Project Title;-	Fish & Coal – Kings Cross	**Technical Submission no:**
Contract No:-	LN 0217	**BAMSE – Able Infrastructure TSE 35 - 002**

To:-	Phil Summers	Company:-	Hoare lea

Approval of the following equipment is required:

Equipment;-	Landlords External CCTV Cameras

Manufacturers:	Pelco by Schneider Electric

Description;-	Pelco Spectra IV IP Series H.264 Digital PTZ high speed Network Dome Camera Mounted on Pelco Wall /mounted /Corner Brackets coloured Black

Specification References;-
1 - Hoare Lea Kings Cross Central – Fish & Coal MEPH Engineering Systems (rev C Stage F1A) dated 19-05-2014 and in line with the following sections

  i) SPEC- Section W42 ---0511447-W42-PS-20140203;- Surveillance System Specification
  ii) SPEC- Section Y82 ----0511447-Y81-PS-20140203;-   Testing & commissioning of Electrical systems

Attached Detail Documents:	
Equipment specifying schedule.	W42 Surveillance System Specification clause 720 – 724 incl & Y81 Testing & commissioning clause 363
Manufacturers quotation.	N/A
Manufacturers details.	As attached
Design check calculations.	N/A
Certified performance levels.	N/A
Builderswork requirements.	By BAM Construction
Assembly and installation details.	As attached
Operation and maintenance details.	To form part of O+M Manuals
List of recommended spares.	To form part of O+M Manuals

Electrical requirements for equipment:	N/A

Planned site delivery:	as required to meet with BAM construction programme

Issued by: Stuart McFall -- BAM SE Ltd	Date 22nd June 2015

Please return comments by:	4th July 2015

To be completed and returned by Consultant Design Engineer

Technical submission is ** approved / approved with comments / not approved.
(delete as appropriate)**

Returned by:	Company:
Signature:	Date:

Spectra® IV IP Series Network Dome System

H.264, DIGITAL PAN/TILT/ZOOM HIGH-SPEED DOME

Product Features

- Ability to Control and Monitor Video Over IPv4 and IPv6 Networks
- Simultaneous IP and Analog Video and Control
- H.264, MPEG-4, and MJPEG Compression
- Supported Protocols: TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and 802.1x (EAP)
- Multilevel Password Protection
- 3 Autofocus, High Resolution Integrated Camera/Optics Packages
- Autotracking
- Horizontal Zone and Window Blanking
- Sensitivity Down to 0.0015 Lux PAL (36X Models)
- On-Screen Compass and Tilt Display
- Up to 2 Simultaneous Video Streams
- Web Viewing
- Open IP Standards

- ONVIF v1.02 Conformant
- Bidirectional Full-Duplex Audio

Spectra® IV IP dome systems incorporate all of the features and functions of Spectra IV (including analog), while allowing you to control and monitor video over an IP network from virtually anywhere in the world. Spectra IV IP is a high-speed dome with a built-in 100Base-TX network interface for live streaming to any network application.

Spectra IV IP supports two simultaneous video streams. The two streams can be compressed in MJPEG, MPEG-4, and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration. The H.264 compression video files are up to 20 times smaller than MJPEG, making network video storage more affordable.

Spectra IV IP allows you to view and control analog video while viewing, recording, and controlling network IP video. There is no need to abandon your current analog infrastructure if you are making the move to network video as a recording solution. Continue to monitor and control video in the analog domain while recording video in the network domain, and let Spectra IV IP's professional compression method do the work for you without the need for external encoders.

Spectra IV IP dome system consists of a back box, a dome drive, and a lower dome. These three system components are interchangeable with other Spectra IV IP dome systems, making retrofitting and application adjustments simple.

Spectra IV IP features several back box options. All back boxes feature built-in memory, which can be used to store camera and location-specific dome settings, including labels, presets, patterns, and zones.

All cameras in **Spectra IV IP** dome drives feature an EXview HAD™ imager for increased sensitivity and LowLight™ technology allowing the cameras to compensate for scenes where minimal light is present. Both the 29X and the 36X cameras feature built-in motion detection and advanced 128X wide dynamic range (WDR) that enables the system to compensate for scenes where dramatic contrasts in lighting are present. The 36X day/night camera's electronic image stabilization digitally reduces blurring of the camera image due to vibration caused by external sources, such as wind and traffic.

Web Interface

Spectra IV IP uses a standard Web browser for powerful remote setup and administration.

Network protocols such as Secure Sockets Layer (SSL) configuration for security certificates, Secure Shell (SSH) for remote logon, and Quality of Service (QoS) for priority or guarantee data flow can be managed using a Web browser.

Video Systemization

Spectra IV IP easily connects to Pelco IP and hybrid systems such as Endura® version 1.5 (or later), MPEG-4; Endura version 2.0 (or later), H.264; Digital Sentry® version 7.3 (or later); DX8100 version 2.0 (or later); DX4700/DX4800 Series 1.1 (or later); DX4700HD/DX4800HD Series v2.0 (or later); and DVR5100 version 1.5.4 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) and software developer's kit (SDK) for interfacing with Pelco's IP cameras.

BACK BOX FEATURES

🖐 NOTE: VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.

In-Ceiling (Indoor)

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 13.35 cm (5.25 in.) Space Above Ceiling and 8.25 cm (3.25 in.) Below
- Minimum Ceiling Thickness 1.27 cm (0.50 in.); Maximum 4.45 cm (1.75 in.)
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces

Dimensions: 19.0 (7.5), 13.2 (5.2), 8.8 (3.5), 15.0 (5.9), 20.8 (8.2)

Standard and Environmental Pendant

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)

Dimensions: 26.9 (10.6), 15.0 (5.9), 21.8 (8.6)

Environmental In-Ceiling

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 11.18 cm (4.40 in.) Space Above Ceiling and 10.92 cm (4.30 in.) Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 1.27 cm (0.50 in.); Maximum 4.45 cm (1.75 in.)
- Quick Disconnect to Dome Drive
- Aluminum Construction

Dimensions: 25.2 (9.9), 11.0 (4.4), 10.9 (4.3), 15.0 (5.9), 21.8 (8.6)

DOME DRIVE FEATURES

36X and 29X Models

- 256 Presets
- ±0.1° Preset Accuracy
- Electronic Image Stabilization (36X model)
- Auto Sharpness
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 8, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 7 Alarm Inputs
- 1 Auxiliary (Form C) Relay Output and 1 Open Collector Auxiliary Output (can be alternately configured to operate upon alarm)
- Configurable Locations of Labels and On-Screen Displays
- Action on Alarm: Alarms Can Be Individually Configured for 3 Priority Levels, to Initiate a Stored Pattern, or to Go to an Associated Preset When Received
- Resume After Alarm: Allows the Dome to Return to a Previously Configured State After Alarm Acknowledgement or to its Previous Position Before Alarm
- Multiple Park and Power-Up Action
- Patterns: Up to 8, On-Screen, User-Defined Configurable Patterns; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D, Sensormatic®, Vicon®); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback Through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- "Auto Flip" Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Zoom Speeds
- Freeze Frame During Presets

23X Models

- 64 Presets
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 4, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 1 Alarm Input
- 1 Auxiliary (Form C) Relay Output
- Configurable Locations of Labels and On-Screen Displays
- Patterns: 1 On-Screen, User-Defined Configurable Pattern; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Autosensing Protocol (Coaxitron, RS-422 Pelco P and Pelco D, Sensormatic, Vicon); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- "Auto Flip" Rotates Dome 180° at Bottom of Tilt Travel
- Freeze Frame During Presets

CAMERA/OPTICS

	Day/Night (36X)	Day/Night (29X)	Day/Night (23X)
Signal Format	NTSC (DD436) PAL (DD436-X)	NTSC (DD429) PAL (DD429-X)	NTSC (DD423) PAL (DD423-X)
Scanning System	Interlace/Progressive selectable	Interlace/Progressive selectable	2:1 Interlace
Image Sensor Effective Pixels NTSC PAL	1/4 inch EXview HAD™ 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4 inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV Lines >540 TV Lines	 >540 TV Lines >540 TV Lines	 540 TV Lines 540 TV Lines
Lens	f/1.4 (focal length, 3.3 ~ 119 mm)	f/1.4 (focal length, 3.3 ~ 95.7 mm)	f/1.6 (focal length, 3.6 ~ 82.8 mm)
Zoom	36X optical, 12X digital	29X optical, 12X digital	23X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds	3.2/4.6/6.6 seconds	2.9/4.2/5.8 seconds
Horizontal Angle of view Focus	57.2° at 3.3 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	57.2° at 3.4 mm wide zoom; 2.2° at 95.7 mm telephoto zoom Automatic with manual override	54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom Automatic with manual override
Maximum Sensitivity NTSC/EIA PAL/CCIR	90% scene reflectance; f/1.4; 27 dB gain; 35 IRE (245 mV equivalent) 0.55 lux at 1/60 sec (color) 0.018 lux at 1/2 sec (color) 0.055 lux at 1/60 sec (B-W) 0.0018 lux at 1/2 sec (B-W) 0.45 lux at 1/50 sec (color) 0.015 lux at 1/1.5 sec (color) 0.045 lux at 1/50 sec (B-W) 0.0015 lux at 1/1.5 sec (B-W)	90% scene reflectance; f/1.4; 27 dB gain; 35 IRE (245 mV equivalent) 0.55 lux at 1/60 sec (color) 0.018 lux at 1/2 sec (color) 0.055 lux at 1/60 sec (B-W) 0.0018 lux at 1/2 sec (B-W) 0.45 lux at 1/50 sec (color) 0.015 lux at 1/1.5 sec (color) 0.045 lux at 1/50 sec (B-W) 0.0015 lux at 1/1.5 sec (B-W)	35 IRE 0.65 lux at 1/60 sec (color) 0.15 lux at 1/60 sec (B-W) 0.55 lux at 1/50 sec (color) 0.12 lux at 1/50 sec (B-W)
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override	Automatic with manual override	Automatic with manual override
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000
Iris Control	Automatic iris control with manual override	Automatic iris control with manual override	Automatic iris control with manual override
Gain Control	Automatic/OFF	Automatic/OFF	Automatic/OFF
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise	>50 dB	>50 dB	>50 dB
Wide Dynamic Range	128X	128X	—
Electronic Image Stabilization	Integrated/Selectable		—
Auto Sharpness	Integrated/Selectable	Integrated/Selectable	—
Video Motion Detection	Integrated	Integrated	—

SYSTEM AND COMPONENT MODELS

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	Cage	36X Day/Night NTSC	36X Day/Night PAL	29X Day/Night NTSC	29X Day/Night PAL	23X Day/Night NTSC	23X Day/Night PAL
In-Ceiling, Indoor	Black	Smoked		SD4E36-F0	SD4E36-F0-X	SD4E29-F0	SD4E29-F0-X	SD4E23-F0	SD4E23-F0-X
	Black	Clear		SD4E36-F1	SD4E36-F1 X	SD4E29-F1	SD4E29-F1-X	SD4E23-F1	SD4E23-F1-X
In-Ceiling, Environmental*	Black	Smoked		SD4E36-F-E0	SD4E36-F-E0-X	SD4E29-F-E0	SD4E29-F-E0-X	SD4E23-F-E0	SD4E23-F-E0-X
	Black	Clear		SD4E36-F E1	SD4E36-F-E1-X	SD4E29-F-E1	SD4E29-F-E1-X	SD4E23-F-E1	SD4E23-F-E1-X
Pendant, Standard	Black	Smoked		SD4E36-PB 0	SD4E36-PB-0-X	SD4E29-PB-0	SD4E29-PB-0-X	SD4E23-PB-0	SD4E23-PB-0-X
	Black	Clear		SD4E36-PB 1	SD4E36-PB 1-X	SD4E29-PB-1	SD4E29-PB-1-X	SD4E23-PB-1	SD4E23-PB-1-X
	Light Gray	Smoked		SD4E36-PG-0	SD4E36-PG-0-X	SD4E29-PG-0	SD4E29-PG-0-X	SD4E23-PG-0	SD4E23-PG-0-X
	Light Gray	Clear		SD4E36-PG-1	SD4E36-PG-1-X	SD4E29-PG-1	SD4E29-PG-1-X	SD4E23-PG-1	SD4E23-PG-1-X
Pendant, Environmental*	Light Gray	Smoked		SD4E36-PG-E0	SD4E36-PG-E0-X	SD4E29-PG-E0	SD4E29-PG-E0-X	SD4E23-PG-E0	SD4E23-PG-E0-X
	Light Gray	Clear		SD4E36 PG E1	SD4E36 PG E1 X	SD4E29-PG-E1	SD4E29-PG-E1-X	SD4E23-PG-E1	SD4E23-PG-E1-X
Heavy-Duty In-Ceiling, Indoor	Light Gray	Smoked	No	SD4E36 HF0	SD4E36 HF0-X	SD4E29-HF0	SD4E29-HF0-X		
		Smoked	Yes	SD4E36-HCF0	SD4E36-HCF0-X	SD4E29-HCF0	SD4E29-HCF0-X		
		Clear	No	SD4E36-HF1	SD4E36-HF1-X	SD4E29-HF1	SD4E29-HF1-X		
		Clear	Yes	SD4E36-HCF1	SD4E36-HCF1-X	SD4E29-HCF1	SD4E29-HCF1-X		
Heavy-Duty Pendant, Indoor	Light Gray	Smoked	No	SD4E36-HP0	SD4E36-HP0-X	SD4E29-HP0	SD4E29-HP0-X		
		Smoked	Yes	SD4E36-HCP0	SD4E36-HCP0-X	SD4E29-HCP0	SD4E29-HCP0-X		
		Clear	No	SD4E36-HP1	SD4E36-HP1-X	SD4E29-HP1	SD4E29-HP1-X		
		Clear	Yes	SD4E36-HCP1	SD4E36-HCP1-X	SD4E29-HCP1	SD4E29-HCP1-X		
Heavy-Duty Pendant, Environmental*		Smoked	No	SD4E36-HPE0	SD4E36-HPE0-X	SD4E29-HPE0	SD4E29-HPE0-X		
		Smoked	Yes	SD4E36-HCPE0	SD4E36-HCPE0-X	SD4E29-HCPE0	SD4E29-HCPE0-X		
		Clear	No	SD4E36-HPE1	SD4E36-HPE1-X	SD4E29-HPE1	SD4E29-HPE1-X		
		Clear	Yes	SD4E36-HCPE1	SD4E36-HCPE1-X	SD4E29-HCPE1	SD4E29-HCPE1-X		
Stainless Steel Pendant, Environmental*	Stainless Steel	Smoked		SD4E36-PSGE0	SD4E36-PSGE0-X	SD4E29-PSGE0	SD4E29-PSGE0-X		
		Clear		SD4E36-PSGE1	SD4E36-PSGE1-X	SD4E29-PSGE1	SD4E29-PSGE1-X		

*Environmental dome systems include a heater, fan, and sun shield.

SYSTEM AND COMPONENT MODELS

COMPONENT MODEL NUMBERS

Back Box		Dome Drive		Lower Dome[1]	
BB4E-F	In-ceiling, black, with back box memory	DD423	Day/Night (NTSC) camera (23X)	LDHQF-0	Smoked, in-ceiling
BB4E-F-E	In-ceiling, black, environmental, with back box memory	DD423-X	Day/Night (PAL) camera (23X)	LDHQF-1	Clear, in-ceiling
BB4E-PB	Pendant mount, black, standard, with back box memory	DD429	Day/Night (NTSC) camera (29X)	LDHQPB-0	Smoked, pendant, black
BB4E-PG	Pendant mount, gray, standard, with back box memory	DD429-X	Day/Night (PAL) camera (29X)	LDHQPB-1	Clear, pendant, black
BB4E-PG-E*	Pendant mount, gray, environmental, with back box memory	DD436	Day/Night (NTSC) camera (36X)	LD53HDF-1	Clear, in-ceiling, heavy-duty
BB4EHD-F	Heavy-duty, in-ceiling, gray, with back box memory	DD436-X	Day/Night (PAL) camera (36X)	LD53HDCF-1	Clear, in-ceiling, heavy-duty with cage
				LD53HDPB-1	Clear, pendant, heavy-duty
BB4EHD-PG	Heavy-duty, pendant, gray, with back box memory			LD53HDCPB-1	Clear, pendant, heavy-duty, with cage
BB4EHD-PG-E*	Heavy-duty, environmental pendant, gray, with back box memory			LD53PSB-0	Smoked, pendant, black trim ring, 316 SS
BB4E-PSG-E*	Stainless steel, environmental pendant, gray 316 SS, with back box memory			LD53PSB-1	Clear, pendant, black trim ring, 316 SS
Note: For environmental applications you must order an environmental back box.					

*Environmental dome systems include a heater, fan, and sun shield.
[1]Use the pendant lower domes with the environmental in-ceiling and environmental pendant back boxes.

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7, 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution			MJPEG		H.264 Base Profile		MPEG-4	
Width	Height	Format	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
704	480	NTSC	30 ips	5.4 Mbps	30 ips	1.9 Mbps	30 ips	2.0 Mbps
352	240	NTSC	30 ips	1.3 Mbps	30 ips	0.5 Mbps	30 ips	0.6 Mbps
704	576	PAL	25 ips	5.4 Mbps	25 ips	1.9 Mbps	25 ips	2.0 Mbps

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6*, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup
Pelco System Integration	Endura 1.5 or later (MPEG-4) or Endura 2.0 or later (H.264); Digital Sentry 7.3 IP bundle 3 or later; DX8100 Series 2.0 or later; DX4700/DX4800 Series 1.1 or later; DX4700HD/DX4800HD Series v2.0 or later; and DVR5100 version 1.5.4 or later
Open API	Pelco API or ONVIF v1.02
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, Windows 7, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.0 (or later)
Media Player[†]	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.

[†]This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

GENERAL

Construction
Back Box
In-Ceiling	Aluminum
Pendant	Aluminum
Heavy-Duty	Aluminum
Stainless Steel	316 stainless steel; gray, polyurethane powder coated finish

Dome Drive	Aluminum, thermo plastic

Lower Dome
In-Ceiling	Acrylic
Pendant	Acrylic
Heavy-Duty	Polycarbonate, 0.09-inch thick
Stainless Steel	Acrylic

Light Attenuation
Smoked	f/0.5 light loss
Clear	Zero light loss
Chrome	f/2.0 light loss
Gold	f/2.0 light loss

Cable Entry (back box)
In-Ceiling	0.75-inch conduit fitting
Pendant	Through 1.5-inch NPT pendant mount

Weight (approximate)
	Unit	Shipping
In-Ceiling	2.4 kg (5.2 lb)	3.6 kg (7.9 lb)
Environmental In-Ceiling	2.8 kg (6.2 lb)	4.5 kg (9.9 lb)
Standard Pendant	3.0 kg (6.5 lb)	5.0 kg (11.0 lb)
Environmental Pendant	3.5 kg (7.6 lb)	5.4 kg (11.9 lb)
Heavy-Duty In-Ceiling*	3.3 kg (7.3 lb)	5.4 kg (11.9 lb)
Heavy-Duty Pendant*	4.5 kg (9.8 lb)	7.3 kg (16.1 lb)
Heavy-Duty Environmental Pendant*	4.5 kg (9.8 lb)	7.3 kg (16.1 lb)
Stainless Steel	4.6 kg (10.1 lb)	7.3 kg (16.1 lb)

Environment
In-Ceiling	Indoor
Environmental In-Ceiling	Outdoor
Pendant, Standard and Environmental	Indoor/outdoor
Heavy-Duty In-Ceiling	Indoor
Heavy-Duty Pendant, Standard & Environmental	Indoor/outdoor
Stainless Steel	Indoor/outdoor

Operating Temperature
In-Ceiling	0° to 50°C (32° to 122°F)
Standard Pendant	(Assumes no wind chill factor)
Maximum	45°C (113°F) absolute maximum; 35°C (95°F) sustained maximum
Minimum	−4°C (25°F) sustained minimum

Environmental In-Ceiling and Environmental Pendant (Assumes no wind chill factor)
Maximum	60°C (140°F) absolute maximum; 50°C (122°F) sustained maximum
Minimum	−51°C (−60°F) absolute minimum; prevents icing at sustained minimum of −45°C (−50°F); de-ices 2.5 mm (0.1 inch) within 3 hours after power-up
Heavy-Duty In-Ceiling	0° to 50°C (32° to 122°F)
Heavy-Duty Pendant	0° to 50°C (32° to 122°F) absolute maximum; 0° to 50°C (32° to 122°F) sustained maximum

Heavy-Duty Environmental Pendant
Maximum	(Assumes no wind chill factor) 60°C (140°F) absolute maximum; 50°C (122°F) sustained maximum
Minimum	−51°C (−60°F) absolute minimum; minimal icing at sustained minimum of −45°C (−50°F); prevents icing at sustained minimum of −40°C (−40°F); de-ices 2.5 mm (0.1 inch) within 3 hours after power-up

Stainless Steel
Maximum	(Assumes no wind chill factor) 60°C (140°F) absolute maximum; 50°C (122°F) sustained maximum
Minimum	−51°C (−60°F) absolute minimum; minimal icing at sustained minimum of −45°C (−50°F); prevents icing at sustained minimum of −40°C (−40°F); de-ices 2.5 mm (0.1 inch) within 3 hours after power-up
Effective Projected Area (EPA)	132.257 sq cm (20.5 sq in.) without mount; 303.225 sq cm (47 sq in.) with IWM Series mount

MECHANICAL
(Dome Drive Only)

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to −92°

Manual Pan/Tilt Speeds
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation

Preset Speeds
Pan	400°/sec
Tilt	200°/sec For variable-speed operation, an appropriate controller is required; (with nonvariable speed control, Spectra IV IP pan/tilt speed is 20°/sec)

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	Terminal block, analog for microphone and speaker; 600-ohm differential; 1 Vp-p maximum signal level
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/sec

ELECTRICAL

Ports	RJ-45 connector for 100Base-TX Auto MDI/MDI-X Autonegotiate/Manual setting
Cabling Type	Cat5 or better for 100Base-TX
Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal

Input Power
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

*Add 0.90 kg (2 lb) to the total weight if the system includes a lower dome cage.

CERTIFICATIONS/RATINGS/PATENTS
- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Cisco® Medianet (MSP) compatible
- ONVIF 1.02
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2
- Meets NEMA Type 4X, IP66 when installed properly (BB4E-F-E, BB4E-PB, BB4E-PG, BB4E-PG-E, BB4EHD-PG, BB4EHD-PG-E, and BB4E-PSG-E)
- Meets NEMA Type 1, IP40 (BB4E-F and BB4EHD-F)

OPTIONAL ACCESSORIES

HD-KEYS	1 set of keys for heavy-duty lower dome
IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC; refer to *www.pelco.com* for a list of compatible devices
IPS-RDPE-2	Remote data port; 24 VAC, wall/pole mount video/data breakout box; allows ground-level control/configuration when used with the IPS-CABLE
LD5F-2*	Flush in-ceiling lower dome with chrome bubble (f/2.0 light loss).
LD5F-3*	Flush in-ceiling lower dome with gold bubble (f/2.0 light loss).
LD53PB-2*	Pendant lower dome with black trim and chrome bubble (f/2.0 light loss).
LD53PB-3*	Pendant lower dome with black trim and gold bubble (f/2.0 light loss).
SECURE-SLA License	Enables Information Assurance compliant mode of operation

* Not recommended for outdoor use due to possible light reflections.

RECOMMENDED MOUNTS
In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction; replaces 2' x 2' ceiling tile
SCA1	Support rails for BB4N-F; for use in ceiling tile applications

Pendant Domes

BB5-PCA-BK	Pendant conduit adapter, black
BB5-PCA-GY	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer; black or gray finish; can be adapted for corner, parapet or pole application
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish; can be adapted for corner or pole applications
IDM4012SS	Stainless steel wall mount with feedthrough capabilities

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.