

Cabinets – Services Interface

Interface Document: LN-MPIA-FDR-INT-101		Issue: 1.1
Relevant Documents: LN-MPIA-FDR-ELEC-003, LN-MPIA-FDR-GEN-007		
Brief Description: Cooling water, power and ethernet for the cabinets		
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Date: 31 January 2005	Date: 25 April 2005	Date: 28 April 2005

Interface Description

This document describes the interface between the electrical cabinets and the services including: cooling water, electrical power and ethernet connection.

Interface Specification

- Cooling water:

The cooling water of LINC-NIRVANA will be supplied by two different connection points, one below each instrument flange. From this connection point, we will distribute the cooling water to the different consumers using a manifold. The power consumption of the right and left sides should be in balance. From the manifold, there will be flexible hoses to the consumers. The connectors used are the same type as the connectors at the central connection point, only the size is scaled down.

Connectors	Swagelock quick connectors QTM series (These connectors are LBT observatory standard)
Heat dissipation left	Cabinet L1 1400 W
	Cabinet L2 1400 W
	Cabinet M1 1000 W
Power consumption right	Cabinet R1 1400 W
	Cabinet R2 1400 W
	Cabinet M2 1000 W
Cooling water temperature	1.5 degrees below ambient

- Electrical power connection:

The power of LINC-NIRVANA will be supplied by two different connection points, one below each instrument flange. From this connection point we will distribute the power to the different cabinets using a small power distribution cabinet, which is mounted on the instrument substructure. The power consumption of the right and left sides should be in balance. From the distribution cabinet, there will be cables to the cabinets.

Power consumption left	Cabinet L1 2200 W
	Cabinet L2 1800 W
	Cabinet M1 1200 W
Power consumption right	Cabinet R1 2200 W
	Cabinet R2 1800 W
	Cabinet M2 2600 W
Maximum rate current (208/3AC 60Hz)	15 A / Phase
Maximum rate current (120/1AC 60 Hz UPS)	25 A
Power supply cable (208/3AC 60Hz) Service point <-> Distributor cabinet	5 x 4 mm ²
Power supply cable (208/3AC 60Hz) Distributor cabinet <-> Cabinets	5 x 2.5 mm ²
Power supply cable (120/1AC 60 Hz UPS) Service point <-> Distributor cabinet	3 x 4 mm ²
Power supply cable (120/1AC 60 Hz UPS) Distributor cabinet <-> Cabinet	5 x 2.5 mm ²

- Ethernet connection

The ethernet-switch (10/100/1000Mbit) is the interface. One unit is mounted in each cabinet. The connector is an ethernet standard connector of type RJ45.