



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Ref. No. (PR.1000036944)

Technical Specification for Add-on Component for FTIR Facility

Technical capabilities, specifications + essential accessories, total cost in INR (include break up of INR and foreign currency components + attach best quotes from potential vendors)

Details of Current FTIR Facility:

In brief, the current FTIR facility in SAIF doesn't have the capability to capture diffuse transmittance and reflectance from samples. This becomes important when the samples are diffusive. If we want to accurately quantify the optical properties of such a sample, collecting the diffuse scattered radiation from all directions is a must. While the UV-vis-nir spectrometer in SAIF has an integrating sphere accessory, the FTIR doesn't. For accurately determining optical properties in IR this accessory will be necessary.

Integrating spheres help improve the accuracy and precision of measurements, especially for samples that may have uneven or complex surface properties - paints, coatings, powders etc. The way these help improve accuracy and precision is as follows: these typically consist of a spherical chamber coated with a highly reflective material (gold) on the inside. The sample is placed at one of the openings of the sphere, and infrared light is directed into the sphere. The light undergoes multiple reflections inside the sphere, and the sample uniformly interacts with this diffuse light. The light that exits the sphere is then collected and directed into the FTIR spectrometer for analysis.

The accessory comes with a separate detector.

Technical specifications:

Sr. No.	Detailed Specification	Qty	Compliance (Yes/No)
1.	<p>Add-on Component for FTIR Model Vertex 80 P/No. A562-G/Q Integrating sphere for use inside sample compartment: gold-coated, 14,000-400cm⁻¹ wavelength range; QuickLock base plate; - 01</p> <p>For diffuse transmittance measurements of thin samples: transmittance holder A562-T – 01</p> <p>Warranty: 1 Year</p>	1 No.	
2.	<p>P/No. D301250B ext MIR DLATGS detector: ext MIR DLATGS detector, Range:12,000-180cm⁻¹, size:3mm; integrated amplifier and digitization electronics for use with integrating sphere A562-G/Q</p> <p>Warranty: 1 Year</p>	1 No.	