

Specification no.	Revision no.	Total pages
TSP/01	0	2

Supply and Installation of Two stage 1.5 W, 4 K Pulse Tube Cryocooler along with compressor and accessories

1. Introduction

Cryocooler based superconducting systems are more reliable and less complex, these systems are cryogen less and free from hassles faced by conventional superconducting system. Key component of these cryogen free systems are Cryocooler. This tender document gives specifications and scope of supply for Pulse Tube based Cryocooler along with compressor. Installation of the Cryocooler is in scope of the supplier.

2. Deliverables

SN	Particulars	Quantity
1.	Two stage 1.5 W 4 K Pulse Tube Cryocooler	Two sets
	Compatible compressor to Two stage 1.5 W 4 K Pulse Tube Cryocooler (Para 4)	Two sets
	Helium Gas Lines with Buffer Tank	Two sets
	Cold Head Cable	Two sets
	Tool kit: Tool kits should include standard installation wrench kits to comprehensive kits that include such items as gas charging valves and additional tools for installation, maintenance or service on the offered Cryocooler systems.	Two sets
	Operating manuals	Two sets

3. Technical Specifications

SN	Parameter	Specified value
1.	Refrigeration Cycle	Pulse Tube (2-Stage)
2.	Power line frequency	50 ± 1 Hz
3.	I stage cooling capacity	≥ 36 Watt @ 48 K
	II stage cooling capacity	≥ 1.5 Watt @ 4.2 K
4.	Lowest temperature	< 2.8 K
5.	Weight	< 29 Kg
6.	Maintenance interval	≥ 12,000

4. Water cooled compressor for Two stage 1.5 W 4 K Pulse Tube Cryocooler

SN	Parameter	Specified value
1.	Cooling system	Water cooled
2.	Electrical Requirement	AC380 400 415 (±10%) V 50Hz
3.	Power consumption	< 12 kW
4.	Ambient temperature range	15 – 35 °C
5.	Maintenance interval	≥ 25000 hrs
6.	Cooling inlet	< 10 Liter / Min
7.	Weight	< 250 Kg
8.	Maximum Operating Current	24 A

5. General Instructions

- a. Bidders shall attach detailed data sheet of the offered product along with the offer.
- b. Installation of the Cryocooler is in scope of the supplier.
- c. The supplier should have service center in India. This is a mandatory requirement for ensuring availability of the items for the indented use.
- d. The equipment to be packed for safe delivery to BARC.
- e. Test and calibration certificate of the instrument should be delivered along with.
- f. Other technical specifications and terms and conditions as per supplier's offer.
- g. Post supply inspection is not allowed.