

Air Traffic Control The Netherlands Data Centre Cabinet Specifications



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1. Introduction

This document contains the specifications for a data centre cabinet for Air Traffic Control The Netherlands.

1.1 Scope

Air Traffic Control The Netherlands uses data centre cabinets in data centres at different locations. For each location, data centre cabinets have different dimensions.

Dimensions (width x depth x height in mm)	Height Units (amount)
800 x 1200 x 2000	Min 42
800 x 1000 x 2000	Min 42
800 x 800 x 1800	Min 38

1.2 Classification

This document is classified as internal. This means that the information in this document may not be shared outside the Air Traffic Control The Netherlands organisation without specific authorization from Air Traffic Control The Netherlands

1.3 Priorities of the requirements

The specifications described in this document may have the following priority:

1. Knock-out
2. Essential (Need to have)
3. Optional (Nice to have)



2. Requirements

2.1 Weight

Requirement nr.	Type	Topic	Titel	Priority
RM-W001	Guideline	Weight	Data Centre Cabinet	Knock-out
Description	The maximum weight of the chassis with fitted panels and base shall not exceed 250Kg.			
Rationale	To avoid problems with the raised floor(s).			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-W002	Guideline	Weight	Data Centre Cabinet	Knock-out
Description	The minimum weight capacity of the cabinet shall be 1000Kg.			
Rationale	In order to ensure that the system cabinet can bear heavy equipment			
Remarks	-			

2.2 Colour

Requirement nr.	Type	Topic	Titel	Priority
RM-C001	Guideline	Colour	Data Centre Cabinet	Knock-out
Description	The colour of the system cabinet shall be white.			
Rationale	Uniformity. The same color for the entire contract period.			
Remarks	-			

2.3 Material

Requirement nr.	Type	Topic	Titel	Priority
RM-MT01	Guideline	Material	Data Centre Cabinet	Knock-out
Description	The cabinet frame should be constructed with conductive frames (galvanized or other conductive surface treatment). The frame is used as a reference conductor, on which panels and equipment enclosures are grounded.			
Rationale	To ensure the stability of the chassis and to meet EMC and EMI guidelines.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-MT01A	Guideline	Material	Data Centre Cabinet	Knock-out
Description	Cabinet frame components that have a non-conductive coating (paint, powder coating) should be mounted in a conductive manner using the appropriate mounting method and material, which will provide a continuous conductive frame.			
Rationale	To ensure the stability of the chassis and to meet EMC and EMI guidelines.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-MT02	Guideline	Material	Data Centre Cabinet	Knock-out
Description	The minimum sheet thickness of the side panels should be 1 mm.			
Rationale	To ensure the stability of the cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-MT03	Guideline	Material	Data Centre Cabinet	Knock-out
Description	The minimum sheet thickness of the doors should be 1,25 mm.			
Rationale	To ensure the stability of the cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-MT04	Guideline	Material	Data Centre Cabinet	Knock-out
Description	The minimum sheet thickness of the rooftop plate should be 1,25 mm.			
Rationale	To ensure the stability of the cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-MT05	Guideline	Material	Data Centre Cabinet	Knock-out
Description	The minimum sheet thickness of the base plate should be 1,25 mm.			
Rationale	To ensure the stability of the cabinet.			
Remarks	-			

2.4 Mechanical

Requirement nr.	Type	Topic	Titel	Priority
RM-M001	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The bare chassis shall be stiff.			
Rationale	To ensure the stability of the system cabinet.			
Remarks	Without the addition of loose reinforcement parts.			

Requirement nr.	Type	Topic	Titel	Priority
RM-M002	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The chassis shall be mounted at a removable base with plinths. Max height plinths 100 mm. Min height plinths 80 mm.			
Rationale	To avoid contamination by dirt or dust and to ensure easy transport of the cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M003	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The height of the cabinet is as specified in chapter 1.1 (plinth excluded).			
Rationale	Uniformity.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M004	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The plinths mounted at the base shall be removable.			
Rationale	To ensure an easy transport of the cabinet.			
Remarks	-			



Requirement nr.	Type	Topic	Titel	Priority
RM-M005	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The front of the chassis shall be fitted with 2 perforated hinged doors that can be opened 180 degrees.			
Rationale	For easy access to the installed hardware.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M006	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The back of the chassis shall be fitted with 2 perforated hinged doors that can be opened 180 degrees.			
Rationale	For easy access to the installed hardware.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M007	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The doors shall be locked via a locking mechanism at the top and bottom of chassis.			
Rationale	To protect the installed systems against unauthorized persons.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M008	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The perforated part of the door(s) shall be optimal used and is around 80% perforation.			
Rationale	For ventilation purposes.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M009	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	At the left and right side of the chassis, removable side panels shall be fitted.			
Rationale	To protect the installed systems against unauthorized persons.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M010	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	It shall be possible to separate system cabinets through removable partitions.			
Rationale	To connect each individual system cabinet with each other.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M012	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The chassis shall be fitted with a removable roof top plate with openings for cable entry at the right and left side of the plate.			
Rationale	To install cables via the top of the system cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M013	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The chassis shall be fitted with a removable base plate with openings for cable entry at the right and left side of the plate.			
Rationale	To install cables via the bottom of the system cabinet.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M014	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The length of the openings for cable entry should be centred and not exceed the depth of the chassis minus 50 mm each side. The minimum length of the opening is 600 mm. The minimum width of the openings is 100mm and shall not exceed 200mm.			
Rationale	To ensure having enough space to install cables.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M015	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The openings for cable entry should be protected against airflow leakage.			
Rationale	To ensure optimal cooling of the installed hardware.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M016	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The inside part of the chassis shall be fitted with a bare metal (rustproof and with good conductivity) 19 inch movable mounting frame, front and backside.			
Rationale	To install hardware and to ground the installed hardware.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M017	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The space to the left and right front side of the 19 inch mounting frame shall be airtight and shall contain closable openings.			
Rationale	To ensure an optimal airflow.			
Remarks	Openings for use of cable management modules.			

Requirement nr.	Type	Topic	Titel	Priority
RM-M017A	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The 19 inch mounting frame shall be fitted at 130 mm from the front of the chassis.			
Rationale	For easy access to the installed hardware.			
Remarks	-			



Requirement nr.	Type	Topic	Titel	Priority
RM-M018	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The distance between the front side and the rear side (depth) of the 19 inch mounting frame, shall be: For 1200 mm depth cabinet at 740 mm. For 1000 mm depth cabinet at 690 mm. For 800 mm depth cabinet at standard factory setting.			
Rationale	To ensure that heavy hardware can be easy mounted at the front and back of the 19 inch mounting frame.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M019	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	Cable trays, 300 mm wide, shall be mechanically fitted at the top and bottom and in the middle of the left and right side of the chassis.			
Rationale	For proper cable routing.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M020	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	Cable trays, 200 mm wide, shall be mechanically fitted at the top and bottom and at the left and right backside of the chassis.			
Rationale	For proper cable routing.			
Remarks	Only for cabinets with a depth of <u>1200 mm</u> .			

Requirement nr.	Type	Topic	Titel	Priority
RM-M021	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The cable trays shall be bolted at the top and bottom of the chassis.			
Rationale	To ensure stability and grounding.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M022	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	Handles shall be fitted at the front and rear doors.			
Rationale	To open and close doors.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M023	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	Positioning strips shall be fitted at front and back of the 19 inch mounting frame.			
Rationale	To mark height units.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-M024	Guideline	Mechanical	Data Centre Cabinet	Knock-out
Description	The count of the height units starts from the bottom of the 19 inch mounting frame.			
Rationale	Uniformity.			
Remarks	-			

2.5 Security

Requirement nr.	Type	Topic	Titel	Priority
RM-S001	Guideline	Security	Data Centre Cabinet	Knock-out
Description	It shall be possible to fit an Euro profile cylinder in the handle of the doors.			
Rationale	To secure the doors.			
Remarks	-			

2.6 ESD

Requirement nr.	Type	Topic	Titel	Priority
RM-ES001	Guideline	ESD	Data Centre Cabinet	Knock-out
Description	At the front and back side of the chassis, ESD bonding points shall be fitted at 21 U.			
Rationale	To prevent against unexpected electric static discharge.			
Remarks	-			

2.7 Electrical

Requirement nr.	Type	Topic	Titel	Priority
RM-E001	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	2 <u>metered</u> rack PDU's shall be vertical fitted at the backside of the chassis.			
Rationale	For 1200 mm depth cabinet both at the right backside. For 1000 mm depth cabinet one at each backside. For 800 mm depth cabinet one at each backside.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E002	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	The rack PDU's shall be equipped with a C-form connector with a minimum cable length of 3,5 meter.			
Rationale	Easy connection to Busbars.			
Remarks	The cable entry for the power strip via the top of the cabinet.			



Requirement nr.	Type	Topic	Titel	Priority
RM-E003	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	Each rack PDU shall consists the following outlets: minimum of 20 x C13 and 4 x C19 (2 top, 2 bottom).			
Rationale	-			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E004	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	The metered rack PDU's can be easily connected to management software.			
Rationale	To measure and manage and monitor the use of capacity at distance (SNMP)			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E005	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	There shall be no power on/off switch at the rack PDU's.			
Rationale	To prevent loss of power.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E006	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	All metal parts within the cabinet shall be grounded.			
Rationale	To ensure protection against electrocution			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E007	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	The system cabinet shall be equipped with a horizontal ground rail. The ground rail must be mounted at the bottom of the frame in a conductive manner, with suitable mounting material.			
Rationale	Ensures that electricity flows away via the earth in the event of defect.			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-E008	Guideline	Electrical	Data Centre Cabinet	Knock-out
Description	The PDU's shall be able to handle an nominal electrical current of 16A single phase.			
Rationale	-			
Remarks	-			

2.8 Additional Parts

Requirement nr.	Type	Topic	Titel	Priority
RM-A001	Guideline	Additional	Data Centre Cabinet	Knock-out
Description	If needed during the contract period, it shall be possible to order additional materials to build up the cabinet.			
Rationale	-			
Remarks	-			

2.9 Assembly

Requirement nr.	Type	Topic	Titel	Priority
RM-AS001	Guideline	Assembly	Data Centre Cabinet	Knock-out
Description	The system cabinet shall be delivered completely assembled according to the requirements mentioned in this document.			
Rationale	-			
Remarks	-			

Requirement nr.	Type	Topic	Titel	Priority
RM-AS002	Guideline	Assembly	Data Centre Cabinet	Knock-out
Description	It shall also be possible to deliver the system cabinet in parts, to be assembled at by Air Traffic Control The Netherlands named location.			
Rationale	-			
Remarks	At some locations a completely assembled system cabinet doesn't fit. The assembly of a system cabinet at such a locations is then needed.			



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