



X-Ray Scanner Machines

Detailed Requirements Specification (RS)

SUMMARY: This document defines the requirements for the X-Ray Scanner Machine.

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AMENDMENT HISTORY

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1 INTRODUCTION AND SCOPE

1.1 Identification

This Requirements Specification (RS) describes the requirements for X-Ray Scanner Machines for Armscor HQ.

1.2 Intended Use

The X-Ray Scanner machines will be used for security inspections.

1.3 Overview

The X-Ray Scanner Machines currently installed at Armscor HQ have reached their end of sustainable life. The manufactures and suppliers no longer keep stock of the machines or parts. These models are over thirty years (30) old and offer outdated technology.

2 DOCUMENTS

2.1 Applicable Documents

No applicable documents.

3 DEFINITIONS, AND ACRONYMS

3.1 Definitions

The following definitions shall be used in the interpretation of this document:

As specified means as specified in four (4). "REQUIREMENTS".

Shall expresses a binding requirement.

Should expresses a non-binding preference to be pursued in accordance with this specification.

Will expresses a declaration of intent. "Will" does not express a requirement.

The ranges in this requirement specification are inclusive of the minimum and maximum values.

3.2 Acronyms

The acronyms used in this document shall be interpreted as follows:

LCD : Liquid Crystal Display

4 REQUIREMENTS

4.1 Identification of External Interfaces

The X-Ray scanner machines shall have the following external interface:

E-IF01 (220 VAC Power Interface) Electrical Interface 220 VAC from external power to the X-Ray scanner machines.

4.2 Functional and Performance Requirements

4.2.1 West wing Scanner Machines Function

The West wing scanner machine shall scan baggage.

The West wing X-Ray scanner machine shall store scanned images.

The West wing X-Ray scanner machine shall have an image recall or review capability.

The West wing X-Ray scanner machine shall have a steel penetration of at least 27 mm.

The West wing X-Ray scanner machine shall have a bi-directional conveyor belt.

4.2.2 Postal and Parcel Services Scanner Machine Function.

The Postal and Parcel services X-Ray scanner machine shall scan baggage and parcels.

The Postal and Parcel services X-Ray scanner machine shall store scanned images.

The Postal and Parcel services X-Ray scanner machine shall have an image recall or review capability.

The Postal and Parcel services X-Ray scanner machine shall have a steel penetration of at least 30 mm.

4.2.3 Basement and visitor Scanner Machine Function.

The Basement and visitor scanner machine shall store scanned images.

The Basement and visitor scanner X-Ray scanner machines shall store scanned images.

The Basement and visitor scanner X-Ray scanner machines shall have an image recall or review capability.

The Basement and visitor scanner machine shall have a steel penetration of at least 14 mm.

4.3 External Interface Requirements

4.3.1 E-IF01 Interface

The E-IF01 (220 VAC Power interface) shall be a 32 A 3 pin IEC 60309-2 external socket.

4.4 Environmental Requirements

4.4.1 General Environmental Requirements

4.4.1.1 Humidity

a) West wing X-Ray Scanner Machine

The X-Ray Scanner Machine shall have an operating humidity of between 10% to 90%.

b) Postal and Parcel Services Scanner Machine

The X-Ray Scanner Machine shall have an operating humidity of between 5% to 95%.

4.4.1.2 Temperature

a) West wing X-Ray Scanner Machine

The X-Ray Scanner Machine shall have an operating temperature of between 0 °C to 40 °C.

b) Postal and Parcel Services Scanner Machine

The X-Ray Scanner Machine shall have an operating temperature of between 0 °C to 45 °C.

c) Basement and visitor Scanner Machine

The X-Ray Scanner Machine shall have an operating temperature of between 0 °C to 40 °C.

4.5 External Resources Requirements

4.5.1 Coolant

The X-Ray Scanner Machines shall not require any external cooling system.

4.5.2 Electric Power

The X-Ray Scanner Machines shall operate with an external 220 VAC electric power.

4.6 Physical Requirements

4.6.1 Dimensions

4.6.1.1 West wing X-Ray Scanner Machines

The X-Ray Scanner Machine shall have a tunnel height of between 400 mm to 560 mm.

The X-Ray Scanner Machine shall have a tunnel width of between 600 mm to 760 mm.

4.6.1.2 Postal and Parcel Services Scanner Machine

The X-Ray Scanner Machine shall have a tunnel height of between 800 mm to 1020 mm.

The X-Ray Scanner Machine shall have a tunnel width of between 1000 mm to 1020 mm.

4.6.1.3 Basement and visitor Scanner Machines

The X-Ray Scanner Machine shall have a tunnel height of between 300 mm to 420 mm.

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The X-Ray Scanner Machine shall have a tunnel width of between 500 mm to 620 mm.

4.6.2 Mass

4.6.2.1 West wing X-Ray Scanner Machines

The X-Ray Scanner Machine shall carry objects with a maximum load of 100 kg.

4.6.2.2 Postal and Parcel Services Scanner Machine

The X-Ray Scanner Machine shall carry objects with a load of at least 200 kg.

4.6.2.3 Basement and visitor Scanner Machines

The X-Ray Scanner Machine shall carry objects with a maximum load of 100 kg.

4.7 Design and Construction Requirements

4.7.1 Characteristics of Subordinate Elements

4.7.1.1 X-Ray Generator

a) West wing X-Ray Scanner Machine

The X-Ray Generator shall have an anode voltage of between 100 kV to 140 kV.

b) Postal and Parcel Services Scanner Machine

The X-Ray Generator shall have an anode voltage of between 140 kV to 160 kV.

c) Basement and visitor Scanner Machine

The X-Ray Generator shall have an anode voltage of between 80 kV to 140 kV.

4.7.1.2 Accessories

All the X-Ray Scanner Machines shall be equipped with flat panel LCD monitors with the size of at least 17".

The Basement and visitor Scanner Machines shall be wheeled trolley based.

The West wing Scanner Machines shall be wheeled trolley based

4.7.1.3 Workmanship

Workmanship shall be according to the supplier internal workmanship procedures.