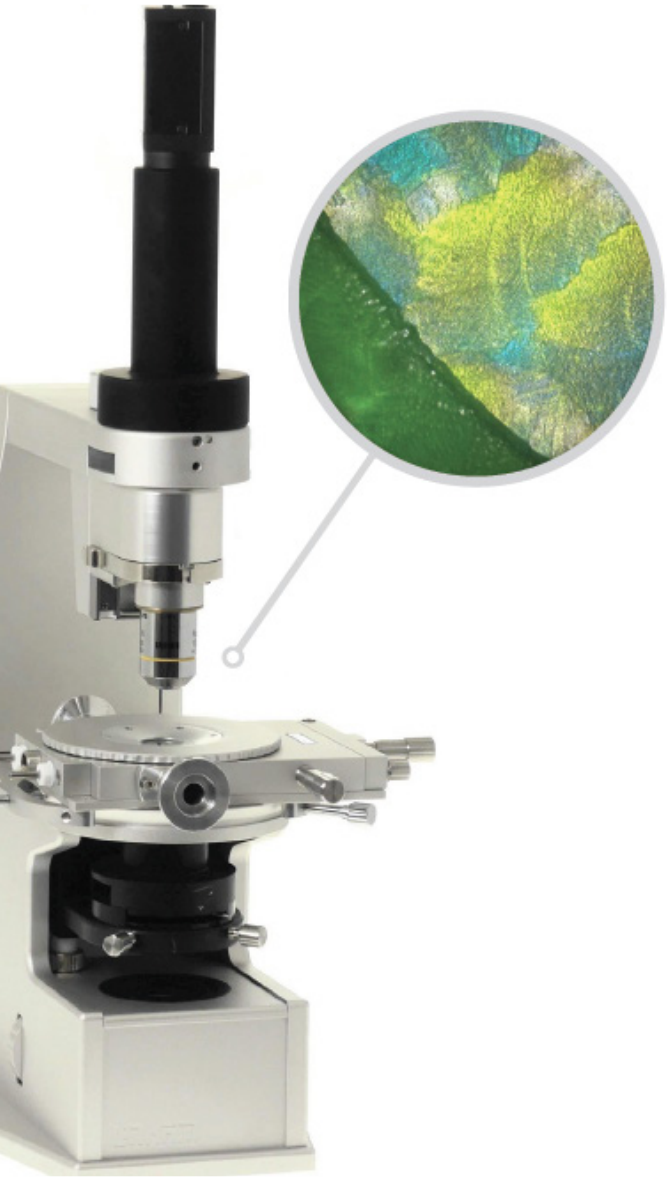
LYOSTAT5
TECHNICAL SPECIFICATION



+ Stage and Controller

- Working temperature from –196°C to + 125°C
- Controlled heating and cooling rates
- Programmable profile function, allowing several ramping and holding steps
- High purity silver heating / cooling block for superior thermal conductivity
- 100 Ohm platinum resistor sensor for temperature monitoring & control (DIN Class A to 0.1°C)
- Sample chamber vacuum tight to 10-3 mbar
- Port for direct measurement of chamber vacuum

+ Optical System

Imaging station:

- LED lamp with an efficient, custom-designed electronics module and lifetime of more than 60,000 hours
- Articulated head for ease of sample loading
- Fewer lenses than compound microscopes, for clearer images
- Polarising lens with analyser
- Long working distance condenser

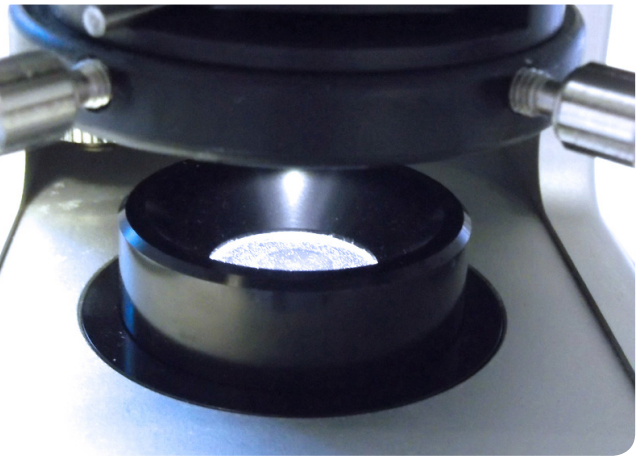
+ Real-Time Digital Video and Measurement

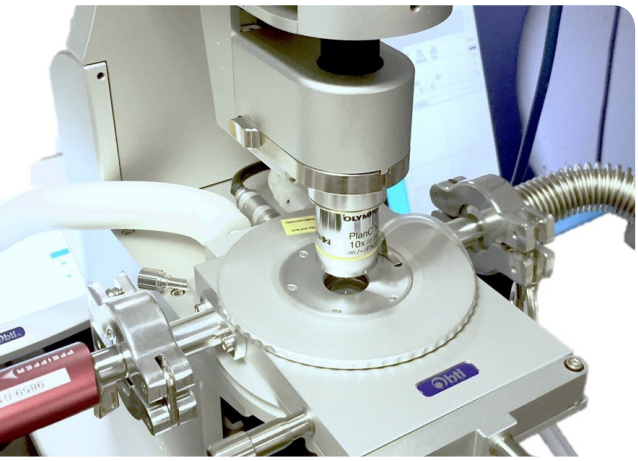
- Capture up to 80Gb information
- Compress gallery images into various picture formats or movies with variable compression codec and playback frame rate
- High performance digital USB camera:
  - High Quantum efficiency: sensitivity for detailed imaging
  - High-resolution, 2.3 mega pixel sensor
  - High-speed readout: previewing and focusing in real time
  - Flexible exposure control with optimal
  - integration over a wide range of light levels

+ Liquid Nitrogen Cooling System

- Automatic twin-pump cooling system including 2L dewar and flexible insulated tubing
- Twin pumps for faster cooling
- Direct injection of the coolant into the silver block

Biopharma Group
btl@biopharma.co.uk | www.intelligentfreezedrying.com





+ Software

- Displays live temperature and stage pressure, active ramp information
- User has full control over temperature programmer USB link to PC
- Online temperature and pressure plot can be viewed, saved, and exported to third part applications such as Excel
- Temperature profile of several ramping and holding steps can be easily created within the software
- 21 CFR Part 11 compliant software available as an option

+ Vacuum System

- Oerlikon Leybold D2.5E rotary vane vacuum pump with pumping speeds of 3.2m2/h
- Exhaust filter, all connectors and clamps
- Pfeiffer Pirani vacuum gauge features pressure range from atmospheric to 10^{-4} mBar (7.6x10-5mTorr)
- Optimal motorised vacuum control system:
  - Software-controlled motorized valve controls chamber pressure
  - Enables close investigation of the effects of pressure on sample collapse
  - Chamber pressure displayed in mBar and Pa
  - Pressure plotted with temperature against time and can be saved for later analysis