP, DNS, IGMPv2/v3, DHCP, RTP, RTSP, RTCP, NTP, HTTP, SOAP, HTTPS ARP, FTP, SMTP, SNMP/NTCIP, Telnet. ONVIF Profile S
Media Players	VLC, Quick Time or any media player compliant with RFC 2326, 3984, 3550, 2435, ISO/IEC 13818-1 Profile S
ONVIF	Profile S
Camera Protocols	ONVIF, NTCIP 1205, CohuT, CohuHD legacy
Security	4 Levels: Admin, Operator, User, Anonymous [User Name + Password], Digest Authentication
Updates	File upload over network using camera web server interface
Configurations	Stored in Non-Volatile Memory
Browsers	IE11, Firefox, Chrome

DIGITAL I/O INTERFACE

Digital Circuits	Four digital I/O circuits, user defined as either input or output
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ANALOG INTERFACE

Video Format	NTSC or PAL
Serial PTZ	RS422, full/half duplex, 1,200 to 115k baud adjustment, data, stop and parity bit configuration.
Protocols	CohuHD Legacy, PelcoD, Ultrak, NTCIP 1205, A/D, FAST, Javelin

COMMAND CORE ACTION ENGINE

Input Triggers	Digital Input(s), Timer, Scheduler, Preset reached, PTZ move, Maintenance, User command
Output Actions	Activate digital output(s), FTP image, Send Email, Send Text, Activate Preset or Tour, Display OSD message
Trigger Queuing	User selectable mode. Processes output actions by trigger priority, first in, or last in.
Servers	Multiple FTP and EMAIL servers can be onfigured for use by camera system

ON SCREEN DISPLAY (OSD)

OSD Capacity	Up to 7 OSD Elements can be selected for display on video
OSD Elements	Text, Preset, Position, Compass, Date/Time, Sector, Maintenance, Action Event
OSD Characters	Up to 40 characters per text element
OSD Size	20 to 90 point, Increment of 10
OSD Color	White, Black, Green, Red, Blue
OSD Background	Transparent, Black
OSD Location	Upper Right/Left, Lower Right/Left, Center, Custom
Banner Display	On/Off, Top/Bottom, 4 OSD elements
Logo Display	BMP, PNG, GIF Format, [x,y] position, Transparency

PRIVACY MASKS

Capacity	Up to 8 Rectangular Masks.
Color	Red, orange, green, blue, purple, grey
Blur	Solid, fine, medium or coarse pixelated
Opacity	25, 50 or 75%
Brightness	4 levels of adjustment

RISE 4220HD Series with Command Core™

H.264 High-Definition, IP68 Dome Positioning System



POSITIONING DRIVE

Pan Range	360° continuous rotation
Tilt Range	+5° to -90°, 190° total
Preset Speed	Peak speed of 300°/sec 180° movement < 1.5 Seconds
Manual Speed	0.1° to 45°/second
Speed Resolution	> 64 Variable speed levels
Repeatability	+/- 0.1°
Resolution	+/- 0.1°
Presets	Up to 256, Includes pan, tilt, zoom, focus, preset ID, I/O output state
Tours	Up to 256, Includes presets with dwell, speed, direction and recurrence properties
Auto Park	Returns to a preset or tour after timer expires, Timer Value [Off, 1 Minute to 999 Hours]
Features	Auto focus/iris on PTZ, Proportional PTZ, Video freeze on preset, High wind/vibration mode, Set north calibration, Auto flip

Operating Temp

Water immersion at 1m for
24 hours with no water
ingress
PoE++ and 24Vac Models
Per NEMA TS2, para 2.2.7
-30°F to 165°F (-34°C to
74°C); PoE+ Models
-4°F to 165°F (-20°C to
74°C)
Vibration Per NEMA TS2 para.
2.2.8. 5-30Hz sweep @
0.5g applied in each of
3 mutually perpendicular
planes.
Shock Per NEMA TS2 para. 2.2.9.
10g applied in each of 3
mutually perpendicular
planes
Corrosion MIL-STD-810G, Method
509.5, Paragraph 4.5.2,
ANSI NCSL Z540-1, ISO
17025:2005
Wind Survivability Up to 150 mph
- 120 mph for 45 minutes
- 150 mph for 15 minutes

Pole	8438-5
Corner	8439-8

Mounts for model 4222, 4224 and 4227-xxxx

Wall	7411420-001
Pole	8518-2

Field Cables

CA276 Series	For Model 4221-xxxx
CA279 Series	For Model 4224-xxxx
CA280 Series	For Model 4222-xxxx

Power Supply

7412007-003	PoE++, 60W, 110/220vac IP50, -34 to 74C
7411543-010	24Vac, 100VA, 110/220vac, IP66, -34 to 74C

WARRANTY

Three (3) years on camera and positioner
system. Lifetime warranty on dome enclosure
moisture ingress.

ELECTRICAL

Input Voltage	PoE+, PoE++ or 24 Vac model dependent
PoE++, 24Vac	20w, 60w with heater ON
PoE+	15w, 25.5w with heater ON
Voltage Range	NEMA standard TS 2-2003 section 2.2.7 tests C thru H
Transient/Surge Emmissions	Certified to CISPR 24 levels Certified to CISPR 22 levels

MECHANICAL

Weight	14.0 lbs (6.3 kg) Camera 18.0 lbs (8.2 kg) Shipping
Dimensions	Refer to dimensional diagram 15"x15"x15" Shipping (381x381x381 mm)
Construction	Powder Coated aluminum
Sunshield	Included as standard
Color	Light Gray Cardinal Coating T241-GR142
Dome window	IK10 Polymer, Optically Correct
IK10+	Camera System except dome window is IK10

EMC CERTIFICATIONS

AS/NZS CISPR 22:2009+A1:2010
CAN/CSA-CISPR 22-10
FCC Part 15B
EN 55022:2010+AC: 2011
EN 55024:2010
EN 61000-3-2:2006+A1:2009+A2:2009
EN 61000-3-3:2013
EN 61000-4-2: 2009
EN 61000-4-3: 2006 +A1:2008 +A2:2010
EN 61000-4-4: 2004
EN 61000-4-5: 2006
EN 61000-4-6: 2009
EN 61000-4-8: 2010
EN 61000-4-11: 2004
RoHS

ENVIRONMENTAL

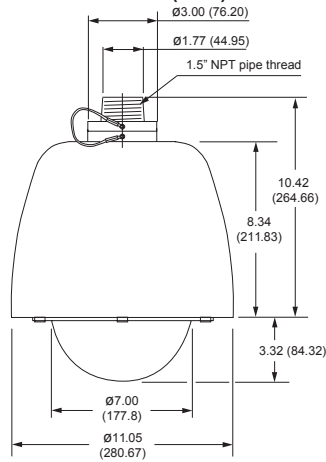
Protection Rating	IP68, Pressurized with Dry Nitrogen, 3.5 psi.
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ACCESSORIES

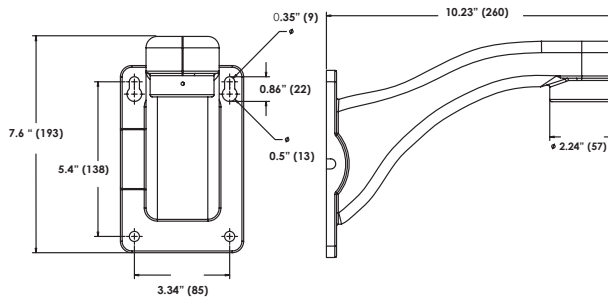
Mounts for model 4221-xxxx

Wall	8438-4
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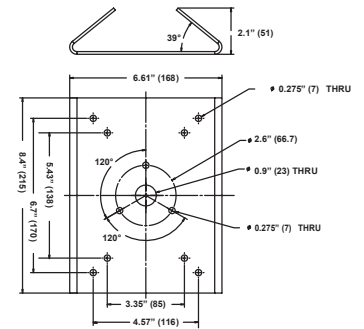
DIMENSIONS (MM)



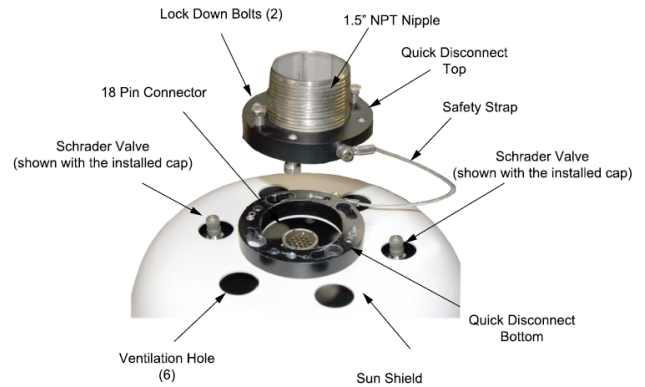
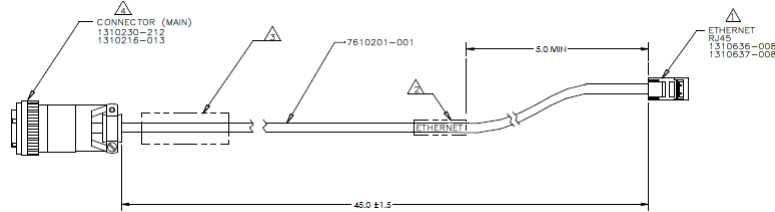
WALL MOUNT 8438-4



POLE MOUNT 8438-5 (Includes 8438-4)



RJ45 PIGTAIL INCLUDED WITH 4221-1000 AND 4226-1000



4220HD Camera's Top View (shown without the housing)

ORDERING INFORMATION - I.E. 4221-1000

Model Structure	Option #	Option Description
Product Series	422	RISE 4220HD Series IP68 Dome Positioner
Power and Connection Options	1	PoE++ Power, RJ45 Pigtail
	2	PoE++ Power, MS Connector
	4	24Vac Power, MS Connector
	6	PoE+ Power, RJ45 Pigtail
	7	PoE+ Power, MS Connector
	-	Model Number Separator
Camera Options	1	HD 1080p 30x Camera Module
Unassigned	000	Future Use



RJ45 IP67 Coupler, p/n 7610203-001. CAT5e/6/6a shielded cable with a 6mm-7mm O.D. is required for waterproofing.

RISE Series IP Video Cameras

Rugged Innovation with Superior Endurance

The RISE Series IP video cameras are designed and built by CohuHD Costar for critical infrastructure applications demanding high-quality images, rugged construction and seamless interoperability.

The RISE Series delivers advanced performance at unbeatable pricing.

About CohuHD Costar™

CohuHD Costar is a leading manufacturer of high-definition video systems designed to satisfy the demanding performance requirements for critical infrastructure applications. CohuHD solutions integrate the latest high-definition video imaging and compression technologies into ruggedized camera products for monitoring in critical, sensitive environments.



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