

UNIT'S ADDRESS: BHEL BHOPAL: PIPLANI BHOPAL M. P.

CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM)

PURCHASE DEPTT.)

AMAR PRATAP SINGH

SR. ENGINEER

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SPECIFICATION CUM COMPLIANCE CERTIFICATE OF 3D MEASUREMENT SYSTEM

NOTE:-

1. Vendor must submit complete information against clause no. 10.0 (Qualifying Condition). The offer meeting this clause would only be processed.

2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor in COPY OF THIS SPECIFICATION ONLY and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.

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

NAME & ADDRESS OF THE SUPPLIER :

TELEPHONE NOS.:

FAX NOS.:

E-MAIL ADDRESS:

SCOPE: SUPPLY AND COMMISSIONING OF TOTAL 01 SET OF 3D MEASUREMENT SYSTEM WITH SPECIFICATIONS AS BELOW

SN	DESCRIPTION FOR BHEL REQUIREMENT	VENDOR TO SPECIFY/CONFIRM	OFFERED	DEVIATIONS	REMARKS
1.0	Purpose:		250		

SN	DESCRIPTION FOR BHEL REQUIREMENT	VENDOR TO SPECIFY/CONFIRM	OFFERED	DEVIATIONS	REMARKS
1.1	Three dimension measurement and projection system based on laser measurement is required to measure the out side dimension of Transformer/Reactors and its accessories. This measurement includes: a) Outside Dimension of Transformer/Reactor and Assesories. b) Air Clearance between Bushings tips and bushing tips to Earth. c) Vertical Height from Bushing tip to Ground. d) Angle of Bushings. The system shall be capable of measuring different measure points on transformer(job) from one setup position and shall be able to generate 3D data ready to use or for post-processing. Refer Annexure-1 as pictorial view of required measurements.	Vendor to note & confirm			
2.0	Scope of Supply: Total 01 Set of Measurement System. Each Set shall include:	Vendor to confirm			
2.1	Laser Measurement system including display and control unit	Vendor to confirm			
2.2	AC/DC Adaptor	Vendor to confirm			
2.3	Compatible rechargeable Battery Set	Vendor to confirm			
2.4	Connecting Cables	Vendor to confirm			
2.5	Compatibe battery charger	Vendor to confirm			
2.6	Relevant Measurement Software	Vendor to confirm			
2.7	Compatible Tripod with leveling arrangements.	Vendor to confirm			
2.8	Carrying Case	Vendor to confirm			
2.9	All additional assessories required for the system. (Vendor to specify)	Vendor to specify			
3.0	Features of System:				
3.1	Measurement Features of Laser measurement System				
3.1.1	System shall be able to measure:				
3.1.1.1	Outside Dimensions of Transformer/Reactor and Accessories.	Vendor to confirm			
3.1.1.2	Air Clearance between Bushings tips and bushing tips to Earth.	Vendor to confirm			
3.1.1.3	Vertical Height from Bushing tip to Ground.	Vendor to confirm			
3.1.1.4	Angle of Bushings	Vendor to confirm			
3.1.1.5	Measurement of the distance between more than two points from one setup position.	Vendor to confirm			
3.1.2	The system shall be capable of carrying out all above measurement on transformer(job) from one setup position and shall be able to generate 3D data ready to use or for post-processing.	Vendor to confirm			
3.1.3	There shall be system for setup on tripod and leveling for correct measurement.	Vendor to confirm			

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3.1.4	The system shall have sufficient memory space to record the measurement data for post processing.	Vendor to confirm.			
3.1.5	The system shall have provision for operating on rechargeable Battery having minimum 8 hrs working and shall have charging facility for charging through AC supply of 230Volt 50Hz.	Vendor to confirm.			
3.1.6	The system shall have facility for Zoom (Magnification) for focusing on measurement points.	Vendor to confirm			
3.1.7	The system shall have facility to show battery status and low battery warning shall be displayed on screen.	Vendor to confirm			
3.1.8	The system shall have USB port for data transfer to PCLaptop/Mobile.	Vendor to confirm			
3.1.9	The system shall have facility to display measurement and scanned picture on colour display touch screen	Vendor to confirm			
3.1.10	The system shall have facility to Calculate following parameters:	Vendor to confirm.			
3.1.10.1	Area measurement				
3.1.10.2	Volume measurement	Vendor to confirm.			
3.2	Operational Features of Laser measurement system				
3.2.1	Language :English	Vendor to confirm.			
3.2.2	Temperature Range:0 to 50°C or Wider	Vendor to confirm.			
3.2.3	Protection against dust & water	Vendor to confirm			
3.2.4	Provision for zero setting before start of measurement	Vendor to confirm.			
3.2.5	Procedure for calibration of instrument	Vendor to confirm.			
4.0	Technical Specification:-				
4.1	Specification of Measurement System				
4.1.1	Range of Distance Measurement : 0 to 50 Metre or wider	Vendor to specify			
4.1.2	Accuracy of Distance measurement: 4mm or better	Vendor to specify			
4.1.3	Range of Angle Measurement : Horizontal: 360 Deg. Vertical: 270 Deg.	Vendor to specify			
4.1.4	Accuracy of Angle Measurement : 5 Seconds or better	Vendor to specify			
4.2	Specification of Display Unit				
4.2.1	Colour touch screen	Vendor to specify			
4.2.1	Screen Size: 4.8" minimum	Vendor to specify			
4.2.2	Display Resolution: 320 X 240 minimum	Vendor to specify			
4.3	Compatible Software shall be supplied along with system	Vendor to confirm.			
4.4	Weight of System : Maximum 5 kg	Vendor to confirm.			
4.5	Carrying Case: Robust Compatible Carrying case to Transport the System safely.	Vendor to confirm.			

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M. S. SINGH / A. P. SINGH
 Sr. Engineer (QC-TCB)
 Quality Control-TCB

SN	DESCRIPTION FOR BHEL REQUIREMENT	VENDOR TO SPECIFY/CONFIRM	OFFERED	DEVIATIONS	REMARKS
5.0	General requirement:				
5.1	The offer shall be submitted in two bids/Techno-commercial and Price Bid). The bidder's technical representative shall visit BHEL Bhopal for technical discussion and on the spot finalisation of technical issue, if needed within two weeks after technical bid opening. Exact date will be confirmed to vendor by BHEL.	Vendor to confirm.			
5.2	The system offered shall be complete in all respects. It shall contain all hardware/accessories/software required for the satisfactory operation of the system. Any additional hardware, software or accessories required during satisfactory operation of equipment shall be supplied by vendor without any price implication.	Vendor to confirm.			
5.3	Equipment should meet all the points of our above specification and bidders must furnish point to point replies against the points of our above specification failing which their offer may not be consider.	Vendor to confirm.			
6.0	Packing:				
6.1	Sea worthy and rigid packing for all items of complete equipment and all accessories and other supplied items to avoid any damage/loss in transit. When equipment is dispatched in container, all small loose items shall be suitably packed in boxes. Any damage, loss, theft during transit shall be the sole responsibility of the vendor.	Vendor to confirm.			
7.0	Tests and Training:				
7.1	Demonstration / physical inspection of all features, assemblies, subassemblies, control panel, bought out items and all accessories shall be done to the full satisfaction of BHEL representatives.	Vendor to confirm.			
7.2	Demonstration of all features of the machine & all accessories to the satisfaction of BHEL for their efficient and effective use and impart training to operators for effective use of the equipment.	Vendor to confirm.			
7.3	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to confirm.			
8.0	Documentation:				
8.1	Four sets of following documents in English language should be supplied along with the equipment	Vendor to confirm			

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SN	DESCRIPTION FOR BHEL REQUIREMENT	VENDOR TO SPECIFY/CONFIRM	OFFERED	DEVIATIONS	REMARKS
	Operating and maintenance manuals of the equipment and supplied accessories. Maintenance manual of equipment should contain System Description, Block diagram, Schematic drawings, Circuit diagrams & hardware details, Trouble shooting charts, All Assembly/ Sub Assembly drawings shall be supplied with the part list.	Vendor to confirm			
8.2	Warranty certificate & supplier's test certificate.	Vendor to confirm			
8.3	Calibration Certificate	Vendor to confirm			
8.4	Published leaflets and Datasheet having detail specification of quoted Equipment. The Specification shall include and meet performance parameters mentioned in clause 4	Vendor to furnish			
8.5					
9.0	Warranty:				
	The machine should be warranted for 12 months from the date of acceptance of the equipment. Free after sales services is to be provided during the warranty period including free replacement of defective parts, if any.	Vendor to confirm			
9.1					
10	Qualifying Condition:				
	Vendor should be original equipment manufacturer (OEM) or authorized dealer/distributor of OEM having after sale service centre in India.	Vendor to confirm			
10.1	Following documents shall be furnished along with technical bid:				
10.1.1	In case of dealer/distributor, Valid Authorization Certificate from OEM.	Vendor to furnish			
	Only those vendors should quote, who or their principal have supplied the quoted Measurement System within last five years (on the date of opening of Tender).	Vendor to furnish			
10.2	Minimum one number of unpriced copy of Purchase order of equipment supplied (The supplied model shall comply the technical specification of this enquiry).	Vendor to furnish			
10.2.1	Performance Certificate of the same PO regarding satisfactory performance of minimum one year from customer. Performance certificate should be issued within one year from tender opening date.	Vendor to furnish			
10.2.2					
11.0	Terms:				
	BHEL reserves the right to verify the information provided by vendor. If the information provided by vendor is found to be false/incorrect at any point of time, the offer shall be rejected.	Vendor to confirm			
11.1					
11.2	Delivery period of the equipment after getting PO should be 3 months.	Vendor to confirm.			
12	Predispatch Inspection:				

3749 प्रमोद कुमार A. P. SINGH

वरिष्ठ अभियंता (प्रति-वै.सौ.बॉ.) / Sr. Engr (EC-TCB)
वरिष्ठ अभियंता (प्रति-वै.सौ.बॉ.) / Sr. Engr (EC-TCB)

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SN	DESCRIPTION FOR BHEL REQUIREMENT	VENDOR TO SPECIFY/CONFIRM	OFFERED	DEVIATIONS	REMARKS
12	Predispatch Inspection:				
12.1	Predispatch Inspection of the complete system shall be done by BHEL at supplier works.	Vendor to Confirm			
12.2	Pre-despatch Inspection will be carried as follows on Demo job	Vendor to Confirm			
12.2.1	Physical Inspection (Scope of supply)	Vendor to Confirm			
12.2.2	Proving of parameters as per clause 3.0 & 4.0	Vendor to Confirm			
12.2.3	Demonstration of all features of the machine, control system & accessories	Vendor to Confirm			
12.2.4	Verification of software configuration and its features.	Vendor to Confirm			
12.3	The vendor shall provide Inspection Certificate to BHEL Personnel deputed for inspection and two copies shall be supplied along with equipment.	Vendor to Confirm			
12.4	Travel, boarding & lodging expenditure of BHEL personnel deputed for PDI will be borne by BHEL.	Vendor to Confirm			
12.5	In case of waiver of Predispatch Inspection by BHEL, the activities mentioned in clause 13.0 will be done at BHEL before acceptance of System.	Vendor to Confirm			
13.0	Machine Acceptance				
13.1	Following Tests/Activities should be carried out at BHEL works on the machine.	Vendor to Confirm			
13.1.1	Physical Inspection (Scope of supply)	Vendor to Confirm			
13.1.2	Proving of all parameters as per clause 3.0 & 4.0 on actual available job.	Vendor to Confirm			
13.1.3	Demonstration of all features of the machine, control system & accessories	Vendor to Confirm			
13.1.4	Verification of software configuration and its features.	Vendor to Confirm			
13.1.5	Review of Test/Calibration certificate	Vendor to Confirm			