



INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH
PUNE

CLARIFICATION ON TENDER NUMBER - IISER-PUR-120-20

ITEM DESCRIPTION- PROCUREMENT OF MONOCHROMATOR WITH EMCCD.

Refer IISER Pune open tender number IISER-PUR-120-20 dated 13.7.2020 for procurement of Monochromator with EMCCD.

Pre-Bid meeting was held on July 20th , 2020 at 3.00 PM via video conferencing and minutes of meeting is as under.

At the outset, the Chairman welcomed all the Members and the representative of the Prospective Bidders and briefed in general the scope of the Project and thereafter requested Assistant Registrar (S&P) to brief the vendors on the salient features of the commercial terms and the indenting Officer to read out the clarification sought by the Prospective Bidders and replied thereto as detailed in Annexure -II

The representatives present were satisfied with the replies given and it was informed that the corrections / additons / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of IISER Pune and all the Prospective Bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before submitting their bids as stipulated in the Bidding Documents.

The other terms & conditions of the notice issued on our IISER website [www.iiserpune.ac .in](http://www.iiserpune.ac.in) will remain unchanged. No more correspondence in this regard will be entertained

The meeting ended with vote of thanks to the Chair

20.7.2020

Sd/-
Assistant Registrar (S&P)



IISER PUNE
PRE-BID CONFERENCE FOR PROCUREMENT OF MONOCHROMATOR WITH EMCCD
TECHNICAL & COMMERCIAL QUERIES AND CLARIFICATION

S.No	Query/Clarification Sought	Clarification / Amendment
1	MONOCHROMATOR: Why >320mm focal length?	Revised Focal length: 320 mm or larger.
2	MONOCHROMATOR: Why only 4 gratings?	Gratings turret(s): accommodate at least 3 and preferably 4 gratings without recalibration (Marks 3 for 3 gratings or Marks 5 for 4 gratings in a single turret)
3	MONOCHROMATOR: Why 4 Gratings	At least 3, preferably 4 gratings to be offered for 240-2500 nm spectral range possibly with (Marks 4 if 3 gratings, 6 if 4 gratings)
4	MONOCHROMATOR: Why Iris?	Spectrometer should have accessory (e.g iris) to enhance resolution up to 30% to obtain higher resolution without any mathematical spectral deconvolution. With reduced Marks 1
5	EMCCD: dark current 0.0001 e/p/s at maximum cooling.	Remains unchanged
6	InGaAs: Why 1.4 microsecond?	This is the Minimum exposure time of 1.4 µsec
7	Chapter 4, Schedule of Requirement, Specification & Allied Technical Details page no 20 to be changed	Chapter 4, Schedule of Requirement, Specification & Allied Technical Details page no 20 to 22 is amended as per Annexure III.

Annexure III

1) MONOCHROMATOR	
Focal length: 320 mm or larger	6
Aperture: F/4.1.	2
Gratings turret(s): accommodate at least 3 and preferably 4 gratings without recalibration (Marks 3 for 3 gratings or Marks 5 for 4 gratings in a single turret)	5
Grating size (mm): 68 x 68	2
No. of Input: One motorized, software-controlled entrance slit.	5
No. of exits slits: Two exits slits compatible with EMCCD and InGaAs Array Detector	1
Slit widths Range: 10 μ m to 2.5 mm and wide aperture facility to open the slit 15mm wide should be present.	3
Wavelength accuracy center: 0.04 nm or better at 500 nm	6
Wavelength repeatability (Grating to Grating): 10 pm or better	1
Spectrometer should have Astigmatism-corrected optical design	1
Drive type: on-axis wavelength drive	1
Interface with computer: USB 2	1
Shutter: Must be present at entrance	2
At least 3, preferably 4 gratings to be offered for 240-2500 nm spectral range possibly with (Marks 4 if 3 gratings or Marks 6 if 4 gratings)	6
- 2400 lines/mm grating blazed at 300nm	
- 1800 lines/mm holographic grating with peak at 480nm	
- 600 lines/mm grating blazed at 1200nm	
- 600 lines/mm grating blazed at 1600 nm	
Mirrors: AL + MGF2 Mirror for broad spectral range from 240-2500 nm	1
Optical fiber of 2-meter length with core size 200 micron with Visible & NIR range to be provided - in 1 Quantity.	2
Focusing: Automatic focusing by software control is preferable	1
Spectrometer should have accessory (e.g iris) to enhance resolution up to 30% to obtain higher resolution without any mathematical spectral deconvolution.	1
Automatic optimization when changing between grating or cameras and to ensure best resolution at any wavelength by software should be possible.	1
Compatible X-Y adjustable fiber adapter to connect the fiber to spectrometer should be provided	1
Software: Latest software to be provided and same software should be able to control both the Spectrometer and EMCCD and InGaAs Detector.	1
TOTAL MARKS for Monochromator	50
Technical Qualification Marks for Monochromator is > 45 out of 50	
2) EMCCD	
Sensor: Back Illuminated, Vis-optimized with anti-fringing	5
Active pixels: 1600 x 200	2
Pixel size: 16 x 16 μ m	5
Image area 25.6 x 3.2 mm with 100% fill factor	2
Air cooling: -65°C or preferably even lower temperatures	2
TE Cooling and accessories included: -70°C (preferably even lower temperatures)	2
Vacuum shield for secured and sustained operation	1
Max spectra per second: 600 or more (Full Vertical Bin), 1,500 or more (in the Crop Mode - 20 rows)	1
Blemish specifications: Grade 1 sensor	2
Peak Q.E: > 95%	1
Dark current, e-/pixel/sec @ maximum cooling: 0.0001 or better	5
Sensitivity:	
- Conventional mode: 300,000 e- or better	3
- Electron Multiplying mode: 1,300,000 e- or better	3
Register well depth:	
- Conventional mode: 400,000 e-	1
- Electron Multiplying mode: 800,000 e-	1
Active area pixel well depth: 200,000 e-	1
Read noise as low as 2.8 e- (Minimum at < 1 e- in EM mode)	5
Electron Multiplier gain: 1 - 1,000 times (software controlled)	2
Linearity: Better than 99%	2
Digitization: 16 bit	2
Vertical clock speed: 4.9, 9.8, 19, 38, 57 (software selectable)	1
Software: Latest software to be provided and same software should be able to control both the Spectrometer and EMCCD.	1
TOTAL MARKS for EMCCD	50
Minimum Technical Qualification Marks for EMCCD is > 45 out of 50	
3) InGaAs Array Detector (Optional)	
Array Size: 25.6 mm wide with 1024x1 pixels	10
Pixel Size: 25 μ m X 500 μ m	10
Peak QE > 80% for 1.7 μ m cut-off	10
Dark current ke-/pixel/sec: 12	5
Typically, attainable up to -70°C (1 marks), preferably with TE cooling (2 marks)	2
Minimum exposure time of 1.4 μ sec	1
Digitization: 16 bit	5
Software selectable output amplifiers	1
Simple opto-mechanical coupling interface	1
Simple USB 2.0 connection	2
Software: Latest software to be provided and same software should be able to control both the Spectrometer and InGaAs detector.	3
TOTAL MARKS for InGaAs Array Detector	50
Minimum Technical Qualification Marks for InGaAs Array Detector is > 45 out of 50	
* COMPLIANCE CHARTS for the above specifications of the Monochromator, EMCCD and InGaAs Array Detector must be provided. ITEM 2 & 3 must be compatible with ITEM 1 for synchronized operation	