



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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PR No. 1000020793 (Rfx No. 6100000869)

Detailed Technical Specifications for Super Critical Dryer

1. Super Critical Dryer with

1. Minimum of 1.25-inch Inner diameter and 1.25-inch depth sample chamber
2. Flexible, high pressure compatible, Teflon lined liquid CO₂ supply hose (minimum 10 ft length).
3. External CO₂ filtration system to remove particulates larger than 0.5 micron
4. Static-free exhaust tubing for purge/vent/bleed/cool of exhaust (5 meters).
5. Flow meter for precise control and periodic bleed of exhaust.
6. Facility to program and save custom Recipes exactly to dry samples ranging from polymers to biological.
7. Slow fill feature to protect the delicate samples.
8. Spare chamber O-rings (5 pieces), chamber lamps (2), 5A slow-blow fuses (5 pieces).
9. Liquid CO₂ tank scale with remote readout and display.
10. Acetone Package Kit for 1.25" I.D. Process Chamber (Contains 3 Teflon O-Rings, 1 Backing Ring, and 1 Spanning wrench).
11. Teflon O-Ring for 1.25" I.D. Chamber (minimum 20 pieces)
12. Backing Ring for 1.25" I.D. Chamber (minimum 10 pieces)
13. O-Ring for LCO₂ Filter Assembly Seal (minimum 10 pieces)
14. External 0.5µm Particulate Line Filter Element for LCO₂ T-Filter or External Purge Line Filter (minimum 20 pieces).
15. LCO₂ Filter Element (minimum 20 pieces).
16. Gasket for LCO₂ tank connect (minimum 50 pieces).
17. CO₂ and Alcohol sorter condenser
18. Carboy container (min 2.5 L) with connectors for exhaust tubing's to collect waste Alcohol.
19. Small Particle Holder (Quantity 2) along with Ultrafine S.S. mesh screen to retain particles down to 30 µm, 10µm and 1µm (5 units of each mesh size).

20. 1" Large Capacity Holder (Quantity 1, material S.S.)
21. Multiple Grid Holder (Quantity 1, 3.05 mm grid size)
22. HF Compatible Chip Holders (Quantity 1, at least 5 wafers of 10mm X 10mm size)
23. S.S. Coupler Connection to LCO₂ Tank
24. Liquid CO₂ cylinder with min 99.8% purity (Quantity 2:- 1 for operation & 1 as back up) with associated regulators, tubing and connectors.
25. 2 years comprehensive warranty.
26. Installation, training and demonstration are on-site.

2.Optical Microscope

1. Optical Microscope with 0.8X to 5.6X magnification, 7:1 Wide Zoom Ratio, the working distance of at least 150 mm with Darkfield illumination, Oblique illumination (Low/Standard/High contrast), Polarized illumination facility to observe the sample before and after supercritical drying.
2. Light intensity adjustment possible using a continuously variable dial.
3. Digital Camera attachment to observe and capture the sample images for further analysis. Suitable PC should be supplied having following Specs or better – CPU i7 or better. 16GB RAM, 1TB SSD, Graphics Card with 4GB memory, 24-inch LED Screen, Keyboard, Mouse (Branded).
4. Instrument should be supplied with 2 years comprehensive warranty.
5. Installation, training and demonstration are on-site.

3.Weighing Balance

1. Weighing Balance with Weighing Capacity: up to 220 gm, Readability: 0.1 mg or better, Linearity: $\leq \pm 0.2$ mg or better, Repeatability: $\leq \pm 0.1$ mg or better, Pan Size: $\varnothing \sim 90$ mm dia.
2. Response time (avg.): 2.5 s or better.
3. Calibration: Internal Calibration.
4. The backlit and high-contrast display to weigh the sample before and after supercritical drying.
5. Glass draft shield can be opened from three sides and removable dust and spill rings.
6. Instrument should be supplied 1 year warranty.

7. Installation, training and demonstration are on-site.