



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076

Purchase Requisition No. 1000012695 (SRM/RFX No. 6100000225)

A multichannel high resolution Optical Emission Spectrometer with plasma line identification software with following specifications:

Number of channels : 3

Grating elements: 1200 lines / mm

Wavelength range: 230-845 nm

Slit: 25 μ m

Resolution: better than 0.25 nm

Collecting lens installed in spectrometer to collect more photons of weak signals

Detector window should be coated to eliminate second and third order effects with UV upgrade

Detector Type : Toshiba TCD1304AP or equivalent

Quantum efficiency : >30%

Integration time: 4 milliseconds to 20 seconds (continuous);

Dynamic range: 2×10^9 (system); 2000:1 for a single acquisition

Signal-to-noise ratio:: 300:1 (at full signal)

Stray light: <0.05% at 600 nm; <0.10% at 435 nm

Fiber optic connector: SMA 905 to single-strand optical fiber (0.22 NA)

Cuvettes : 16 no.s

Calibration source : Lasers 740, 820nm for calibration with power supply

Fiber Cable : 1000 μ m Premium Fiber, UV/VIS, 2 m, polyimide buffer/coating, Silicone monocoil 3no.s

Collimating Lens 3 Nos

Height adjustable Stand with tiltable knob to accommodate all 3 collimating lens

Software for system operation and data analysis

Plasma identification software of plasma lines

Operating temperature range : 15-35 C

Ambient temperature : upto 45 C

Operating moisture requirements : 90 % RH at 25 C (no condensation)

Note:

1. Supplier should send test certificates with standard spectra confirming the data quality before shipping and only after acceptance by purchaser the instrument should be shipped.
2. Supplier / his agent should give all details with quotation regarding various electrical and other utilities like cooling water requirement etc. so that it can be kept ready well in advance prior to the reaching of the equipment at the purchaser's site.
3. Supplier / his agent will be responsible for showing the performance of the unit at the purchaser's site. The unit will be accepted only when its performance is shown to the purchaser's engineers at the purchaser's site.
4. Instrument and all accessories should work on 230 V AC \pm 10 %, 50-60 Hz, single phase or 440 \pm 10 %, 50-60 Hz , three phase power supply.
5. One set of operating manual and service manual (in English) should be provided with the instrument.
6. Warranty: The complete instrument should be under warranty for a period of **two years** from the date of installation. In case of breakdown during the warranty period, a competent service engineer of the supplier should make as many visits as are necessary to rectify and replace the defective components. The unit should be repaired within 5 working days from the date and time of complaint lodged by the user. The supplier should provide all spares required for making the instrument operational. Even if no breakdown is reported during the warranty period, the service engineer should make a minimum of four visits in a calendar year towards preventive maintenance of the instrument. Supplier should confirm that Service Engineer is available in or nearer.
7. Factory Test Certificates with respect to various parameters should be enclosed along with the unit.
8. The original equipment manufacturer (OEM) should confirm in writing that the spares for the quoted model will be available for a period of ten years after installation of the instrument. In case the OEM is bidding through an Indian agent, the OEM should give a written undertaking that they will be responsible for providing the warranty and annual maintenance as per the clauses above, even if there is a change in the Indian agency of the manufacturer. The undertaking from OEM should also include that if in future, OEM does not have any Indian agency, the service will be provided directly by the service engineer of the OEM without any extra charge.

9. Printed documents in support of claimed specifications should be provided. List of users of the offered model in India should be included.
10. The installation and servicing of the instrument should be done by factory trained, qualified and competent service engineers.
11. The service engineer should have obtained training on installation of similar model of the instrument and should have installed a similar model earlier.
12. All spares required for trouble free operation of the unit for five years should be a part of the quotation.
13. Deviations in the specifications of the offered model (if any) should be clearly indicated point by point.