

Ultraseal™ LITE

The Semi-Automatic Microplate Heat Sealing System



Description

The Ultraseal LITE semi-automatic microplate heat sealer from Finneran Porvair processes deep well, shallow well, low profile deep well, filter, and assay plates that conform to the ANSI/SLAS standard format. The Ultraseal LITE heat sealer operates using 400W of heating elements that ensure high integrity sealing of almost any type of microplate. With so much available power, sealing times for most polypropylene plates are less than three seconds each. Sealed plates are automatically ejected, from the unit, when the sealing cycle has completed. The compact footprint means that the Ultraseal LITE will fit just about anywhere - lab bench or inside a fume hood, if required.

Keypoints:

- The Ultraseal LITE heat sealer has been designed to seal most types of microplates.
- The Ultraseal LITE utilizes various heat seal films and foils to give either permanent or peelable seals for all common microplate material types (polypropylene, polystyrene, polyethylene).
- Sealing times and temperatures are fully adjustable with the Ultraseal LITE, via the control touchscreen.
- Fully compatible with ANSI/SLAS standard plates and PCR, if full skirted.
- The Ultraseal LITE has dual voltage capability, operating on either 115 or 220 VAC supplies without the need for a power transformer.

Optimization

The Ultraseal LITE System has been designed to efficiently seal plates of different heights and different plastics, using a variety of films, to give a seal with varying properties. The quality and strength of the seal, created between the sealing film and the microplate, will vary between different conditions. In general, increasing either the sealing temperature or duration of seal will provide a stronger, more complete seal. Note: Over-sealing on a regular basis is not recommended, as applying too much heat may cause excessive damage to the plate being sealed. This, in turn, will reduce the number of times a particular plate can be resealed. Therefore, a balance has to be achieved, that gives an acceptable seal while minimizing plate damage or distortion. Another optimization factor, to be taken into account, is the surface area of the plate. A plate with thin raised rims around each well will have a reduced surface area, compared to a plate with wide raised rims. This means that less heat is needed to seal the thin rim plate in comparison to the wide rim plate. The pressure that the heater plate exerts during sealing is pre-set and cannot be adjusted. Plates that do not have any raised rims are not recommended for heat-sealing.

Temperature and Time Settings:

The following table gives a guideline as to the sealing time and temperature for different materials.

Plate Material	Temperature Setting (°C)	Time Settings (Seconds)
Polystyrene	145 to 165	2 to 5
Polypropylene	150 to 175	2 to 5
Polyethylene	150 to 170	2 to 5

For Sealing PCR Plates - No Skirt or Half Skirt

An adaptor is required to seal plates that have well bottoms protruding past the plate skirt. This is available from Finneran Porvair.

Addressable applications

Of the various methods for sealing microplates, heat sealing has become the preferred option. It creates an air-tight and chemically-resistant seal without the complications of adhesives being applied to a plate. A compact and ideal sealing device for microplate sealing in low, medium and high throughput laboratories.

Competition

Competitor	Part number	Description
VITL	V902001	Variable Temperature Sealer (VTS)
Brooks	59-2000	IntelliXseal™ SA Semi-Automatic Sheet Heat Sealer

USPs, Features and Benefits

- Desktop semi-automatic heat applied microplate sealing system
- Seals SBS format microwell plates and tubes
- Seals plates of any height from 9 - 54mm
- Temperature range from ambient to 200°C
- Seal time from 10 - 20 seconds (based on a 2 second seal)
- Semi-automated slide operation
- Combined temperature and seal time display
- Light weight system, only 9.2kgs (20lbs)
- No compressed air required
- 2mm, 2.75mm, 3.5mm risers included with unit

Product Specific Information

- Power Supply: 115/220 VAC 50/60 Hz
- Power Consumption: 600 Watts Nominal
- Fuse Rating: 5 Amp anti-surge (T5AH 250V)
- Internal Heaters: 4 x 100 Watts (Sealing Plate)
- Dimensions: 181mm (7.125in) Width x 270mm (10.63in) Depth x 285mm (11.22in) Height
- Minimum Plate Height: 9mm
- Maximum Plate Height: 54mm
- Maximum Sealing Temperature: 200°C
- Protection: IP20
- Cycle Time (approx.): 10 - 20 seconds (based on a 2 second seal)

Part Number	Description
250-10071	Ultraseal™ LITE Semi-Automated Heat Sealer

Accessories

Part Number	Description
101028121074	Skirtless PCR plate adaptor 96 well
101028121073	Plate adaptor flat top 384 well PCR plates

Accessories - Sealing Film

Part No.	Film Type	Solvent Resistance	Temp. Range °C	Plate Type	Application
SF01078LS	Transparent Peelable Film	Moderate	-80 to 80	PP, PE, PS, COC	qPCR, Short term compound storage
SF01078TS	Transparent Peelable Film - Trial Sheets				
SF03078LS	Transparent Pierceable Film for Abi 3730	Moderate	-80 to 80 or 110 w/ pressurized PCR heated lids	PP, PE, PS, COC	Use with ABI 3730 PCR sequencer
SF03078TS	Transparent Pierceable Film for Abi 3730 - Trial Sheets				
SF02078LS	Optically Clear Strong Bond Heat Seal for Water Bath PCR	Good, DMSO	-80 to 110	PP	For water bath PCR, use w/DMSO & hazardous materials
SF02078TS	Optically Clear Strong Bond Heat Seal for Water Bath PCR - Trial Sheets				
SF04078LS	Peelable Foil (White Laminate) Film for PP Plates	Moderate	-80 to 110	PP	PCR, good liquid barrier, low temp short term compound storage, can be re-sealed
SF04078TS	Peelable Foil (White Laminate) Film for PP Plates - Trial Sheets				
SF14078LS	Peelable Foil (White Laminate) Film for All Plate Types	High Resistance to Solvents, DMSO	-80 to 110	PP, PE, PS, COC	PCR, low temperature, short term compound storage, short term room temp compound storage
SF14078TS	Peelable Foil (White Laminate) Film for All Plate Types - Trial Sheets				
SF05078LS	Peelable Foil Film for PP Plates, DMSO Resistant	Excellent	-80 to 110	PP	Compound storage at low & ambient temps, with DMSO & other solvents
SF05078TS	Peelable Foil Film for PP Plates, DMSO Resistant - Trial Sheets				
SF06078LS	Easily Pierced Foil Heat Sealing Film	Good, DMSO	-20 to 120	PP, PS	PCR, compound storage, sample shipping
SF06078TS	Easily Pierced Foil Heat Sealing Film - Trial Sheet				
SF15078LS	Pierceable and Peelable Foil Heat Seal for all Plate Types	Moderate	-80 to 80	PP, PE, PS, COC	PCR, low temp compound storage, short term ambient temp storage, can be re-applied
SF15078TS	Pierceable and Peelable Foil Heat Seal for all Plate Types - Trial Sheets				
SF07078LS	Pierceable, Peelable Foil Film to PS Plates	Good, DMSO	-20 to 120	PS	PCR, low temp compound storage, short term ambient temp storage, can be re-applied
SF07078TS	Pierceable, Peelable Foil Film to PS Plates - Trial Sheets				
SF08078LS	Strong Bonding Peelable Foil Film for PP Plates	Good, DMSO	-200 to 110	PP	PCR, thermal cyclers, storage of solvents and other organics, long term storage, low temp transport
SF08078TS	Strong Bonding Peelable Foil Film for PP Plates - Trial Sheets				
SF10078LS	Non-woven Gas Permeable Peelable Film for Cell & Seed Culture	None	-20 to 80	PP, PS	Short term Incubation, ag. and seed storage, Insect storage and Cell Culture, use in autoclaves
SF10078TS	Non-woven Gas Permeable Peelable Film for Cell & Seed Culture - Trial Sheets				
SF13078LS	60gsm Paper with a Grid Lacquer Coating, Breathable, Peelable Film	None	-20 to 80	PP, PS	Short term Incubation, agriculture and seed storage, Insect storage and Cell Culture
SF13078TS	60gsm Paper with a Grid Lacquer Coating, Breathable, Peelable Film - Trial Sheets				
SF11078LS	Clear Perforated Gas Permeable Peelable Film for Cell & Seed Culture	Moderate	-80 to 80	PP, PE, PS, COC	Short term Incubation, agriculture and seed storage, Insect storage and Cell Culture
SF11078TS	Clear Perforated Gas Permeable Peelable Film for Cell & Seed Culture - Trial Sheets				