**CSI 2010 Specification for:**

**FLIR CP-6408-31-I IR PTZ Camera**

**Notes to Specifier:**

1. **This CSI 2010-compliant specification is designed to allow the specifier to specify FLIR or similar products for any type of project. Specifier can easily customize this specification to his/her needs.**
2. **The specification is not proprietary to FLIR. Any suitable brand can be specified using this specification.**
3. **FLIR has placed Text Boxes such as this in bold to alert the specifier of important information. Delete all Text Boxes after editing.**
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# GENERAL

# Summary

# This Specification is for a 4K UHD (3840x2160) True (Shutter) Wide Dynamic Range (WDR) IR PTZ (Pan-Tilt-Zoom) digital video camera with an integrated infrared (IR) illuminator and auto-focusing, motorized vari-focal lens for installation into a fully operational digital video system. This Specification is part of a larger project which may be covered in one or more of the Specification Sections listed below.

# Section Contents and Related Specification References

# This Specification may be part of a larger Security System project. *[If so, utilize the appropriate specification sections below.]* Refer to the appropriate CSI 2010 Specification Sections as referenced below: *[Delete any sections not for coordination to this work.]*

# 000000 – Procurement and Contracting Requirements (Division 0)

# 010000 – General Requirements (Division 1)

# 020000 – Existing Conditions (Division 2)

# 080000 – Openings (Doors, Door Hardware and other Openings) (Division 8)

# 101400 – Signage (Division 10)

# 111200 – Parking Control Equipment (Division 11)

# 142000 – Elevators (Division 14)

# 250000 – Integrated Automation Systems (Division 25)

# 260000 – Electrical (Division 26)

# 270000 – Communications (Division 27)

# 271000 – Data Communications Network Equipment (including Firewalls, Routers, Codecs, Switches and Access Points)

# 272200 – Data Communications Hardware (including Servers, Storage, Workstations, Printers, etc.)

# 273000 – Voice Communications

# 280000 – General Security System Specification (Division 28)

# Section 280800 – Commissioning of Electronic Safety and Security

# Section 281000 – Electronic Access Control and Intrusion Detection

# Section 281600 – Intrusion Detection

# Section 281619 – Intrusion Detection Remote Devices and Sensors

# Section 282000 – Electronic Surveillance

# Section 282300 – Video Surveillance

# Section 282313 – Video Surveillance Control and Management Systems

# Section 282316 – Video Surveillance Monitoring and Supervisory Interfaces

# Section 282323 – Video Surveillance Systems Infrastructure

# Section 282329 – Video Surveillance Remote Devices and Sensors

# Drawings and Specifications:

# Drawings:

# *[Include this paragraph if Drawings were included.]* Drawings delivered with these Specifications show device locations, and may show conduits, details, device schedules and single-line or detailed schematics.

# *[Include this paragraph if Drawings were not included.]* Drawings are not included. See the descriptive narratives in Articles 1.5 and 1.7 below.

# Specifications: The Specifications describe the Scope of Work including:

# Section 1 – System Descriptions, all items to be delivered and installed and all services to be performed.

# Section 2 – Products, describes acceptable products.

# Section 3 – Execution, describes the standards and practices to be used by the installer for this work.

# Project Background and Site Conditions:

# *[Fill in Project Background and Site Conditions for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# See Section 282313 – Video Surveillance Control and Management Systems

# Product Description:

# Provide a quantity of PTZ digital video security cameras (CP-6408-31-I) as shown on the associated Purchase Order or Bill of Quantities.

# Submittals:

# *[Fill in Submittal Requirements for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# See Section 013300 – Submittal Procedures

# Quasar 4K 31x IR PTZ CP-6408-31-I Quick Install Guide

# Quasar 4K IR PTZ CP-6408 Range Installation and User Guide

# Delivery, Storage and Handling

# *[Fill in Submittal Requirements for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# See Section 016000 – Product Requirements

# Quality Assurance:

# *[Fill in Submittal Requirements for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# Manufacturer:

# Minimum 10 years’ experience in manufacture and design of IP Video Surveillance Systems.

# ISO 9001:2008 certification

# Installer:

# Minimum 5 years’ experience in installing IP Surveillance Systems.

# All camera installation, configuration and commissioning shall be performed by technicians fully authorized by manufacturer.

# Applicable Codes and Standards:

# *[Fill in Applicable Codes and Standards for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# Electromagnetic Compatibility: CE (EN 50130-4)

# H.264, MJPEG

# FCC Part 15 (subpart B, class A)

# RoHS

# ONVIF Profile S

# Warranty:

# *[Fill in specific services for this work here or delete this paragraph and include the paragraph below if this is part of a complete system.]*

# Manufacturer’s warranty will cover two years for replacement or repair of defective equipment.

# PRODUCTS

# Acceptable Manufacturer and Model:

# Acceptable Manufacturers: *[FLIR and/or name acceptable alternative manufacturers here, or indicate to submit all for review.]*

# Models: *[FLIR CP-6408-31-I and/or name acceptable alternative models here, or indicate to submit all for review.]*

# General Product Description:

# 4K UHD True (Shutter) WDR IR PTZ digital video camera with integrated 6.5mm to 202mm motorized auto-focusing, vari-focal P-iris lens, within an IK10 vandal-resistant upper housing for wall mounting or pendant mounting

# Detailed Product Description:

# Basic Description:

# The integrated system shall operate either as a stand-alone PTZ security camera or as part of an integrated network or DVR configuration.

# The camera shall include a mechanism that ensures precise positioning and preset location.

# The digital video camera shall support H.264/MJPEG compression on two simultaneous video streams (up to 4K UHD) through a digital network.

# Resolution and bandwidth shall be scalable.

# The camera shall incorporate a fully digital 4K UHD CMOS imaging system with IR illumination and day/night IR cut filter for infrared sensitivity.

# The camera shall support infrared illumination up to 200 meters (656 feet).

# The camera shall provide bi-directional audio via audio I/O.

# The camera shall accommodate alarm inputs and provide relay outputs.

# The camera may be powered by 24 VAC or Universal PoE 60W (4 pair forced mode; no support for CDP/LLDP).

# The camera shall be IEEE-compliant utilizing the multicast networking protocol such that a single camera may be transmitted to multiple viewers/archivers on the network simultaneously, further reducing bandwidth and providing greater flexibility in network monitoring/recording configurations.

# Field software upgrades shall be distributable across the network.

# The camera shall provide digital IP video output using an Ethernet connection.

# The camera shall include a web interface for remote control/configuration without requiring the use of a VMS.

# The camera shall be compatible with 3rd party Network Video Management Software (NVMS), digital video displays or recording devices.

# The camera shall digitally encode images into a compressed IP video stream over IP to a VMS.

# The camera shall support overlaying on-screen display information onto the encoded video.

# The camera shall include a wiper for both windows and support an optional wash system connected to the camera’s dry outputs. The camera’s web interface shall include settings and controls for the wiper and the optional wash system.

# Setup and Configuration:

# Single-handedly install and set up one or more cameras without requiring another person’s assistance.

# It shall be possible to configure the camera via its web interface.

# The camera shall enable the following additional functionality:

# Via the unit’s web interface, set up and configure the unit

# Utilize the unit’s relay outputs to control external devices, including an optional wash system

# Support for ONVIF Profile S

# Support for IEEE 802.1X authentication (EAP-TLS)

# Support for digest authentication

# Firewall with options to allow RTSP, UPnP, and ICMP

# Support for TLS control and HTTPS redirect

# Product Performance Requirements:

# The digital video camera shall provide the user with H.264/MJPEG video compression on up to two digital streams simultaneously.

# Resolution shall be scalable between VGA (640 x 480), 720p (1280 x 720), 1080p (1920 x 1080), and 4K UHD (3840 x 2160) on selected digital streams, which can be set to unicast or multicast. (4K UHD available only with H.264 compression.)

# Bandwidth shall be scalable between 100Kbps and 12,000Kbps.

# The audio capabilities shall support:

# Full-duplex audio on two-way connections

# Unicast or multicast digital stream

# The camera shall support G.711 audio compression.

# The camera shall accommodate four (4) digital alarm inputs and provide two (2) digital alarm relay outputs.

# The camera shall provide a web interface for viewing, configuration and control.

# The camera shall include the following specifications:

# Camera:

# Image Sensor:

# 1/1.8” CMOS

# Day/Night with IR sensitivity

# Sensor Resolution: Full HD 4K (3840 x 2160)

# Scanning Mode: Progressive

# Sensitivity:

# Color (Day Mode): 0.25 Lux (@ (F1.6 AGC On, 30 FPS)

# B/W (Night Mode): 0.10 Lux (@ (F1.6 AGC On, 30 FPS)

# Lens Type:

# F/#: F1.55 (wide); F4.8 (tele)

# Field of View

# H=61.8° (wide), 2.15° (tele)

# V=36.65° (wide), 1.2° (tele)

# Focal Length: 6.5~202 mm

# Optical Zoom: 31x

# IR Illuminator:

# Effective IR range: 200 m/656 ft.

# LED Type: High-power/high-efficiency SMD devices with wide-angle illumination

# Peak Emission Wavelength: 850 nm

# White Balance: Auto/ATW/One Push/Manual

# Noise Reduction:

# Color NR/3D NR: On/Off (3 levels)

# 2D NR: On/Off

# Night Mode:

# Color (day)

# B/W (night)

# Auto, with separate night-to-day and day-to-night thresholds

# Wide Dynamic Range Settings

# Digital Wide Dynamic Range (dWDR): On/Off (3 levels)

# True (Shutter) Wide Dynamic Range: On/Off

# Day/Night IR Cut Filter: Auto / Manual

# Digital Zoom: up to 8x

# Optical Zoom: 31x

# Auto focus: Stereo laser focus system

# Exposure modes: Full Auto/Manual (NTSC: 1/30-1/32000 seconds; PAL: 1/25-1/32000 seconds)

# Highlight Compensation (HLC)

# Servo motor for precise positioning and preset location

# Video:

# The camera shall provide two digital streams plus bi-directional audio on one Ethernet connection.

# Compression: H.264 Main/High Profile (MPEG-4 Part 10) and MJPEG compression

# Maximum Performance: 30/25 FPS @ 4K (NTSC/PAL) & 30/25 FPS @ VGA (NTSC/PAL)

# Resolution Range: Four selectable resolutions from VGA to 4K Ultra HD (4K UHD only available with H.264 compression)

# Bandwidth:

# Configurable between 100 Kbps to 12,000 Kbps

# Rate Control: CBR/VBR

# Audio:

# Bidirectional Audio:

# Line-In for using line-level audio inputs

# Line-Out to feed any single-ended line-level audio input, such as an amplified bullhorn, amplified speakers, or public address system

# Compression: G.711

# Input/output:

# Input: Four sets / 5V 10kΩ pull up

# Output: Two sets / relay output, 130mA max at 24VDC / 24VAC

# Network:

# Ethernet: RJ45 10/100/1000 Mbps

# Services and protocols: IPV4, HTTP, HTTPS, UPnP, DNS, NTP, TCP, UDP, ICMP, IGMP, DHCP, ARP

# Video: RTP/RTSP Unicast/Multicast

# Alarms and commands: TCP/IP, HTTP

# Cybersecurity:

# User credentials with policy enforcement

# Protection from brute force attack

# Digest authentication

# IEEE 802.1X Authentication (EAP-TLS)

# TLS/HTTPS

# Access control via firewall

# Management:

# Configuration: Remote (via web interface or supported video management system)

# Firmware Updates: Flash memory for upgrade of camera firmware over the network

# Electrical:

# Power Input:

# 24 VAC

# Universal Power over Ethernet (PoE) 60W (4 pair forced mode, no support for CDP/LLDP)

# Maximum Power Consumption:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **24 VAC (W)** |  | **LED** | **-40°C** | **25°C** | **60°C** |
| Camera static | Off | N/A | 21 | 21 |
| On | 27 | 43 | 43 |
| PTZ motion | Off | N/A | 29 | 26 |
| On | 57 | 50 | 49 |
| Maximum, including wiper and IRCUT | 61 | 52 | 52 |
| **PoE (W)** |  | **LED** | **-40°C** | **25°C** | **60°C** |
| Camera static | Off | N/A | 15 | 15 |
| On | 35 | 32 | 32 |
| PTZ motion | Off | N/A | 22 | 19 |
| On | 41 | 37 | 39 |
| Maximum, including wiper and IRCUT | 43 | 39 | 42 |

# Connections:

# Network: RJ45

# Power:

# 24 VAC: Through terminal block connector

# PoE: Through the RJ45 connector

# Audio In/Out:

# Line In/Line Out: Through terminal block connector

# Alarm In/Alarm Out: Through terminal block connector

# Physical and Mechanical:

# Physical:

# Dimensions: 409.2 mm x 267.96 mm (16.11 x 10.55 in.) (H x D)

# Unit Weight: 20.11 lbs. (9.12 kg)

# Mechanical:

# Pan Manual Speed: 0.1° to 90° / second

# Tilt Manual Speed: 0.1° to 60° / second

# Pan Travel: 360° continuous

# Tilt Travel: -10° to 190°

# Pan Preset Accuracy: 0.16°

# Tilt Preset Accuracy: 0.18°

# Preset Speed: 5 to 280° / second

# Software:

# Integrated web server

# Discovery Network Assistant (DNA) tool to discover and configure the camera’s IP addressing and DNS server settings; set device properties and user credentials; set the video format (PAL/NTSC); upgrade the camera’s firmware; reset defaults; reboot the firmware; and display camera properties.

# Environmental:

# IP Rating (Dust & Water Ingress) / Enclosure Rating: IK10 Upper / IP66 Overall

# Operating Temperature: -40° C to 60° C (-40° F to 140° F) cold start

# Storage Temperature: -55° C to 85° C (-67° F to 185° F)

# Relative Humidity: 0-95%

# Shock tolerance: IEC 60068-2-27

# Vibration tolerance: IEC 60068-2-64

# Internal Heater: Automatic

# Wiper / Washer: Built-in / Optional accessory

# Certifications:

# USA: FCC Part 15 (subpart B, class A)

# International: CE Marked, EN 50130-4, EN61000-6-4 (Class A), RoHS, LVD, NEMA 4X, WEEE

# Eye Safe: LiDAR Laser (IEC60825-1), IR Light (IEC60825-1), IR Light (IEC62471)

# Optional Accessories:

# CP-POE-4P-60W-US: Inline 60W 4 pair PoE injector with USA-type power plug

# CX-PRWR-241: NEMA 4X 24 VAC Power Supply in Weather Resistant Enclosure for 1 PTZ

# CX-ARMX-G3: Wall mount bracket (1.5" threaded)

# CX-ELBX-G3: Wall mount bracket (1.5" inch threaded) with IP68 electrical box enclosure

# CX-GSNK-G3: Gooseneck mount (1.5" inch threaded) with IP68 electrical box enclosure

# CX-CRNR-G3: 90-degree angle exterior corner adapter for CX-xxxx-G3 mounts

# CX-POLE-G3: Pole adapter for CX-xxxx-G3 mounts, including 2.5"-8.5" straps

# EXECUTION

# Examination:

# See Section 282313 – Video Surveillance Control and Management Systems

# Installation:

# See Section 282313 – Video Surveillance Control and Management Systems

# Preparation:

# See Section 282313 – Video Surveillance Control and Management Systems

# Quality Control:

# See Section 282313 – Video Surveillance Control and Management Systems

# Testing and Commissioning:

# See Section 282313 – Video Surveillance Control and Management Systems

# Handing Over:

# See Section 282313 – Video Surveillance Control and Management Systems

--- End of Specifications ---