

**Office of the Dean Research and Development
Indian Institute of Engineering Science & Technology (IEST), Shibpur
Howrah-711 103**

Project Code: DRC/DST/CEGESS/HS/043/10-11

**Centre of Excellence for Green Energy & Sensor Systems
Indian Institute of Engineering Science & Technology (IEST), Shibpur
Howrah-711 103**

Notice Inviting Quotations

Sealed quotations are invited for the supply of:

- Item 1. Refilling of Hydrogen Gas (99.999%),**
- Item 2. Copper Gasket,**
- Item 3. Ultrasonic Flow Sensor,**
- Item 4. AIM Active Inverted Magnetron Gauge (Qty-1),**
- Item 5. Commercial wet & dry Vacuum cleaner,**
- Item 6. Printer,**
- Item 7. Viton O-Rings,**
- Item 8. Gold Wire.**

As per the following technical specification. The technical specification can be downloaded from the website. The document can be also obtained from the Centre of Excellence for Green Energy & Sensor Systems (contact: Prof. H. Saha) between 10.30 a.m. and 3.00 p.m. on all working days. The invitation is valid for 7 working days from the date of publication of this notice.

Dean (R & D)

(A. Code DRC-T013/17-18)

SECTION I: TERMS & CONDITIONS

- 1.** The last date of receipt of quotation is valid **for 7 working days** from the date of publication of this notice. Quotations received later will not be entertained under any circumstances.
- 2.** Potential supplier are to submit the quotations in Sealed Cover to the Centre of Excellence for Green Energy & Sensor Systems in the following address:

**Prof. Hiranmay Saha
Chair Professor & Project Investigator
CEGESS
IEST, Shibpur
Howrah-711103, India**

- 3.** Item name must be mentioned on cover
- 4.** The price quoted should be inclusive of all Taxes in INR, duties and levies. Inclusion of Tax/Levy at a latter stage will not be accepted. Freight, Insurance charges should be clearly indicated.
- 5.** Vendor have proven track record of supply in IEST, IIT, NIT.

SECTION II: TECHNICAL SPECIFICATIONS

Item 1.

Refilling of Hydrogen Gas (99.9995%)

Specifications (Refilling of Hydrogen Gas (99.9995%)) :

Pressure -130 to 140 kg/Cm², Volume-7m³ in 47 Ltrs. Water Capacity Carbon Steel Cylinder.

Impurities : O₂: ≤ 1 PPM, H₂O: ≤ 1 PPM, THC: ≤ 0.2 PPM, N₂: ≤ 2 PPM, CO₂ + CO: ≤ 0.5 PPM, Total Impurities = ≤ 5 PPM.

Item 2.

Specification (Copper Gasket) :

Made of fully Annealed Copper (Qty -10)
ID 203.4 mm
OD 220.1 mm
Thickness 2 mm

Item 3.

Specification (Ultrasonic Flow Sensor) :

Ultrasonic type.

Flow rate range: 0 - 50 Litre/Sec.

Capable of measuring flow rate through Acidic medium

Fixable on the outer surface of PVC pipe.

Flow pipe diameter: 18mm. (inner dia.), 25mm. (outer dia.)

Item 4.

Specification (AIM Active Inverted Magnetron Gauge (Qty-1)) :

Pressure Range	
AIM-X and AIM-XL	10 ⁻² to 10 ⁻⁹ mbar
Accuracy*	Typically ±30%
Maximum overpressure	10 bar absolute (145 psi)
Power supply	+13.5 to +36V d.c. (max 1 V ripple)
Power consumption	2 W Maximum
Output signal	2 to 10 V d.c.
Set point	Open collector transistor
Maximum voltage -	40V d.c.
Current	100 mA max
Temperature range	
Operating	+5 to +60°C
Storage	0 to +70°C
Baking (DN40CF version only)	300 °C with electronics removed DN40CF only
Materials exposed to vacuum	
NW25 versions	Stainless steel 304 & 306 & 347, fluoroelastomer, glass
DN40CF	Stainless steel (AISI 304 and 306), copper, ceramic, very small amount of copper braze
Internal volume	26 cm ³
Weight	0.81 kg
AIM-X NW25	810 g
AIM-XL NW25	860 g
AIM-X DN40CF	1090 g
AIM-XL DN40CF	1140 g
External interface connector	8-way FCC68/RJ45 socket
Vacuum fitting	NW25
Standards	
Electromagnetic compatibility	EN 61326 (Class B Emissions)
Enclosure rating	IP40

Item 5.

Specification (Commercial wet & dry Vacuum cleaner) :

Type of Product -	Industrial Wet & Dry Vacuum Cleaner
Container Capacity (l) -	30 ltr
Weight (Kg) -	14 Kg
Voltage -	220-230 V
Suction Power -	23 Kpa
Frequency -	50-60 Hz
Power Input -	1000 W

Item 6.

Specification (Printer) :

Printer Features

Printing Type	Monochrome
Printing Technology	Laser
Available Functions	Print, Scan, Copy
Print Speed Black (PPM-A4)	18
Standard Memory(MB)	64MB

Copier Features

Reduction and Enlargement(Percentage)	50 - 200
Halftone	256 levels

Monochrome Copy Speed (PPM-A4)	18
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Scanner Features

File Format	Win: Hi-Compression PDF, Searchable PDF, PDF,
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JPEG, TIFF, BMP
- Mac: PDF, JPEG, TIFF, BMP, PNG

Scanner Type	CIS
Bit Depth	24-bit

Media Handling

Paper Size	A4
Duty Cycle(Pages per month)	8000
Output Plain Paper	100

Connectivity

USB Port	Yes
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Power Requirement

Power Consumption (Operation) (Watts)	450W
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Dimensions

Dimensions (W x D x H)	372 x 276 x 254 mm
Weight	light

After Sales Service

Warranty Period	3 Years
Cartridge	1 No. (Extra)

Item 7.

Specification (Viton O-Rings) :

Qty-5 nos.

I.D-474 mm
C.S- 8 mm
Temp-230~250⁰C

N.B: Complete Circular no joint allowed

Item 8.

Specification (Gold Wire) :

1.0mm (0.04in) dia, 99.95% (metals basis) 50cm