

The Draft Technical Purchase order is given below.

Diffusion Pump and accessories: The diffusion pump should have integral high vacuum valves. The pump must have all the necessary seals and valves to isolate the vacuum system from the pump. The pump must have the following specifications:

Pumping speed (hydrogen)	500 l/s
Pump Fluid	Santovac 5
Inlet Flange Size	ISO 100
Cooling system	Water cooled
Oil charge capacity	125 mL
Backing connection	NW25
Heater Power	650W
Inlet flange seal	Co-seal

No	Item	Quantity
1	Diffusion Pump with integral high manual vacuum valves	1
2	Heaters 240 V 650 W	1
3	Santovac 5 Fluid	500 mL
4	Thermal snap switch	1
5	Speedivalve with diaphragm	2
6	Air admittance valve	4
7	Solenoid Valve 240 V	2
8	NW25 Flexible Pipeline 1000 mm S/S	6

Double Stage Rotary Vane Vacuum Pump and accessories:  
 The pump should have the following specifications:

Displacement (m <sup>3</sup> /hr)	14.2 m <sup>3</sup> /hr
Ultimate pressure (mbar)	0.002 mbar
Water vapor tolerance	32 mbar
Motor rating (kW)	450 W, 115/230 V, 1Ø, 50/60 Hz
RPM	1500
Noise level (db)	48 @ 50 Hz
Oil quantity (l)	1
Operating temperature range (°C)	12 – 40

No	Item	Quantity
1	Double stage rotary vane vacuum pump	2
2	Pump line cord set	2
3	Oil mist filter	2
4	NW 25 Clamping ring SS	15
5	NW 25/25 centring ring	15
6	Ultrade oil	16 lit

**The Draft Technical data is given below.**

**1. Linear pirani gauge NW25 (with suitable active 3M gauge cable)**

Enclosure rating	IP40
Measurement range	Atmosphere to $10^{-4}$ mbar
Accuracy	Typically +/- 15% at <10 mbar
Maximum over-pressure	10 bar absolute
Operating temp range	5° to 60° C
Bake-out with no electronics	150 °C
Humidity	80% RH up to 31 °C decreasing linearly to 50% RH at 40 °C and above
Filament temperature	100 °C above ambient
Electrical supply voltage	15 to 30 V d.c. nominal 13.5 V d.c. minimum 32 V d.c maximum
Power consumption	1 W

**2. NW25 S/S active in Magnetron gauge (with suitable active 3M gauge cable)**

Pressure Range	$10^{-2}$ to $10^{-9}$ mbar
Accuracy	Typically $\pm 30\%$
Maximum overpressure	10 bar
Power supply	+13.5 to +36 V DC (max 1 V ripple)
Power consumption	2 W Maximum
Output signal	2 to 10 V DC
Set point	Open collector transistor
Maximum voltage	40V DC
Current	100 mA max
Temperature range	
Operating	+5 to +60°C
Storage	+0 to +70°C
Vacuum fitting	NW25

**3. TIC instrument controller (with suitable power connector and 2M line cord without plug and with three head)**

Electrical supply	90 to 264 V AC, 47 to 63 Hz
Number of heads	3
Power consumption	approximately 50 VA.
Fuse	Self-protected and no user replaceable fuse. The unit should recover once any overload is removed.
Earth stud	M4
Ambient operating temperature range	0 °C to 40 °C
Maximum ambient operating humidity	90%
Maximum operating altitude	3000 m max
IP rating	20
IEC rated pollution degree	2
Analogue output	0-10 V DC – one for each gauge

**4. Digital Vacuum Display unit (with suitable power connector and 2M linecord without plug)**

Display	Green LED display
Units	Mbar/Torr/Pa/Volts
Electrical supply	100 – 240 V (50 Hz)
Operating temperature	0 to +40°C
Maximum ambient operating humidity	Approximately 90%
Analogue output	0 – 10 V DC
Pressure Range	1500 to $9 \times 10^{-3}$ mbar
Accuracy	Typically $\pm 15\%$