

NIPER-G/PUR/GLOBAL/2018/05

SPECIFICATIONS FOR NANO SPRAY DRYER

Nano Spray Dryer High Potential to generate particle sizes in the nano range 200 to 1000 nm with narrow size distribution for milligram sample quantities particularly suited for pharmaceutical, biotechnology, materials and nanotechnology applications as per the below specifications:

	Specification as per the Tender Notification in Chapter 4	Amended Specifications as per the Pre Bid meeting held on 22-02-2018 in Chapter 4
1.	<p><u>General Specifications</u></p> <p>1. Should have a precise technology either ultrasonic or piezoelectric technologies to generate smaller particles in the range of 200 to 500nm with narrow particle size distribution.</p> <p>2. The spray head can be positioned angular or vertical in the spray cylinder and it can be used with different size or capacity spray caps.</p> <p>3. The drying gas entering into the drying chamber should be through porous metal foam and its flow should be laminar.</p> <p>4. Modular glass assembly of the spray cylinder so that it is possible to configure the system for spray drying water based samples or organic samples in the same instrument.</p> <p>5. Spray cylinder with sideways flange for organic samples and for spray drying temperature sensitive samples and minimal sample quantities down to 1 ml.</p> <p>6. Elongation possibilities of the drying section for drying bigger droplets.</p>	<p align="center">No change in any Specifications</p>

	7. Electrostatic particle collector for collection of sub microns and nano particles and improved yield.	
	8. Height adjustable peristaltic pump for sample feeding.	
	9. The pump should supply sample continuously with minimum dead volume in the feeding tubes.	
	10. Visualized process parameters and display control for convenient setting of inlet/outlet temperature, drying gas flow, spray rate and pressure.	
	11. Built-in software for online data monitoring and storage.	
	12. Corrosion resistant aspirator to generate the drying gas in open mode or to re-circulate the gas in closed mode. It should have a glass fibre filter to prevent contamination of inlet air by any kind of particles from the environment.	
	13. Borosilicate glass to withstand the temperatures used in the instrument.	
	14. All the other parts should withstand the temperature, solvents used and corrosion free and resistant material	
	15. Manual cleaning tool for efficient particle recovery from electrostatic particle collector.	
	16. Integrated outlet gas filter for the protection of environment and the user.	
	17. Optional -- Inert-Loop fitted with an Oxygen monitoring and pressure monitoring sensor for safe operation with organic solvents in closed mode.	

	<p>18. Optional -- Dehumidifier for reproducible inlet air conditioning or condensation of water in closed loop configuration.</p>	
	<p>Technical Data Nano Spray Dryer: Mean Particle Size Range: 200 nm to 5 μm (Lesser the size better) Mean Droplet Size Range: 8μm to 20μm Evaporating Capacity: maximum 0.2 l/hr Water, higher for solvents Drying Gas Flow: 80-160 litres/minute Maximum Inlet temperature: 120 - 150 deg C Heating control: $\pm 1^{\circ}C$ (lower will be better) Heating Capacity: maximum 1400 Watts Power Consumption: 1500 Watts Maximum.</p>	
	<p><u>OPTIONAL ITEMS</u></p> <p><u>Inert Loop:</u></p> <p>Rate of Cooling: 800 Watts at – 10 deg C. Minimum Outlet Temperature: down to – 25 deg C. Power Consumption: 1.4 KW Maximum</p>	
	<p>Upgrade kit for the Inert Loop to work in closed mode (organic solvents) with Nano Spray Dryer.</p>	<p>No change in any Specifications</p>

Dehumidifier:

Rate of Cooling: 600 Watts at 0 deg C.
Minimum Outlet Temperature: + 2 deg C.
Power Consumption: 700 Watts.

Upgrade kit for the Dehumidifier to work in closed mode with the Nano Spray Dryer The set must includes a backpressure valve, a dummy plug, hose connectors and compressed gas tubing for N2 and CO2.

One set of spare parts like gaskets, feed capillary sets and other tubing required for instrument and accessories should be supplied along with instrument.

General Terms and Conditions applicable to all 13 tenders published in newspaper on 19th February 2018 and exhibited in NIPER Guwahati website.

Following additional information is provided for the information of prospective bidders for 13 different items for which tender inquiry is issued:

1. Payment terms:

Considering the request made by few prospective bidders during the pre-bid conference held in the institute on 22nd February 2018, regarding payment terms related with foreign suppliers it is clarified that the **indicated payment terms in the tender documents still remains unchanged.** However Director, NIPER Guwahati **at his own discretion** can consider any other mode of payment requested by suppliers based on the reputation, credentials of foreign suppliers in the field and also protecting the interests of NIPER Guwahati. **No request for advance payment will be considered.**

2. Clarification with regard to projecting the cost implications of free delivery of the item at NIPER Guwahati premises.

Subsequent to the Pre-bid conference with regard to projection of price for items coming from abroad, the following guidelines may be followed:

- A) The F.O.B. C.I.F., C.I.P. prices as per the suppliers quote should be indicated in foreign currency only
- B) The additional cost towards payments of custom duty against duty exemption certificated provided by the institute, clearance charges, forwarding consignment from port of clearance to NIPER Guwahati premises etc. can be quoted in Indian currency.

For comparing the price with other bids, the institute at the time of preparing comparative chart for the tenders, the total F.O.B., C.I.F., C.I.P. cost will be converted into equivalent Indian currency at the exchange rate prevailing on the date of tender opening i.e. 13th February

2018 at 1500 hours IST and add the equivalent Indian currency value to the clearance and forwarding charges indicated by the supplier.
