

RFT006-Request for Proposal (RFP) for supply and installation of high resolution Visible-IR (400-2000 nm) Spectrometer

Table of Contents /index:

S. No.	Name of the component	No. of units required
1	High resolution Visible-IR (400-2000 nm) spectrometer with all required accessories and equipment.	1
2	Tungsten-Halogen source	1

Technical specifications of the components:

1. Spectrometer- (1 No.)

Specifications	
Wavelength range	400-2000 nm
Resolution with 600 l/mm groove density grating	≤ 0.025 nm over the wavelength band of 400-800 nm ≤ 0.04 nm over the wavelength band of 800-1200 nm ≤ 0.08 nm over the wavelength band of 1200-2000 nm
Resolution with 1200 l/mm groove density grating	≤ 0.015 nm over the wavelength band of 400-800 nm ≤ 0.02 nm over the wavelength band of 800-1300 nm
Calibration Accuracy	≤ 0.01 nm
Wavelength Reproducibility	$\leq \pm 0.005$ nm
Coating	All the reflective optics must be coated with Al+MgF ₂
Grating groove density	600 and 1200 g/mm to meet the spectral resolution requirements
Grating Holder	Kinematic turret with 3 grating slots
Grating scan control type	Motorized
Scanning Mechanism	Stepper Motor driven
Grating Scan step size	0.001nm-0005 nm
Operating Order	1 st and 2 nd
Order sorting filters	To cut-off desired order spectral overlap over the wavelength band 400-2000 nm. Suitable for operation in both 1 st and 2 nd order.
Filter Diameter (Clear Aperture)	≥ 20 mm
Blocking optical density	OD 4 or better
Mount for order sorting filters	Filter wheel
Filter wheel control type	Motorized

Entrance Slit type	Precision bilaterally adjustable
Entrance Slit width range	5 µm to 1 mm
Step size for slit width adjustments	1 µm-5 µm
Entrance slit height range	2 mm-20 mm
Height adjustment steps	1 mm
Entrance Slit operation	Motorized
Exit Slit type	Precision bilaterally adjustable
Exit Slit width range	5 µm to 1 mm
Step size for slit width adjustments	1 µm-5 µm
Exit slit height range	2 mm-20 mm
Height adjustment steps	1 mm
Exit Slit operation	Motorized

2. Source (1 No.)-

Specifications	
Source	Tungsten-Halogen
Wavelength Range	400-1200 nm
Condenser	Transmittive/Reflective
Source intensity variation/fluctuation	≤0.01% across the wavelength band 400-1200 nm over 1 hour operation
Source-to-Spectrograph Interface	Suitable mechanical interface for coupling the source to spectrograph should be provided.
Shelf Life	> 1000 hours

Additional Requirements:-

- Vendor should provide all interface drawings and product drawings in pdf format along with the technical bid for the evaluation. If the vendor fails to provide this information, it may lead to rejection of the technical bid.
- The vendor should supply all the relevant hardware and software for coupling different parts of the spectrometer.
- The vendor should provide price bid with detailed price breakup of individual components.

Warranty:

All the supplied hardware should have a minimum warranty period of 1 year from the date of installation.

All the system software support, update and maintenance for a period of 10 years.

Expected deliverables:

- 1.** As mentioned in **Table of Contents** that meets the **technical specifications**.
- 2. Conformance test certificates** for the properties of optics as per the specifications mentioned.
- 3.** Soft copy and hard copy of all the relevant manuals, soft copy of all control software's should be supplied by the vendor at the time of delivery.
- 4.** All the necessary controls, auxiliary hardware and software for the spectrometer operation should be supplied by the vendor at the time of delivery.

Expected Time Schedule

3-4 Months

For any information/clarifications contact the following

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