



**CENTRE FOR NANO AND SOFT MATTER SCIENCES**  
Arkavathi, Survey No. 7 Shivanapura, Dasanapura Hobli,  
Bengaluru North 562162

*Autonomous Institution under the Dept. of Science & Technology, Govt. of India*

**INVITATION TO TENDER**

**No. CeNS/2023-24/869**

**Date:05-02-2024**

To

The Centre invites sealed tender/bid from your firm for supply, installation and commissioning of the following scientific equipment.

**Technical specifications of the optical components**

Tender document has been uploaded in GEM PORTAL, Bid No: [GEM/2024/B/4571352](#)

dt. 05-02-2024 registered vendors can participate through GEM bidding.

- **Registered GEM vendors** can participate through the Bid No: [GEM/2024/B/4571352](#) dt. 05-02-2024 and submit online bid in GeM portal.
- **Non-Registered vendors**, tender document is uploaded both in CPP Portal and CeNS website, link <https://www.cens.res.in/en/tenders> may duly be completed and submitted in a **sealed outer cover**, containing two **separate sealed envelopes**, clearly marked as “**Techno-Commercial Bid (Annexure III)**” and “**Price Bid (Annexure IV)**”, for identification.

The tender shall be addressed to **The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North 562162** marked with our tender reference number, due date and due time with stamp. The completed tender bids must reach this office in the combined sealed cover on or before **16.00 Hrs. of 15 February 2024**, through Speed Post / Courier / Registered Post/hand delivery.

Yours faithfully,

**Sd/**

Administration and Finance Officer

Encl: as above.



## CENTRE FOR NANO AND SOFT MATTER SCIENCES

Arkavathi, Survey No. 7 Shivanapura, Dasanapura Hobli,  
Bengaluru North 562162

*Autonomous Institution under the Dept. of Science & Technology, Govt. of India*

### INVITATION TO TENDER

**No. CeNS/2023-24/Tender Optical Components**

**Date: 05 February 2024**

To

The Centre invites sealed tender/bid from your firm for supply, installation and commissioning of the following scientific equipment.

#### **Technical specifications of the Optical Components**

The Tender Form in Annexure I to V may be submitted along with relevant Fees and Earnest Money Deposit (EMD). The terms and conditions may clearly be noted before submission of the tender.

The form in Annexure II may duly be completed and submitted in a **sealed outer cover**, containing two **separate sealed envelopes**, clearly marked as **“Techno-Commercial Bid (Annexure III)”** and **“Price Bid (Annexure IV)”**, for identification.

The tender shall be addressed to **The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North 562162** marked with our tender reference number, due date and due time with stamp. The completed tender bids must reach this office in the combined sealed cover on or before **17.30 Hrs. of 15 February 2024**, through Speed Post / Courier / Registered Post/hand delivery.

Yours faithfully,

**Sd/-**

Administration and Finance Officer

Encl: as above.

## GENERAL INSTRUCTIONS

### 1. Definitions :

- a. The terms 'Purchaser' shall mean The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bangalore North 562162.
- b. The term 'Supplier' shall mean the person, firm or company with whom or with which the order for the supply of Items/Equipment is placed.
- c. The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the supplier for supply of Items/Equipment.

2. **Delivery of tender:** The offer in response to the tender invitation shall be made in two separate envelopes, the first envelope containing Annexure III along with Compliance Statement. The second envelope shall contain only Annexure IV. The two envelopes shall be super scribed with "**Techno-Commercial Bid**" and "**Price Bid**" respectively. The two envelopes may be put in one outer cover, sealed and addressed to **The Administration and Finance Officer, Centre for Nano and Soft Matter Sciences, Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli, Bengaluru North 562162.** The tender reference number, due date and due time should be clearly mentioned on the outer cover.

The tender should be accompanied by Tender Application Fee of INR 2,000 and Earnest Money Deposit (EMD) of Rs. 2,25,000/- through SBI Collect (link : [onlinesbi.com/sbicollect](https://onlinesbi.com/sbicollect)).

Procedure for paying through SBI Collect :- For EMD Please Select State : Karnataka/Type: Govt. Department/ Name: Centre for Nano and Soft Matter Sciences/Category : MISC Fee/ Purpose : Earnest Money Deposit. For Tender Application Fees (TAF) same procedure as above but choose purpose as TAF. The EMD will be refunded to unsuccessful bidders without any interest thereon. A copy of the SBI Collect receipt should be attached with the quotation in proof of remittance of EMD. Overseas bidders may remit an equivalent EMD to the Centre's Bank A/CNo.10838600274, Bank Name : State Bank of India, Jalahalli branch, IFSC Code : SBIN00963 SWIFT Code: SBININBB177.

**A copy of the payment transaction shall be enclosed with technical bid.**

3. **Receipt of tender:** The tender must reach this office by **17.30 hours** on the due date. Late and delayed Tenders will be liable to be rejected.
4. **Validity of the offer:** (a) The quotation should be valid for a minimum period of 120 days from the date of opening of tender. If the day up to which the offer is to remain open is declared a closed holiday, the offer shall remain open for acceptance till the next working day.  
  
(b) Quotations qualified by vague and indefinite expressions such as 'Subject to immediate acceptance', 'subject to prior sale' or any other riders will not be considered.
5. **Opening of tenders:** The firm shall be at liberty to authorize a representative to be present at the opening of the tender at the time and date as specified in the schedule. The name and address of the representative who would be attending the opening of the tender on behalf of the firm should be indicated in the tender or a proper letter of authority be produced before the meeting.
6. **Right of acceptance:** This Centre does not pledge itself and reserves to itself the right of accepting the whole or any part of tender or portion of the quantity offered and the firm shall supply the same at the rate quoted. In case any MOQ (Minimum Order Quantity or MOU (Minimum Order Unit) is applicable, the same should be mentioned specifically.
  - (a) No correspondence /discussions /visits whatsoever will be entertained on the subject unless specifically called by this office after opening the tenders for technical discussions/ price negotiations. Any violation of this will render the quotations invalid and the firm is liable to be blacklisted.
  - (b) The Purchaser reserves the right to call for techno-commercial/price negotiations. The firm should depute competent representative for such discussion / negotiations whenever called for and he shall be competent to take on the spot decisions.
  - (c) The firm may give any of their commercial terms, if required in their techno-commercial offer only, and price quotation should contain only price.
  - (d) Office stamps of tenderers must be affixed below their signatures.
  - (e) Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
  - (f) The firm shall provide Banking information for payment or any other purpose

7. **Delayed supplies:** In case of delayed supplies, liquidated damages at the rate of 0.5 percent per week or part thereof of delay with a maximum of 5 percent of the value of supply order/contract will be levied.

8. **Extension of delivery time:** As soon as it is apparent that supply dates cannot be adhered to, an application shall be sent by the Supplier to the Purchaser. If failure, on the part of the Supplier to deliver the Items/Equipment in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case). In case of Letter of Credit the banking charges for the LC amendment will be on suppliers account.

9. **Guarantee and replacement:** The Supplier shall guarantee that the Items/Equipment supplied shall comply fully with the specifications laid down, for material workmanship and performance. The Guarantee should be as mentioned in the specification.

10. **Acceptance of items/equipment:**

a) Items supplied are subject to inspection and acceptance and the supplier should collect/replace the rejected items at his cost and risk.

b) The Items/Equipment shall be tendered by the Supplier for inspection at such places as may be specified by the purchaser at the Suppliers own risk, expenses and cost.

It is expressly agreed that the acceptance of Items/Equipment is subject to final approval by the Purchaser, whose decision shall be final.

11. **Banking charges:** All banking charges applicable outside India will be on **suppliers account**.

12. Please note that faxed/email quotations shall not be accepted under any circumstances.

**13. Preference will be given to 'Class-I local supplier' as per the Government of India Notification No. P-45021/2/2017-PP (BE-II) dated. 04 June 2020. Accordingly relevant documents i.e. a statement showing percentile of local content with respect to manufacture of the item, spares, service and assembling, if any, are Mandatory**

**TENDER FORM**

Tender Ref. No.

To

**The Administration and Finance Officer,  
Centre for Nano and Soft Matter Sciences,  
Arkavathi, Survey No. 7, Shivanapura, Dasanapura Hobli,  
Bengaluru North 562162**

I/We agree to furnish required supplies/services as detailed in the Techno-Commercial Bid or such portions thereof as you may specify in the Acceptance of Tender/Supply Order at the prices given in the Price Bid in accordance with the General Terms and Conditions governing the contract/supply order enclosed hereto duly accepted on receipt of order for the same.

I/We agree to hold this offer open until \_\_\_\_\_ and shall be bound to supply/commission/erect the equipment and dispatch the same within the specified period.

I/We agree to supply and commission/erect the equipment and complete the whole of the work and hand over to the purchaser within the period of \_\_\_\_\_ weeks, from the date of receipt of intimation from you regarding acceptance of this tender/receipt of supply order.

I/We have understood the specifications and have drawn up the Techno-Commercial Bid in accordance with the requirements and have accordingly submitted the Price Bid.

I/We understand that CeNS reserves the right to reject any or all offers without assigning any reasons. It is also understood that the offers may be accepted either in whole or in part.

The details of remittance of Tender Application Fee and EMD are as under:

Details	Demand draft enclosed	Details of EMD Remittance		
		SBI Collect Ref No & Date		
(i) Tender Application Fee (INR 2000/-*)	Yes/No			
(ii) Earnest Money Deposit: (INR 2,25,000/-)	Yes/No			

If (ii) above is 'No', details of Certificate of exemption:

\* If submission of bid is through non-GeM process.

Date:

Signature and Seal of Supplier

Name & Address

**TECHNO-COMMERCIAL BID**Tender Ref. No. : **CeNS/2023-24/ Tender Optical Components****Dated 05 January 2024**

1. Name of Tenderer:
2. Due date & due time: **15 February 2024 @ 17.30 hours**
3. Opening date & time : **Will be notified in our website.**
4. The tender shall remain valid for acceptance for 120 days, from the date of tender opening.
5. Amount of EMD – INR 2,25,000/- } SBI Collect Ref No.
6. Amount of Tender fee – INR 2,000 }
7. Schedule of requirements:

Sl. No.	Description	Quantity	Destination	Technical Specifications
			<b>Split rates should be shown separately for</b>  <b>(i) FOB/Ex-works, freight &amp; insurance and for</b> <b>(ii) CIF/CIP Bengaluru, INDIA</b>	

**Discount: special discount for educational institutions shall be mentioned in the price bid.**

**CONDITIONS FOR TECHNO-COMMERCIAL BID****TECHNICAL**

1. a) All available Technical Literature(s), Catalogue(s) and other data in support of the specifications and details of the item(s) should be furnished along with the offer.
- b) Approximate net and gross weight of the items offered shall be indicated in the offer. Packaging dimensional details should also be indicated in the offer.
- c) Insurance against all the transit and handling risks on a 'WAREHOUSE to WAREHOUSE' basis for a sum equivalent to 110% of C & F Cost shall be separately indicated.



d) SPECIFICATIONS:

Items/Equipment offered should strictly conform to our specifications indicated in Annexure V. Deviations, if any should be clearly indicated by the Supplier in their quotation. The Supplier should also indicate the Make/type and provide catalogue(s), Technical literature(s) and sample(s), wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with the supplies.

2. Any firm representing the principal supplier should submit authorized dealership certificate in original from the principal company.
3. Full details of supplies of the same equipment(s) made to users in India, if any shall be enclosed.
- 4. Provide List of user details in India.**
5. Full details of facility of service after sales available in India for the period covered by warranty and thereafter shall be furnished.
6. A complete set of instruction and operation manual should be supplied at the time of installation.
7. Final performance should be guaranteed at the site.
- 8. Compliance Statement for the point-wise specifications in the format (Annexure-V) should mandatorily be enclosed.**
9. The Centre reserves the right to make its own assessment on any of the technical details provided and decide on the suitability of the equipment offered.

## COMMERCIAL

### 1. Terms of payment:

#### A. For Imports:

- i. 90% through Letter of Credit with usance period of 30 days on proof of arrival of consignment OR through Wire Transfer against delivery. The balance 10% payment will be released after expiry of the applicable Warranty period.
- ii. The balance 10% can be considered for payment earlier, provided, a Performance Bank Guarantee for an equivalent amount of 10% of the Invoice value, having validity up to three months from the date of expiry of the applicable Warranty period, is submitted soon after installation and commissioning the equipment.

#### B. For Domestic Suppliers:

The payment in INR shall be made through NEFT/RTGS after successful installation and against submission of Performance Bank Guarantee equal to 10% value of the equipment, having validity up to a period of 3 months after expiry of Warranty. Complete details such as the bank account number/IFSC/SWIFT/Bank Address, etc. should be provided along with the price bid.

2. Duties, Taxes where legally leviable and intended to be claimed should be distinctly shown in the Tender.
3. **Duty Exemption** :Please note that the Purchaser is eligible for concessional Customs Duty, under the Govt. of India Notification **No. 11/280/1993-TU-V dated 28 April 2022**
4. **Delivery period** : Delivery is the essence of the contract. The supplier should adhere to delivery schedule as indicated in the Purchase order, failing which Clause 7 of Annexure-I shall be enforced.
5. **Delivery terms** : Delivery should be upto customs Bangalore Airport in case of CIP (Bangalore) incoterms.
6. In case Items/Equipment offered requires maintenance after the expiry of the warranty, the approximate charges for comprehensive as well as on-call basis maintenance should be indicated. Details of availability of local support should also be given.

7. **Packing, forwarding and insurance:** The supplier will be responsible for the stores being sufficiently and properly packed for transport by air, to withstand transit hazards and ensure safe arrival at the destination. The packing and marking shall be done by and at the expenses of the supplier. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Supplier and the Purchaser shall pay only for such Items/Equipment as are actually received in good condition, in accordance with contract.
  
8. **Test certificate:** Wherever required, Test Certificate should be sent along with the relevant dispatch documents.
  
9. Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

**PRICE BID**

Tender Ref. No. : CeNS/2023-24/ Tender Optical Components dated 05/02/2024

1. Name of tenderer :
  
2. Due date & due time : **15 February 2024 @ 17.30 hours**
3. Opening date & time : **Will be notified in our website.**
4. The tender shall remain valid for acceptance for 120 days, from the date of tender opening.
5. Rates for items given in Techno-commercial offer at Schedule of Requirements are as follows. (Adhering to the Format given below is a pre-requisite for considering the quotations):

Sl.No.	Description	Product / Catalogue No.	Qty.	Unit Price	Total Cost
(i)	Brief description, basic price, without duties / taxes if any, of complete Items/Equipment with all accessories				
(ii)	Duties / Taxes				
(iii)	Packing & Forwarding				
(iv)	Freight & Insurance	CIP Bangalore			
		Ex-works			
(v)	Handling charges, if any				
(vi)	Any other (please specify)				
(vii)	Total cost (in figures & words) in INR				

**Discount: special discount for educational institutions shall be mentioned in the price bid.**

### **OTHER CONDITIONS FOR PRICE BID**

1. The price should be indicated on unit basis only. No unilateral revision in price will be admissible.
2. In case any of the subheads are included in the total cost, the same should be specified. Any exemption of duties / taxes / any other should be indicated. The Centre is eligible for concessional Customs Duty, under the Govt. of India Notification No. 11/280/1993-TU-V dated 18 March 2019.
3. Any optional item indicated in techno-commercial bids must be priced separately.
4. Currency in which the price is quoted must clearly be mentioned.
5. **Applicable PAN, GST & MSME certificates etc. should be enclosed.**

## Technical specifications of the optical components

S.No.	Items	Quantity
1	Long Fixed Mounting Bracket 56 mm Long Metric	1
2	Cleats with M3 Locking Screws Qty. 15	1
3	Mounted Aspheric Lens ARC: 600 -1050 nm, f = 6.24 mm NA = 0.40	1
4	Clamping Fork 31.5 mm Counterbored Slot M6 x 1.0 Captive Screw 5 Pack	3
5	Extension Tube Internal SM1 Threading of 1" Depth External C-Mount Threading One Retaining Ring Included	4
6	Longpass Dichroic Mirror 567 nm Cut-On, Ø1	2
7	Premium Bandpass Filter, Ø25 mm, CWL = 640 nm, FWHM = 10 nm	1
8	Premium Bandpass Filter, Ø25 mm, CWL = 730 nm, FWHM = 10 nm	1
9	Universal Fiber Connector Cleaner 20' Spool	1
10	Replacement Cleaning Reel for FCC-7020 20'	1
11	Premium Longpass Filter Cut-On Wavelength:600 nm, Ø25.0 mm	2
12	Optical Filter Mount, Stackable, 1.0 in. Diameter Optics	1
13	Fiber Inspection Scope with FS200-FC and FS201-SMA Adapters	1
14	RMS-Threaded Flexure Stage Mount	1
15	Wide Key FC/PC-Connectorized-Fiber Holder for Multi-Axis Stages	1
16	HeNe Laser 632.8 nm 15 mW Polarized 100 - 240 VAC Power Supply Included	1
17	Mounted Standard Iris Ø12 mm Max Aperture TR75/M Post	4
18	Kinematic Mirror Mount for Ø1" Optics	2
19	Kinematic Mirror Mount for Ø1" Optics with Visible Laser Quality Mirror	2
20	Kinematic Prism Mount 25.4 mm Deep M4 Taps	2
21	Kimwipes; 280 Kimwipes per Box 12 Boxes Per Case	1
22	Plano-Convex Lens SM1-Threaded Mount f = 100 mm ARC: 650-1050 nm, Ø1" N-BK7	1
23	Plano-Convex Lens SM1-Threaded Mount f = 500 mm ARC: 650-1050 nm, Ø1" N-BK7	1

24	Laser Safety Glasses Light Orange Lenses 48% Visible Light Transmission Universal Style	1
25	Ø1" Lens Mount with Internal and External SM1 Threads M4 Tap	4
26	Mirror Mount, Lab Standard, Clear Edge, 1.0 in., 2 Knob Actuators	1
27	0.275 NA, FC/PC - FC/PC Graded-Index Patch Cable, 1 Meter	2
28	3-Axis MicroBlock Compact Flexure Stage Differential Micrometers Metric Taps	1
29	Lens Tissues 25 Sheets per Booklet 5 Booklets	1
30	Single Mode Patch Cable 633 - 780 nm FC/PC Ø3 mm Jacket 2 m Long	2
31	Polarizing Beamsplitter Cube 420 - 680 nm, 20 mm	1
32	Ø12.7 mm Pedestal Post Holder Spring-Loaded Hex-Locking Thumbscrew L=44.7 mm	5
33	Ø12.7 mm Pedestal Post Holder Spring-Loaded Hex-Locking Thumbscrew L=54.7 mm	10
34	Digital Power & Energy Console Si Sensor 400 nm -1100 nm 500 nW - 500 mW	1
35	Large Adjustable Clamping Arm M4 x 0.7 Threaded Post	2
36	Slip-On Post Collar for Ø1/2" Posts M6 Thumbscrew	6
37	Ø25.0 mm Pedestal Pillar Post M6 Taps L = 75 mm	4
38	Rotation Mount for Ø1" (Ø25.4 mm) Optics with Adjustable Zero M4 Tap	2
39	FC/PC Fiber Adapter Cap with Internal SM1 (1.035"-40) Threads Narrow Key (2.0 mm)	1
40	Spanner Wrench for SM1- Threaded Retaining Rings Graduated Scale with 0.02" (0.5mm) Increments Length = 3.88"	1
41	Dual-Window Fiber Coupler, Ø62.5 Core, 0.275 NA, 50:50 Split, FC/PC 1x2 MM	2
42	Multimode Fiber Optic Coupler, High OH, Ø50 µm Core, 0.22 NA, 50:50 Split, FC/PC 1x2	1
43	Multimode Fiber Optic Coupler, Low OH, Ø50 µm Core, 0.22 NA, 50:50 Split, FC/PC 1x2	2
44	Ø12.7 mm Optical Post SS M4 Setscrew M6 Tap L = 100 mm 5 Pack	2
45	Ø12.7 mm Optical Post SS M4 Setscrew M6 Tap L = 75 mm 5 Pack	2
46	Wideband Fiber Optic Coupler 670 ± 75 nm 50:50 Split FC/PC 1x2	1

47	Wideband Fiber Optic Coupler, 850 ± 100 nm, 25:25:25:25 Split, FC/PC 1x4	1
48	VRC2, VIS/IR Detector Card 400 -640 nm 800 - 1700 nm	2
49	VRC2D1, Ø1" Visible and IR Alignment Disk (400 - 640 800 - 1700 nm)	1
50	VRC5, IR Detector Card 700 - 1400 nm	1
51	Ø1/2" Zero-Order Half-Wave Plate SM05-Threaded Mount 532 nm	1
52	Beam splitter, Non-Polarizing, 25.4 mm Diameter, 532 nm Laser Line	1
53	Longpass Filter, Colored-Glass Alternative, 25.4 mm, 570 nm Cut-on	1
54	Fast Steering Mirror System, 1 in. Removable Mirrors,ER.1 Coating 7	1
55	<p><b>Continuous wave laser (532 nm) with fiber coupling (rugged)</b></p> <p>Power: 100 mW  BW 30 GHz, power stability &lt; 0.8% (RMS), Noise &lt; 0.8% (RMS), Noise BW: 10 Hz – 6 MHz, Beam pointing stability: &lt; 10 micro rad/deg. C, beam dia: ~ 1 mm, Coherence length: ~ 1cm, along with standard power supply unit.</p>	1
56	<p><b>Single photon detector (Avalanche Photodiode) with FC fiber adaptor</b></p> <p>Detector type    Avalanche Photodiode  Wavelength range    400 – 1060 nm  Photon detection efficiency    65 %  Dark count rate    100 cps  Peak wavelength    650 nm  Max count rate    37 Mcps  Dark count rate    100 cps  Peak wavelength    650 nm  Max count rate    37 Mcps  Dead time    &lt;22 ns (typical)  Voltage supply    5 V DC  Output    TTL 10 ns /2.2 V  Adaptor type    FC fiber  Operating temperature    5 – 70 deg C</p> <p>Warranty: Standard 12-month warranty</p>	2
57	<p><b>Time to digital converter</b></p> <p>Input Channels: 8 (SMA)  Time resolution: &lt; 30 ps (RMS Jitter)  Dead time: 6 ns  Sustained data rate: &gt; 8 M tags/s  Sustained sync rate: &gt; 80 M tags/s  Burst memory: 8 M tags  Input signal: 0 – 3.3 V  Max. input level: 5 V  Trigger level range: 0 – 2.5 V</p>	1



	<p>Input delay adjust: 1 ps to 1s Edge detection: 1 ps to 1 s</p> <p>General purpose I/O: 4 (SMA) Extnl. Clock input: 1 (SMA)</p> <p>Full software package, lifetime software and firmware updates and Python programming support.</p>	
58	<p><b>XYZ Nanopositioner with integrated fiber holder</b></p> <p>Travel range: 120 <math>\mu\text{m}</math> <math>\times</math> 120 <math>\mu\text{m}</math> <math>\times</math> 120 <math>\mu\text{m}</math> (X <math>\times</math> Y <math>\times</math> Z, open loop); linearity error (X,Y, Z): 0.1%, SGS, direct position measuring; integrated fiber holder; D-sub 25 (m) connector; 1.5 m cable length, resolution (X, Y, Z): 0.2 nm, unidirectional repeatability: +/- 10 nm, integrated sensor. Res freq in X, Y, Z (unloaded): 350, 220 and 250 Hz Drive type: Piezo actuator, Aluminum</p>	1 no.
59	<p><b>Controller compatible with XYZ nanopositioner</b></p> <p>20 kHz sampling rate control Option for increased output current Interfaces: TCP/IP, USB and RS-232 Optional analog inputs and outputs Autoloading of calibration data from stage ID chip for interchangeability of controller and mechanics</p> <p><b>Amplifier</b> O/P voltage: - 30 V to 130 V Channels: 4 Peak power/channel: 270 W max 10 ms Avg. O/P power / channel: 30 W Peak current / channel: 1500 mA max 10 ms Avg O/P current/channel: 200 mA DAC resolution: 20 bit Amplifier BW: 6.5 kHz</p> <p>Communication: TCP/IP, USB (2.0), RS-232 Analog Inputs: 4 with +/- 5 V or +/- 10 V, 18 bit A/D converter Analog output: +/- 10V, 20 bit D/A converter Digital I/P and O/P: 4 and 4</p> <p>Max. Power: 84 W Operating voltage: 24 V DC (with extnl. Adapter).</p> <p>Software drivers: Compatible with Windows 11 and support for Linux</p>	1 no.

- **Compliance Statement for the point-wise specifications should mandatorily be enclosed.**
- **Discount: Special discount for educational institutions shall be mentioned in the price bid.**

**Note: Annexure I to Annexure V is referred to non-Gem vendors.**

**Warranty should be:**

- 1) Items S.No. 12, 26, 52 – 56  
Standard one year for system, 90 Days for Optics**
- 2) Items S.No. 57: 3 years warranty**
- 3) Remaining i.e. Sl. No.1-11; 13-25; 27-51; 58 and 59: Standard 12 months as applicable.**