

Specifications for Helium Leak Detector

Sn.	PARAMETER	SPECIFICATIONS for HELIUM LEAK DETECTOR	
1.			
2.	Minimum detectable leak rate	Vacuum mode: - $< 5 \times 10^{-12}$ mbar l/s Sniffer mode: - $< 5 \times 10^{-9}$ mbar	
3.	Gross leak mode	5×10^{-9} mbar l/s to 1 mbar l/s	
4.	Normal leak mode	5×10^{-12} mbar l/s to 2×10^{-4} mbar l/s	
5.	Detectable masses	3 masses including H2 gas	
6.	Ready for operation time	~ 3 to 4 minutes without calibration	
7.	Response time	< 0.5 seconds	
8.	Leak rate display range	10^{-12} – 1 mbar l/s	
9.	Maximum inlet pressure	Maximum inlet pressure 25 mbar.	
10.	Qualitative leak detection range (rough leak test)	Maximum of 100 mbar (Facility to find leaks at pressure between 100 mbar to 25 mbar)	
11.	Pumping speed of turbo (He)	More than 2.5 l/s	
12.	Internal test leak	Built in as standard	
13.	Leak rate Calibration	Automatic Calibration history should be inbuilt	
14.	Test port	DN 25 ISO-KF or DN 40 ISO KF	
15.	High Vacuum Pump (Turbo)	Air-cooled, split flow turbo-molecular with pumping capacity not less than 50 lps for N ₂ .	
16.	Backing and roughing pump	Single stage rotary vane pump of 15 m³/h	
17.	Time to reach test mode (Gross Leak)	Volume	Time
		10 litre Capacity ss container	Not more than 20 seconds
18.	Time to reach background of 1×10^{-9} mbar l/s	50 litres SS container	Not more than 6 to 7 minuts
19.	Mass spectrometer	High resolution 180 degree magnetic deflection type with electron multiplier amplification system.	
20.	Operating principle	Preferable working system should be Counter flow of helium principle	
21.	Operation	Fully automatic, single button operation, microprocessor based control system with auto calibration and auto ranging. Manual operation and ranging is also preferred as extra feature	
22.	Control Display panel	Built in display unit, with remote display as option.	
23.	Key lock switch	Protects pre set parameters from unauthorised changes	
24.	display unit should be	For Easy operation Touch Screen colour display	
		Leak rate vs time, analog / digital, statistics	
		running hours of leak detector, pump, filaments events and calibration history	
25.	Set point alarm, volume, warn limit	Adjustable,	
26.	Input and outputs	37 pin I/O Board and should be compatible to PC/PLC	
	Digital input	6 digital inputs (allocated functions configurable)	

	Analog output	3 analog outputs (configurable : Helium signal log, Mantissa, Exponent, Inlet pressure)
	Digital outputs	Ready pump, ready measure, leak, error
	Relay outputs	5 relays outputs (allocated functions configurable)
	Outputs	4 open collector transistor outputs (allocated functions configurable)
27.	Operating temperature	equipment should be designed to operate at max 45°C ambient temperature
28.	Inline vacuum valve	Size DN 40 ISO KF- 1
29.	Power supply	230 V \pm 10%, 50 Hz, 1ph / 850 W
30.	Should include small tool box to store accessories	