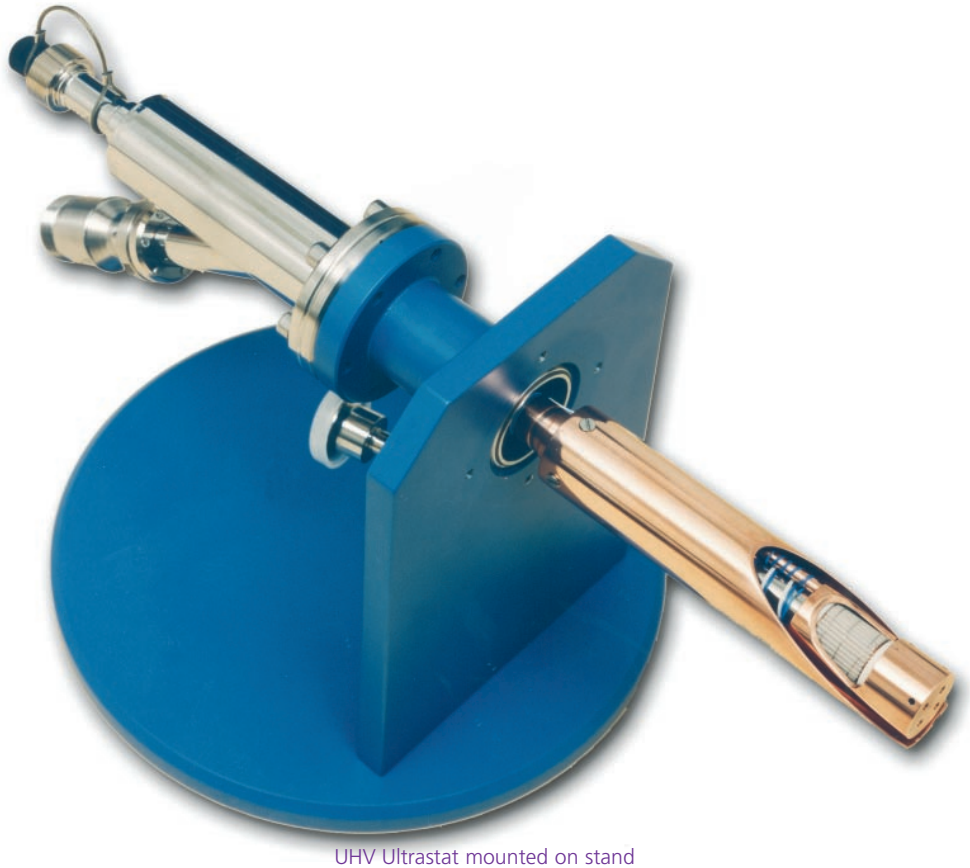


UHV Ultrastat mounted on stand

UHV Ultrastat

Ultra High Vacuum Cryogenic Environment

Introduction

The UHV Ultrastat is a continuous helium flow cryostat for electrical and surface property sample measurements in a ultra high vacuum environment.

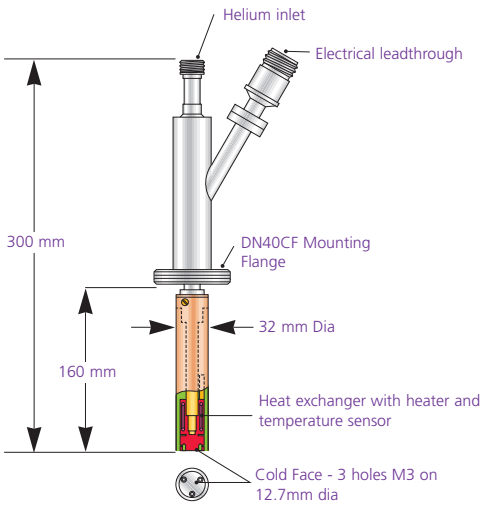
Description

The UHV Ultrastat is constructed from stainless steel and OFHC copper. Joints are manufactured using minimum amounts of zinc/cadmium free solder. Mounting is via a DN40CF (70 mm outer diameter) conflat flange.

A heater and rhodium-iron sensor are fitted to the cold tip. The system can be baked to 500 K. The sample may be mounted directly onto the heat exchanger for optimum thermal contact, alternatively the cryostat may be used as a 'cold finger' with a copper braid used for connection between the sample and the face of the cold tip.

Applications

- Measurement of electrical and surface properties of sample in UHV environments.
- Materials characterisation of nano-devices, suitable for testing and examination of semiconductors.



UHV Utrastat can be supplied with alternate DN-CF mounting flanges and alternate length inserts.

Features

- Use of UHV materials and fabrication techniques for total UHV compatibility
- Variable temperature operation between 3.8 K and 500 K
- Small, flexible, highly efficient cooling platform
- Simple operation with fully automated control of helium
- Operates in any direction
- Low helium consumption

Benefits

- UHV Clean environment
- Simple to install and operate
- Low cost of ownership

OXFORD INSTRUMENTS

Standard Specification

UHV Ultrastat		
UHVULTRASTAT	Temperature Range	3.8 K to 500 K
	Temperature Stability	+/- 0.1 K
	Maximum Bakeout Temperature	500 K
	Cooldown Time (from ambient)	40 mins
	Cooldown Helium Consumption	1 litre
	Helium Consumption	1.1 litres hr^{-1} at 4.2 K 0.1 litres hr^{-1} at 10 K <0.5 litres hr^{-1} at 150 K
	Maximum Cooling Power	1 W at 4.2 K
	Weight	1 kg

System Components

Part Number	Name	Description
UHVULTRA	UHV Continuous Flow Cryostat	
LLT700/13	Low loss technology flexible transfer tube	Designed for use with continuous flow cryostats Lightweight and flexible design with 180° configuration for vertical cryostat entry. 1.1 metre flexible length section. Gas cooled radiation shield, manually operated needle valve upgradable to automated type.
GF3	Gas flow pump	
VC31	Gas flow controller	Includes vacuum gauge, helium flow meter and needle valve.
ITC502	Digital temperature controller	Single channel IEEE488 and RS232 interfaces. Standard calibration curves built in, auto-ranging, auto-PID setting, ability to control needle valves.
SV12	Storage vessel	Top-fitting for LLT and TTL type transfer tubes which have standard 12 mm dewar leg, including control valve and bladder fitting.
SK	Spares kit	O-rings, indium wire, screws etc.

Optional Items

Part Number	Name	Description
LLT700AUTO	Upgrade from LLT700/13	Allows automatic operation of transfer tube needle valve, requires ITC controller, includes cable and monitor assembly.
HD30	Liquid helium dewar	Top fitting with trolley.

Reference No: OI622 02/03

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Certificate No Q4118

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