



**CORRECTIONAL SERVICES CANADA
TECHNICAL SERVICES BRANCH
ELECTRONIC SECURITY SYSTEMS**



ES/STD-0221
Revision 4
February 2014

**ELECTRONIC ENGINEERING STANDARD
FIXED NETWORK COLOUR CAMERA FOR ENCLOSURE
FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS**

AUTHORITY

This Standard is approved by the Correctional Service Canada for the procurement and installation of this item in Canadian federal correctional institutions.

Acquisition of a camera for the identified purposes that is not in compliance with this standard must be approved by the Design Authority.

Recommended corrections, additions or deletions should be addressed to the Design Authority at the following address:

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Approved by:

A handwritten signature in black ink, appearing to read "M. Howard", written over a horizontal line.

Director,
Electronics Security Systems

TABLE OF REVISIONS

Revision	Paragraph	Comment
0		Original issue
1	7.1	Imager changed to ¼ inch or larger
	7.9	Remove numeric quantity on AGC, just yes
	7.12	Added iris requirement
	7.12 – 7.17	Renumber paragraphs
2	6.1	Added CMOS imager
3	All	Reorganized and cleaned to new format
4	Definitions	Removed
	2.1	Added reference IEC EN 61000-4-3, Radiated RF immunity
	3.2.2.4	Changed humidity to non-condensing 20%-90%
	3.3.1	Interference now uses IEC EN 61000-4-3, Radiated RF immunity

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
AGC	Automatic Gain Control
CSC	Correctional Service Canada
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
MJPEG	Motion Joint Photographic Experts Group
MTBF	Mean Time Between Failures
ONVIF	Open Network Video Interface Forum
PoE	Power over Ethernet
TCP/IP	Transmission Control Protocol/Internet Protocol

1 INTRODUCTION

1.1 Overview

- .1 This standard defines the requirements of Correctional Service Canada (CSC) for a fixed focus, network capable camera to be mounted in an enclosure for use at federal correctional institutions. The camera is for deployment in either existing indoor enclosures or Fixed Outdoor Camera Enclosures (ES/STD-0205).

1.2 Purpose

- .1 The cameras are deployed for both observation and evidentiary use.
- .2 These cameras are for deployment in outdoor fixed enclosures such as:
 - .1 facility perimeter; and
 - .2 outdoor walkways.
- .3 These cameras are for deployment in existing indoor fixed enclosures such as:
 - .1 indoor hallways;
 - .2 gymnasiums;
 - .3 weight rooms;
 - .4 passage doors/barriers; and
 - .5 explosive environments.
- .4 The camera is used indoors where enclosures already exist and are being reused. New indoor installations must use Fixed Network Colour Dome Cameras (ES/STD-0232) except for new installations in explosive environments.

2 REFERENCES

2.1 Specifications, Standards, and Statements of Work

- .1 Access to non-government specifications is the responsibility of the contractor.
- IEC EN60529 – International Electrotechnical Commission Degrees of protection provided by enclosures (IP Code)
 - IEC EN60950-1 – International Electrotechnical Commission Information technology equipment – Safety
 - IEC EN61000-4-3 – Electromagnetic compatibility Part 4-3
 - IEC EN62262 – International Electrotechnical Commission Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts
 - IEEE 802.3at – IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Amendment 3: Data Terminal Equipment (DTE) Power via the Media Dependent Interface (MDI) Enhancements
 - IEEE 802.3u – IEEE Standards for Local and Metropolitan Area Networks: Supplement to Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications Media Access Control (MAC) Parameters, Physical Layer, Medium Attachment Units, and Repeater for 100 Mb/s Operation, Type 100BASE-T
 - ES/STD-0205 – Electronics Engineering Standards Fixed Outdoor Camera Enclosure
 - ES/STD-0232 – Electronics Engineering Standards Fixed Network Colour Dome Camera

3 PHYSICAL

3.1 Dimensions

- .1 The camera with lens must:
 - .1 measure less than 75mm high;
 - .2 measure less than 100mm wide;
 - .3 measure less than 250mm long;

3.2 Environment

- .1 For use either in indoors enclosures or in outdoor heated enclosures.
- .2 The camera must:
 - .1 have a permanently affixed label on the exterior of the unit which identifies the manufacturer, the model or assembly number, the serial number and the power requirement;
 - .2 be capable of continuous operation;
 - .3 start and operate from 0°C to 50°C;
 - .4 start and operate from 20% to 90% non-condensing humidity;

3.3 Interference

- .1 The camera must be certified compliant to IEC EN 61000-4-3, Radiated RF immunity.

3.4 Reliability

- .1 The camera must have an MTBF of at least 25,000 hours.

3.5 Safety

- .1 The camera must meet IEC 60950-1 or the CSA equivalent.

4 OPERATIONAL

4.1 Camera

- .1 The camera must retain its configuration over a power cycle.
- .2 The image sensor must:
 - .1 include automatic or remote back focus;
 - .2 have a minimum of 480,000 pixels (horizontal x vertical);
 - .3 have day (colour) and night (black and white) modes;
 - .4 automatic removable infrared cut filter for day/night transition;
 - .5 have 0.5 lux or less minimum required illumination for day mode;
 - .6 have 0.1 lux or less minimum required illumination for night mode;
 - .7 include Automatic Gain Control (AGC);
 - .8 include extended dynamic range processing;

4.2 Lens

- .1 The camera lens must:
 - .1 have a 35° to 80° or greater horizontal angular view vari-focal lens
 - .2 be approved by the manufacturer of the camera for that camera;

4.3 Video

- .1 The video encoding must:
 - .1 support H.264 configurable I-frame frequency of at least 3 per second;
 - .2 support H.264 constant bit rate transmission mode;
 - .3 support H.264 frame rate transmission mode;
 - .4 support at least 3 levels of H.264 image quality;
 - .5 support at least 3 levels of MJPEG image quality;
- .2 The video output must:
 - .1 include an on-screen, programmable character generation overlay capability with a minimum of 8 visible characters;
 - .2 support at least two simultaneous H.264 video streams at 30 frames per second with at least 480,000 pixel resolution;
 - .3 support at least two simultaneous video streams, one H.264 and one MJPEG at 15 frames per second with at least 480,000 pixel resolution;

5 INTERFACE

5.1 Ports

- .1 The camera must:
 - .1 interface over IPV4 TCP/IP;
 - .2 be able to operate on 100Base-TX (IEEE 802.3u);
 - .3 connect using an RJ-45 connector;
 - .4 be ONVIF compliant;

5.2 Power

- .1 The camera must be a Type 1 powered device operating solely from Power over Ethernet (PoE) compliant with IEEE 802.3at Class 0, 1, 2, or 3.

5.3 Video Management System Compatibility

- .1 The camera model must be identified as “Certified” or “Supported by Design” in the current Genetec Omnicast Supported Hardware camera list.