

1. INTRODUCTION

1.1 GENERAL

The Model DLMS-531 TURBO Helium Leak Detector has been designed primarily for use in the maintenance of vacuum systems.

Since the Leak Detector requires no liquid Nitrogen and allows leak detection within a matter of five minutes, it can be readily used for leak detection at any time. A turbomolecular pump is used for the main pump and will not contaminate a test object with oil vapor.

The DLMS-531 TURBO basic unit (as a portable unit) is designed for easy handling and installation.

1.2 SPECIFICATIONS

- Performance

Minimum leak : 3×10^{-10} std. cc/sec
detecting value

- Mass Spectrometer Tube

Deflection angle: 60°

Orbital radius : 4 cm (The ion source is of the Pierce cassette type and can be easily exchanged.)

Standard leak : Built-In (leak rate is marked on rear panel)

Standard leak : Quartz glass (with stainless steel protective
membrane case and valve)

- Vacuum Pumping System

Main pump : Turbomolecular pump 42 L./sec At Helium

Mechanical pump : Oil rotary pump 60 L./min (G-50D)

(Option) Oil rotary pump 120 L./min (G-100D)

- Vacuum Gauge

Penning Gauge : Measurement range $2 \times 10^{-2} \sim 1 \times 10^{-5}$ Torr

: Relay operating range 2.0×10^{-4} Torr or less

1.2 SPECIFICATIONS (Cont'd.)

- TC Gauge with : Measurement range 30 ~ 0.05 Torr
with Mode Guide
- Protective Circuit
 - Overload protection circuit breaker
 - Ion source protection circuit
 - Turbomolecular pump overload protection circuit
 - Door interlock circuit (including rear panel)
- Mode of Operation
 - Leak rate display: Leak value can be read directly
 - Valve operation : All valves electrical solenoid type except the
throttle valve
- Maintainability
 - Electrical system : Modular design, PC board insertion type ...
easily changed
 - Vacuum piping : KF type
- Utilities
 - Power : 110 VAC, single phase, 6 A with G-50D
(8A with G-100 D Pump)
 - Size : 460 mm wide x 300 mm deep x 452 mm high
(basic unit)
200 mm wide x 100 mm deep x 112 mm high
(remote meter)
 - Weight : Basic Unit 40.71 Kg
: G-50D 12.02 Kg
: G-100D 22.68 Kg
: Cart 19.05 Kg