

Technical Specifications for Differential Scanning Calorimeter

Sl. No.	Features	Description
1	General Description	State-of-the-art Modulated differential scanning calorimeter, capable of measuring normal DSC and specific heat capacity (C _p) by Modulated DSC.
2.	Design	Heat flux DSC design over temperature range from -180 to 725 ⁰ C
3.	Temperature range	-180 to 725 ⁰ C
4.	Sensor Type	Fixed metallic Chromel /Alumel sensor_for the full temperature range given in Sl.No.3
5.	Temperature accuracy	± 0.1 ⁰ C or better
6.	Temperature repeatability or precision	± 0.05 ⁰ C or better
7.	DSC baseline repeatability (50 to 300 ⁰ C)	± 40 micro Watt
8.	Enthalpy precision	± 0.1% or better
9.	Heating/Cooling rate	0.001 to 200 ⁰ C (K) per min or better
10	Controlled cooling by Liquid Nitrogen	0.001 to 200 ⁰ C per min or better
11	DSC measuring range	±350 mW or better
12	Heat flow digital resolution	0.001 μW or better
13	Calorimetric sensitivity	0.2 μW or better
14	Segment types	Static (Isothermal) and dynamic and modulated mode
15	Gas atmospheres	Inert and oxidising conditions
16	Mass flow controller	Capable of independent control of protective and purge gases
17	Standards for C _p measurements	Set of Sapphire standards to be provided
18	Cooling System and Accessories.	Liquid Nitrogen Dewar (50 L or higher) with supply system, sealing press/crimping tool, cleaning brush and tweezers. Provision for LN ₂ and GN ₂ is mandatory.
19	Sample pan	Aluminium pans and lids (500 nos.; 25μl or better); Alumina pans and lids (20 nos., 25μl or better).
20	Personal computer with printer	Desktop PC with latest technical configuration compatible with main instrument to be provided.
21	Software	Basic softwares capable of measuring and evaluating melting, crystallinity, polymorphism, phase transitions, liquid crystal transitions, solid liquid ratio, glass transition and specific heat capacity, ₂ Separation of reversing and non-reversing transitions. Advanced Softwares for measuring thermokinetics, peak separation and purity determination, modulated DSC.
22	General terms and conditions	1. Price should be quoted on Ex-works and CIP Chennai basis (stating the cost of the equipment, insurance, freight separately) and indicating the mode

		<p>of shipment.</p> <p>2. Price for optional items, if any, should be indicated separately.</p> <p>3. Standards for calibration (Temperature and Sensitivity), for the entire range should be provided.</p> <p>4. Three years' warranty from the date of installation/ acceptance, covering all the units of the instrument.</p> <p>5. Indicate the AMC cost after the expiry of the warranty period.</p> <p>6. List of spares and consumables to be provided with price details. Support in terms of availability of parts and consumables will be assured for 5 years.</p> <p>7. Complete technical details along with hard and soft copies of the manual should be provided.</p> <p>8. Software upgrade should be incorporated by the vendor as and when the new versions are released at no additional cost.</p> <p>9. Onsite training for at least 2 persons in the operations and general maintenance should be given</p> <p>10. List of installations in India for the last 2 years to be provided.</p>
23	Optional items	None