



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



ES/STD-0227  
Revision 1  
2015 July

**ELECTRONIC ENGINEERING STANDARD  
COLOUR MONITOR  
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.

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

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A handwritten signature in black ink, appearing to read 'Mustard', written over a horizontal line.

Director,  
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### TABLE OF REVISIONS

Revision	Paragraph	Comment
0		Original issue
1	All	Reorganized and cleaned to new format with connector , resolution, contrast, mounting, and angle of view added

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## TABLE OF ABBREVIATIONS

Abbreviation	Expansion
HDMI	High Definition Multimedia Interface
IEC	International Electrotechnical Commission
VESA	Video Electronics Standard Association

## 1 INTRODUCTION

### 1.1 Overview

- .1 This standard defines the requirements of Correctional Service Canada for a colour monitor to be used as part of systems at federal correctional institutions. This standard deals only with display monitors and does not apply to any touch screen monitors.

### 1.2 Purpose

- .1 The most frequent use of the monitor is for the display of Closed Circuit Television video streams. The monitors are typically deployed as parts of control and observation systems located in:
  - .1 Main Control and Communications Post;
  - .2 Movement Control Posts;
  - .3 Living Unit Control Posts; and
  - .4 Visits and Correspondence Offices.

## 2 REFERENCES

### 2.1 Specifications and Standards

- IEC EN60950-1 – Information Technology Equipment Safety
- IEC EN55024:2010 – Information technology equipment – Immunity characteristics – Limits and methods of measurement
- VESA FDMI – Video Electronics Standards Association Flat Display Mounting Interface Standard
- HDMI v1.0 – High Definition Multimedia Interface
- DVI rev. 1.0 – Digital Video Interface

## 3 PHYSICAL

### 3.1 Dimensions

- .1 The monitor visible screen diagonal measurement will be specified in the Request for Proposal.
- .2 The monitor must have VESA FDMI compatible threaded inserts.
- .3 The monitor must 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;

### 3.2 Environment

- .1 The monitor must:
  - .1 be capable of continuous operation;
  - .2 start and operate from 5°C to 40°C;
  - .3 start and operate from 20% to 80% non-condensing humidity;

### 3.3 Interference

- .1 The monitor must be certified compliant to IEC EN55024, Immunity characteristics;

### 3.4 Reliability

- .1 The monitor must have a Mean Time Between Failures of at least 25,000 hours.

### 3.5 Safety

- .1 The monitor must meet IEC EN60950-1 or the Canadian Standards Association equivalent.

## **4 OPERATIONAL**

### **4.1 Monitor**

- .1 The monitor must:
  - .1 retain its configuration over a power cycle;
  - .2 have a minimum horizontal resolution of 1920 pixels;
  - .3 have a minimum vertical resolution of 1080 pixels;
  - .4 have an aspect ratio of 16:9 or 16:10;
  - .5 have a maximum black to white response time of 5ms;
  - .6 have a minimum static contrast ratio of 3000:1;
  - .7 have a minimum horizontal viewing angle of 178°;
  - .8 have a minimum vertical viewing angle of 178°; and
  - .9 use light emitting diode backlighting;

## **5 INTERFACE**

### **5.1 Ports**

- .1 The monitor must:
  - .1 have a female DE-15 D-SUB video input receptacle (VGA connector); and
  - .2 have a Type A High Definition Multimedia Interface video input receptacle (HDMI connector) compatible with HDMI v1.0 or later;
  - .3 have a Digital Video Interface – Digital video input receptacle (DVI-D) compatible with DVI rev. 1.0 or later;

### **5.2 Power**

- .1 The monitor must be powered from 110 VAC nominal.