GLOBAL TENDER NOTICE NO: RFT/IMP/011/17-18

Technical specifications

Supply, Installation and Commissioning of non-contact optical profilometer for surface microroughness measurements for VELC-ADITYA-L1

1. Specifications :

Sl. No	SYSTEM REQUIREMENTS	
1	Measurement mode/ technique	Coherence correlation interferometry / Coherence scanning interferometry / Phase shifting interferometry
2	Measurement type	3D non-contact
3	Vertical Scanning Range	≥ 150 μm
4	Optical Lateral Resolution	<10 μm over FOV of ≥6 mm X 6 mm <0.4 μm over FOV of ≥80 μm X 80 μm
5	Z-axis Resolution / Surface topography repeatability	≤0.1 nm
6	Repeatability RMS surface roughness	≤0.01 nm
7	Field of View (FOV)	≥80 μm X 80 μm to ≥6 mm X 6mm (depending on the magnification)
8	Detector size	1024 x 1024 or larger format
9	Microscope Objectives (Turret Mountable)	1X, 2X, 5X,10X, 20X, 50X, 100X Or Nearest possible objectives to meet the FOV and optical lateral resolution requirements.
10	Objective mount	3 position turret
11	Light source	White light source
Specimen Properties		
12	Specimen size	250 mm (L) x 250 mm (W) x 150 mm (H)
13	Specimen surface form	Planar, spherical , aspherical, convex, concave, circularly symmetric and off axis segments
14	Type of specimen	Opaque, transparent, reflective, coated, uncoated, specular, rough
15	Surface finish	Polished, unpolished and anodized
16	Reflectivity	< 1% - > 99%
Translation Stages		
17	Degrees of Freedom	X, Y, Z, Tip and Tilt
18	XYZ Travel	≥ ±75 mm (X &Y) & ≥ 100 mm (Z)
19	Tip/Tilt	$\pm 4^{o}$
20	Sample holding	Simple platform
21	X,Y- movement	Motorized and encoded
22	Z - movement	Motorized
23	Vibration isolation platform	Essential
24	Load carrying capacity	≥ 10 kg

Sl. No	SYSTEM REQUIREMENTS	
Minimum Software Requirements		
25	System software support, updates, maintenance for 10 years.	
26	Stitching and re-stitching option for larger field of view	
27	Data should be available as 3D image 3D plots and 2D profiles of 3D data and in ASCII format	
28	Quantitative 3D analysis should be possible	
29	Power spectral density analysis in 1D and 2D format	
Calibration Standards		
30	Roughness standards	2 Å SiC samples NIST traceable or equivalent
31	Lateral calibration standard	For all supplied magnifications
32	Step height calibration standard	5µm step height calibration standard
Other Requirements		
33	Power Requirements	220V 50 Hz
34	Operating Temperature	15-30°C
35	Relative Humidity	25-70%
36	Working Environment	Compatible to operate in ISO 4/5 cleanroom as per ISO 14644-1 Standard
37	Interface control	Should provide necessary hardware for data acquisition, storage, analysis and transfer.

2. Scope of the item:

Above mentioned items will be used for surface roughness measurement of super polished optical surfaces

3. Eligibility criteria of vendor:

i. The vendor must have experience in manufacturing, supply, installation and providing technical and hardware maintenance of the non-contact optical profilometers for surface roughness measurements.
ii. Demonstration of profilometer meeting the specifications should be done prior to opening of commercial bid.

4. Expected deliverables

i. Supply of Non-contact optical profilometer as per the specifications.
ii. Instrument should be delivered and installed at Prof. MGK Menon Laboratory for Space Sciences at CREST-IIA, Hoskote, Karnataka-562114.
iii. Relevant supporting documents and Operating Manual (both Soft & Hard copies) should be provided by Vendor along with the Supply. .
iv. Commissioning, Training and acceptance.

5. Packing Requirements:

i. Profilometer and all related hardware should be packed in ISO-4/5 cleanroom (ISO 14644-1) compatible materials.
ii. Shock watch should be provided on the outer packing.

6. Warranty

i. Profilometer and all associated accessories should have a minimum of 1 year warranty from the date of commissioning.

7. Expected time schedule

3 Months, from the date of purchase order.

Liquidated Damages:

If the Vendor fails to deliver, as per Delivery schedule, within the stipulated time specified or any extension thereof, there will no liability for the first 30 (thirty) days of delay. Thereafter, for each completed calendar month of such failure, IIA will be entitled to claim from the party as liquidated damages, a sum of one-half of one per cent (0.5%) per week of the contract price relating to that portion of the delay up to a maximum value of ten per cent (10%) of the contract price of the portion of delay. The work or part thereof will be deemed to have been delivered/completed only when all its component parts are accepted by IIA.

The detailed statement of liquidated damages will be notified to the Vendor who will be entitled to submit the reasons against levy of liquidated damages to IIA within 30 (thirty) days from the date of notification of the statement. Beyond this thirty (30) days period, the party is deemed to have accepted the liquidated damages claimed to have to be paid. This clause is not applicable when the delay is due to a failure on the part of IIA.

For further information/clarifications

For technical clarifications, please contact the indenter venkata@iiap.res.in or brp@iiap.res.in .

For any administrative matters, please contact vishnu.vardhan@iiap.res.in.