

भारत सरकार
GOVERNMENT OF INDIA

दूरभाष /Tel No: (01792)-273105,273377
वेबसाईट/Website:www.crikasauli.nic.in
ई-मेल/email : director-crik-hp@gov.in

पंजीकृत
संख्या / No.:I-86/App/2023-24/St.
केन्द्रीय अनुसंधान संस्थान,
CENTRAL RESEARCH INSTITUTE,
कसौली /KASAU LI

दिनांक /Dated the: 08 JAN 2024

प्रेषक / From :

निदेशक / DIRECTOR,
केन्द्रीय अनुसंधान संस्थान, कसौली (हि0प्र0)-173204
CENTRAL RESEARCH INSTITUTE,
KASAU LI (HP) - 173 204. INDIA

To,

List of Address of the firms

Sub: Regarding Pre-bid meeting of Air Cooled Oil Free Air Compressor with integrated dryer.

Sir,

This institute is interested in the purchase of a complete unit of Air Cooled Oil Free Air Compressor with integrated dryer (01 No.)) on an immediate basis. However, in order to finalize the specifications etc., a pre-bid meeting has been fixed on 01.02.2024 at 11:00AM in the O/o Chairman, TAC (i.e Supply Section).

You are therefore requested to depute your authorized representative having technical knowledge in the field to have detailed deliberation/discussion for finalization of the specifications etc. Draft specification is being attached for ready reference.

Yours Faithfully,

Stores Officer
for Director

Phone No. : 01792-272995,273207
Email- crikasaulistore@gmail.com

Encl: Draft Specification

Received
08/01/24

MM
04/01/24

TAC approved specifications of Air Cooled Oil Free Air Compressor With Integrated Dryer for Workshop Division

Sr. No.	Heading	Design Provision
1	Model Number	Vendor to specify
2	Brands	Atlas Copco / ELGi / Ingersoll Rand
3	Item Name	Air cooled Oil Free Air compressor with Integrated Dryer
4	Quantity	1 No
5	PLC	Reputed brand of HMI & PLC (With slot for memory card. CF card (1GB) will be provided for logging text message alarm only) HMI Size: Min. 7" Inch or above touch screen with stylus pen, Software Backup & license key.
6	Control panel	HMI, Emergency Push Button, Main Supply Switch, Cooling Fan, Auto/Manual Switch
7	Type	Rotary double screw or toothed, Oil-Free air compressor with Integrated Dryer
8	Air Receiver Tank	Quantity: 1 No Capacity: Minimum 4000 liters. Orientation: Vertical Max. Working pressure :10 kg/cm ² Design Pressure:11 kg/cm ² HYD. Test Pressure: 16.5 kg/cm ² Code of construction: ASME sec./ VIII Div.I / IS 2825
9	Compressed air purity classes	(ISO – 8573-1) as applicable. 1. Particle class : Class 1 2. Humidity & Liquid water: Class 4 3. Oil Class: Class 0-100% oil free 4. Microbial contamination: Zero bacteria.
10	Free Air Delivery	Minimum: 200 cfm at 8 Bar or better
11	Type of cooling	Air Cooled
12	Mounting and Noise Level	Skid mounted with suitable sound insulation within the canopy. (Noise level not exceeding 70 dB (A) measured at operator working place).
13	Grade / Application	Industrial / Pharma
14	Compressor	<ul style="list-style-type: none"> • Stage: Multi stage (vendor to confirm the number of stages required based on capacity). • Capacity: Minimum 200 CFM (F.A.D) • Discharge pressure: Minimum 8 Bar • Pressure Gauge (dial size minimum 4") and Temperature Gauge (dial size minimum 4") at Discharge of Each Stage. • The compressor shall be variable volume ratio control that enables it to perform at all operating conditions and loads. • The capacity control system shall automatically modulate the unit from maximum to minimum value of the rated capacity.
15	Motor	<ul style="list-style-type: none"> • Type: 3-Phase motor, 415 ± 5% V, 50 ± 3% Hz • Starting: Star delta Starter on bypass mode/Normally by VFD • Motor Protection: Minimum IP 55

		<ul style="list-style-type: none"> • Insulation: F class • Earthing terminal shall be equipped in terminal block • EFF – 1 efficiency • Motor to suit the need of VFD • Capacity: Vendor to specify
16	Drive	VFD (Variable frequency drive) with brand
17	Dryer	Air cooled dryer to ensure a pressure dew point of class 4.
18	Instrumentation & Controls	<p>An electronic controller and data collection panel which has the following functions:</p> <ol style="list-style-type: none"> 1. Operating, Controlling & Protecting the compressor 2. Monitoring components of the compressor 3. Automatic restart after voltage failure with the option of turning of the automatic restart option. 4. Emergency stop button. 5. Critical parameters should only be accessible by authorized personnel and such parameters should be password protected. i.e (Admin, Manager, Operator)
19	Alarms	<ol style="list-style-type: none"> 1. Audio and visual alarms should be provided on the panel and shall be integrated in case of failure / fault conditions being encountered. 2. Error message shall be displayed for fault diagnosis.
20	Drains	Automatic water drains for draining of condensate where required as per the air compressor design.
21	Filtration	<p>Filters to be provided in the outlet of the compressor to comply with (ISO-8573-1:2010) along with filter holder and other necessary instrumentation to indicate condition of filter automatic water drains to be provided to drain the filter holder.</p> <p>Filters to be provided in series are:</p> <ul style="list-style-type: none"> • General purpose coalescing filter: Particle removal down to: 1 micron, including water or oil aerosols. • High efficiency coalescing filter: Particle removal down to: 0.01 micron, including water or oil aerosols. • Pressure drop across the filter should be as minimal as possible.
22	Requirement of spares and consumables	<ol style="list-style-type: none"> 1. The firm should mention in detail the consumables, parts (also referred to as service kits) that need to be changed at regular intervals (that is during the preventive maintenance) to keep the equipment in optimal working condition. 2. Such parts and consumables shall be listed, frequency or interval of change, and its cost (at the time of submitting the tender) be indicated. 3. The firm shall quote the requirement of 50,000 or better working hours of the compressor. 4. The firm shall submit the relevant documents (relevant pages of service manual) that indicate the frequency of change of parts/ consumables along with the tender.

23	Warranty	1. The complete equipment and other parts supplied shall be warranted for 1 year from the date of successful commissioning and handover to Central Research Institute.
24	Comprehensive Maintenance Contract	<ol style="list-style-type: none"> 1. The firm shall enter into CMC of 5 years at the end of warranty period. The same shall be quoted year-wise and shall include the replacement of consumables, parts (service kits) as per the maintenance schedule. 2. There shall be no limit in the number of breakdown calls. 3. The number of maintenance visits shall be minimum of four visits per year (that is as per the maintenance schedule of the equipment). 4. Any downtime of more than 72 hours shall result in the extension of the CMC period by double the period of downtime.
25	Documentation / Protocols	<p>The firm shall provide one set of the following along with the equipment:</p> <ol style="list-style-type: none"> 1. Installation Qualification document 2. Operational Qualification document 3. Performance Qualification document 4. P&ID Diagram and List of components 5. Equipment GA & Elevation 6. Electrical wiring diagram and components list 7. Process Flow Diagram 8. Instrumentation components list 9. Preventive maintenance manual 10. List of test certificates 11. ISO certification for quality of Air (Moisture and Oil content) 12. List of alarms including Trouble shooting 13. Lists of spare parts and consumables 14. FAT & SAT need to be completed 15. Complete set of calibration certificates for all the indicators, sensors and gauges installed in the equipment 16. Version of installed software user levels 17. Certificate of warranty 18. Operational training after the completion of commissioning activities at site. 19. Satisfactory installation performance report from ≥3 reputed Pharma / Biopharma industries is mandatory 20. Operational & Technical Manual
26	Utilities available at CRI, Site.	<ol style="list-style-type: none"> 1. Electrical supply: 400 V ± 5%, 50 Hz, 3 Phase 2. Cooling water: Maximum temperature 25°C
27	Local weather conditions / Room Area Size	<p>Temperature °C : Min: 2°C Max: 28°C</p> <p>Relative Humidity %: Min: 20% Max: 60%</p> <p>Room Size : 30*23*10 (l*b*h) in feet (As per Site Condition)</p>
28	Package	<p>The Vendor shall supply air compressor package that is necessary to meet process requirement. The package shall have a common steel base structure with all system components, related valves and manifolds, including the following parts, but not limited to:</p> <ul style="list-style-type: none"> • Rotary Double Screw or toothed type non-lubricated, Air Cooled, Oil-Free air compressor • Air Receiver Tank : 1 No

		<ul style="list-style-type: none"> • Motor with VFD and Control panel • PLC control system • Inter & After coolers • Noise hood (Acoustic enclosure) • Filter with differential pressure indicators and drainage valves • Air dryer with pressure gauge • All piping, fitting, valve & Instrumentation within air compressor package and auxiliaries • Counter Flanges with Bolts, Nuts and Gaskets for air inlet & outlet as per standards • Pressure gauge (Dial size – minimum 6") and transmitter installed on top of the (air) receiver tank with auto/manual drain valve • Control cables and power cables between compressor power & control panel and local control cabinet • Check valve & Safety valves • Moisture separator • Isolator for Electrical Panel <p>Vendor should clearly mention any other item if not mentioned above, which is necessary to make it a complete packaged unit</p>
29	Piping	<ul style="list-style-type: none"> • All interconnecting piping, valves, fittings, etc. from Air compressor to Air receiver shall be included in vendor scope. • All interconnecting piping, valves, fittings shall be of SS 304 for the skid mounted system.
30	Safety Requirements	<ul style="list-style-type: none"> • Vendor shall consider all safety requirements in accordance with good engineering practices and local regulation. • All technical equipment/components shall have a CE sign confirming that the product meets the demands of all relevant guidelines and regulations of the European Union (EU). The VENDOR is fully responsible for the accordance with all appropriate regulations.
31	Responsibilities of Vendor	<ul style="list-style-type: none"> ▪ The representative of the vendor must visit the site for space verification as per their design and drawing of Air compressor before initiation of the work. ▪ Site available input utilities as specified in the point 26 in Utility available at CRI site of this document. ▪ To provide adequate General arrangement (GA) of Air compressor at the site as per space available in the proposed area of installation. ▪ Un-box the machine in presence of CRI engineer by respective firm. ▪ Unloading, Equipment positioning and Electrical cable termination from main DP panel to instrument at site. ▪ Piping from main unit/compressor to air receiver tank and input utility connections is under the scope of vendor. ▪ Piping connection from outlet of air receiver tank to main supply header (existing) is under the scope of vendor. ▪ Main drain header in the system will be erected and connected to drain header is under the scope of vendor. ▪ Non-return valves to be installed in the air pipelines (Qty: vendor to specify). ▪ Approval & Performance of SAT/FAT as per protocol completion is under the scope of vendor.

		<ul style="list-style-type: none"> ▪ Followings documents shall be verified at the time of FAT <ul style="list-style-type: none"> a) Dimension as per G.A & elevation drawing b) Certificates for material of construction c) Electrical connection diagram with list of components d) Components and its specifications as per the P & I Diagram e) Instruments calibration certificate f) Functional design specification and working condition of equipment ▪ To provide Installation Qualification and Operation Qualification protocol and to assist to carry out Performance Qualification is in the scope of vendor. ▪ To provide training of the following:- <ul style="list-style-type: none"> a) Initial start-up b) Safe operation of equipment c) Handling emergency situation d) Trouble shooting & Preventive maintenance
32	Responsibilities of User	<ul style="list-style-type: none"> ▪ CRI Engineering Head / CRI Quality Assurance Head to approve all protocols w. r t design and drawings as per print format submitted by the respective vendor as per URS. ▪ CRI Engineering to provide the support and feasibility for connecting the electrical cable termination of the equipment.

Special Note:

- Pre bid meeting is mandatory. Regarding for the firm shall come back with any suggestions if, found to be more effective and efficient / better than that specified in this specification.
- Site requirements/ conditions and other utility requirements required for operating the air compressor should be clearly stated by firm to CRI Engineering.
- The firm should accordingly consider all necessary items required for effective installation and performance of the system, whether mentioned or not in the specifications.
- Firm should provide point-wise duly filled compliance sheet along with quotation.
- The firm should take full responsibility for the function of the Air compressor Package unit.