

Specification for Laser Interferometer

Note:-

1. The 'Offered' Column and where applicable, the 'Deviations' & 'Remarks' Column of this format shall be filled in by the Vendor and submitted along with the offer. The offer containing inadequate/incomplete, ambiguous or unsustainable information against any of the clause may be rejected.

2. The offer and all documents enclosed with offer should be in English language only.

Name & Address of the supplier:		Name & Address of the Indian Agent:	
Telephone No.:		Telephone No.:	
Fax No.:		Fax No.:	
e-mail :		e-mail :	

Scope: Supply & Commissioning of Laser Interferometer (1 set) complying with the following specifications.

Annexure to Indent No.:20140955 , Dated:15.05.2014

MATERIAL CODE NO.: ZWG060901012

S. No.	Description - BHEL's Requirement	Qty.	Specified	Offered	Deviations	Remarks
1.0.0	APPLICATION:					
1.1.0	The Laser Interferometer will be used for recalibration for Positioning and repeatability accuracies of CNC machines after checking and restoring the geometrical accuracies.	-	Vendor to note and confirm			
2.0.0	SCOPE OF SUPPLY:					
2.1.0	Supply & Commissioning of Laser Interferometer with compensation unit, optics and latest software for Positioning, repeatability and backlash recalibration of CNC machine tools.	1 set	Vendor to Comply and confirm			
3.0.0	TECHNICAL SPECIFICATIONS:					
3.1.0	Laser Source	1 no.	HeNe, frequency stabilized			
3.2.0	Wavelength accuracy	-	±0.05ppm (over 1 year)			
3.2.1	Short term stability	-	±0.02ppm (over 1 hour)			

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3.3.0	Heating time (Maximum)	-	15 minutes		
3.4.0	Laser Power (Maximum)	-	1mW		
3.5.0	Light Source	1 no.	LED		
3.6.0	Suitable power supply system including cables for Laser head for trouble free operation.	1 set	Vendor to Comply and confirm		
3.7.0	Compensation Unit				
3.7.1	Compensation unit is primarily responsible for the system's measurement accuracy .It automatically compensates for the error occuring due to change in temperature, humidity and pressure of air and temperature of material.	1 no.	Vendor to note and confirm		
3.7.2	Real time compensation through wire or wireless sensors:	1 no.	Vendor to Comply and confirm		
3.8.0	Air Temperature Sensor	1 no.			
3.8.2	Air temperature Range	-	0°C to 45°C		
3.8.3	Accuracy	-	±0.2°C		
3.9.0	Air Humidity Sensor	1 no.			
3.9.2	Air humidity Range	-	10% - 90%		
3.9.3	Accuracy	-	±5%		
3.10.0	Air Pressure Sensor	1 no.			
3.10.2	Air pressure Range	-	650mbar - 1150mbar		
3.10.3	Accuracy	-	±1mbar		
3.11.0	Material temperature sensor	3 nos.			
3.11.1	Air temperature Range	-	0°C to 45°C		
3.11.2	Accuracy	-	±0.1°C		
3.12.0	Suitable power supply system including cables for Compensation unit for trouble free operation.	1 set	Vendor to Comply and confirm		
3.13.0	Optics for linear measurement				
3.13.1	Linear interferometer optics	1 no.	-		
3.13.2	Linear - Retro reflector optics	1 no.	-		
3.13.3	Both optics should be supplied with magnetic base stand	-	Vendor to Comply and confirm		

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3.14.0	Software				
3.14.1	Software for linear positioning, electronic adjustment of optical axes, for linear displacement measurement, linear displacement registration, FFT analysis, measurement of the velocity according to standard: ISO 230-2, PN-93/M-55580/81, NMTBA, VDI/DGO 3441, BSI BS 4656 P16.	1 set	Vendor to Confirm		
3.15.0	Sturdy Tripod with ball joint and two axes stage for adjustment range of 500mm to 2000mm and angular rotation (<i>with its rigid case</i>).	1 set	Vendor to Confirm		
3.16.0	Portable rugged case for complete laser kit with wheels and telescopic handle	1 no.	Vendor to Comply and confirm		
3.17.0	The certificate of the laser frequency and environmental sensor calibration.	1 no.	Vendor to Comply and confirm		
3.18.0	Calibration certificate of complete set traceable to Indian/International standards	1 no.	Vendor to Comply and confirm		
3.19.0	Measuring Axis length (Minimum)	-	50m		
3.20.0	Velocity of Axis traverse (Minimum)	-	± 4m/sec		
4.0.0	Ambient Operating Temperature: 2 Degree Centigrade to 45 Degree Centigrade without derating.	-	Vendor to note and confirm		
5.0.0	PRE DISPATCH INSPECTION: Pre- Dispatch Inspection will be carried out by BHEL for demonstration of operation on a machine/test setup of vendor in India & a LASER calibration report shall be generated	-	Vendor to Comply and confirm		
6.0.0	COMMISSIONING: Commissioning work should be completed by the vendor within 8 weeks from date of first intimation by BHEL, Haridwar .	-	Vendor to Comply and confirm		
6.1.0	It includes demonstrating the application/function and user training of equipment on following types of machine tool provided at BHEL, Haridwar works:-a) 1 No. CNC Vertical Borer-2 days b) 1 no. CNC Horizontal borer-3 days c) 1no. CNC Lathe-3 days.	-	Vendor to Comply and confirm		
7.0.0	O & M MANUALS: Operation & Maintenance Manual with 1 set of CDs. All copies shall be hard-bound in high quality folders.	3 set	Vendor to Comply and confirm		
8.0.0	PERFORMANCE GUARANTEE:				

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8.1.0	The Performance of the complete set of equipment shall have guarantee/warranty for a minimum period of 24 months from the date of commissioning.	-	Vendor to Comply and confirm			
9.0.0	SPECIAL INSTRUCTIONS:					
9.1.0	Supplier must submit point wise reply to specifications, Deviations if any must be separately submitted with reasons for each.	-	Vendor to Comply and confirm			
10.0.0	FINAL ACCEPTANCE					
10.1.0	The equipment shall be finally accepted by BHEL, Haridwar subject to fulfillment of all the above points.	-	Vendor to Comply and confirm			


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