

**BHARAT HEAVY ELECTRICAL LIMITED
HEAVY ELECTRICAL EQUIPMENT PLANT
UTTARAKHAND,INDIA**

Enquiry No. &
Date:
Due Date:
Supplier's Ref.:
Date :

Specification for Autocollimator

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 Autocollimator(1 set) complying with the following specifications.

Annexure to Indent No.: 2014 0954

Dated: 15.05.14

MATERIAL CODE NO.: ZWG060801018

S. No.	Description - BHEL's Requirement	Qty.	Specified	Offered	Deviations	Remarks
1.0.0	APPLICATION:					
1.1.0	The autocollimator will be used to measure small angles with very high sensitivity. It will be used to find straightness of machine tool guideways and thus will help in adjusting the same.		Vendor to note and confirm			
1.2.0	Autocollimator will be used along with other equipments like electronic level, dial gauges etc. to measure the geometrical inaccuracies in the machine and aid in restoration of geometrical accuracies of machine.		Vendor to note and confirm			
2.0.0	SCOPE OF SUPPLY:					
2.1.0	Supply & Commissioning of Dual Axes Autocollimator for measurement of straightness, Squareness, Flatness, angular deviation and precision alignment of long guideways of machine tools.	1 set	Vendor to Comply and confirm			
3.0.0	Range					
3.1.0	Range of measurement / Field of view (minimum)	-	± 10 minutes			
3.2.0	Capability of measurement (minimum)	-	20m			

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4.0.0 TECHNICAL SPECIFICATIONS:					
4.1.0	Axes of measurement: X and Y (Dual) (s)	-	Vendor to Comply and		
4.2.0	Accuracy over 1minute range	-	1 second		
4.3.0	Accuracy over full range	-	5 seconds		
4.4.0	Magnification (Minimum)	-	X 24		
4.5.0	Least count on micrometer	-	0.5 second		
4.6.0	Light Source	-	LED		
4.7.0	Power Source	-	220V, 50Hz		
4.8.0	Material of mounting tube	-	High quality Stainless Steel (rustproof)		
4.9.0	Horizontal stand with leveling screws and resting pads.	1 set	Vendor to Comply and		
4.10.0	Dark view field with bright cross line.		Vendor to Comply and		
4.10.0	Standard Reflector	1no.			
4.10.1	Base Dimension	-	100X100mm		
4.10.2	Front surface reflective coated with Al with protective coating of SiO	-	Vendor to Comply and		
4.10.3	Flatness of mirror	-	$\lambda/4$ to $\lambda/6$ @ visible spectrum		
4.10.4	Center Height	-	75-100mm		
4.10.5	Diameter of reflector lens(minimum)		100 mm		
4.11.0	Total weight (maximum)	-	20 kg		
4.12.0	Suitable power supply system including cables for the equipment for trouble free operation	1 set	Vendor to Comply and confirm		
4.13.0	Calibration certificate of complete set traceable to Indian/International standards	1 no.	Vendor to Comply and		
4.14.0	Good quality durable case each for transportation & storage for the complete equipment	1 no. each	Vendor to note and confirm		
5.0.0	Ambient Operating Temperature: 2 Degree Centigrade to 45 Degree Centigrade without derating.	-	Vendor to note 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		

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6.1.0	It includes demonstrating the application/function and user training of equipment on following types o.)chine tool provided at BHEL,Haridwar works:-a) 1 no. CNC Horizontal borer-3 days b)1no. CNC Lathe-3 days.	-	Vendor 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.	1 set	Vendor to Comply and confirm			
8.0.0	PERFORMANCE GUARANTEE:					
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			


14.05.17

(SHIV PRAKASH)
(Sr. Engr-WEX-ERS/ERN)



(R K VERMA)
(Sr. Mgr.-WEX-Mech. Maint.)



(B S GARG)
(Mgr.- WEX-CNC)