

Cryostats for very large specimens

Introduction

The use of cryostats to prepare frozen sections for microscopy is widely known and the Bright Instrument Company has been specialising in this field for more than 30 years. For some



applications normal laboratory cryostats are simply not large enough or powerful enough. It is for these cases that the Bright 8250 and 9400 cryostats have been developed.

The most usual application is in the field of Whole Body Radiography (WBA), which is used to trace radio-labelled drugs or other compounds in the frozen bodies of test animals. The cryostat enables researchers to accurately cut thin sections through the whole length of the test animal at different levels. The sections are collected on wide adhesive tape then transferred to X-Ray film. After a suitable exposure period, the film is developed and compared with the original section so revealing the site of deposition of the test compound.

There are many other uses of these large cryostats. In the field of anatomy training, it is possible to prepare sections of different layers of a joint (for example) and use these to aid interpretation of tomographic scans.

Outside of the Biological Sciences, these instruments have been used by material scientists to cut objects as diverse as electrical insulation, timber and plastic automobile chassis joints.

The evolution of a classic design

The Bright Instrument Company first developed a whole-body cryostat in 1968, almost a decade ahead of any other company. Working in close collaboration with Dr D A H Pratt and Mr R J McCulloch of Glaxo, the Company used its years of experience to produce these powerful and efficient instruments.

The instruments described in this brochure are built to customer requirements, and the range of options and accessories is not limited to those described. By choosing a Bright 8250 or 9400 cryostat, you will be acquiring an industry standard piece of apparatus which has been produced to match your exact needs.

Model 8250 Cryostat

Features

- High precision research instrument for specimens up to 250mm long.
- Fitted with the Bright 8000 retracting sledge microtome.
- The microtome is driven by an electro-linear motor capable of producing high cutting forces.
- Full range of microtome controls
- Heated window for clear viewing
- The microtome chamber is made from high grade, polished stainless steel.
- Rigid, CFC-free, polyurethane foam insulation allows low temperatures to be maintained.
- Hermetically sealed dual refrigeration system gives fast cool-down times and maintains low temperatures even at high ambient temperatures.
- The cabinet is constructed from Stelvetite, a steel sheet material with a permanently bonded PVC surface to resist scratches solvents and acids.

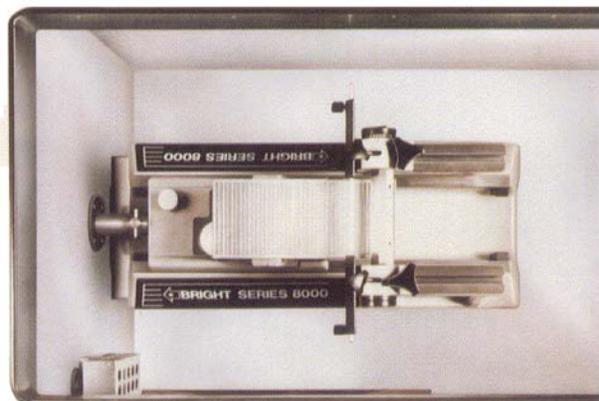


Ease of use

Although these instruments are both powerful and large, careful design has resulted in a “user friendly” control system which makes setting up and section cutting a straightforward procedure.

The electronic control panel allows the operator to select single or continuous cutting, section thickness, cutting speed and other useful functions.

The full cutting stroke of the microtome can be utilized and wide specimens can be accommodated. A range of knife options is available.



Model 8250 Standard Equipment

Cryostat cabinet with Bright 8000 microtome, knife holder with guards, standard steel knife (with box), stainless steel embedding mould, dual refrigeration system, electronic control console,

object stage 250mm x 110mm, knife cleaning brush, low temperature oil and grease, roll of special tape 6m x 50mm, Allen keys, instruction manual.

Model 9400 Cryostat

Features

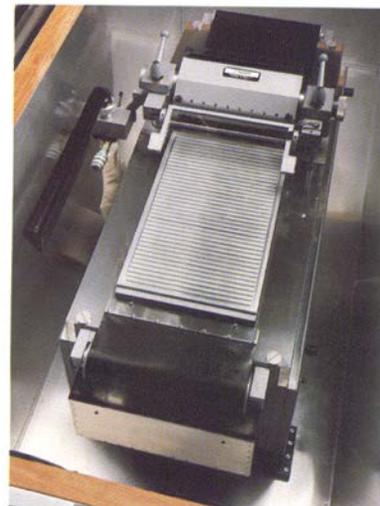
- Very large area sections up to 400mm long.
- Bright 9000 microtome installed for extreme rigidity and cutting power.
- Electro-linear motor drive.
- Knife retraction (optional).
- Comprehensive control with optional features.
- Hermetically sealed dual refrigeration system.
- Defrost delay for section drying.
- Quick-release specimen holder.
- Twin turret knife holder.
- Debris collector and vacuum extractor (optional).
- Electro-mechanical interlocked system fitted.
- Cabinet constructed from Stelvetite to resist scratches, solvents and acids.
- Photo-electronic device for knife guarding (optional).



Electro-linear motor driven microtome

The 9000 microtome has been specially designed to meet the exacting criteria of whole body sectioning. Constructed of stainless steel and other non-corroding alloys, the extremely powerful motor drive provides a smooth and positive cutting action.

Control functions include single or continuous cutting, pause, emergency return, cutting speed and section thickness as well as temperature setting. A range of other options is available.



Model 9400 standard equipment

Cryostat cabinet with Bright 9000 microtome, twin turret knife holder with guards, tungsten carbide tipped knife (with box), object stage 400mm x 250mm, stainless steel embedding mould, dual refrigeration system, electronic control console, auto defrost system, raised temperature alarm, knee switch, freezing tongs, dehydr@ation set, dusting brush, low temperature oil and grease, roll of special tape 6m x 50mm, Allen keys, instruction manual.

Specifications

Feature	Model 8250	Model 9400
Microtome Maximum specimen length Maximum specimen width Maximum specimen depth Section thickness range Cutting speed range	250mm 110mm (Std.) 170mm (Optional) 45mm 0 - 40µm 0 – 50mm/s	400mm 250mm 100mm 1 - 99µm 0 - 80mm/s
Refrigeration No. of compressors Minimum temperature	2 -30°C @ 25°C Ambient	2 -30°C @ 25°C Ambient
Chamber Dimensions l x w x h	870mm x 450mm x 590mm	1700mm x 620mm x 790mm
Cabinet Dimensions l x w x h	1645mm x 770mm x 980mm	2650mm x 800mm x 1060mm
Packing Nett Weight Gross weight Dimensions l x w x h	320Kg 450Kg 2150mm x 900mm x 1300mm	510Kg 690Kg 1970mm x 103mm x 1240mm 1030mm x 920mm x 124mm 1180mm x 780mm x 1000mm
Total volume	2.1m ³ (1 crate)	3.5m ³ (3 crates)

Manufacturers of cryostats, microtomes and laboratory freezers

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