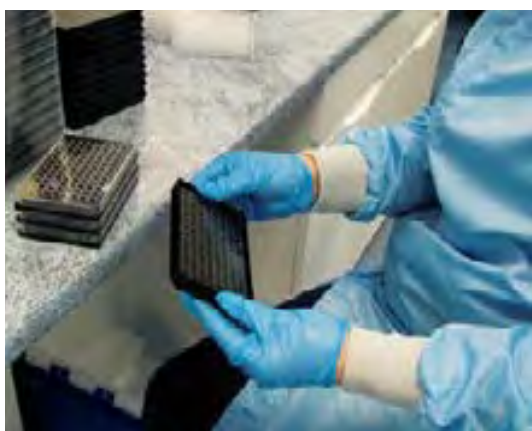


CATALOGUE OF MICROPLATES & MICROPLATE EQUIPMENT
FIFTH EDITION





Pictures taken inside the Porvair Sciences clean room in Wrexham, showing production of clear bottom assay plates.

Welcome to the 2012 edition of the Porvair Sciences Microplate Catalogue.

Many scientists around the world have come to rely upon the Porvair catalogue as a primary source of information that enables them to choose the right microplate or tissue culture consumable.

This revised edition for 2012 brings together information on Porvair Sciences comprehensive microplate and microplate instruments product range, together with our newly introduced Epigenetics & Tissue Culture Plastics range. Reflecting our commitment to continuous microplate technology innovation, the 2012 catalogue introduces yet more exciting new products.

For example, there's our new manual Pin Tools – disposable replicators for 96- and 384-well plate replication. We've expanded our range of colour-coded sealing film and introduced a brand-new and completely re-designed Miniseal II semi-automatic sealer.

But perhaps the most exciting innovation for 2012 is the launch of Ultravap RC – our all new robot-compatible nitrogen blowdown station. For many years, Porvair Sciences has led the field in nitrogen blowdown evaporation. This new version of our most popular concentrator makes it even easier than ever to integrate an automatic dry down step into your liquid handling workstation.

Add to this new SPE plates, more protein removal options and a fantastic new range of tissue culture products and you will see that the 2012 catalogue remains an indispensable reference guide to any laboratory using, or interested in using, microplates.

Porvair Sciences is one of the largest global manufacturers of ultra-clean microplates for life science, synthetic chemistry and many other applications. Our modern Class VIII clean room facility in Wrexham, UK is responsible for production of all of our clear-bottom plate products, including the highly-acclaimed glass bottom Krystal plates. The same highly experienced UK team also provides first-class customer service to our customers and distributors worldwide. Should you be interested in evaluating and testing any of our microplates - just give our friendly team a call, or send them an email asking for a free sample of your microplate of choice.

With a proud history of innovative microplate manufacturing dating back to 1992, Porvair Sciences' mission is to become your preferred global partner for microplate and cell culture products. Our technical and sales teams are at your disposal – so take a look through this catalogue and you will see a wide array of microplate products and instruments designed to enable you to get better results faster and more consistently.

Porvair Sciences products are designed for use in research environments and are not suitable for clinical, diagnostic or medical use.

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Specifications subject to change without notice. E&OE.

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Application table

	COMBINATORIAL CHEMISTRY	GROWTH STUDIES	CLINICAL SAMPLE SCREENING ARRAY TECHNOLOGY	ENVIRONMENTAL ANALYSIS FOOD TESTING	GENOMICS/PROTEOMICS	HTS SCREENING	COMPOUND STORAGE	DRUG DISCOVERY
Storage/collection	■		■	■	■	■		■
Life science								
Solid bottom		■			■		■	
Clear bottom		■	■		■		■	
Glass bottom	■	■	■	■			■	
Quartz bottom	■	■	■	■			■	
PCR plates						■		
Filtration plates				■	■			
Bacti-growth plates		■						
SPE								
MicroLute	■							■
MaxiLute					■			
CombiLute	■				■			
p3				■				■
Equipment								
Manifolds	■				■			■
Evaporators	■				■			■
Cappers	■				■			■
Sealers		■		■		■	■	■
Seals		■		■		■	■	■
Thawing station		■		■		■	■	■
Automation								
Reservoir trays				■	■	■	■	

Are your plates whiter than white? Or do they harbour a dirty secret?



Deep well polypropylene microplates are commonly used for sample storage in life science laboratories. An essential aspect of the manufacture of these plates is the selection of clean raw materials for injection moulding. Polypropylene is an inert and heat resistant material, ideal for sample storage. However, all grades of polypropylene are not the same, for example, Injection moulding grades of polypropylene often have high concentrations of chemicals to aid the moulding process.

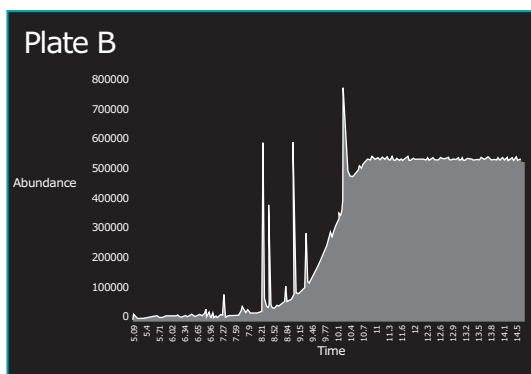
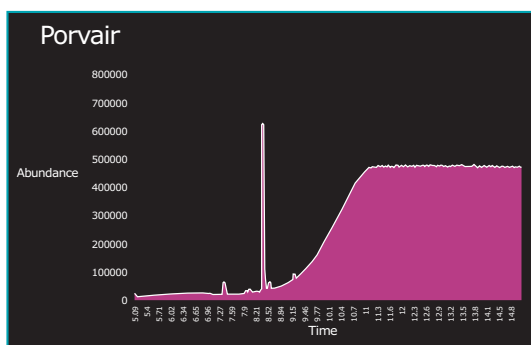
This allows rapid production of plates and lower costs, but may compromise the integrity of samples or compounds which are stored in such plates for extended periods. The problem is particularly acute where compounds are stored as solutions in solvents such as methanol or DMSO, as these excellent solvents have a tendency to extract from the polypropylene base material any added extractable compounds such as mould release agents or polymer flow improvers.

Porvair Sciences has carried out tests on many manufacturers' deep well plates to establish levels of extractables in each. A typical example is illustrated. Extractables testing was performed by adding a volume of methanol, sufficient to half fill the wells to each test plate. An internal standard comprising methanol spiked with 10 mg/ml of caffeine was used to give a consistent peak. Samples were taken from each well and subjected to analysis on a GC-MS system with splitless injection @ 250°C, using an HP - 5MS capillary column. A temperature gradient was programmed such that:

Ramp	30°C/min
Initial temp	70°C Hold 2 min
Final temp	310°C Hold 5 min

Results from the GC-MS showed good performance from the Porvair microplate, with a clean caffeine peak and no significant levels of leachable or extractable compounds. Plate B shown here, is a typical example of the other commercial microplates tested, which included two major German manufacturers and several other well-known suppliers. These variously displayed extra peaks with a variety of retention times across the run, indicating several different contaminants. Further analysis of these extra peaks revealed that they were, indeed, mostly recognized chemicals used as additives in the polypropylene to assist the injection moulding process.

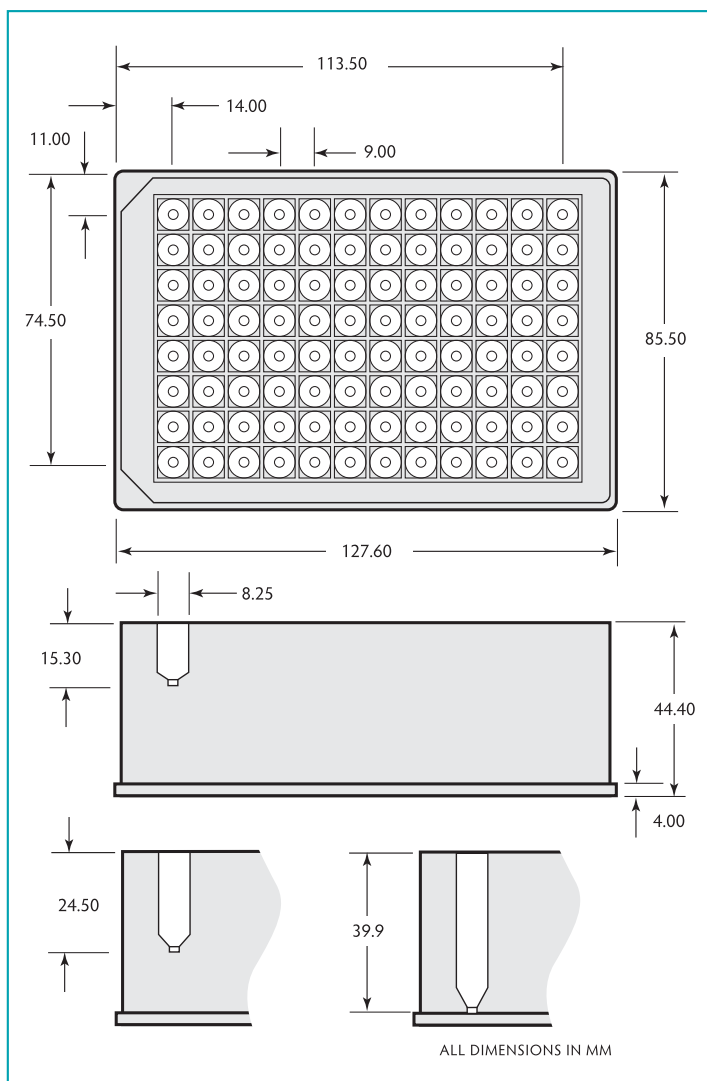
From this it can be seen that it is essential to select the correct grade of polypropylene material for storage plate manufacture. The full report can be downloaded from our website.



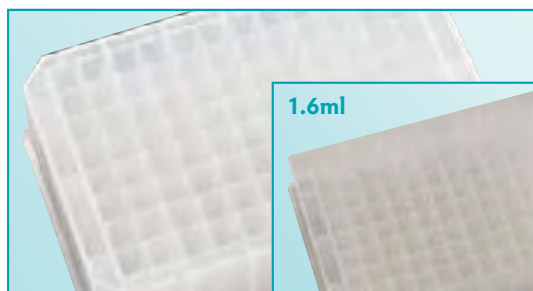
96-well deep square 44mm height

The family of 96 square well plates was designed so that it would make the interchange of plates simpler in automated systems. All three plates have the same geometry and the only variable is the well depth.

- Made from virgin polypropylene
- Tested for low extractables
- Tight specification levels
- V bottom to allow total liquid removal, partial collection and to aid re-suspension
- No inner edges to allow better collection of magnetic beads
- Manufactured under DNase/ RNase free environment
- Working volumes of 350µl, 1ml, 1.6ml and 2ml
- Raised well rims to improve heat sealing
- Conical base which aids sample concentration, reconstitution and centrifugation
- Sterile and non-sterile versions available



Drawing of 500066 available on request.



Storage plates 96 square well

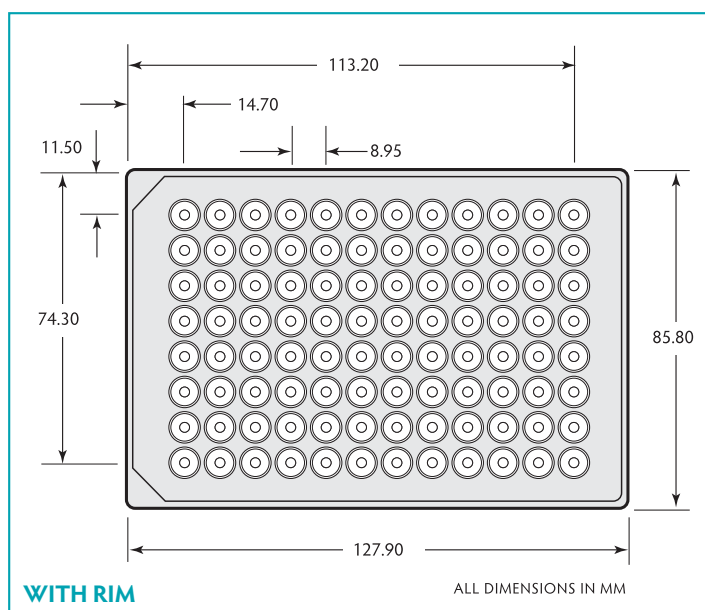
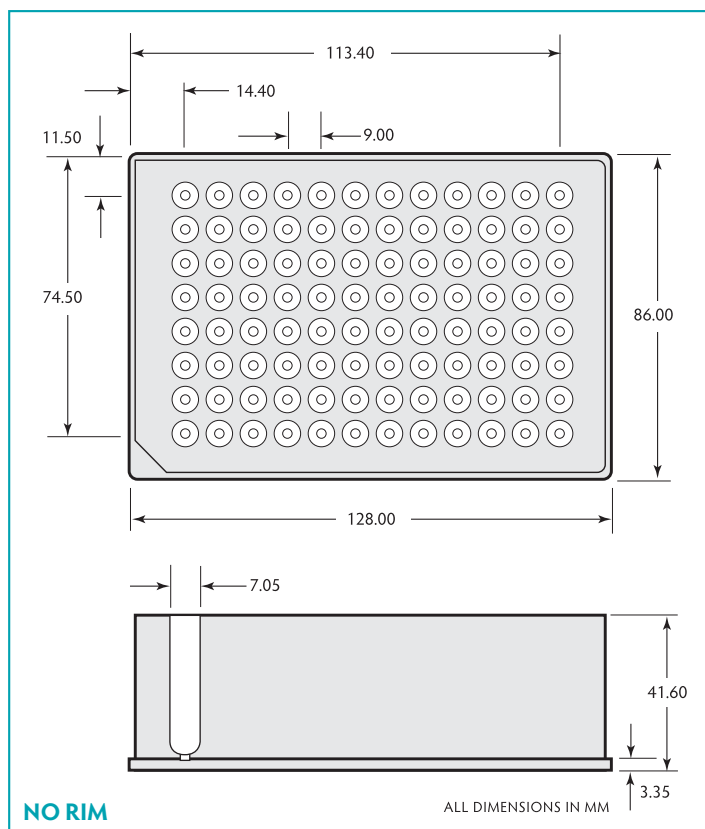
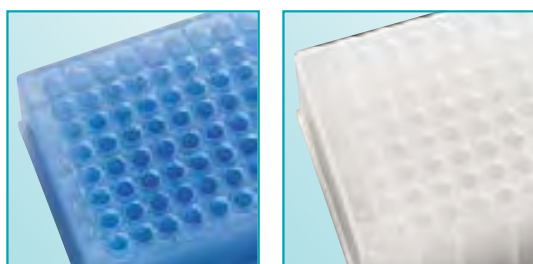
Description	Well volume	Sterile	Use cap mat	Quantity/case	Cat. no.
Polypropylene, pyramid bottom	2.0ml	–	219004	50	219009
Polypropylene, pyramid bottom, sterile, inner bag of 5	2.0ml	✓	219019	50	219027
Polypropylene, round bottom	1.6ml	–	219004	50	500066
Polypropylene, pyramid bottom	1.0ml	–	219004	50	219008
Polypropylene, pyramid bottom, sterile, inner bag of 5	1.0ml	✓	219019	50	219026
Polypropylene, pyramid bottom	350µl	–	219004	50	219006
Polypropylene, pyramid bottom, sterile, inner bag of 5	350µl	✓	219019	50	219025

96-well deep round

42mm height

The plates are made in virgin polypropylene to minimise extractables. Working volume is 1ml per well and total volume is 1.1ml. Coloured plates aid identification when retrieving from storage. Black plates are suitable for storing light sensitive compounds.

- Manufactured from pre-tested polypropylene for low extractables
- Alphanumeric grid-referencing
- DNase/ RNase free
- Packed in sealed sleeves of 5 plates
- Rimmed version to stop cross contamination and enable a better seal
- Non rimmed version to allow insertion of vials, or where the seal is not crucial
- Cylindrical well with round bottom for optimal mixing and recovery
- Very easy to use with automated sample handling systems
- Can be stored at -80°C



Polypropylene storage plates round

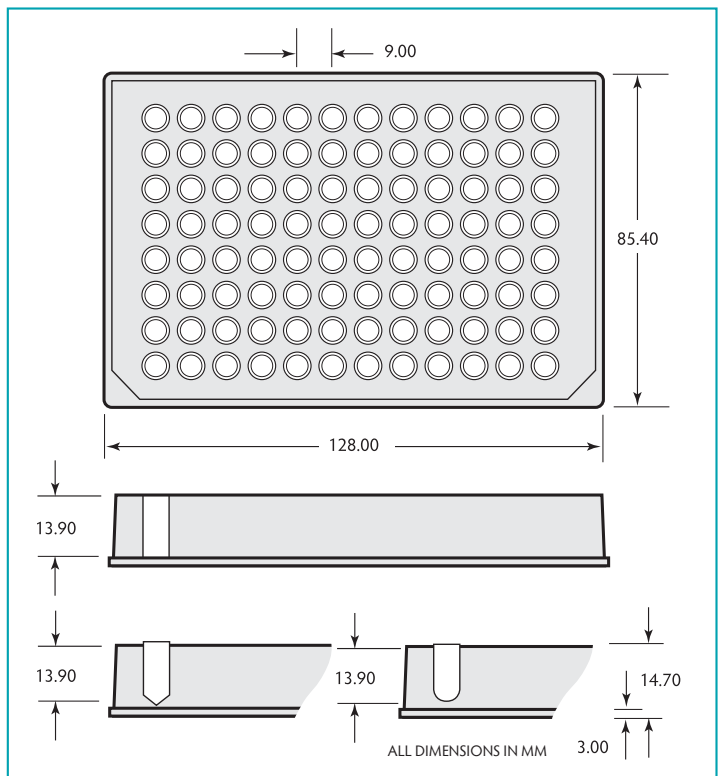
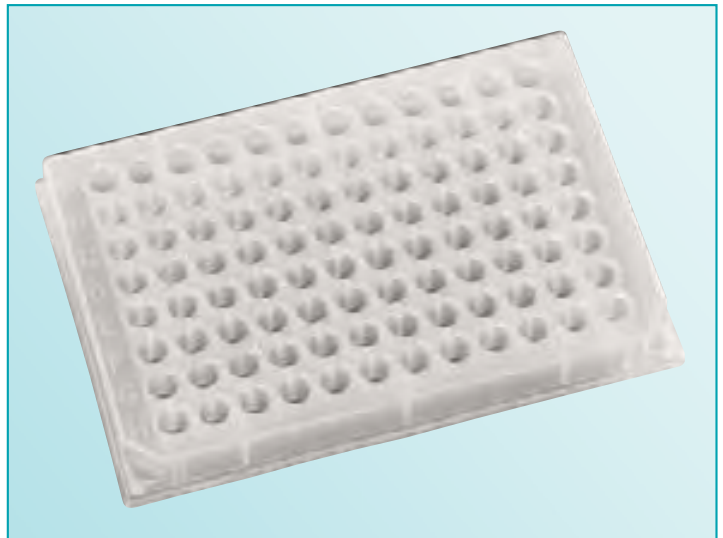
Rim and bottom well shape	Colour	Well volume	Sterile	Use cap mat	Quantity/case	Cat. no.
Raised- round	Natural	1ml	–	219036	50	219002
Raised- round	Natural	1ml	✓	219042	50	219012
No rim- round	Natural	1ml	–	219036	50	219037
Raised- round	Blue	1ml	–	219036	50	219432
Raised- round	Red	1ml	–	219036	50	219422
Raised- round	Black	1ml	–	219036	50	219412

96-well shallow round 14.7mm height

Porvair Sciences has developed a number of storage/collection plates to help in the fields of cell biology, molecular biology, drug discovery, combinatorial chemistry, screening and genomics. The plates are manufactured under clean room conditions and a significant number are DNase/RNase free. They are mainly made from polypropylene, an inert material giving heat and solvent resistant qualities. Porvair Sciences offers the largest combination of well shape, number of wells and well volume on the market. Each is made to the ANSI/SBS format for compatibility with most readers/washers and automated equipment.

Porvair Sciences offers three plates with well capacities of 350µl, 270µl and 220µl. They have flat-, round- or V-bottoms and can be used for compound storage and culturing.

- *Manufactured in polypropylene*
- *Alphanumeric grid reference*
- *Round and V-bottom allow greater liquid removal and particulate collection*
- *Raised rims improve sealing and stop cross contamination*



Storage plates round

Rim and bottom well shape	Material	Well volume	Sterile	Quantity/case	Cat. no.
No rim, flat	Polypropylene	350µl	–	100	208003
Raised-round	Polypropylene	270µl	–	100	209003
Raised-V	Polypropylene	220µl	–	100	210003

96-well round low profile

A new introduction to the Porvair range is a low profile 1.1ml 96-well round plate with a height of just 27mm. This allows more plates to be stored or stacked in a given space. The plates are made with extractable-free polypropylene for excellent results. A specific anti-evaporation cap mat is also available for this plate manufactured from thermoplastic elastomer.

- *Allows stacking in higher densities*
- *Minimises space needed for compound storage*
- *Pure virgin polypropylene*
- *Matching snug-fitting cap mat*



96-well round low profile

Description	Working well vol	Sterile	Qty/case	Cat. no.
96-well round low profile plate	1ml	–	50	219250

96-well glass vial storage plate 44mm height

The new Porvair glass vial storage plate combines 96 borosilicate glass vials of 700µl into a rigid polypropylene carrier plate for ease of storage and transportation. The glass vials are round bottomed and the plate can be capped with our matching square-well cap mat to prevent evaporation or contamination. This is the zero-leachates solution for UHPLC and where organic solvents must be stored in a plate footprint.

- *Store aggressive solvents in glass vials*
- *Chemically resistant*
- *No trace impurities for UHPLC*
- *Prevent evaporation with matching cap mat*



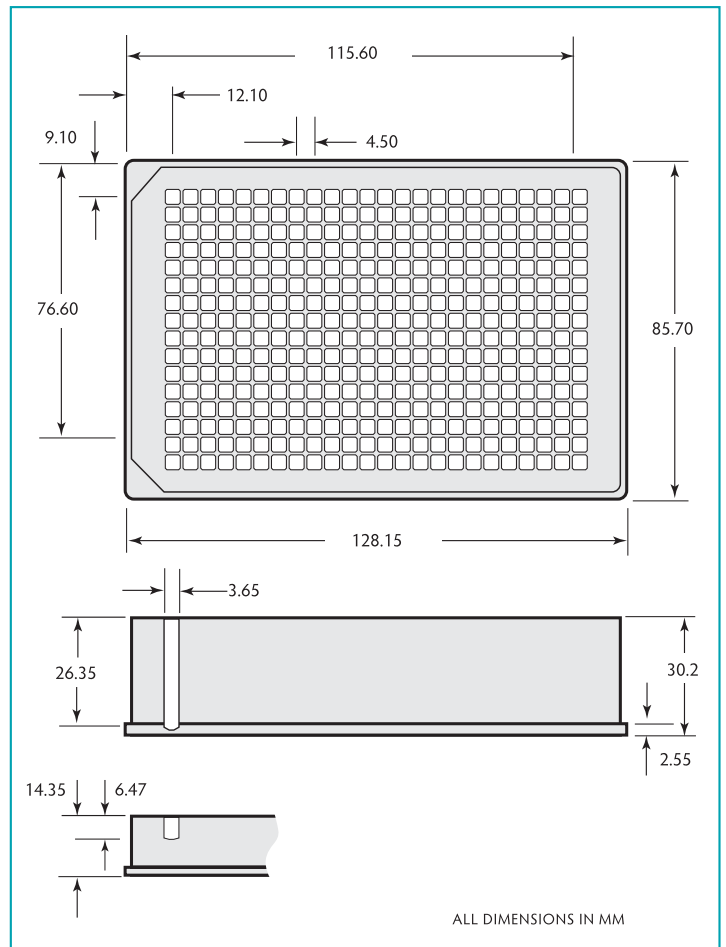
96-well glass vial storage plate

Description	Qty/case	Cat. no.
96-well glass vial storage plate	12	229230
Square well silicone cap mat for 229230	5	229091

384-well

Porvair Sciences has a selection of 384-well polypropylene plates to suit most applications. All of them are made from pre-tested polypropylene in Class 100000 clean rooms.

- Manufactured for high density sample collection / storage
- Two sizes: 58µl and 300µl per well working volume
- Each are designed to allow almost total removal of liquid sample
- Extra flat – allows plate sealing
- Storage temperature down to -80°C
- Available sterile and non sterile
- All manufactured to ANSI/SBS specifications



Storage plates 384-well

Well shape, top & bottom	Working well vol	Sterile	Qty/case	Cat. no.
Square-round	58µl	-	60	224001
Square-V	120µl	-	100	300003
Square-V	300µl	-	48	219040
Square-V	300µl	✓	48	219041

Large volume

The range of large volume plates is designed to meet special requirements. Focused on the combinatorial, environmental and food technology markets, it allows large volumes of samples to be transported in recognised ANSI/SBS format microplates, to allow greater automation. Plates will accept the Porvair universal lid (see page 55). All plates are manufactured from virgin polypropylene, can be heat sealed and stored for prolonged periods at -80°C.

24-well features:

- 24 wells with a working capacity of 10ml/well
- Standard height (44mm) of a deep well plate
- Sterile or non sterile versions
- Lidded version available

48-well features:

- Two versions:
- 5ml/well, 44mm high
- 7ml/well, 68mm high



High volume deep well microplates

Well shape, bottom shape	No of wells	Working well vol	Sterile	Lid	Qty/ case	Cat. no.
Rectangle, V-bottom	24	10ml	–	–	25	360013
Rectangle, V-bottom (bulk pack)	24	10ml	✓	–	25	360115
Rectangle, V-bottom	24	10ml	–	✓	25	360077
Rectangle, V-bottom (single pack)	24	10ml	✓	✓	25	360079
Rectangle, V-bottom (with bar code)	24	10ml	✓	✓	25	360080
Rectangle, round-bottom	24	10ml	–	–	25	360117
Rectangle, V-bottom	48	5ml	–	–	25	360002
Rectangle, V-bottom	48	7ml	–	–	30	360004

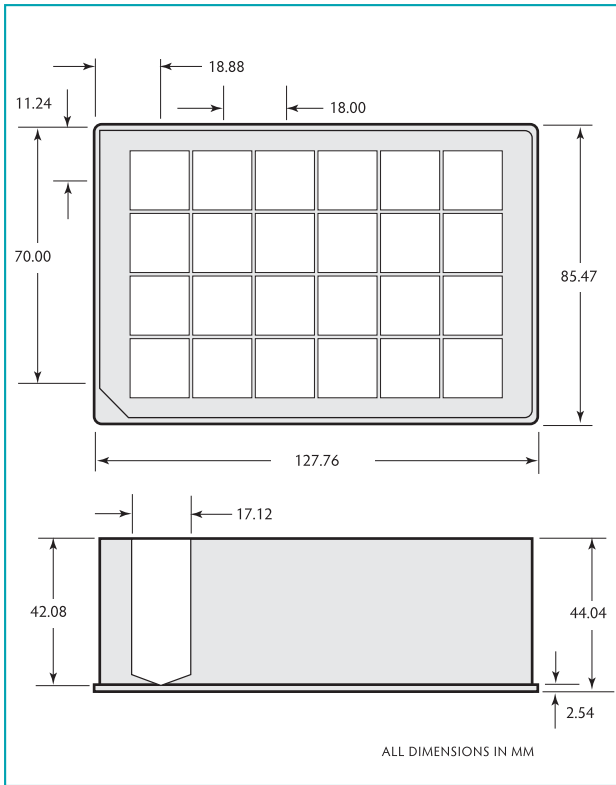
Centrifuge support plate

The support plate is designed to fit into the skirt of the deep well plates. This then allows the plate to be used in a centrifuge without the risk of the plate distorting and causing the well to leak.

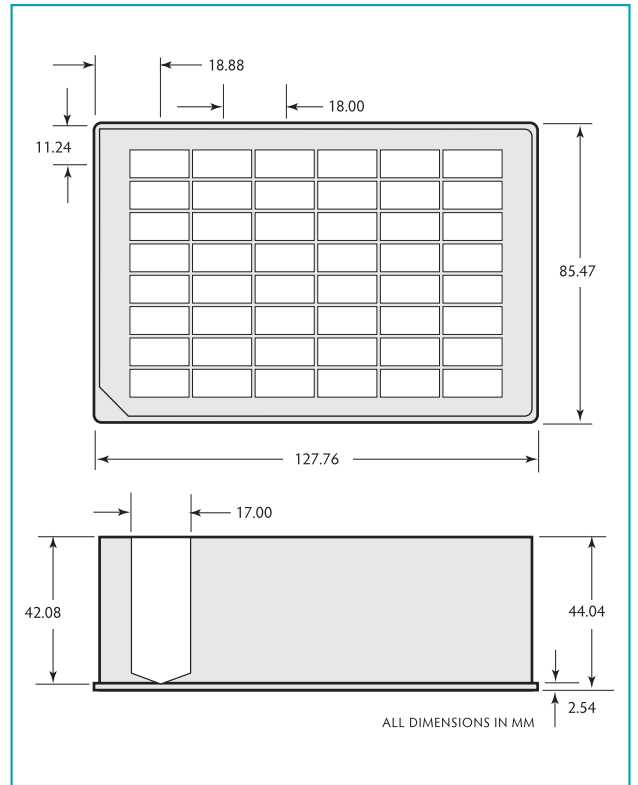
- Available for the 2ml and 1ml square deep well plates
- Easily fitted below plates

Deep well microplate accessories

Description	Quantity/pack size	Cat. no.
Centrifuge support plates for 219008 & 219026	2	228018
Centrifuge support plates for 219009 & 219027	2	228019

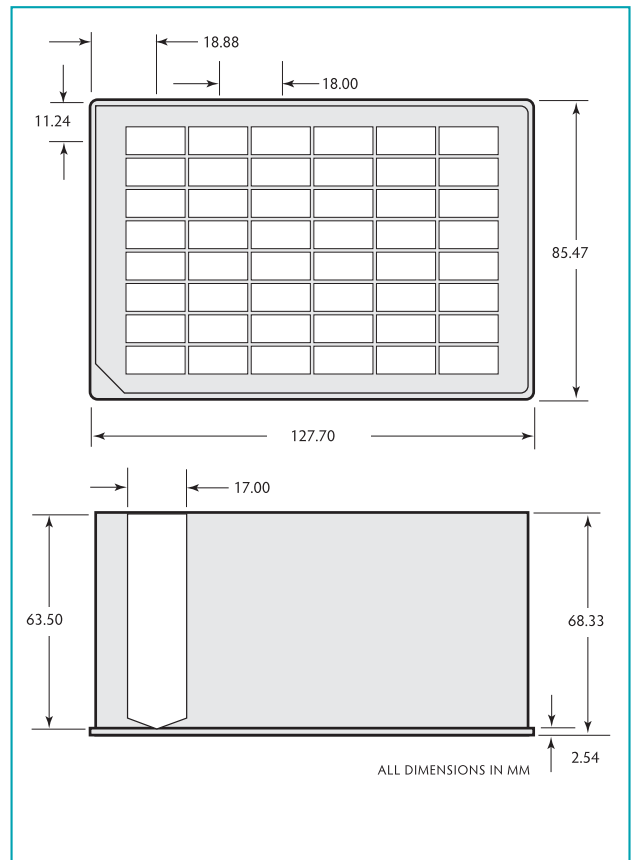
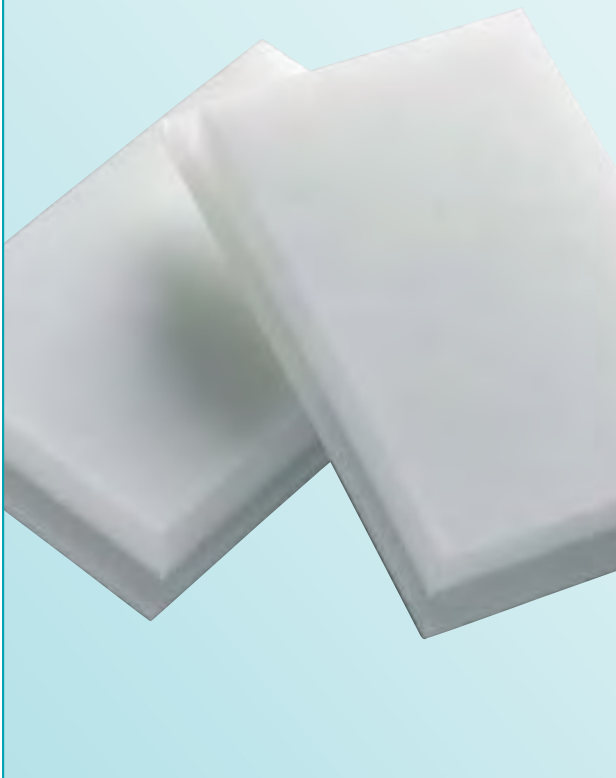


360013



360002

CENTRIFUGE SUPPORT PLATE



360004

PCR plates – polypropylene

Porvair premium PCR plates are made from polypropylene for extra rigidity. These plates are compatible with the majority of 96- and 384-well block PCR and sequencing instruments, including FAST sequencers. Our expanded range includes traditional no-skirt, half-skirt and fully skirted plates with standard 350µl wells and in addition 200µl Low Profile versions of these. The latest 'elevated' or 'chimney' well plates are also catered for with several new products. To ensure full compatibility with robotic systems, these new DNase/RNase- and pyrogen-free thermal cyclers plates feature high rigidity to minimise distortion before and after thermal cycling.

A comprehensive PCR plate selection guide can be found on pages 14 and 15. If you cannot see your sequencer in the list, please contact our Customer Service team at int.sales@porvair-sciences.com who will be pleased to advise you of the most suitable plate for your application and equipment.

Polycarbonate plates remain available; please contact your distributor or Porvair Sciences.



- *Prominent black printed axis*
- *DNase/RNase free*
- *Non-pyrogenic*
- *Range designed to fit a variety of popular thermal cyclers and sequencers*
- *Raised rim for maximum sealing surface*
- *Thin wall design for better heat transfer*
- *96-well have 350µl or 200µl capacity*
- *384-well have a 50µl capacity*
- *All plates conform to ANSI/SBS specification*

PCR plates – polypropylene

Plate description	Qty/pack	Cat. no.
96-well PCR microplate, polypropylene, DNase, RNase free, no skirt, standard profile	100	286101
96-well PCR microplate, polypropylene, DNase, RNase free, no skirt, low profile	100	286102
96-well PCR microplate, polypropylene, DNase, RNase free, no skirt, standard profile, elevated	100	286103
96-well PCR microplate, polypropylene, DNase, RNase free, half skirt, low profile	100	286104
96-well PCR microplate, polypropylene, DNase, RNase free, half skirt, standard profile	100	286105
96-well PCR microplate, polypropylene, DNase, RNase free, half skirt, standard profile, elevated	100	286106
96-well PCR microplate, polypropylene, DNase, RNase free, semi-skirt, low profile, elevated	100	286107
96-well PCR microplate, polypropylene, DNase, RNase free, full skirt, low profile	100	286108
96-well PCR microplate, polypropylene, DNase, RNase free, full skirt, low profile, Megabace™	100	286109
96-well PCR microplate, polypropylene, DNase, RNase free, half skirt, straight sided, standard profile	100	286110
384-well PCR microplate, polypropylene, DNase, RNase free, full skirt, 50µl per well	100	286111
96-well PCR microplate, polypropylene, White, DNase, RNase free, Roche Lightcycler, RTPCR	100	286112
384-well PCR microplate, polypropylene, White, DNase, RNase free, Roche Lightcycler, RTPCR	100	286115
384-well PCR microplate, polypropylene, Black, DNase, RNase free, full skirt	25	500074
384-well PCR microplate, polypropylene, Natural, DNase, RNase free, full skirt	25	500075

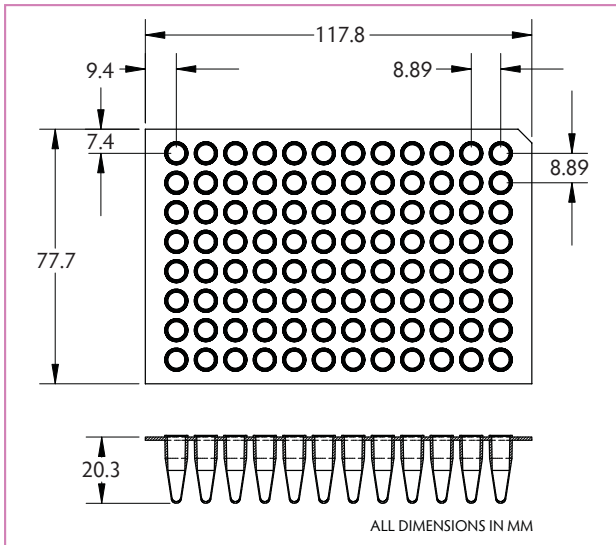
Thermal cycler compatibility guide

96-WELL UNLESS STATED

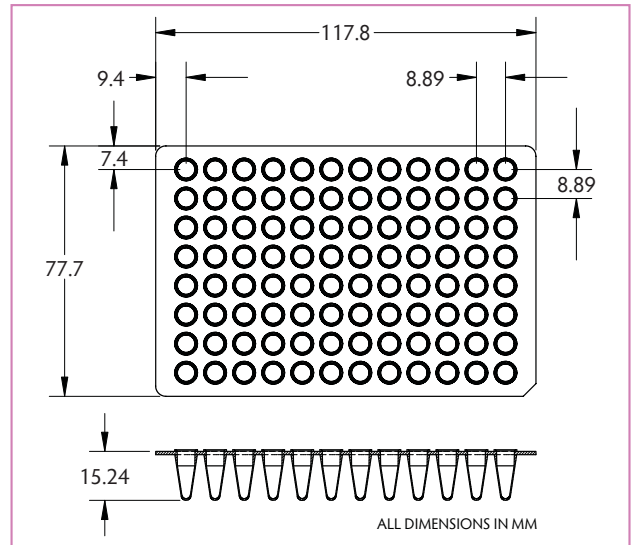
		UNSKIRTED 286101	CHIMNEY TOP 286102	SEMI SKIRT TOP 286103	SEMI SKIRT 286104	SKIRT RAISED EDGE 286105	SEMI SKIRT 286106	SEMI SKIRT 286107	SKIRTED 286108	SEMI SKIRT 286110	SEMI SKIRT WHITE 286111	384-WELL 286112	384-WELL WHITE 286115
Well shape													
Standard well (overall height approx. 21mm, max. capacity > 350µl)		■		■		■	■			■			
Low profile well (overall height approx. 16mm, max. capacity approx. 200µl)			■		■			■	■			50µl	■
Manufacturer	Thermal cycler model												
Applied Biosystems													
Thermal cyclers	2700	■		■		■	■			■		■	
	9600	■		■		■	■			■		■	
	9700	■		■		■	■			■		■	
	9800 'Fast'							■					
	Veriti 0.1ml							■					
	Veriti 0.2ml							■					
	Veriti 384											■	
'Real time' cyclers	5700	■			■		■	■					
	PRISM 7000	■			■		■	■					
	7300	■				■	■	■					
	7500	■				■	■	■					
	7500 'Fast'							■					
	7700	■				■	■	■			■		
	7900HT	■			■		■	■					
	STEP ONE												
	STEP ONE PLUS							■					
Sequencers	PRISM 310	■		■		■	■			■		■	
	PRISM 3100	■		■		■	■			■		■	
	3130(XL)	■		■		■	■			■		■	
	3700	■		■		■	■			■		■	
	PRISM 3730 (XL)	■		■		■	■			■		■	
GE / Amersham													
Sequencers	MegaBACE 500									■			
	MegaBACE 1000									■			
	MegaBACE 4000											■	
Beckman													
Sequencers	CEQ	■											
BiomeRa													
Thermal cyclers	Uno	■	■	■		■			■	■		■	
	Uno II	■	■	■		■			■	■		■	
	T1 Thermal Cycler	■	■	■		■			■	■		■	
	Tgradient	■	■	■		■			■	■		■	
	Trobot	■	■	■		■			■	■		■	
Bio-Rad/MJ Research													
Thermal cyclers	Gene Cyclers	■		■		■	■						
	PTC-100	■		■		■	■						
	PTC-200	■	■	■		■			■	■		■	
	PTC-225 TETRAD	■	■	■		■			■	■		■	
	Dyad/Dyad Disciple	■	■	■		■			■	■		■	
	iCYCLER	■		■		■			■	■		■	
	MyCycler	■		■		■			■	■		■	
	Mini Gradient	■		■		■			■	■		■	
	Personal	■	■	■		■			■	■		■	
	DNA Engine family	■	■	■		■			■	■		■	
	C1000/S1000	■	■	■		■			■	■		■	
'Real time' cyclers	Opticon/Opticon 2	■	■	■		■			■	■		■	
	Chromo-4	■	■	■		■			■	■		■	
	iCYCLER	■		■		■			■	■		■	
	MyiQ	■		■		■			■	■		■	
	iQ5	■		■		■			■	■		■	
	CFX96								■	■		■	
	CFX384								■	■		■	
Sequencers	BaseStation								■				

UNSKIRTED
286101
UNSKIRTED
286102
CHIMNEY TOP
286103
SEMI SKIRT
286104
SEMI SKIRT
286105
SKIRT RAISED EDGE
286106
SEMI SKIRT
286107
SKIRTED
286108
SEMI SKIRT
286110
384-WELL
SEMI SKIRT WHITE
286111
286112
384-WELL WHITE
286115

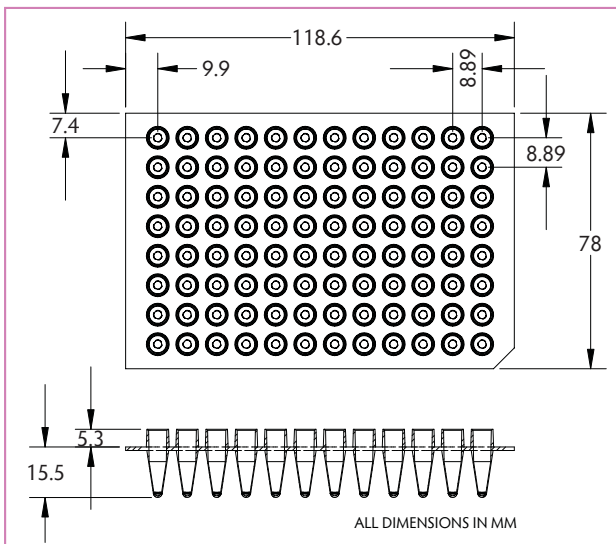
Manufacturer	Thermal cycler model	UNSKIRTED	UNSKIRTED	CHIMNEY TOP	SEMI SKIRT	SEMI SKIRT	SKIRT RAISED EDGE	SEMI SKIRT	SKIRTED	SEMI SKIRT	384-WELL	SEMI SKIRT WHITE	384-WELL WHITE	286115
Corbett Research														
Thermal cyclers	PalmCycler 96		■											
	PalmCycler 384									■	■		■	
	RotorGene													
Eppendorf														
Thermal cyclers	Mastercycler	■	■	■						■	■			
	Mastercycler Gradient	■	■	■		■	■			■	■			
	Mastercycler ep	■	■	■						■	■			
	Mastercycler M384												■	
'Real time' cyclers	Mastercycler ep Realplex								■	■				
Ericom														
Thermal Cyclers	Power Block I	■	■	■	■	■	■	■						
	Deltacycler I	■	■	■	■	■	■	■						
	Deltacycler II	■	■	■	■	■	■	■						
	Single Block	■	■	■	■	■	■	■						
	Twin Block	■	■	■	■	■	■	■						
Esco														
Thermal Cyclers	Swift	■		■							■	■		
Flexi														
Thermal Cyclers	Gene	■		■						■	■	■		
	Genius	■		■						■	■	■		
GRI G-Sturm														
Thermal cyclers	GS1	■	■	■	■	■	■	■			■			
	GS4	■	■	■	■	■	■	■			■			
	GSX	■	■	■	■	■	■	■			■			
	GSXs	■	■	■	■	■	■	■			■			
MWG														
Thermal cyclers	Primus 96	■	■	■	■	■	■	■		■	■			
	Primus 384												■	
Roche														
'Real time' cyclers	LightCycler 480												■	■
Stratagene														
Thermal cyclers	Robocycler 96	■		■	■	■	■	■			■	■		
	Robocycler Gradient	■		■	■	■	■	■		■	■			
'Real time' cyclers	Mx4000 and Mx3000	■	■	■	■	■	■	■						
TaKaRa														
Thermal cyclers	TP240	■	■	■	■	■	■	■		■	■			
	TP3000	■	■	■	■	■	■	■		■	■			
Techn														
Thermal cyclers	Touchgene	■	■	■	■	■	■	■			■	■		
	Cycolgene	■	■	■	■	■	■	■			■	■		
	Genius	■	■	■	■	■	■	■			■	■		
	Genius Quad	■	■	■	■	■	■	■			■	■		
	Genius (TC412)	■	■	■	■	■	■	■		■	■			
	Flexigene	■	■	■	■	■	■	■		■	■		■	
	Touchgene X	■	■	■	■	■	■	■		■	■		■	
	Touchgene Gradient (TC512)			■	■	■	■	■	■		■	■		■
'Real time' cyclers	Quantica		■							■				
Thermo Hybaid														
Thermal cyclers	PCR Sprint	■	■	■	■	■	■	■		■	■			
	MBS Satellite (Multiblock) System	■	■	■	■	■	■	■		■	■		■	
	Px2 and PxE	■	■	■	■	■	■	■		■	■		■	
	PCR Express and Omni-E	■	■	■	■	■	■	■		■	■		■	
	Touchdown	■	■	■	■	■	■	■		■	■		■	
	Omnigene	■	■	■	■	■	■	■		■	■		■	
Transgenomic														
Sequencers	WAVE System									■				



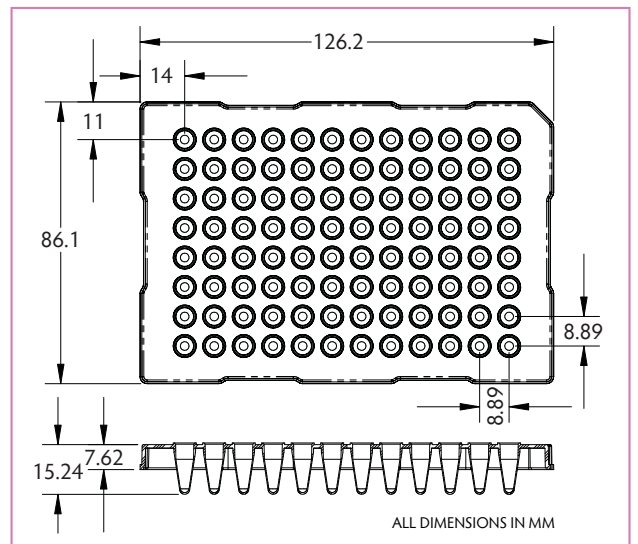
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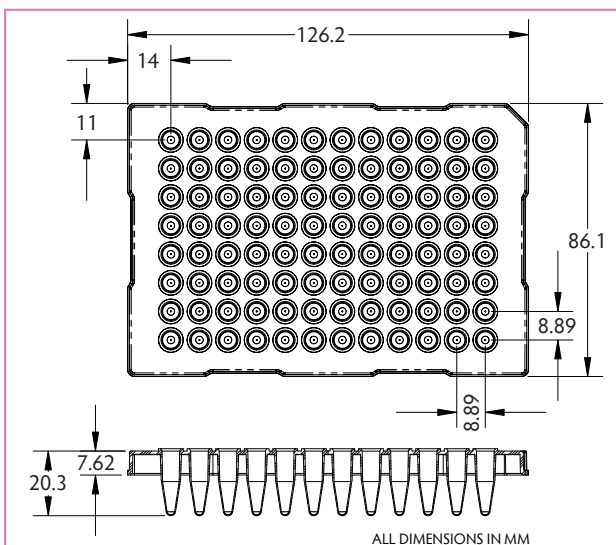
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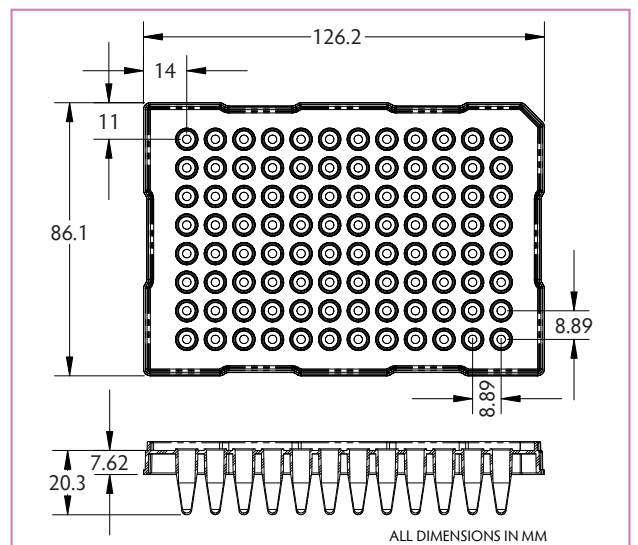
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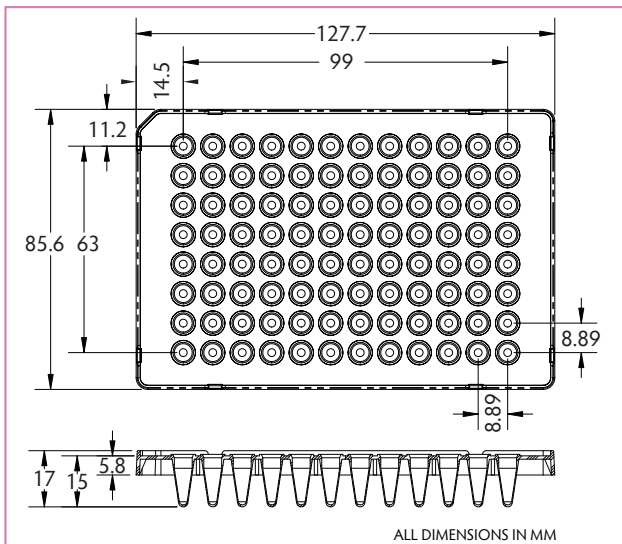
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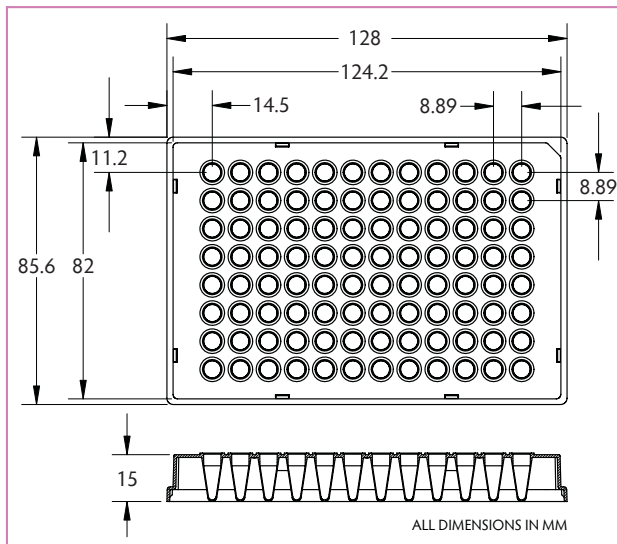
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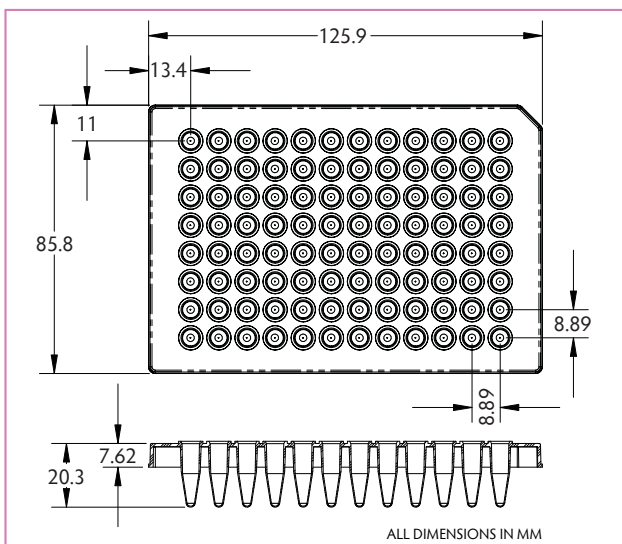
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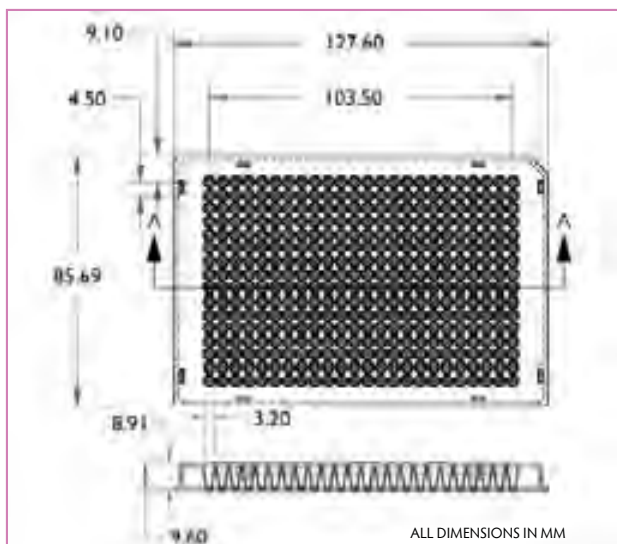
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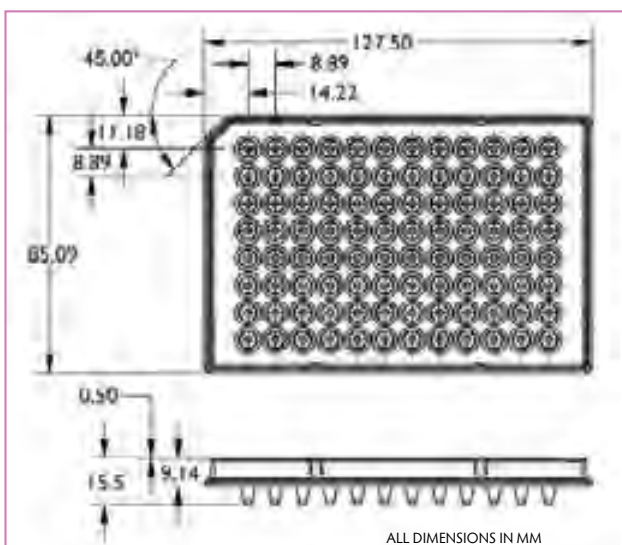
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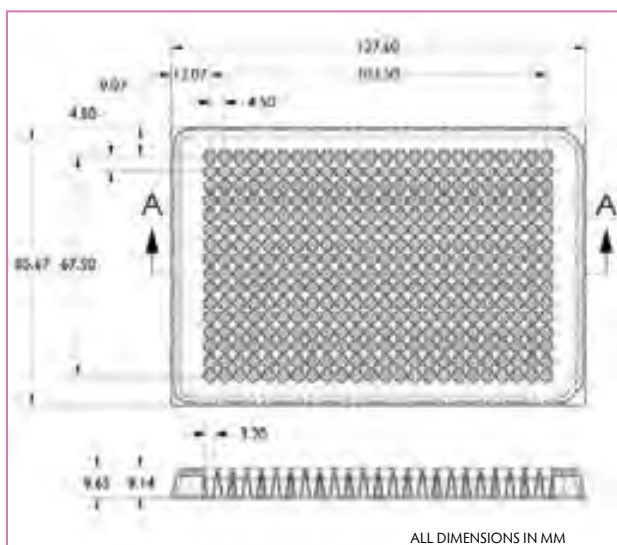
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286112



286115

Choosing the correct assay plate

Choosing the correct microplate for your application can mean the difference between indifferent and great results.

There are three basic methods of obtaining useful optical data from microplate-based samples. The simplest method is absorbance measurement. Where greater sensitivity is required, fluorescence measurements are preferred. Sensitivity can be ten times greater than simple absorbance measurements. The third method involves luminescence, a naturally occurring phenomenon exhibited by certain animal and plant species which can emit light. This is a biological adaptation of a process which can also be seen as purely chemically-driven reactions, in which case it is referred to as chemiluminescence.

Microplate readers are designed to read from either the top or the bottom of a microplate. Top reading instruments rely on measuring reflected light above the wells. A good solid bright white plate is best for these absorbance measurements and a solid black plate for fluorescence readings. Bottom reading units illuminate the sample from above and then use detectors placed below the plate to measure the absorption or fluorescence/luminescence emission. This necessitates the use of clear-bottomed plates. The requirement is to transmit the light wavelengths of interest.

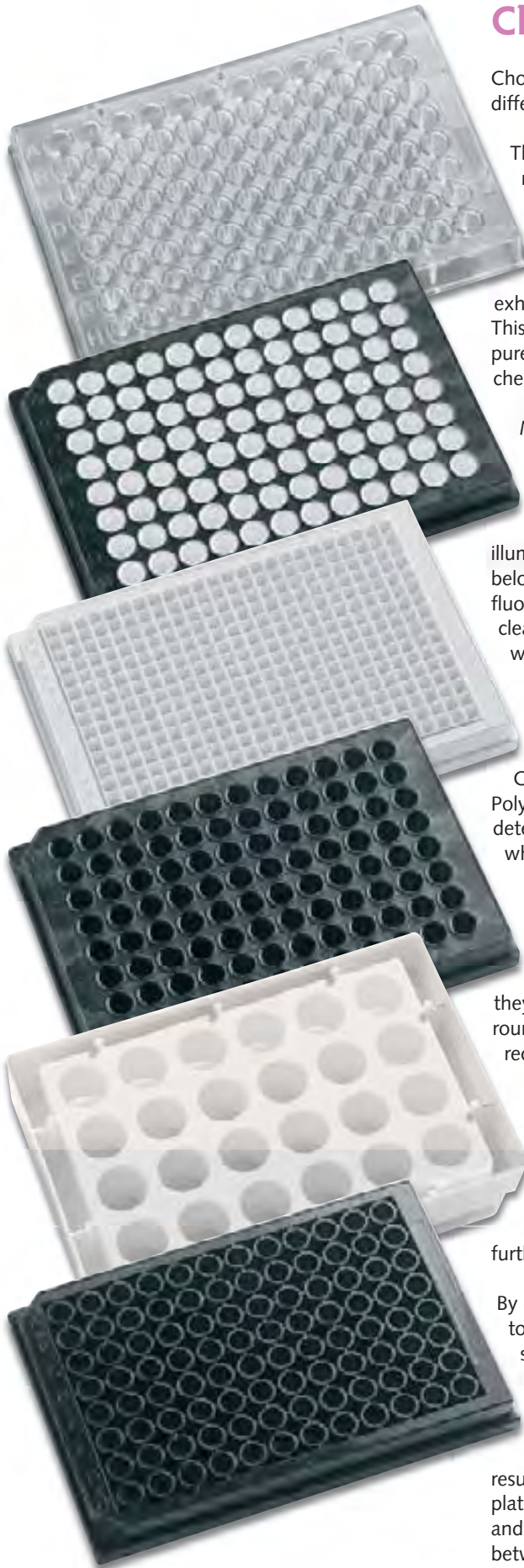
Visible wavelength range (900-350nm) measurements require only clear plastic bases, whilst readings between 220nm and 350nm will require a UV-transparent material. This can be Quartz sheet or a modern polymer such as Cyclo-Olefin Co-Polymer (COP/COC). Optical glass sheet is used where visible range detection is combined with confocal optics or whole plate imaging which requires a very clear uniformly-flat base.

Simple 96-well microplates for ELISA type assays are made from solid clear polystyrene with no additives. These are adequate for clinical and diagnostic tests, ELISA assays and any colour end-point determination with relatively high absorbance. Typically they are available with flat well bottoms, giving high surface area, round well bottoms for good mixing or V-wells for high liquid recovery.

Crosstalk can also be an issue in bottom-reading absorbance and fluorescence measurements. To address this applications challenge, Porvair Sciences has developed the Krystal 2000 zero-crosstalk plates in which individual clear wells are moulded into either a white or black matrix. The black or white base material also projects down below the clear well bottom to further reduce the possibility of crosstalk.

By carefully selecting the correct plate type for the assay, it is possible to significantly improve results. By following the simple guidelines set out here, those tasked with assay development can ensure that their final assay has the best possible chance of success.

The table summarizes the choices available for Assay Plate selection and indicates the plate type most likely to give the best results. Porvair Sciences will be happy to supply samples of their plates for evaluation free of charge, as different detection systems and differing assay development may lead to variances in results between ostensibly similar plate types.



Choosing the correct assay plate

Absorbance assays –

Top Reading Instruments

High signal from majority of wells e.g. test kits, ELISA
Use a simple solid clear plate

Low signal from some or all wells e.g. kinetics or genetic marker assays
Use a solid white plate to boost the signal

Bottom Reading Instruments

Normal visualisation: White plates with clear plastic bottoms

Confocal visualisation: White plates with glass bottoms

For very sensitive assays - Zero Crosstalk white plate with individual clear wells

Fluorescence assays –

Top Reading Instruments

Use a solid black plate

Bottom Reading Instruments

Visible wavelength range 350-700nm
High signal from majority of wells e.g. GFP, Reporter Gene kits,
Use a black clear-bottomed plate

Low signal from some or all wells e.g. poor sensitivity assays, low specificity
Use a black Zero Crosstalk clear bottom plate to boost the signal-to-noise ratio

UV Wavelength range 220-350nm
Use black clear-bottomed COP plates

Confocal or whole plate imaging:
Use black glass-bottomed plates

Luminescence assays –

Top reading instruments

Bio- and Chemi- Luminescence use the same plates
Good signal
Use solid white plates

Poor signal or high dynamic range across the plate
Use solid Black with White wells

Bottom Reading Instruments

Use a white clear-bottomed plate

An introduction to clear bottomed assay microplates

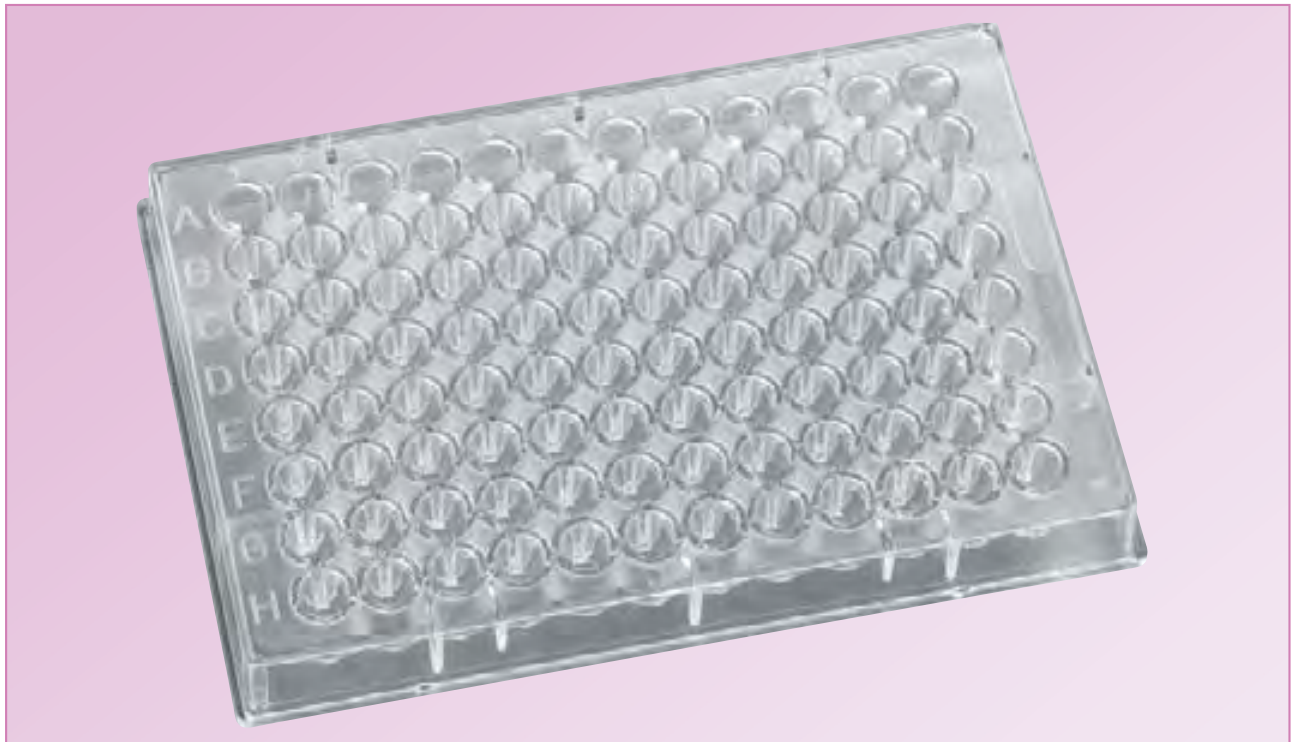
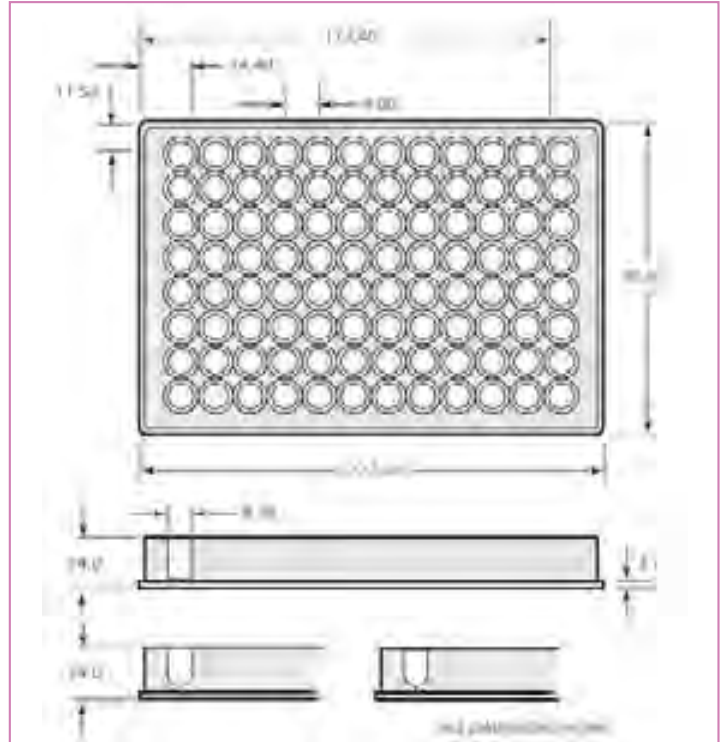
Porvair Krystal series clear bottom plates are now recognised as industry-leading tools for Pharma drug discovery and screening. Our standard clear polystyrene bottom plates have bases just 0.4mm thick and are moulded from highly polished tools to reduce flow lines, artefacts and scratches, guaranteeing good results with all types of bottom-reading instruments. For the more modern demanding confocal readers, Porvair Glass Bottom plates have been shown by leading research institutes to be unsurpassed for flatness, linearity and optical clarity. Our sparkling pure borosilicate glass is just 175µm thick with a flatness tolerance across the plate of +/- 15µm ensuring superb crisp images every time.

We supply our Krystal clear plates treated for cell culture with a low pressure gas plasma that produces an even surface treatment right across the plate. It is particularly suited to cell lines which do not grow easily on plastics. Our plastic-bottomed plates are ultrasonically welded together – a tried and tested method which both guarantees a perfect seal every time and eliminates the inconsistencies seen with laser membrane welding used by other manufacturers. Only biocompatible adhesives are used for glass bottom plates, cured by UV radiation to ensure that the finished plates are solvent-free, have very low autofluorescence and will allow good cell growth.

96-well clear plates

For routine adsorption, absorption, ELISA, mixing and storage applications the standard range of 96-well assay plates offers the perfect mix of affordability and high quality.

- Manufactured from high quality crystal polystyrene
- Flat bottom for spectrophotometric work
- V-bottom minimizing residual liquid
- Round (U) bottom for cell/particulate collection
- Robot compatible
- Working volumes from 275 μ l down to 10 μ l



Solid assay plates

Plate description	Sterile	Colour	Qty/pack	Cat. no.
96 wells of 350 μ l with a flat bottom	–	Clear	100	208004
96 wells of 270 μ l with a round bottom	–	Clear	100	209004
96 wells of 220 μ l with a V bottom	–	Clear	100	210004
96 wells of 350 μ l with a flat bottom, medium bind polystyrene for ELISA tests	✓	Clear	200	500045
96 wells of 350 μ l with a flat bottom, standard bind polystyrene for ELISA tests	✓	Clear	200	500046

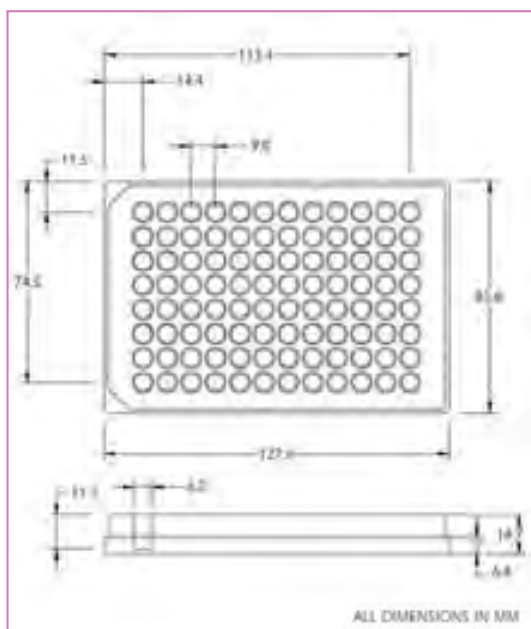
96-well black, white & black with white wells

Porvair Sciences range of solid bottom 96-well assay plates is specifically designed for absorbance, fluorescence, luminescence and scintillation applications. The design uses the most popular 96-well format with standard 'chimney' wells to overcome optical crosstalk and contamination.

These plates are designed to give optimum results from any instrument which reads from the top of the plate.

The acclaimed composite black/white plate has been shown to be ten times more sensitive than a standard white plate for chemi-luminescence assays.

- Black plates designed for top reading fluorescence instruments
- Black plates have low background fluorescence and minimise light scattering
- White plates maximise signal for luminescence readers
- Highly polished well to give better readings
- Specially designed plate featuring a white well set in a black matrix to overcome the problem of a very high luminescence causing false positives
- Working volumes of 350µl/well
- Complies with the standard ANSI/SBS format
- Alphanumerically labelled wells mean samples can be easily traced



Solid polystyrene assay plates

Plate description	Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
96 wells	White	–	–	–	50	204503
96 wells	White	–	–	–	100	204003
96 wells	White	Hi protein binding	–	–	100	204006
96 wells	White	Tissue culture	✓	✓	50	204512
96 wells	White	Tissue culture	✓	✓	100	204012
96 wells	Black	–	–	–	50	205503
96 wells	Black	–	–	–	100	205003
96 wells	Black	Hi protein binding	–	–	100	205006
96 wells	Black	Tissue culture	✓	✓	50	205512
96 wells	Black	Tissue culture	✓	✓	100	205012
96 wells	Black with white wells	–	–	–	100	301004

384-well plates

384-well assay plates from Porvair Sciences are available in black, white and clear. These have been optimised for fluorescence, luminescence/scintillation and ELISA/turbidity measurements respectively. There are two working volumes: 30µl/well or 120µl/well. All 384-well assay plates are available in standard, high bind and tissue culture treated formats.

NEW

Very low volume 5µl clear
TC plate 500079



Round well low volume

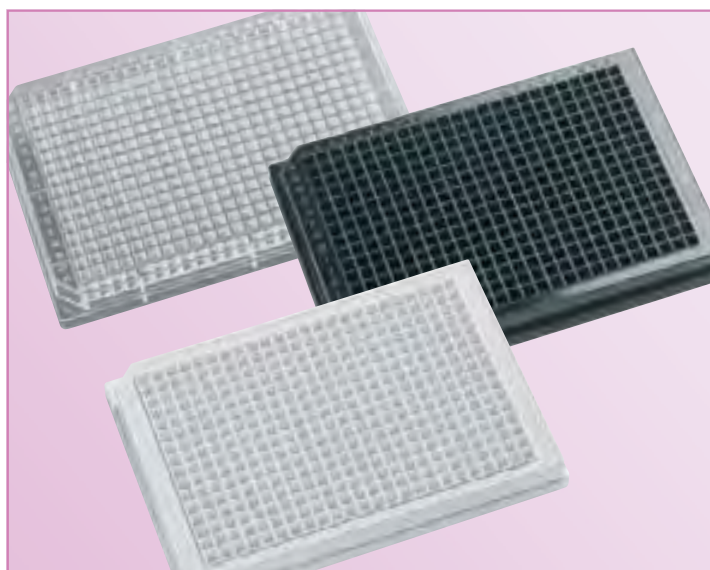
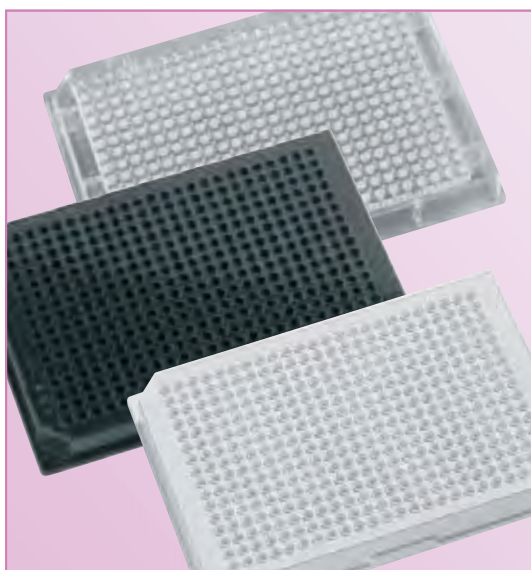
The low volume 384-well assay plate is designed for high throughput screening with 30µl total volume to reduce the amount of sample and reagent required for the assay.

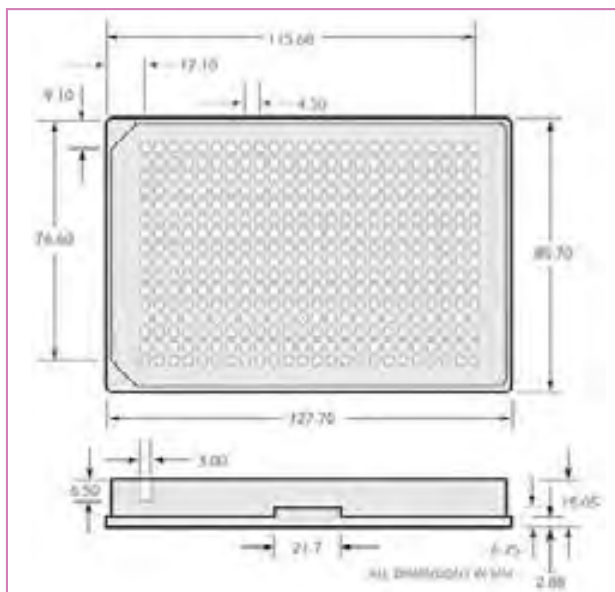
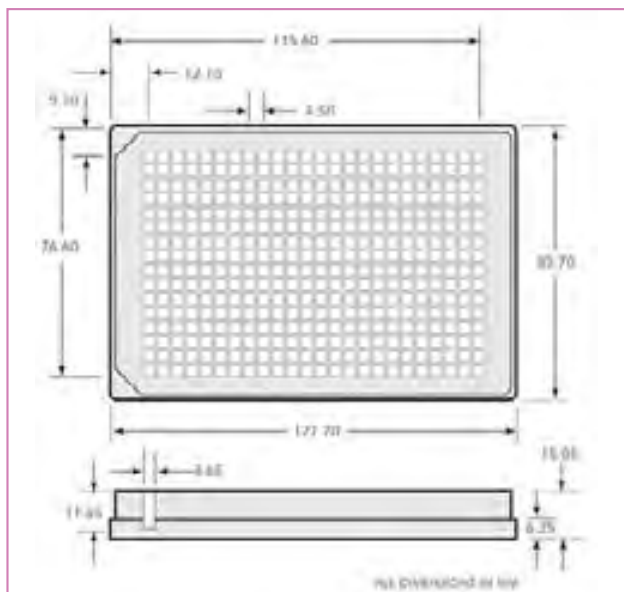
- Specially rounded well to allow pipette tip access to the bottom of the well without interference
- Rounded edges to reduce droplet formation
- Provides a total liquid capacity of 30µl or 5µl per well
- Unique moulding technique to achieve superb flatness to a tolerance of +/-0.2mm
- Standard height plate (14.7mm) for greater ease of automation
- Standard ANSI/SBS format

Square well plates

The 384-well format, with its higher density of wells, allows more work to be carried out in a standard sized plate, aiding higher throughput. Well volume is 120µl per well. All of these plates are manufactured from high quality polystyrene.

- Designed to reduce well-to-well crosstalk
- Black plates have low background fluorescence and minimise light scattering
- White plates enhance bio- & chemi-luminescence signals and have low background luminescence and fluorescence
- Well working volumes of 100µl
- Rounded square at the well bottom to reduce wicking
- Low residual volume
- Designed to the standard ANSI/SBS format
- Alphanumerically labelled wells mean samples can be stored and easily traced





120µl/well

30µl/well

Solid assay plates

	Plate description	Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
S Q U A R E W E L L	384 wells of 120µl	Clear	-	-	-	50	221503
	384 wells of 120µl	Clear	-	-	-	100	221003
	384 wells of 120µl	Clear	Hi protein bind	-	-	100	221012
	384 wells of 120µl	Clear	High bind with lid	-	✓	50	221006
	384 wells of 120µl	Clear	Tissue culture	✓	✓	50	221509
	384 wells of 120µl	Clear	Tissue culture	✓	✓	100	221009
	384 wells of 120µl	White	-	-	-	50	222503
	384 wells of 120µl	White	-	-	-	100	222003
	384 wells of 120µl	White	Hi protein bind	-	-	100	222012
	384 wells of 120µl	White	Hi protein bind with lid	-	✓	50	222006
	384 wells of 120µl	White	Tissue culture	✓	✓	50	222509
	384 wells of 120µl	White	Tissue culture	✓	✓	100	222009
	384 wells of 120µl	Black	-	-	-	50	223503
	384 wells of 120µl	Black	-	-	-	100	223003
	384 wells of 120µl	Black	Hi protein bind	-	-	100	223012
	384 wells of 120µl	Black	Hi protein bind with lid	-	✓	50	223006
384 wells of 120µl	Black	Tissue culture	✓	✓	50	223509	
384 wells of 120µl	Black	Tissue culture	✓	✓	100	223009	
R O U N D W E L L	384 wells of 30µl	Clear	-	-	-	50	221103
	384 wells of 30µl	Clear	Tissue culture	✓	✓	50	221109
	384 wells of 30µl	White	-	-	-	50	222103
	384 wells of 30µl	White	Tissue culture	✓	✓	50	222109
	384 wells of 30µl	Black	-	-	-	50	223103
	384 wells of 30µl	Black	Tissue culture	✓	✓	50	223109
	384 wells of 5µl	Clear	Tissue culture	✓	✓	180	500079

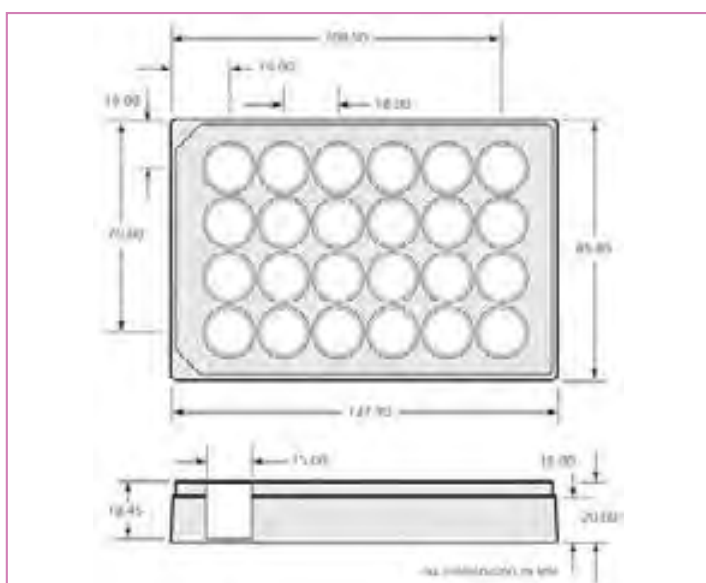
24-well Krystal™ black & white

Clear bottom plates allow the cells grown on the bottom surface to be viewed using an inverse microscope. In addition, light-emitting assays can be measured from the bottom.

Porvair Sciences collection of clear bottom 24-well Krystal plates are optimised for fluorescence and luminescence. The special design of the plate virtually eliminates well-to-well light crosstalk inherent with other clear-bottomed microplate designs, enabling unmatched accuracy, higher sensitivity and better repeatability of photometric readings.

For photometric applications where samples are typically large, Porvair Sciences range of unique black or white Krystal 24 plates provides a perfect solution. Offering 24 high volume (3.1ml) wells in the same convenient footprint of a standard 96-well plate, the Krystal 24 provides a large surface area per well, enabling efficient cell growth. All tissue-culture treated plates are supplied lidded and sterile, in individual bags.

- Opaque walls to prevent well-to-well crosstalk
- Clear plate bottom permits direct microscopic viewing
- Base plate thickness 0.75mm
- For use with top or bottom reading instruments
- Conforms to the standard ANSI/SBS format
- Well volume of 3.1ml
- Constructed with ultra-pure polystyrene components polished to give exceptional photometric performance and optimised for cell growth



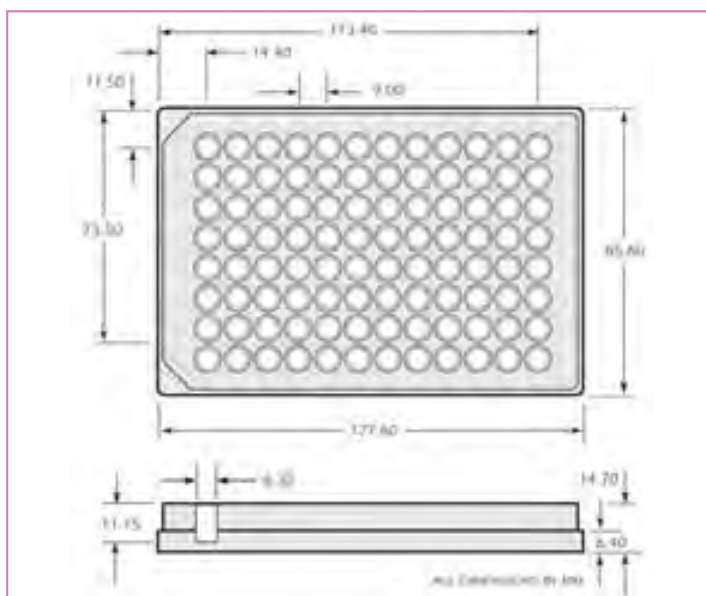
Krystal™ 24-well

Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
White	–	–	–	68	303002
White	Hi protein binding	–	–	68	303004
White	Tissue culture	✓	✓	56	303006
Black	–	–	–	68	303008
Black	Hi protein binding	–	–	68	303010
Black	Tissue culture	✓	✓	56	303012

96-well Krystal™ black and white

Porvair Sciences clear bottom 96-well Krystal plates are optimised for fluorescence and luminescence. Proprietary ultra-sonic welding is used to assemble the clear bases to the solid top plate in our clean room. This design provides flat, optically clear bases to each well with no leakage, enabling excellent accuracy and reproducibility of photometric readings. All tissue-culture treated plates are supplied lidded and sterile, in individual bags.

- Opaque walls to prevent well-to-well crosstalk
- Clear plate bottom permits direct microscopic viewing
- Thickness of bottom 0.75mm
- For use with top or bottom reading instruments
- Standard ANSI/SBS format
- Well volume of 350µl
- Constructed from ultra pure grade polystyrene



Krystal™ 96-well

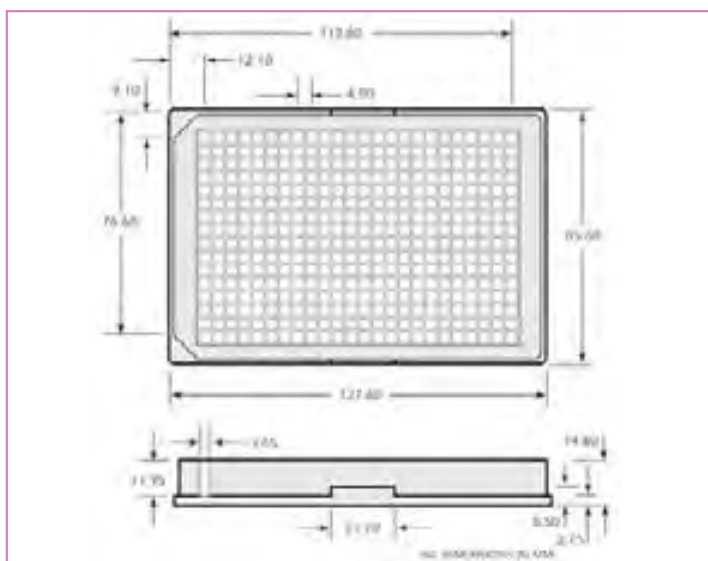
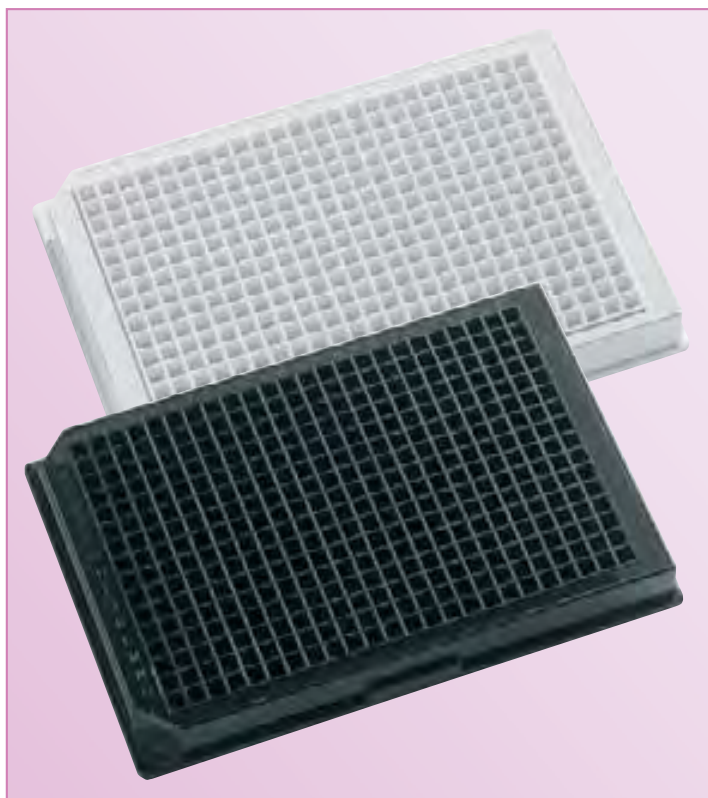
Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
White	–	–	–	50	214503
White	–	–	–	100	214003
White	Tissue culture	✓	✓	50	214506
White	Tissue culture	✓	✓	100	214006
White	Tissue culture	✓	✓	100 (4 x pack of 25)	214030
Black	–	–	–	50	215503
Black	–	–	–	100	215003
Black	Tissue culture	✓	✓	50	215506
Black	Tissue culture	✓	✓	100	215006
Black	Tissue culture	✓	✓	100 (4 x pack of 25)	215030

384-well Krystal™ black and white

The Krystal 384-well microplate range incorporates novel square wells with a large liquid capacity of 120µl per well, increasing the achievable sensitivity of most HTS assays.

Using a proprietary manufacturing technique, the Krystal 384 offers market leading plate flatness (+/- 0.1mm tolerance) that translates into a significant increase in measurement precision and elimination of read errors when performing cell based assays using fluorescent or luminescent imaging. All tissue-culture treated plates are supplied lidded and sterile, in individual bags.

- Opaque walls to prevent well-to-well crosstalk
- Clear plate bottom permits direct microscopic viewing
- Thickness of bottom 0.40mm
- For use with top or bottom reading instruments
- Maintaining the standard ANSI/SBS format
- Well volume of 120µl
- Constructed from ultra pure grade polystyrene

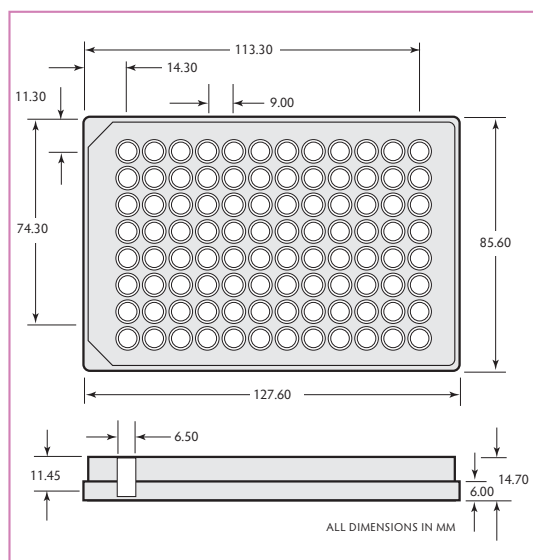


Krystal™ 384-well

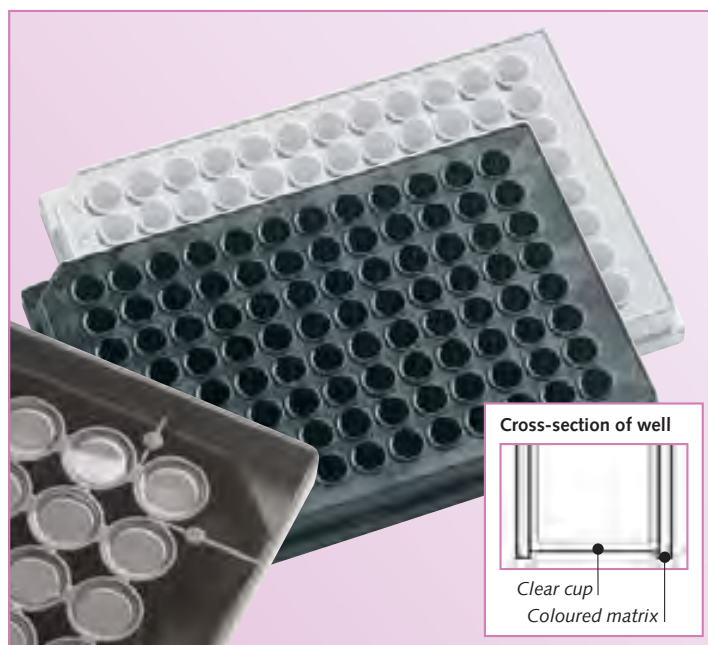
Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
White	–	–	–	100	311001
White	Tissue culture	✓	✓	50	311503
White	Tissue culture	✓	✓	100	311003
White	Tissue culture	✓	✓	100 (4 x pack of 25)	311030
Black	–	–	–	100	312001
Black	Tissue culture	✓	✓	50	312503
Black	Tissue culture	✓	✓	100	312003
Black	Tissue culture	✓	✓	100 (4 x pack of 25)	312030

96-well Krystal™ 2000 black and white

The unique Krystal 2000 plate range from Porvair Sciences has been optimised for luminescence and fluorescence assays. A patented manufacturing process, using a 'two-shot' mould, provides clear, individual wells in an opaque matrix. The special design of the plate totally eliminates the well-to-well optical crosstalk inherent with other clear-bottomed microplate designs, giving unmatched accuracy, sensitivity and repeatability of photometric readings. Very high signal-to-noise ratio and low detection limits can be achieved with this superb plate. All tissue-culture treated plates are supplied lidded and sterile, in individual bags.



- Raised rims to prevent well-to-well crosstalk
- Lowered bottom rim to stop lateral light piping
- Clear well bottom permits direct microscopic viewing
- For use with top or bottom reading instruments
- Designed to the standard ANSI/SBS format
- Total well volume of 350µl
- White matrix provides for maximum reflectivity, allowing high sensitivity luminescence assays
- Black matrix provides a quenching of background fluorescence, reducing false positives
- Constructed from ultra pure grade polystyrene



Krystal™ 2000 96-well

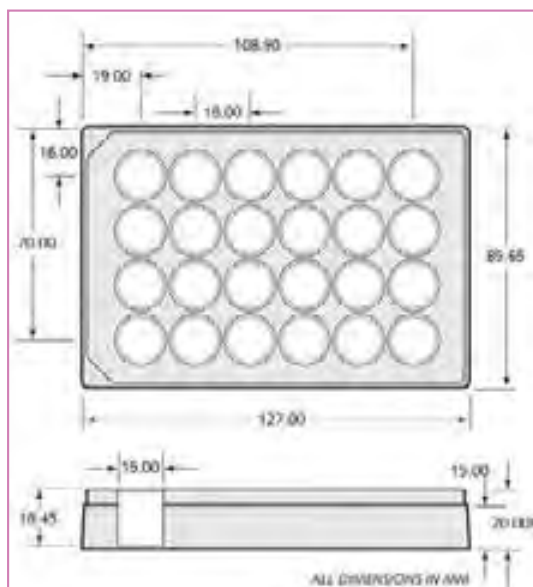
Colour	Treatment	Sterile	Lid	Qty/pack	Cat. no.
White	–	–	–	50	301510
White	–	–	–	100	301010
White	Hi protein binding	–	–	100	301018
White	Tissue culture	✓	✓	50	301512
White	Tissue culture	✓	✓	100	301012
White	Tissue culture	✓	✓	100 (4 x pack of 25)	301070
Black	–	–	–	50	301502
Black	–	–	–	100	301002
Black	Hi protein binding	–	–	100	301014
Black	Tissue culture	✓	✓	50	301506
Black	Tissue culture	✓	✓	100	301006
Black	Tissue culture	✓	✓	100 (4 x pack of 25)	301060

Krystal™ glass bottom plates

Manufactured for whole-plate CCD imaging and laser detection applications, Krystal glass bottom plates consist of a polystyrene upper part and a clear borosilicate glass sheet fixed to the base with a proprietary adhesive. This process results in consistent flatness of the base and gives improved light transmission whilst maintaining a flat optical plane for growing cells. The nominal cut-off wavelength of 335nm allows most fluorescence assays to be excited or read through the glass bottom. All plates are supplied lidded.

- 175µm glass thickness
- +/- 15µm flatness across base
- 335nm UV optical cut-off
- Industry-standard well layout
- Very low autofluorescence
- High degree of planar flatness
- Biocompatible adhesive
- Resistant to alcohol, DMSO and PBS
- Robot friendly
- Manufactured to ANSI/SBS specification

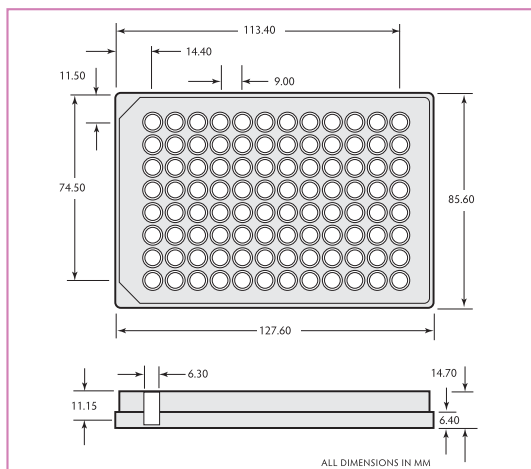
Krystal™ 24-well glass bottom plates



Glass bottom assay plates

Number of wells	Description	Sterile	Lid	Pack size	Cat. no.
24 wells	Black with lid, single pack	–	✓	10	324041
24 wells	Black with lid, single pack	✓	✓	10	324042
24 wells	White with lid, single pack	–	✓	10	324051
24 wells	White with lid, single pack	✓	✓	10	324052

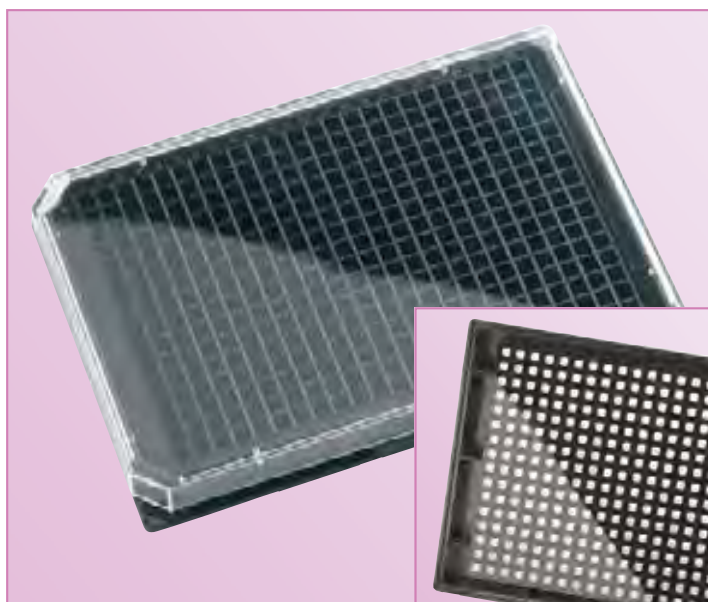
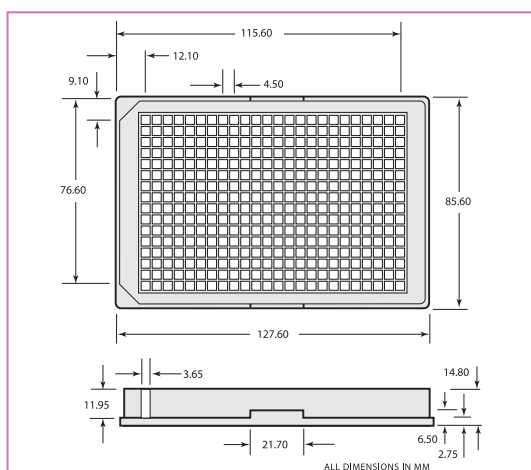
Krystal™ 96-well glass bottom plates



Glass bottom assay plates

Number of wells	Description	Sterile	Lid	Pack size	Cat. no.
96 wells	Black with lid, single pack	–	✓	10	324001
96 wells	Black with lid, single pack	✓	✓	10	324002
96 wells	White with lid, single pack	–	✓	10	324011
96 wells	White with lid, single pack	✓	✓	10	324012

Krystal™ 384-well glass bottom plates



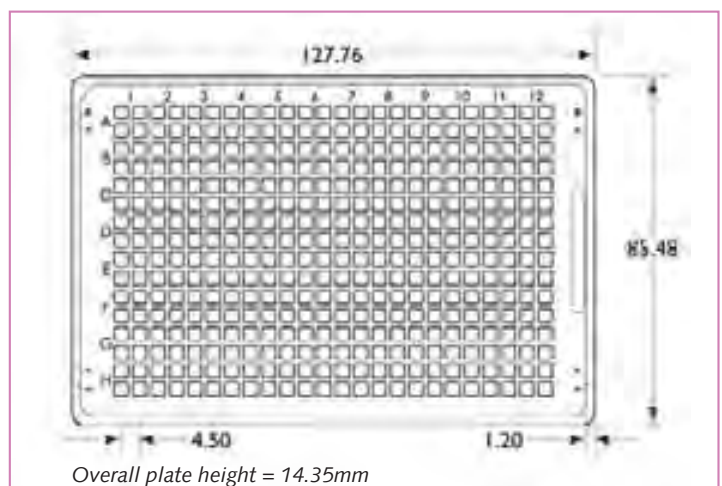
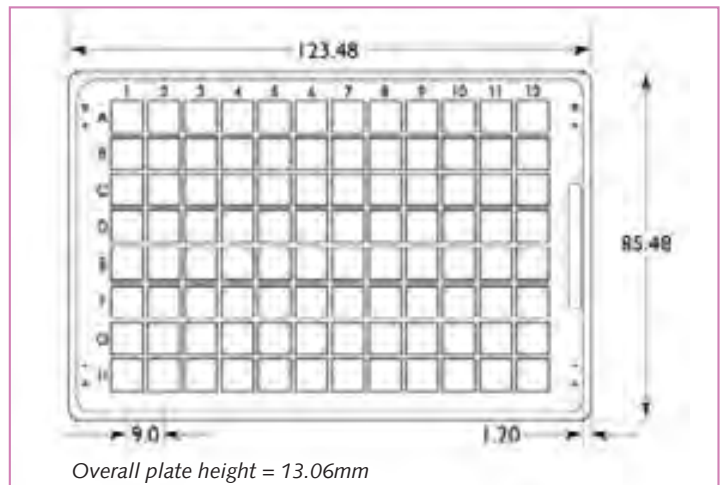
Glass bottom assay plates

Number of wells	Description	Sterile	Lid	Pack size	Cat. no.
384 wells	Black with lid, single pack	–	✓	10	324021
384 wells	Black with lid, single pack	✓	✓	10	324022
384 wells	White with lid, single pack	–	✓	10	324031
384 wells	White with lid, single pack	✓	✓	10	324032

Krystal UV clear bottomed microplates

Recently, scientists have begun using assay chemistries which require excitation or detection wavelengths in the far UV region, below 350nm. To enable our customers to develop assays in this area, Porvair Sciences has introduced a very high specification range of COP-bottomed, UV-transparent microplates. Precision engineered and assembled, these plates are available in 96- and 384-well black matrix only for the most sensitive UV range fluorescence assays using whole-plate imaging or confocal microscopy.

- 220nm far UV cut-off
- 96- and 384-well black versions
- Industry-standard well layout
- Very low autofluorescence
- High degree of planar flatness
- High chemical resistance to most solvents
- Robot friendly
- Cyclo Olefin Polymer construction with clear base
- Precision engineered to meet ANSI/SBS specification



Krystal UV COP-bottomed microplates

Description	Pack size	Cat. no.
96-well Krystal COP-bottomed plate	32	327002
384-well Krystal COP-bottomed plate	32	327001

Detailed schematics available on request

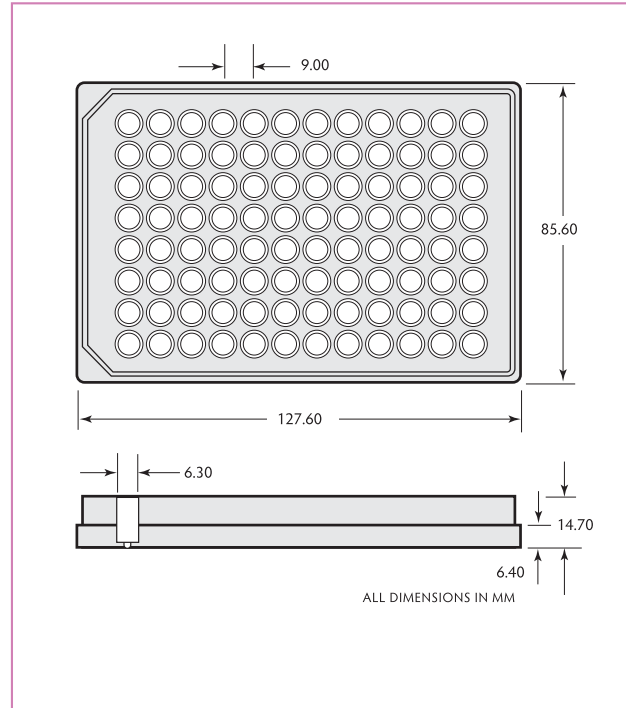
Filtration plates

Filtration plates are used in their simplest form to remove particulate matter from liquid. Either the particulate matter or the filtrate is needed for further study.

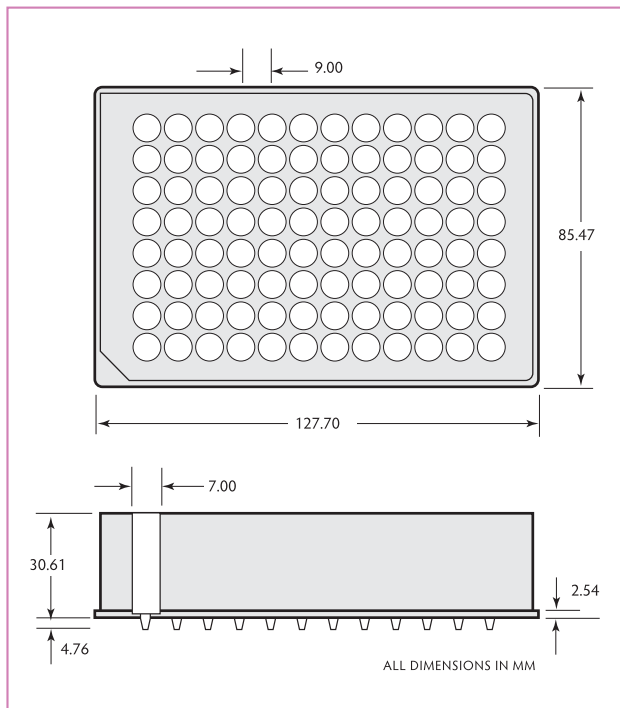
Porvair Sciences has a range of filter plates to suit most filtration applications. The company has optimised filter plates for applications including cell harvesting, DNA separations, binding studies, Plasmid isolation, general filtration and sample clean up.

Porvair has a full range of 48-, 96- and 384-well microplates with a choice of glass fibre, nylon, PVDF or polyethylene filtration materials and well volumes ranging from 350µl to 5ml.

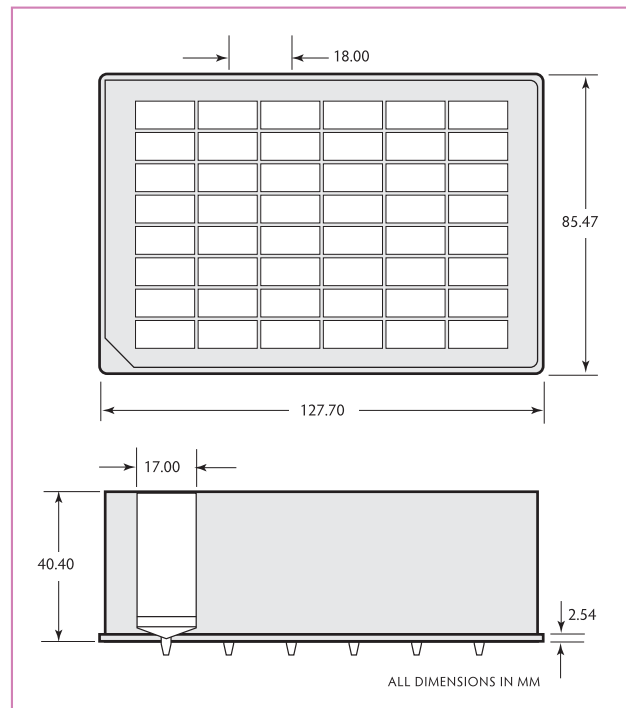
- Polystyrene and polypropylene filter plates
- Long and short drip directors
- Each well has an individual drainage spout ensuring 100% sample transfer
- Manufactured from ultra pure grade polymer
- Standard ANSI/SBS footprint
- Robot friendly
- Fit standard vacuum manifold



350µl/well



800µl/well



5ml/well

Filtration plates

No & vol. of wells	Plate, filter material and pore size	Qty/pack	Cat. no.
48 wells of 7.5ml	Polypropylene, polyethylene, mean pore size 25 microns, long drip	15	360053
48 wells of 5ml	Polypropylene, polyethylene filter, mean pore size 10 to 20 microns	25	360008
96 wells of 300µl	Polypropylene, UHMW polyethylene, mean pore size 25 microns, short drip	50	360047
96 wells of 300µl	Polypropylene, UHMW polyethylene, mean pore size 25 microns, long drip	50	360041
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 0.7 microns, short drip	50	360052
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 0.7 microns, long drip	50	360046
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 1.0 microns, short drip	50	360051
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 1.0 microns, long drip	50	360045
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 1.2 microns, short drip	50	360048
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 1.2 microns, long drip	50	360042
96 wells of 300µl	Polypropylene, glass fibre, mean pore size 3.0 microns, long drip	50	360066
96 wells of 300µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, short drip	50	360049
96 wells of 300µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, long drip	50	360043
96 wells of 300µl	Polypropylene, polypropylene, mean pore size 0.45 microns, short drip	50	360050
96 wells of 300µl	Polypropylene, polypropylene, mean pore size 0.45 microns, long drip	50	360044
96 wells of 300µl	Polypropylene, PVDF, mean pore size 1.0 microns with a polyprop back, short drip	50	360070
96 wells of 300µl	Polypropylene, black, hydrophilic PVDF, mean pore size 0.2 microns, short drip	50	360060
96 wells of 300µl	Polypropylene, black, polypropylene, mean pore size 0.45 microns, short drip	50	360064
96 wells of 350µl	Polystyrene, glass fibre, mean pore size 1.9 microns	50	230001
96 wells of 350µl	Polystyrene, glass fibre, mean pore size 1.3 microns	50	230002
96 wells of 350µl	Polystyrene, glass fibre, mean pore size 1.7 microns	50	230003
96 wells of 350µl	Polystyrene, glass fibre, mean pore size 6.0 microns	50	230004
96 wells of 400µl	Polypropylene, UHMW polyethylene, mean pore size 25 microns, short drip	25	360035
96 wells of 400µl	Polypropylene, UHMW polyethylene, mean pore size 25 microns, long drip	25	360026
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 0.7 microns, short drip	25	360040
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 0.7 microns, long drip	25	360017
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 1.0 microns, short drip	25	360039
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 1.0 microns, long drip	25	360028
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 1.2 microns, short drip	25	360036
96 wells of 400µl	Polypropylene, glass fibre, mean pore size 1.2 microns, long drip	25	360016
96 wells of 400µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, short drip	25	360037
96 wells of 400µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, long drip	25	360027
96 wells of 400µl	Polypropylene, polypropylene, mean pore size 0.45 microns, short drip	25	360038
96 wells of 400µl	Polypropylene, polypropylene, mean pore size 0.45 microns, long drip	25	360020
96 wells of 400µl	Polypropylene, PES, pore size 10kD, short drip	25	360061
96 wells of 400µl	Polypropylene, PES, pore size 30kD, short drip	25	360062
96 wells of 400µl	Polypropylene, PES, pore size 100kD, short drip	25	360118
96 wells of 400µl	Polypropylene, PES, pore size 300kD, short drip	25	360119



Filtration plates

No & vol. of wells	Plate, filter material and pore size	Qty/pack	Cat. no.
96 wells of 800µl	Polypropylene, UHMW polyethylene, mean pore size 25 microns, short drip	25	360029
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 0.7 µm, short drip	25	360034
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 0.7 µm, long drip	25	360025
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 1.0 microns, short drip	25	360033
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 1.0 microns, long drip	25	360024
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 1.2 microns, short drip	25	360030
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 1.2 microns, long drip	25	360022
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 3.0 microns, long drip	25	360075
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 13.0 microns, long drip	25	360076
96 wells of 800µl	Polypropylene, glass fibre, mean pore size 0.7 microns and a polyethylene frit, long drip	25	360065
96 wells of 800µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, short drip	25	360031
96 wells of 800µl	Polypropylene, hydrophilic PVDF, mean pore size 0.45 microns, long drip	25	360023
96 wells of 800µl	Polypropylene, polypropylene, mean pore size 0.45 microns, short drip	25	360032
96 wells of 800µl	Polypropylene, polypropylene, mean pore size 0.45 microns, long drip	25	360019
96 wells of 800µl	Polypropylene, polyethylene, mean pore size 10 to 20 microns, long drip	25	360011
96 wells of 800µl	Polypropylene, Hydrophilic CA, mean pore size 0.2 microns, long drip	25	360055
96 wells of 2ml	Polypropylene, UHMW PE, mean pore size 25 microns, long drip	25	360056
96 wells of 2ml	Polypropylene, glass fibre, mean pore size 0.7 microns, long drip	25	360057
96 wells of 2ml	Polypropylene, polycarbonate, mean pore size 2.0 microns, long drip	25	360071
96 wells of 2ml	Polypropylene, GF 3.0 µm & polypropylene 10 µm, long drip	25	360063
96 wells of 2ml	Polypropylene, polypropylene, mean pore size 0.45 microns, long drip	25	360058
96 wells of 2ml	Polypropylene, polyethylene mean pore size 25 microns, long drip	25	360021
96 wells of 2ml	Polypropylene, Hydrophilic PES, mean pore size 0.45 microns, long drip	25	360059
96 wells of 2ml	Polypropylene, glass fibre, 5.0 microns, long drip	25	360114
96 wells of 2ml	Polypropylene, Affymetrix, SNP 5.0 assay DNA prep plate	10	360090
384 wells of 140µl	Polypropylene, glass fibre 0.7 microns, short drip	10	360068
384 wells of 140µl	Polypropylene, glass fibre 0.7 microns, long drip	10	360073
384 wells of 140µl	Polypropylene, glass fibre 1.2 microns, short drip	10	360067
384 wells of 140µl	Polypropylene, glass fibre 3.0 microns, short drip	10	360069
384 wells of 140µl	No filter, long drip	10	360107
384 wells of 140µl	Filter bottom, GF 5.0µm, long drip	10	360108
96 wells of 250µl	Filter bottom, UHMW PE 25µm, short drip	25	360109
96 wells of 300µl	Filter bottom, GF 1.0µm, medium drip	50	360110
96 wells of 300µl	Filter bottom, Hydrophilic PVDF 1.2µm, short drip	50	360105
48 wells of 7ml	No filter, long drip directors	30	360111
96 wells of 1ml Plate	Filter bottom, 96-well, half skirt, 0.7µm GF & 25µm PE, Qiagen fit	35	361001
96 wells of 1ml Plate	Filter bottom, 96-well, half skirt, 0.7µm GF, Qiagen fit	35	361002
96 wells of 1ml Plate	Filter bottom, 96-well, half skirt, 25µm PE, Qiagen fit	35	361003
96 wells of 1ml Plate	96 well, polypropylene, short skirt, turbine tip filter, empty	35	361004



Filter bottom microplate application guide

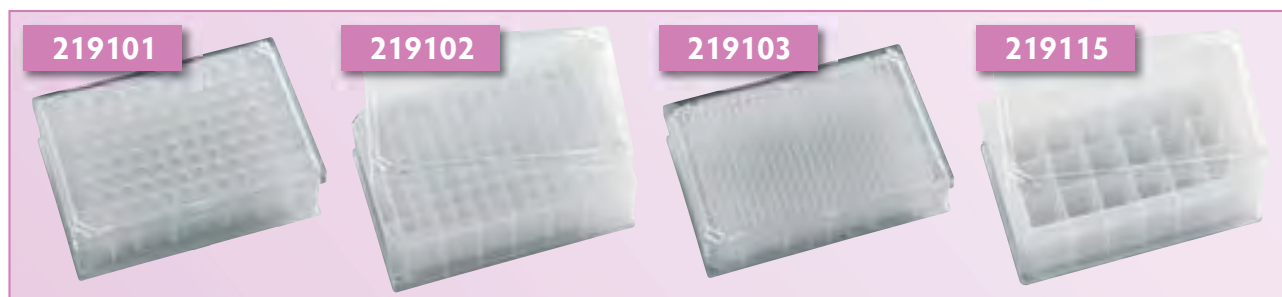
Solvent resistant	Application	Filter	Drip detector	Vol (µl/well)	Cat. no.	
Low Biomolecule Binding	YAC (Yeast Cloning Assays)	Hydrophilic	Short	300	360043	
	DNA extraction from agarose gel	PVDF 0.45µm		400	360037	
	Dye Terminator Clean Up			800	360031	
	Sequencing Reaction Clean Up					
	DNA/RNA Purification					
	Ni-Nta					
	Affinity Bead					
	Streptavidin/biotin bead					
	Chromatography beads/resins		Long	300	360049	
	Purified cloned receptors			400	360027	
	Cell Based Receptor Binding			800	360023	
	Signal transduction					
	Phosphodiesterase					
	Protein or nucleic acid desalt					
	Cell membrane					
Neonatal Screening						
Vesicle Assay						
Low Biomolecule Binding	Dye Terminator Removal	UHMW PE	Short	300	360047	
	Dye Terminator Clean Up	25µm		400	360035	
	Sequencing Reaction Clean Up			800	360029	
			Long	300	360041	
				400	360026	
				800	360011	
Low Biomolecule Binding	Solid Phase Extraction (SPE)	P E Frit 25µm	Long	2000	360021	
				5000	360008	
Low Biomolecule Binding	YAC (Yeast Cloning Assays)	Polypropylene	Short	300	360050	
	Bacterial DNA prep for PCR	0.45µm		400	360038	
	Alumina			800	360032	
	Cell fragments/membranes					
	Whole Cells					
	Protease assays					
	Phosphodiesterase					
	Antibody neutralization		Long	300	360044	
	Mammalian Cells Capture			400	360020	
	Calcium uptake			800	360019	
	Dual assay: Ca + receptor			2000	360058	
	Microsomes					
Solid Phase Radioimmunoassays						
High Biomolecule Binding	DNA Binding	Glass fibre	Long	140	360073	
	Lysate Clarification	0.7µm		400	360017	
				800	360025	
				2000	360057	
High Biomolecule Binding	Cell homogenates, crude	Glass fibre	Short	300	360051	
	DNA Binding	1.0µm		400	360039	
	DNA Isolation			800	360033	
	DNA/RNA Purification					
	PCR Clean up					
	Plasmid Minipreps		Long	300	360045	
	Recovering DNA from gels			400	360028	
	Reverse Transcriptase			800	360024	
	Sample Clean up					
High Biomolecule Binding	M13 phage preps	Glass fibre	Short	140	360067	
	Thymidine Uptake	1.2µm		300	360048	
	Cell homogenates, crude				400	360036
					800	360030
	Cell fragments/membranes		Long	140	360072	
	Cytotoxic/Cell Proliferation			300	360042	
	Signal transduction			400	360016	
	Mammalian Cells Capture			800	360022	

Bacti-growth plates

Bacti-growth plates are specially packaged plates to allow the growth of bacteria, yeast, mammalian or insect cell lines.

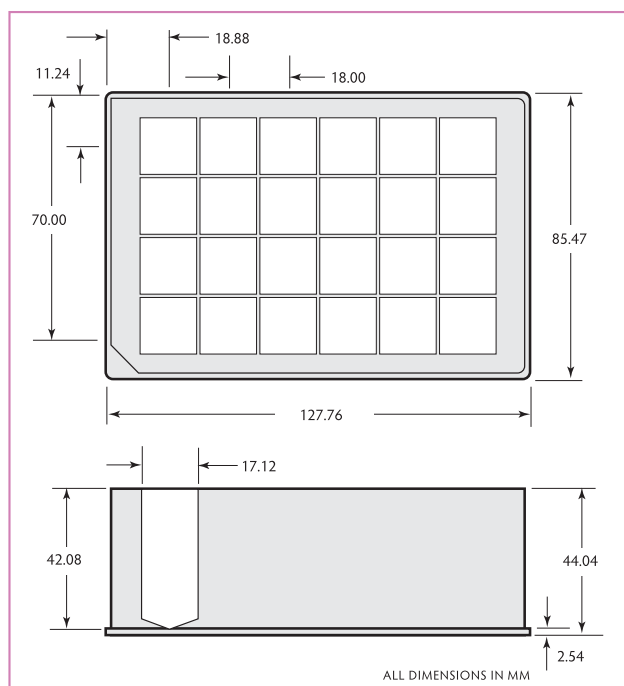
Using only the highest-grade raw materials, our plates are tested to ensure no moulding or polymer contaminants leach out into the samples. This guarantees reproducibility and maintains customer confidence. Each Bacti-growth plate consists of a deep well plate and a tight fitting lid, packed sterile in bags.

- Plate well configuration available from 24- through to 384-well
- Well volumes from 300µl through to 10ml per well
- Round and square well available
- Sealed in sterile bags of 5 plates
- Robot friendly
- Manufactured to the highest specifications
- Conform to the ANSI/SBS format

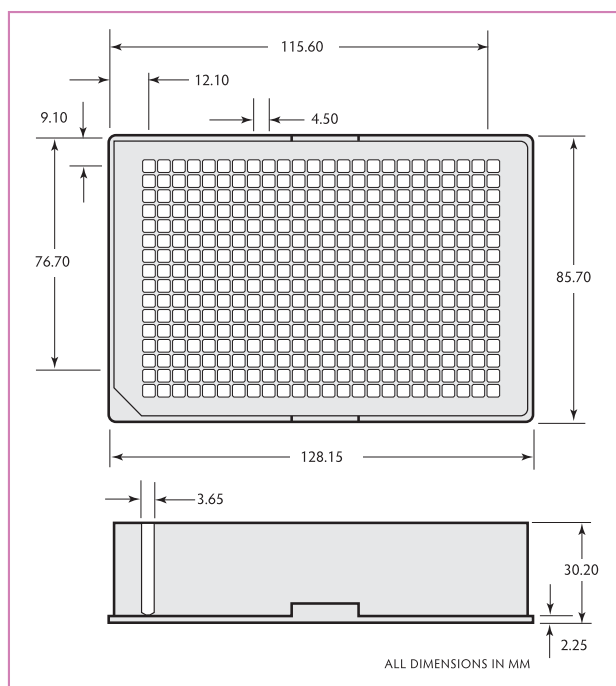


Bacti-growth plates

Description	Sterile	Lid	Qty/Pack	Cat. no.
24 x 10ml square wells, polypropylene with lid	✓	✓	25	219115
96 x 1ml round wells, polypropylene with lid	✓	✓	25	219101
96 x 2ml square wells, polypropylene with lid	✓	✓	25	219102
384 x 300µl square wells, polypropylene with lid	✓	✓	20	219103



219115



219103

For schematics of 219101 and 219102, please refer to 219009 (page 6) and 219002 (page 7).

Components for assay development

Porvair has many years of developing bespoke microplates and injection-moulded components for Life Science research companies. As such, we are often asked for small numbers of the components used to make our two-part plates. We are happy to make these available as standard items to aid your product or method development programme.

Description	Qty/pack	Cat. no.
24-well A-Plate Krystal glass bottom plate, black	20	229218
96-well A-Plate Krystal glass bottom plate black	20	229220
24-well clear polystyrene lid for Krystal glass bottom plate	20	229219
96-well clear polystyrene lid for Krystal glass bottom plate	20	229221
Borosilicate glass sheet, 74 x 110mm x 175µm	100	229217
96-well A plate Krystal polystyrene, black	126	500011
96-well B plate Krystal polystyrene, clear	1350	500012
96-well lid polystyrene, clear, with anti-condensation rings	300	500013

Porvair Microplate Microarray / Chip Printing Kit

Our new Chip Printing Kit is a direct response to the many academic and research customers who have requested our two-part clear bottom microplates as separate components. We are happy to provide either the top (A plate) or bottom (B plate) components from our Krystal polystyrene clear bottom assay plates. We can also supply the A plate and borosilicate glass sheet for our Krystal Glass Bottom microplates. This allows you to use either the B plate or the glass sheet as a substrate and to print your own microarray pattern directly on to the smooth surface. The components can then be assembled with common solvents, such as methyl ethyl ketone (Krystal plastic plates) or cyanoacrylate glue (Krystal glass plates).

Description	Qty/pack	Cat. no.
96 well chip printing kit: contains 1 set of 20 A (upper) plates in black polystyrene and 1 matching set of 20 clear polystyrene B plates (bases). Suitable for solvent-assembly using methyl ethyl ketone. Chips can be printed with DNA chip on smooth side of the base.	20	500080



Hand-held replicator tools for colony replication

These easy to use disposable pin replicators are made from durable polypropylene and the 96-well tool comes in a choice of two useful lengths: 12mm and 25mm pins. They are DNA/RNA, DNAase/RNAase free.

Manual Pin Replicators

Description	Qty/pack	Cat. no.
Disposable polypropylene pin tool 384 well plates, 12mm long, DNA/RNA, DNAase/RNAase free	120	500076
Disposable polypropylene pin tool 96 well plates, 12mm long, DNA/RNA, DNAase/RNAase free	120	500077
Disposable polypropylene pin tool 96 well plates, 24mm long, DNA/RNA, DNAase/RNAase free	120	500078

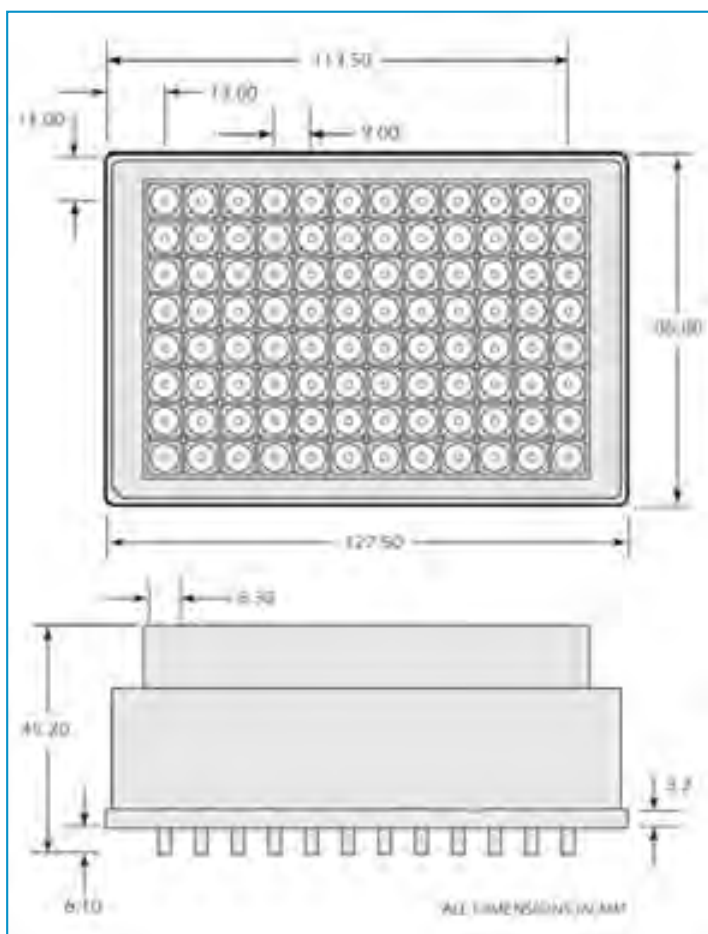
MicroLute™

Solid phase extraction (SPE) is a method of sample preparation that concentrates and purifies analytes from solution by sorption, followed by elution of the analyte with a solvent appropriate for instrumental analysis, such as LC-MS. Porvair Sciences offers a complete range of products to implement SPE.

MicroLute™ is the original 96-well plate format for SPE. This device consists of a polypropylene 96-well plate loaded with a choice of sorbent and sorbent volumes. The frits have a mean pore size of 20 microns and are made from microporous high-density polyethylene.

- Choice of popular sorbents
- Packed bed volumes from 10mg to 100mg per well
- Frit pore size 20µm
- No channelling due to proprietary sorbent loading technique
- Working volume of 2ml per well
- Up to four times quicker than cartridge systems
- Long drain directors locate accurately with collection plate to avoid cross contamination
- Virgin polypropylene, tested and chosen for having no extractables
- Plate designed to be automated, meets ANSI/SBS specification

Porvair's flexible manufacturing approach enables us to consider manufacture of small runs of MicroLute™ devices packed with specialty resins or sorbents of your choice. Typically, minimum runs of just 50 plates can be produced economically. Please contact Porvair Sciences for more details of this service.



MicroLute™ packed with Varian sorbent

Description	10mg	15mg	25mg	50mg	100mg
C18	242001	244001	246001	248001	250001
C8	242002	244002	246002	228002	250002
C2	242003	244003	246003	248003	250003
C1	242004	244004	246004	248004	250004
PH	242005	244005	246005	248005	250005
CH	242006	244006	246006	248006	250006
CN-E	242007	244007	246007	248007	250007
C18-OH	242008	244008	246008	248008	250008
CN-N	242009	244009	246009	248009	250009
20H	242010	244010	246010	248010	250010
Si	242011	244011	246011	248011	250011
CBA	242012	244012	246012	248012	250012
PRS	242013	244013	246013	248013	250013
SCX	242014	244014	246014	248014	250014
NH2	242015	244015	246015	248015	250015
PSA	242016	244016	246016	248016	250016
DEA	242017	244017	246017	248017	250017
SAX	242018	244018	246018	248018	250018
PBA	242019	244019	246019	248019	250019
ENV	242020	244020	246020	248020	–
LMS	242021	244021	246021	248021	–
PPL	242022	244022	246022	248022	–
C18HF	242023	244023	246023	248023	–
Certify	242024	244024	246024	248024	250024
Certify HF	242025	244025	246025	248025	–
Certify II	242026	244026	246026	248026	250026
Certify II HF	242027	244027	246027	248027	–

Combinatorial MicroLute™

Combinatorial MicroLute™ is based on the tried and tested MicroLute™ format. This is a 96-well polypropylene plate with a bottom polyethylene frit already in place. It is designed to allow packing with any material required for chemical synthesis. Two bottom frit sizes are available, 10µm and 30µm, however, we recommend the use of 30µm top frits to ensure a good flow rate in both cases.

- Accepted industry standard
- Up to 2ml per well of sample
- Low frit liquid retention
- Virgin polypropylene
- Polypropylene is tested and chosen for having no extractables
- Manufactured to ANSI/SBS standard to allow for automation

Combinatorial MicroLute™

Description	Qty/pack	Cat. no.
Combinatorial MicroLute™ plate, unpacked with bottom frits. Mean pore size 30µm, polyethylene	1	240002
30µm Vyon F PE frits to fit Combinatorial MicroLute 1.5 x 7.2mm frits	1,000	239007
Combinatorial MicroLute™ plate, unpacked with bottom frits. Mean pore size 10 µm, polyethylene	1	240054
10µm Vyon T PE frits to fit Combinatorial MicroLute 1.5 x 7.2mm frits	1,000	239010
Empty 96-well MicroLute shell with no top or bottom frits	40	240011

MaxiLute™

The development of a 48-well solid-phase extraction (SPE) system allows the step between SPE cartridges and SPE 96-well plates to be managed.

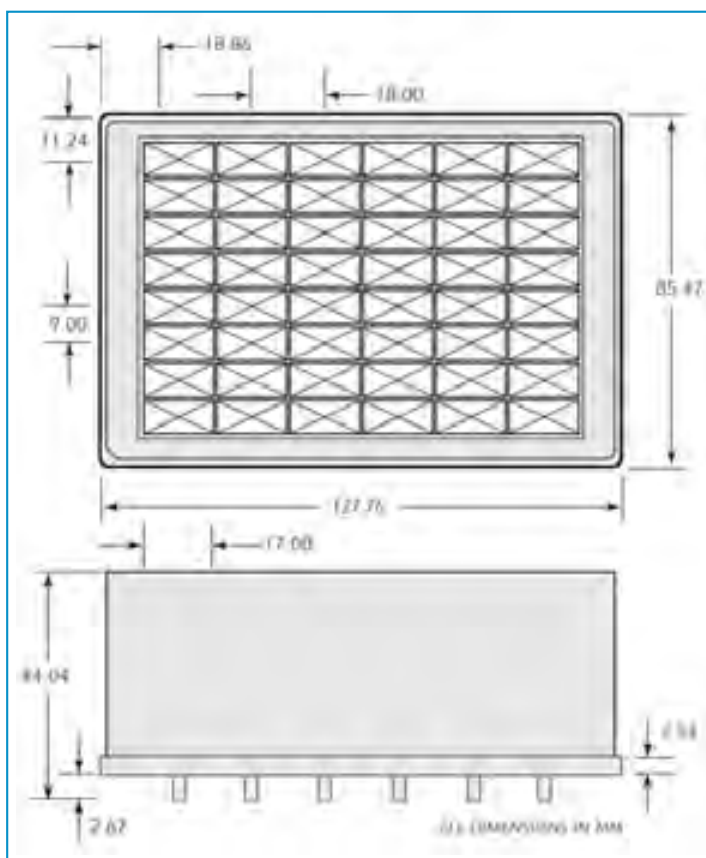
With the larger packed bed volume and increased sample volume, the design of the MaxiLute™ offers advantages for drug development, food and environmental laboratories currently using SPE cartridges.

Manufactured from virgin polypropylene and loaded with a choice of sorbents and volumes.

- *Unique design eliminates mess associated with traditional manual SPE cartridge methods*
- *Up to 4 times faster than cartridge methods*
- *Constructed from a single piece of high quality polymer which will not bend or distort*
- *A range of packed bed volumes ranging from 250mg, through to 1500mg*
- *Capability to process up to 200ml of sample in one plate*
- *Frit pore size of 20µm*
- *Each well has an individual drain spout ensuring 100% sample transfer and zero cross-contamination*
- *Manufactured within ANSI/SBS standard to allow easy automation*

MaxiLute™

Sorbent volume	250mg	500mg	1000mg	1500mg
SCX	322001	321001	318001	320001
SAX	322002	321002	318002	320002
Silica	322003	321003	318003	320003
C18	322004	321004	318004	320004



P³ Protein Precipitation Plates

Biological samples commonly contain proteins that interfere with downstream applications. The P³ plate uses the CRASH method, in which the protein is denatured with acetonitrile and the flocculant filtered out, allowing 96 samples to be handled at one time.

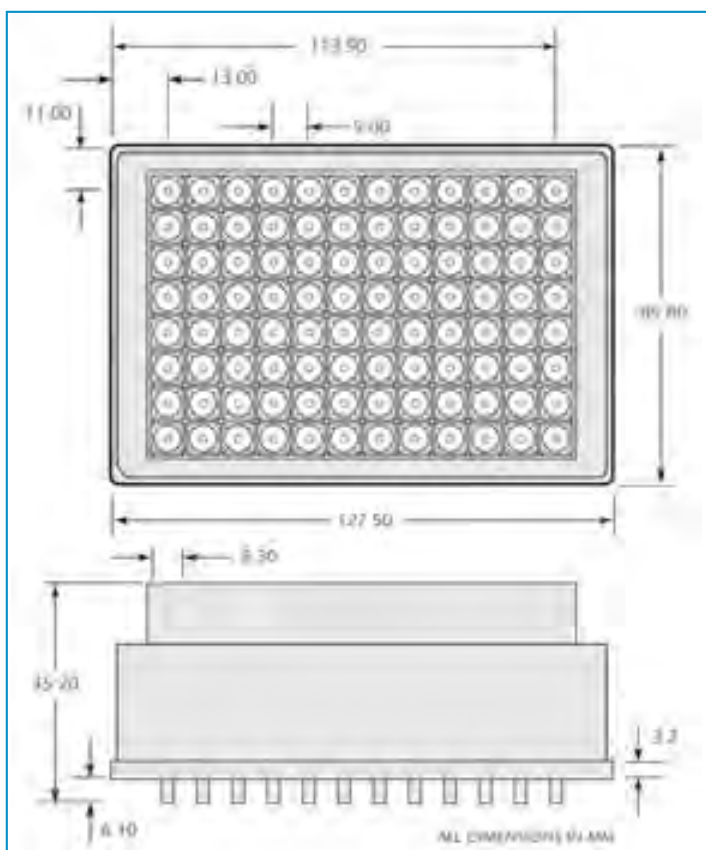
The Protein Precipitation Plate, P³, is based on the industry standard MicroLute™ format, but without the chromatographic sorbent. Protein 'crashes' out of solution and precipitates directly in each well when acetonitrile is added, thus solving all common problems associated with the CRASH technique of protein clean-up.

The novel dual frit, hydrophobically treated matrix means that there is no 'wetting out' and leakage of the sample through the plate before the application of vacuum. P³ is now commonly used as the protein precipitation plate of choice in many major pharmaceutical companies.

Optional drain cap and top cap mats are available for those wishing to use vortex sample mixing (see page 41).



- Dual frit design
- Pre-filter frit at 100µm traps large flocculant particles
- Secondary frit traps fine protein particles at <10µm
- Frits are Hydrophobic/Oleophobic. This retains sample/acetonitrile in the well to allow precipitation of proteins until vacuum is applied.
- Pore size optimised to allow ideal flow rate
- Inert filter material to ensure no adsorption of sample components
- Frit structure prevents break through of protein particles
- Industry standard MicroLute™ format enables easy automation
- Specially selected polypropylene for low extractables



MicroLute™ Protein Precipitation Plate

Description	Qty/pack	Cat. no.
P ³ Protein Precipitation Plate (single pack)	1	240100
P ³ Protein Precipitation Plate (bulk pack)	5	240200
P ³ Protein Precipitation Plate High Efficiency*	1	240010

*The Protein MicroLute High Efficiency plate is exactly the same as the P³ but with the frits untreated. This plate is used when sample and acetonitrile are pre-mixed before being pipetted into the plate.

SPE starter pack

This kit has been designed to form the starting point for SPE analysis. This gives the researcher the necessary hardware to process samples using an SPE plate and to collect under vacuum the analyte for further analysis.

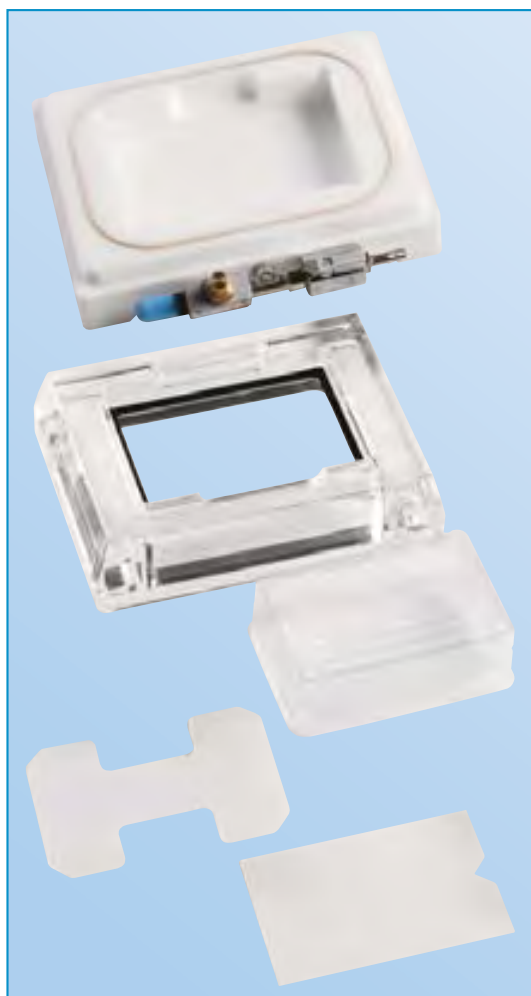
The kit consists of:

- 2 x 50mg MicroLute™ – containing: 50mg of Varian C18, C8, C2, SAX, SCX, Certify, Certify II and CBA, 1 x 50mg Varian C18
- 1 x acrylic manifold
- 1 x 1ml spacer insert
- 3 x 2ml 96-well microplates
- 3 x disposable reservoir trays

MicroLute™ starter pack

Starter pack

271023



Development MicroLute™

This is an SPE Development MicroLute™, which is designed for research and development laboratories, where it may not be known which sorbent best suits the process.

The system allows the researcher to specify which sorbents go into specific wells, with what designated packed bed volume. This allows the researcher to have full control of the SPE plate.

- Uses an industry standard SPE plate, MicroLute™
- Sorbents from Varian
- Packed bed volumes ranging from 10mg to 100mg
- Allows up to 2ml of sample to be tested
- Can be packed either in 8-row or 12-column format
- Manufactured within ANSI/SBS standard to allow for automation

MicroLute™ – Development

	10mg	15mg	25mg	50mg	100mg
Eight sorbents	271014	271016	271018	271020	271022
Twelve sorbents	271024	271026	271028	271030	271032

MicroLute™ accessories

- Disposable reservoir tray. Used for the collection of waste products in the vacuum manifold
- Sealing cap, square well, fits top of MicroLute™. Used for retaining the sample in the well during transit or stopping the well from becoming contaminated
- Drain cap mat that seals the bottom of the plate, preventing liquid leakage

MicroLute™ – accessories

Description	Qty/pack	Cat. no.
Disposable reservoir tray	25	219010
Sealing cap, square well, fits to top of plate	50	219004
Drain cap mat, seals base of plate	25	219005

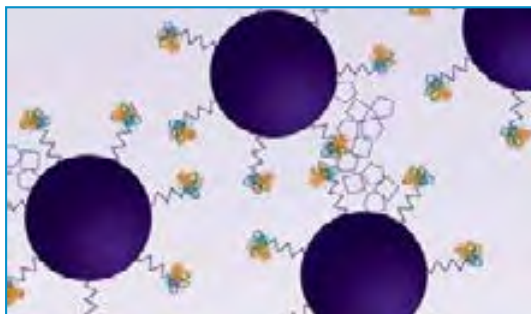
MicroLute™ BioVyon Co-sinter products

BioVyon™ Co-sinter products are made using a solid-state media created from an ultra-pure and highly modified polymeric material with the lowest levels of extractables and leachables. Our proprietary BioVyon™ technology allows high-purity silica resins to be supported in a matrix which provides a high surface area whilst reducing channelling through the column. As the porous material is co-sintered under high pressure and temperature with the BioVyon™ polymer matrix, the resultant frit or column is impervious to further compression and easily resists channelling of liquids, even at high flow rates.



BioVyon C8 and C18 products

Porvair Sciences have introduced MicroLute™ BioVyon™ Co-sintered C8 and C18 silica SPE 96-well plates for low volume assays. Offered in 96-well MicroLute™ plates as a 10mg per well loading of C8 or C18 suitable for low sample volume bioassay preps and clean ups.



Micro structure of BioVyon substrate



A MicroLute solid phase extraction plate in use with the new Porvair Sciences robotic compatible vacuum manifold.

MicroLute™ BioVyon™ Co-sinter products

Solid Phase Extraction		
Description	Qty/pack	Cat. no.
C8 96-well plate 10mg per well	1	240030
C18 96-well plate 10mg per well	1	240031

Vacuum manifolds

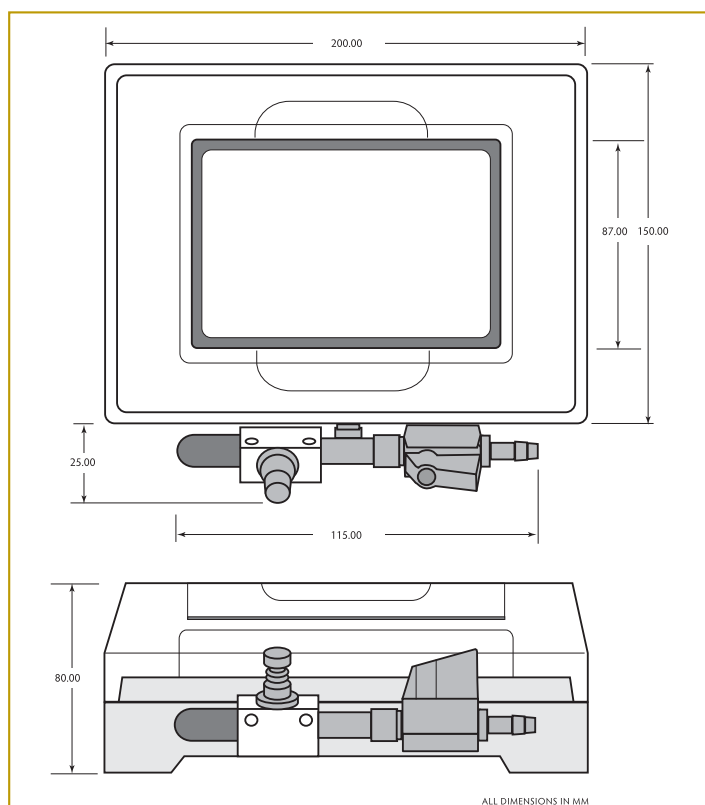
Vacuum manifolds are used to draw liquid through a filter or SPE plate into either a waste tray or a collection plate. The application of vacuum increases the speed at which samples can be collected.

MicroLute™ manifold

The MicroLute™ vacuum manifold from Porvair Sciences is precision machined from crystal clear acrylic (top plate) and acetal polymer (plenum chamber). The acrylic top plate allows visual access to the plenum chamber for checking progress of the separation process.



- Designed to take most filter plates manufactured to the SBS/ANSI specification with long drip directors
- Also designed so that SPE plates can be used, especially the Porvair Sciences MicroLute™ plate
- Fitted with valve controller to ensure accurate adjustments of vacuum to the manifold
- On/off valve for speed of use
- Square well collection plate volumes of 350µl, 1ml and 2ml may be used. Any plate up to 44mm in height can be used
- Fitted with a custom O-ring in upper surface allowing airtight interface between plates during operation
- Removable top plate to install reservoir tray or collection plate
- Chamber has a medium resistance to alcohols and weak acids



MicroLute™ manifold

Description	Qty/pack	Cat. no.
Standard MicroLute™ manifold to hold deep 96-well collection plate	1	228008
Replacement gasket, profile (to fit between top plate and vacuum chamber), for 228008/228020	1	228007
Replacement gasket, flat (to fit top plate below filtration plate), for 228008/228020	1	228009
Optional spacer insert, polypropylene, to allow use of 1ml round well polypropylene microplates (219002) in acrylic deep well manifolds (228008/228020)	1	228010
Optional spacer insert, HDPE, to allow use of 350µl microplates in acrylic manifolds (228008/228020)	1	228012
Disposable reservoir tray, PVC	25	219010
Single plate manifold, high impact polystyrene, for filter plates (no waste collection) (<i>not shown</i>)	1	228001

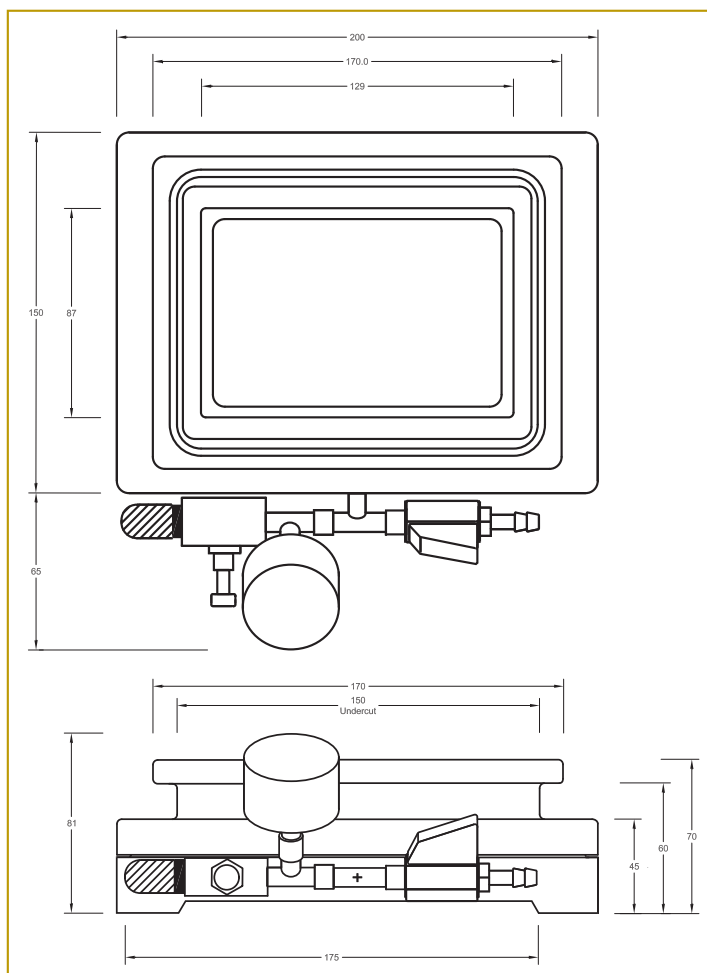
Universal robotic manifold

Based on our successful MicroLute™ Acrylic Manifold, the new Universal Robotic Manifold is designed to be easily assembled and disassembled by robotic manipulators, thus enabling productive automation of SPE or DNA clean-up procedures. Able to accommodate collection plates from 14mm - 44mm in height and adaptable for working with short, medium and long skirts and drip directors, the Universal Robotic Manifold can operate with many different brands of filter plate and collection trays. Supplied with an integral vacuum gauge, the Manifold provides complete control of vacuum pressure ensuring plates are processed with high reproducibility. The Manifold is fully compatible with most commercial robotic liquid handling systems.

The Universal Robotic Manifold is suitable for a range of manufacturer's plates without an adaptor. For certain plate types a Shallow Adaptor or a Deep Adaptor, is required.

- Compatible with any filter plate type
- Robotic friendly designs aids automation
- Chemically resistant acetal/acrylic construction
- Adaptable for different collection plates
- Easy visual inspection of process
- Built in vacuum gauge for reproducibility

Manufacturer	Plate type	Base	Adapt. 1	Adapt. 2
Qiagen™		■	■	
Waters™	Standard plate	■		
Waters™	μElution plate	■	■	
Biotage™		■		
Varian™		■		
Phenomenex™		■		
Axygen™		■		■
Seahorse™		■		
Porvair™		■		



Universal robotic manifold

Description	Qty/pack	Cat. no.
Universal robotic compatible manifold to hold deep 96-well collection plate	1	228020
Adaptor 1 for medium skirt/medium drip director plates	1	228021
Adaptor 2 for short skirt/long drip director plates	1	228022

Gaskets and spacers are identical to those for our standard MicroLute™ acrylic manifold shown on page 43.

Microplate evaporators

Porvair evaporators are designed to remove the traditional laboratory 'bottleneck' of solvent evaporation from microplates prior to analysis or reconstitution in storage buffer. These evaporators give significant throughput advantages to laboratories looking to optimise microplate sample preparation productivity. Faster than centrifugal evaporation, significant increases in sample throughput are achieved through advanced evaporator head technology and an innovative manifold design, which directly injects heated nitrogen into each individual well of the microplate simultaneously. The evaporators have been designed to be simple to install, operate and maintain. Installation requires only connection to a gas supply or cylinder and mains electricity. Safety of operation is ensured as the CE marked compact units fit into all fume cupboards. Not suitable for high boiling solvents such as DMSO and water.

Both MiniVap and UltraVap may be operated with a supply of clean, dry compressed air in place of nitrogen, if the chemistry allows. An in-line gas filter must be used in this case.



MiniVap 229205

MiniVap™

The MiniVap is purpose designed for low usage research and development departments where low numbers of individual plates or vials need drying. The MiniVap is simple to operate and maintain. Installation requires only connection to a gas supply and standard mains socket. With manual control of the needle depth, gas temperature and flow rate, it allows fine control and quicker drying times than other standard methods.

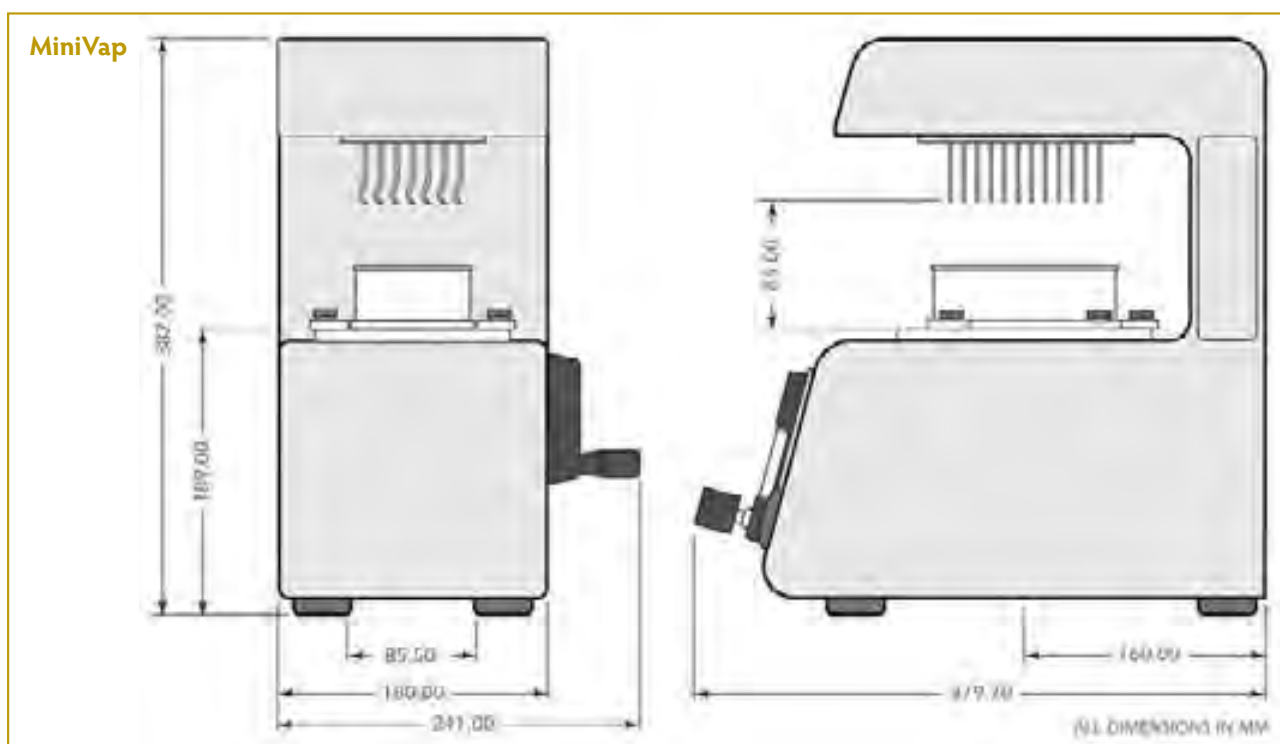


MiniVap 229201

- Quicker dry down times than standard methods such as vacuum oven
- Tests have shown that the MiniVap can evaporate 500µl of methanol in less than 6 minutes
- Designed for any ANSI/SBS 96 well plate
- 24 vial head now available
- Simple to install and operate
- Easy adjustments of temperature, gas flow rates and needle depth into the wells
- Compact footprint – fits all standard fume cupboards

MiniVap™ blowdown sample concentrator

Description	Qty/pack	Cat. no.
Blowdown Evaporator MiniVap™ (230 Volts), with 96 spiral needles	1	229201
Blowdown Evaporator MiniVap™ (230 Volts), with 96 straight needles	1	229200
Blowdown Evaporator MiniVap™ (230 Volts), with 24 straight needles	1	229205
Blowdown Evaporator MiniVap™ (110 Volts), with 96 spiral needles	1	229203
Blowdown Evaporator MiniVap™ (110 Volts), with 96 straight needles	1	229202
Blowdown Evaporator MiniVap™ (110 Volts), with 24 straight needles	1	229204
Blowdown Evaporator MiniVap™ (230 Volts), without a head	1	229206
Blowdown Evaporator MiniVap™ (110 Volts), without a head	1	229207

**Spares and consumables for Porvair evaporators**

Description	Qty/pack	Cat. no.
Replacement 24 Needle Head with straight for Ultravap & MiniVap	1	229409
Replacement 96 Needle Head with spiral needles for Ultravap & MiniVap	1	229072
Replacement 96 Needle Head with straight needles for Ultravap & MiniVap	1	229036
Replacement 384 Needle Head with straight for Ultravap	1	229073
Spare Needle Kit, Spiral, Set of 10 c/w Fitting Tool for Ultravap-96/MiniVap	1	229074
Spare Needle Kit, Straight, Set of 10 c/w Fitting Tool for Ultravap™ 384	1	229075
Spare Needle Kit, Straight, Set of 10 c/w Fitting Tool for Ultravap-96/MiniVap	1	229035
Gasket for needle manifold	1	229048
Disposable vial rack with clear bottom for 13.75mm glass vials x 24	5	229216
Ultravap Instruction Manual (Spare)	1	229523
MiniVap Instruction Manual (Spare)	1	229524
Protective clear side panels to allow fume extraction, Ultravap, pair	1	500007
Fume extraction duct adaptor 4" to Ultravap ovoid rear fitting	1	500008

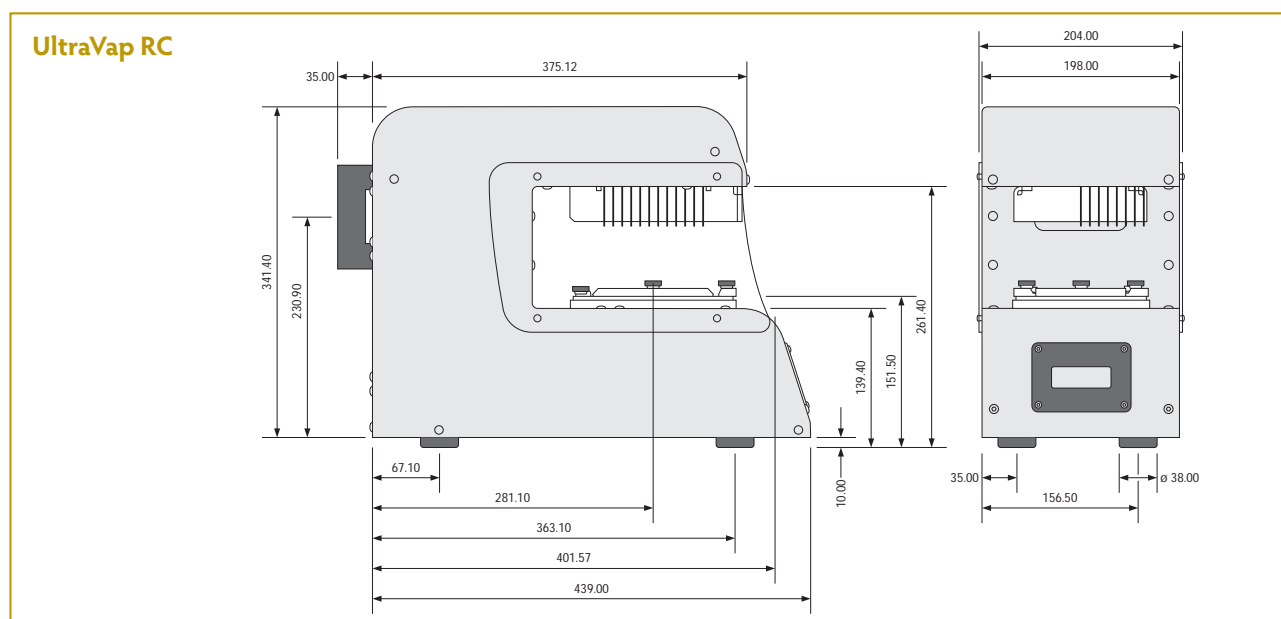
Ultravap™ RC

The new Ultravap RC from Porvair Sciences is the latest fully robot-compatible version of our popular Ultravap nitrogen blow-down evaporator, suitable for integration within the safety enclosure of several leading laboratory liquid handling robots. Designed with the demands of linear robots very much in mind, the Ultravap RC comprises a fully microprocessor controlled dry down station for 24-, 96- or 384-well plates, together with clear safety side screens and a 4 inch fume hood duct adaptor.

- Designed for heat sensitive and thermally labile samples
- Nine different drying programmes can be retained in the memory
- Ability to upload and download methods
- Robotic plate stage automatically moves plates up in two drying phases
- RS232 allows remote control via PC or LH robot
- Removes most chromatography solvents in just minutes
- Can evaporate 500 µl methanol in 5 minutes
- Compact footprint allows the Ultravap to fit into all standard fume cupboards
- Choice of straight, curved & 24, 96 or 384 needles
- Compatible with Tecan™, Hamilton™ and Caliper™ robotic liquid handlers

Ultravap™ RC high speed sample concentrator

Description	Qty/pack	Cat. no.
Ultravap RC robot compatible blowdown evaporator with 96 spiral needles, 230V	1	229070
Ultravap RC robot compatible blowdown evaporator with 96 spiral needles, 110V	1	229080
Ultravap RC robot compatible blowdown evaporator with 96 straight needles, 230V	1	229135
Ultravap RC robot compatible blowdown evaporator with 96 straight needles, 110V	1	229136
Ultravap RC robot compatible blowdown evaporator with 384 straight needles, 230V	1	229071
Ultravap RC robot compatible blowdown evaporator with 384 straight needles, 110V	1	229081
Ultravap RC robot compatible blowdown evaporator with 24 straight needles, 230V for 24 well plates and vials	1	229138
Ultravap RC robot compatible blowdown evaporator with 24 straight needles, 110V, for 24 well plates and vials	1	229139
Ultravap RC robot compatible blowdown evaporator without head, 110V	1	229146
Ultravap RC robot compatible blowdown evaporator without head, 230V	1	229145
Ultravap RC robot compatible blowdown evaporator, 384 type, without head, 110V	1	229082



Nitrogen blow-down

The nitrogen blow-down principle is easy to understand. Warm gas is blown down into the wells of the microplate, just above the liquid level. The effect is to speed up solvent evaporation by providing more energy for the latent heat of evaporation. This enables a steady-state equilibrium to be reached more quickly, leading to shorter drying times. Nitrogen blow-down has been shown to be the easiest way to automate the frequent bottlenecks caused by the requirement to remove solvent from samples that need to be concentrated, dried or reconstituted in a more suitable solvent.

Flexible programming

The Ultravap RC has been designed to allow robots with extended gripper arms to place and remove microplates directly onto the evaporation table. In comparison with previous models, the Ultravap RC is 22mm shorter at the front end, allowing better access for the gripper arms. The evaporation table is able to rise under the control of a stepper motor as the drying process proceeds. This can be programmed at a suitable rate for each solvent type being evaporated. In addition, gas temperature, pressure and flow rate can all be programmed individually and stored in one of nine multistep programmes on the Ultravap RC. Each programme allows the table to rise in two distinct ramped phases, so that a fast initial drying period can be followed by a gentler final drying phase.

With the addition of the optional clear acrylic side sheets and the 4 inch fume duct adaptor, the new Ultravap RC unit lends itself to full integration with Tecan and Hamilton robotic liquid handlers, where it is usually located on the right-hand side of the deck. Control commands are sent directly from the robot controller to the Ultravap. These standard commands are listed in the manual, but most robot manufacturers have drivers available to control the Ultravap, making integration a seamless process.

Solvent compatibility

With a choice of 96 straight or 96 spiral needles, plus 24 and 384 straight needles, the sphere of application for Ultravap RC is huge. Most common chromatography solvents can be evaporated with ease, such as dichloromethane, methanol, acetonitrile and hexane. The nitrogen blow-down method is not, however, suitable for high-boiling point solvents such as DMF, DMSO and water. It is also unable to be used with acids or acid chlorides, as special corrosion-resistant systems are needed for this work. The choice of straight or spiral needles allows the user to choose between faster dry down (spiral) and better final drying in V-well plates (straight). The spirals cause a vortex to form in the solvent, increasing the surface area and thus speeding up the rate of evaporation. However, for plates with V-bottom wells, or for smaller wells such as those in 384-well plates, straight needles are required.



UltraVap RC 229135

Evaporator System Requirements

Gas flow rate: 28L/min minimum, 80L/min maximum at 6 bar pressure.

Can be used with nitrogen or dry compressed air if the chemistry allows.

Not suitable for use with strong acids or acid chlorides.

Mat Capper

For laboratories having to seal medium numbers of microplates the Mat Capper offers an affordable solution. Compact and portable, the Mat Capper is very easy to use, requiring only one operation of the system to produce an accurate and tight seal on a wide range of both collection and shallow well microplates. The seals used are EVA or silicone mats, which work by friction fit and are re-usable with care. For a wide range of friction seals, please see page 56.

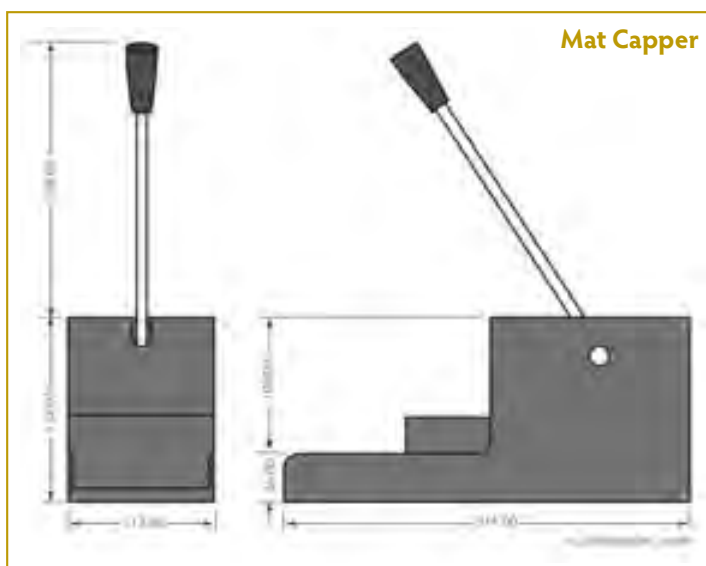
- Caps shallow and deep well polypropylene storage plates
- Needs minimal pressure for capping, reducing fatigue and RSI
- Powder coated to resist chemical spillage
- Universal plate 'shuttle' to take shallow or deep well plates
- Fixing holes for securing to bench



Shown with cap mat 229093

MicroLute™ De-capper

The MicroLute™ De-capper is for use with any MicroLute™ plate fitted with a drain cap. It enables the quick and easy removal of the protective lower drain cap, enabling the plate to be used.



Mat Capper and MicroLute™ De-capper

Description	Qty/pack	Cat. no.
Mat Capper, applicator for storage and assay plates	1	229078
MicroLute™ De-capper, for use with drain caps (not shown)	1	229110

Thermal plate sealers

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. Porvair Sciences has developed a range of units to meet the needs of low, medium and high throughput laboratories for microplate sealing.

MicroSeal Manual Thermal Plate Sealer

The MicroSeal is designed to be compact, easy to use and ergonomic. Heat sealing a wide range of plates is quick and simple. Heat sealing protects precious samples from evaporation and contamination when performing PCR or during storage. A built-in thermostat prevents overheating of the MicroSeal and with its small footprint and ease of use, the new MicroSeal is the obvious choice for manual sealing of PCR plates and microplates. With a pre-set temperature of 170°C, ideal for most common sealing applications, and dual LED status display for power and heating, the MicroSeal is safe and easy to use. An ergonomic pull down action allows single action sealing of most common plate types. Additional adaptors are available for specific plates.



- Fast warm up time
- Consistent, single action sealing
- Pre-set temperature for ease of use
- Sealing Temperature 170°C
- Warm up time < 10 minutes

MicroSeal plate sealer

Description	Qty/pack	Cat. no.
MicroSeal plate sealer 110/230v	1	229751
Plate adaptor for ANSI/SBS deep-well plates	1	229752
Plate adaptor for rimless 96-well PCR plates	1	229753
Plate adaptor for ANSI/SBS standard 14mm plates	1	229754
Plate adaptor block 384 deep well plates 30.2mm high	1	500014

MiniSeal II semi-automatic heat sealer

The new MiniSeal II semi-automatic plate sealer builds on the reputation of our earlier Miniseal design for robustness and an ability to seal most types of plate. For users who need a tight seal on deep well plates, conventional sealers may not offer sufficient down force to guarantee a good seal.

With powerful stepper motor control and a mighty 450 watts of heating power available, the new MiniSeal II copes effortlessly with PCR, filter-bottomed, assay and deep well plates, EVEN if the plate itself is distorted or bowed. Easy to set up with simple up/down programming for both sealing time and sealing temperature, the MiniSeal II also boasts a robust drawer design that ensures excellent conformance to health & safety regulations.

With so much available power, sealing times for most polypropylene plates with Porvair seals are less than 3 seconds each. Sealed plates are automatically ejected from the MiniSeal II. With a footprint smaller than a sheet of A4 paper and weighing just 6kgs, this electrically-driven sealer is ideal for small bench spaces.

Unlike some other manufacturer's products, MiniSeal II comes complete with plate adaptors for standard SBS microplates, deep well microplates and PCR plates. The unused adaptors are ingeniously designed to stack on top of the unit when not in use. Also included is a brass plate weight to keep your foils and seals flat during sealing.



- Desktop semi-automatic Heat Applied Plate Sealing System
- Seal SBS format micro well plates and tubes
- Seals plates of any height from 9 - 48mm
- Temperature range from ambient to 200°C
- Seal time from 0.1 - 9.9 seconds
- Simple slide operation
- Combined temperature and seal time display
- Light weight system, only 6kgs (14lbs)
- 110V / 220V 50/60 Hz compatible
- No compressed air required

MiniSeal II semi-automatic single plate sealer

Description	Qty/pack	Cat. no.
MiniSeal II semi-automatic single plate heat sealer 110V / 220V Supplied complete with two plate adaptor blocks, plate weight and line cord.	1	500090
Skirtless plate adaptor 96-well	1	500083
Plate adaptor flat top 384 PCR plate	1	500084

Porvair seals and foils

Porvair Sciences has a comprehensive range of seals and foils for thermal and adhesive sealing of microplates. In addition, a full range of re-usable cap mats is available for friction sealing of plates.

Foils and seals for the MicroSeal and MiniSeal Plus are supplied as cut sheets, 125mm x 78mm, in packs of 100. For the automated TriSeal system, these come in roll form. Sample rolls are 5m long, whilst production rolls are either 500m or 610m long, enough to seal 5-6,000 plates on average.

All Porvair heat seals have a sealing integrity range of -80°C to +120°C, are resistant to DMSO and TFA as well as most other solvents and will seal Polypropylene plates. For Polystyrene plates, please only use Clear Seal.

Heat seals for use with TriSeal or other automated sealers

Description	Qty/pack	Cat. no.
<i>All foils and films are 78mm width, sheet length is 125mm</i>		
Peel-Seal peelable sealing foil	1 x 610m 1 x 5m	229420 229450
Pierce-Seal pierceable sealing foil	1 x 610m 1 x 5m	229421 229451
Clear Seal optically clear film for fluorescence/colorimetric assays	1 x 500m 1 x 5m 100 sheets	229422 229452 229472
Pierce-Seal easily pierced foil for PCR	1 x 610m 1 x 5m	229440 229460
Thermal bond strong peelable sealing foil	1 x 500m 1 x 5m	229442 229462
Clear Weld-Seal strong permanent seal	1 x 610m 1 x 5m 100 sheets	229441 229461 229481
Gas-permeable Rayon seal for cell culture	1 x 200m 1 x 5m 100 sheets	229443 229463 229553

Porvair colour-coded thermal seals

Description	Qty/pack	Cat. no.
Easily pierced 20µm PP/PS lacquered aluminium foil – colour coded green 125mm x 78mm sheets printed with colour coding and right side up for ease of use	100	229572
Peelable 70µm polyester/aluminium laminate sealing foil – colour coded red 125mm x 78mm sheets printed with colour coding and right side up for ease of use	100	229571
Pierceable/peelable 38µm lacquered aluminium foil – colour coded blue 125mm x 78mm sheets printed with colour coding and right side up for ease of use	100	229573
Strong 85µm thick aluminium foil for long term storage – colour coded black 125mm x 78mm sheets printed with colour coding and right side up for ease of use	100	229574
Sealing film optically clear 75µm – non peelable, but pierceable 125mm x 78mm sheets printed with black coding and right side up for ease of use	100	500009
Sealing film optically clear 105µm – peelable, but non pierceable 125mm x 78mm sheets printed with black coding and right side up for ease of use	100	500010

Adhesive seals (suitable for use down to -40°C unless shown)

Description	Qty/pack	Cat. no.
SealPlate® clear adhesive film for PP or PS plates	100	229016
ThermalSeal RT2™ thermal cycler film for real-time PCR polyester 50µm thickness	100	229301
ThermalSeal RT5™ thermal cycler film for real-time PCR polyester 125µm thickness	100	229302
ThermalSeal A® thermal cycler film for standard PCR	100	229303
ThermalSeal A® thermal cycler film for standard PCR, sterile	100	229304
ThermalSeal RT2RR™ thermal cycler film for real-time PCR – 50µm films	100	229521
AlumaSeal II™ aluminium seal for PCR and storage down to -40°C	100	229305
AlumaSeal 96® aluminium seal for PCR and storage in 96-well plates with raised rims	100	229497
AlumaSeal 384™ aluminium seal for PCR and storage in 384-well rimless plates	100	229498
AlumaSeal CS™ aluminium seal for long term cold storage -80°C	100	229499
Absorb Max™ optically-black film for light-sensitive assays	100	229520
EZ-Pierce™ easily pierceable polyethylene film	100	229306
Aeraseal™ gas-permeable, hydrophobic Rayon seal for cell culture (-20°C only)	100	229307
Aeraseal™ gas-permeable, hydrophobic Rayon seal for cell culture, sterile (-20°C only)	50	229308
X-pierce™ pre-scored film 96 Well Round – sterile	50	229495
X-pierce™ pre-scored film 96 Well Round	100	229496

Porvair MicroBurst™ Microencapsulated clear sealing film

Using adhesive seals whilst wearing laboratory gloves can prove to be difficult. The glued surface of the seal can easily stick to your glove rather than your microplate. Porvair MicroBurst™ films eliminate this problem. When first handled, MicroBurst™ is not tacky and will not stick to anything. Only when you are satisfied that the film is in the correct place do you press down hard to activate the MicroBurst™ adhesive. Millions of tiny spheroids contain the adhesive and these “microcapsules” burst under applied pressure to release the adhesive just where you want it and not all over your gloves!

The patented MicroBurst™ technology is being offered for the first time in a Life Science laboratory by Porvair Sciences. The clear film has excellent optical properties and once activated, produces a very firm seal which quickly strengthens to form a near-permanent seal on your plates. MicroBurst™ film can be pierced by pipette tips or robot liquid handlers and is temperature stable – making it ideal for PCR work.



MicroBurst™ non-sticky adhesive seal

Description	Qty/Pack	Cat. No.
Microburst™ clear seal with microencapsulated adhesive coating	100	229731
Adhesive film application paddle	5	229732
Adhesive film application roller	1	229733

Zone-Free™ adhesive seal

Description	Qty/Pack	Cat. No.
EZ-Pierce™ sealing film 96-well round sterile	50	229493
EZ-Pierce™ sealing film 96-well round	50	229494

Adhesive seals

229494

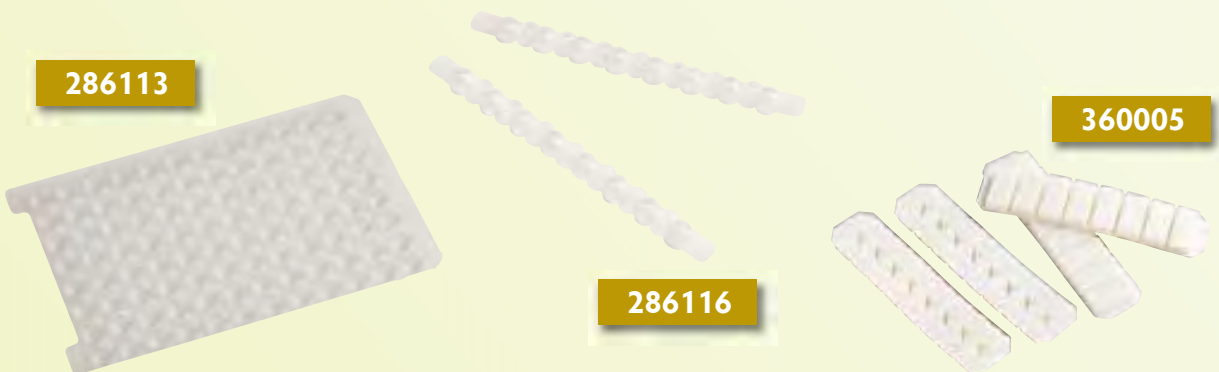


229016

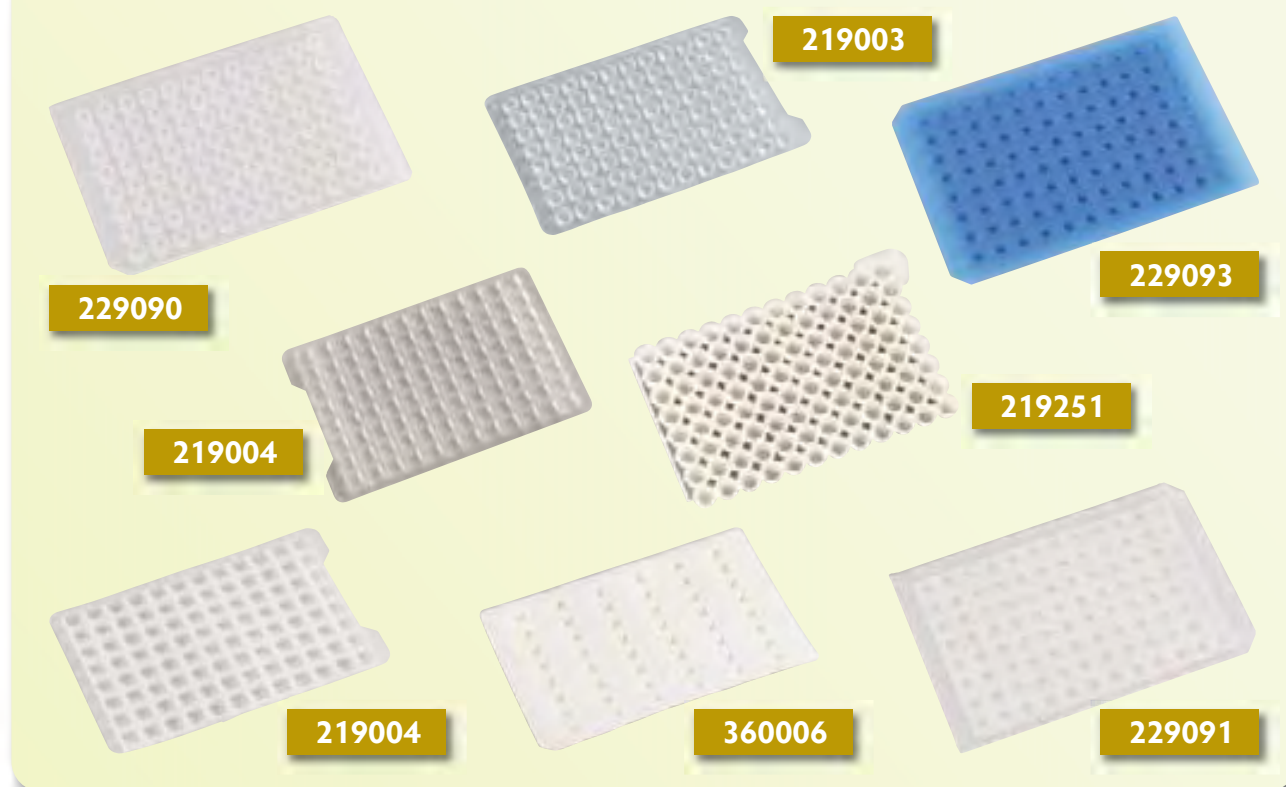
Heat seals and foils



Friction sealing strips and PCR cap mats



Friction seals

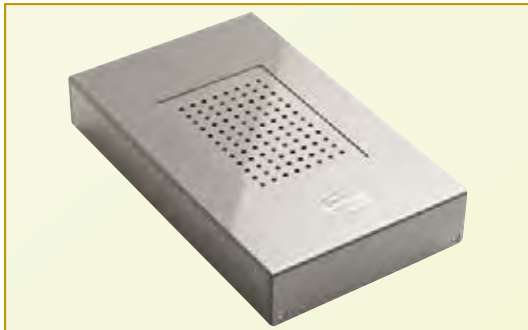


Friction seals (cap mats)

Description	Cross reference to Porvair Sciences plates	Qty/pack	Cat. no.
Silicone sealing mat to fit 384-well plates	219040, 219041	50	380001
EVA sealing mat to fit 96-square well plates	219006, 219008, 219009	50	219004
EVA sealing mat to fit 96-square well plates, sterile	219025, 219026, 219027	50	219019
Pierceable Santoprene mat for 96-square well plates	219006, 219008, 219009	100	360010
EVA sealing mat for 96-round well plates	219002, 219032	50	219036
EVA sealing mat for 96-round well plates, black	219002, 219032	50	219038
EVA sealing mat for 96-round well plates, sterile	219012	50	219042
Pierceable Santoprene seal strip to fit 24-well plates	360013	100	360014
Pierceable Santoprene seal mat to fit 48-well plates	360002, 360004	100	360006
Pierceable Santoprene seal strip to fit 96-well plates	360001	400	360007
Pierceable sealing cap, round 96-well	219002	50	219044
Mat for round 96-well plates (standard silicone)	219002 and round well plates	5	229090
Mat for square 96-well plates (standard silicone)	229230 and square well plates	5	229091
Mat for round 96-well plate (PTFE coated silicone)	219002 and round well plates	5	229092
Mat for square 96-well plate (PTFE coated silicone)	229230 and square well plates	5	229093
Polystyrene clear lid for all 96-well SBS standard plates	Fits all plates	100	229125
Polypropylene lid for all 96-well SBS standard plates	Fits all plates	100	229128
Cap mat for 1.1ml low profile storage plate	219250	5	219251
96-well PCR sealing mat, natural	For rimless PCR plates	50	286113
96-well PCR sealing mat, rubber, natural	For rimless PCR plates	50	286114
8-well PCR sealing strip, 125 strips per pack, 10 packs per case	–	1250	286116

MicroStream™ tube rack and microplate thawing station

The latest addition to the Porvair Sciences range of microplate equipment is this handy single-rack microplate thawing station. Ambient air is continuously and gently circulated across the base of the frozen microplate or tube rack, ensuring gentle, even thawing without the risk of damage to your precious samples. Economical, quiet in use and boasting a small footprint on the bench, the MicroStream™ is an ideal addition to your microplate or tube-rack sample management.



MicroStream™ microplate thawing station

Description	Qty/pack	Cat. no.
MicroStream™ microplate thawing station 110/220v	1	229510

MicroShake™ orbital microplate shaker

Description	Qty/pack	Cat. no.
MicroShake™ variable speed orbital SBS microplate shaker 110V US plug	1	229651
MicroShake™ variable speed orbital SBS microplate shaker 230V UK plug	1	229652
MicroShake™ variable speed orbital SBS microplate shaker 230V EU plug	1	229653
MicroLute™ SPE & MicroLute™ P ³ plate adaptor for MicroShake™	1	229654
Optional clear lid for MicroShake™ for use with 14mm high SBS microplates	1	229655

MicroShake™ orbital shaker

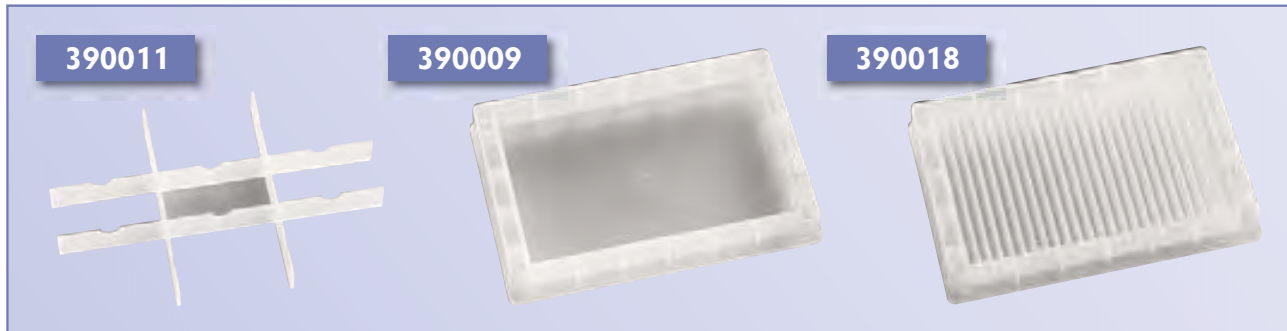
The MicroShake™ orbital shaker is specially designed for use with Porvair Sciences' MicroLute™ P³ protein precipitation plates. To ensure rapid and complete mixing of serum samples with acetonitrile, simply place the MicroLute™ P³ plate on the dedicated plate holder and agitate for up to 30 seconds. The MicroShake™ has been tested with our P³ plates to ensure that no breakthrough of supernatant liquid can occur and has been shown to be the fastest way to ensure protein precipitation throughout the sample. MicroShake™ uses a 15 volt power supply and is fitted with a speed adjuster. This compact and quiet unit is barely bigger than a standard SBS microplate and will fit on any bench, in any fume hood or even the deck of your liquid handler. For added peace of mind and to eliminate any risk of contamination, the P³ plates can be fitted with a re-usable silicone cap mat. A simple adjustment enables the MicroShake™ to be used with any SBS footprint microplate.



Reservoir trays

Porvair Sciences reservoir trays are designed for use with any robotic liquid handling system. These reservoirs offer options for a single liquid or a partitioned space for several liquids. Most working configurations are accounted for as well as varying liquid volumes. Made to take a range of liquid handling configurations from 8 or 12 channel pipettes through to 96 or 384 pipette heads.

- *Pyramid bottom for very low dead volume*
- *Robot friendly*
- *Moulded in natural virgin polypropylene*
- *Chemically and heat resistant*
- *Autoclavable*
- *Can be gamma irradiated*
- *Made to SBS/ANSI standard dimensions*



Reservoirs

Description	Max. vol.	Dead vol.	Qty/Pack	Cat. no.
96-well, full height, pyramid bottom	300ml	<64µl	25	390001
12-column full height, pyramid bottom	290ml	<540µl	25	390002
8-row, full height, pyramid bottom	300ml	<82µl	25	390003
96-well, low profile, pyramid bottom	86ml	<64µl	25	390004
12-column, each of 21ml, partitioned, pyramid bottom	252ml	<54µl (per col)	25	390005
8-row reservoir, each of 32ml, partitioned, pyramid bottom	256ml	<82µl	25	390006
384-well, full height, pyramid bottom	282ml	<7µl	25	390007
384-well, low profile, pyramid bottom	92ml	<7µl	25	390008
Reservoir, low profile, flat bottom	85ml	–	25	390009
12-column, each of 7ml, partitioned, pyramid bottom, low profile	84ml	<54µl (per col)	25	390012
384-well, low profile, with four controls	49.3ml	<120µl	25	390013
8-row, partitioned, each of 10.6ml, pyramid bottom, low profile	84ml	<82µl (per col)	25	390014
6-column, each of 47ml, partitioned, full height, pyramid bottom	282ml	<82µl (per col)	25	390015
384-well, 2 control wells, full height, pyramid bottom	282ml	<7µl	25	390016
16-row, partitioned, each of 4.9ml, low profile, pyramid bottom	78ml	<18µl (per col)	25	390017
24-column, each of 3.5ml, partitioned, low profile reservoir, pyramid bottom	84ml	<110µl (per col)	25	390018
4-column partition reservoir pyramid bottom	300ml	<540µl	25	390107
24-column reservoir, 3.5ml, partitioned, low profile	78ml	250µl	25	390108
384-well reservoir, 4 controls, half height	155ml	7µl	25	390109
384-well reservoir, controls, low profile, wave breakers	92ml	7µl	25	390110
4 rows of 73ml partitioned reservoir, pyramid bottom	292ml	0.5ml	25	390111
12 column reservoir, half-height, with outer channel	170ml	0.5ml	25	391001
Universal anti-splash reservoir baffle to fit 390009	–	–	10	390011
Disposable PVC trays for use with Porvair manifolds	–	–	25	219010

Reservoir trays



390001



390002



390003



390004



390005

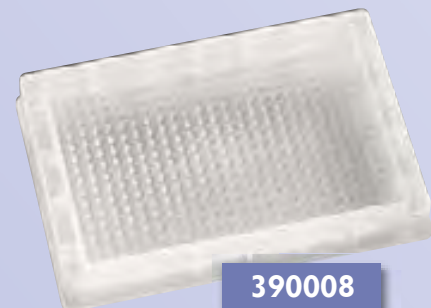


390006

390007



390008



219010



390012

Reservoir trays



390013



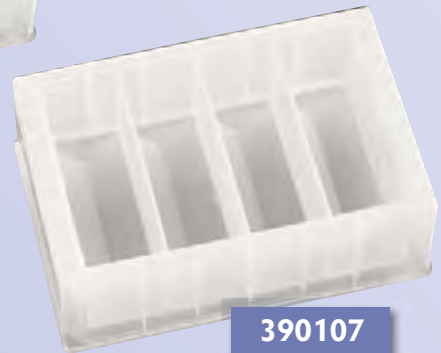
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390015



390017

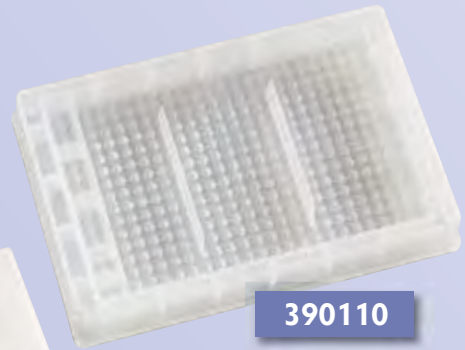


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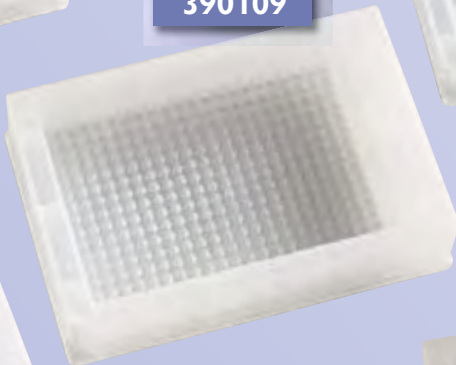
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390110



390111



391001

STORAGE/COLLECTION

LIFE SCIENCES

SOLID PHASE EXTRACTION

EQUIPMENT

59

TISSUE CULTURE & EPIGENETICS

CUSTOM MANUFACTURE



Tissue Culture & Epigenetics

For many years we have supplied scientists across Europe with our top quality Tissue Culture treated clear-bottomed assay microplates. We are now building on this success by introducing a range of carefully selected and quality controlled Tissue Culture plastics. Sourced from several prestigious Far Eastern manufacturers, Porvair TC Plastics are made to the highest international standards for:

- *Material Quality*
- *Surface Optical Polish*
- *Tissue Culture Treatment*
- *Sterility and Pack Integrity*

We have extensively researched these products and invested heavily in on-site Quality Assurance at each manufacturing plant as well as significant laboratory testing in the UK. Production is carried out in a Class 100000 / ISO Class VII clean room to ISO 9001:2008 and EN ISO 13485:2003 manufacturing standards to ensure all products are free from DNA/RNA, DNAase/RNAase and Pyrogen contamination. Most products can be supplied sterilised by gamma radiation.

We are confident that the products we have chosen for our new range are as good as, or better than, any European or American manufacturer, and at extremely attractive prices. Test reports comparing cell growth on our new range and a leading brand can be downloaded from our website: www.EpigeneticsXpress.com

All of these new products are in stock now and fall into two groups:

Cell & Tissue Culture Plasticware:

- Clear lidded Plates
- TC Flasks - Vented and Standard caps
- Dishes - lidded and glass-bottomed

Epigenetics Consumables & Supplies:

- Large volume Centrifuge Tubes
- Microcentrifuge tubes
- PCR tubes & strips
- Racked pipette Filter tips
- Serological pipettes
- "Mini" Pipettes
- Syringe filters



Epigenetics supplies

Pipettes

Porvair Pipettes are manufactured in virgin crystal polystyrene to ensure consistent quality and are available with five capacities: 1, 2, 5, 10 and 25ml. The 1, 2 and 5ml pipettes are a single-piece extrusion, whilst 10 and 25ml are ultrasonically welded at the tip and mouth-piece. All graduations are calibrated for accurate dispensing to within $\pm 2\%$ and negative graduations allow for additional working volume. All pipettes are supplied with a filter plug and are sterile, individually wrapped in easy to open packs and non-pyrogenic.

Our high quality polypropylene filter tips are supplied in convenient, sturdy, lidded racks which are autoclavable if sterility is compromised. Tips are available in three sizes: 0.1-10 μ l, 10-200 μ l and 100-1000 μ l and fit most popular makes of pipette, including Gilson™, Eppendorf™, Pipetman™, ThermoFisher™ and Biohit™.

Ultrajet pipette controller

The ergonomic design, light weight and powerful motor of our new Ultrajet Pipette controller gives you unrivalled ease of use and accurate control of aspirate and dispense

volumes. The Ultrajet has a disposable syringe filter inside to protect it from over-filling and a snug neoprene collar to firmly grip the pipette and ensure good directional control. It has been designed to work with all sizes of Porvair pipettes from 1 to 25ml and will fill the largest in just 6 seconds. A rechargeable lithium battery ensures no unsightly cables trailing across the bench and the unit can be stored on the handy self adhesive bench hook. Supplied with European 220V charger.

Syringe filters

Syringe/Vacuum driven filters are an essential way to purify cell culture media and we can supply these with three popular membranes:

PES (polyethersulfone) has a low-affinity for proteins and extractables; suitable for pre-filtration and filtration of buffers and culture media.

MCE (mixed cellulose ester) is ideal for filtration of aqueous solutions; as it effectively binds trace proteins.

Nylon providing a broad range of chemical compatibility for the filtration of either aqueous or organic solvents. It is hydrophobic and can be used in a broad pH range.



Centrifugation

'Easy Flip' centrifuge tubes are the answer for one-handed operation with a secure flip-cap lid that can also be unscrewed, yet is leak proof. They can be spun up to 9400g and will withstand autoclaving at 121°C or storage at -80°C.

Our standard 15 and 50ml centrifuge tubes have thin clear polypropylene walls and can withstand 8000g and 12000g respectively.

Self-standing centrifuge tubes are supplied in the popular 50ml size with conical bottoms and an outer

collar that allows the tube to stand on a bench and can withstand 6000g.

Microcentrifuge tubes

Our PCR and Microcentrifuge tubes and PCR strips are thin-walled to ensure good heat transfer and made from DNA/RNA, DNAase/RNAase and pyrogen free virgin polypropylene with a high light transmittance. Microfuge tubes can withstand up to 18000g and come in three sizes: 2.0ml, 1.5ml and 0.2ml. Clear tips for best pellet visibility are complemented by frosted upper walls for ease of marking.

Tissue & cell culture plastics

Dishes & flasks

This new range of tissue culture plastics combines the unrivalled optical purity of high-pressure moulded 100% USP Class VI virgin crystal polystyrene with a patented low-pressure gas plasma surface treatment that allows cells to adhere more efficiently to the surface by reducing its hydrophobicity. Highly polished moulds and rigorous quality control ensure that you get perfect visualisation every time with our new flasks and dishes.

Our range of culture flasks embody such novel features as moulded graduations in the flask walls, opaque areas for laboratory markers and sector division marks on the dishes. Both vented and sealed caps are available for all sizes of our flasks. Special glass-bottom culture dishes employ an optically clear glass bottom cleverly bound to a plastic dished frame with matching clear plastic lid. Data from a leading British university shows adherent cells grow as well or better on Corning TC plastics as on a leading branded product. The full report, including micrographs, can be seen on our website; www.EpigeneticsXpress.com



Tissue culture & Epigenetics consumables

Description	Lidded	Sterile	Qty/pack	Working volume (ml)	Cell growth area (mm ²)	Cat. no.
96 well Cell Culture Plate, individually wrapped. Flat bottom	✓	✓	100	0.1-0.2	32	500020
24 well Cell Culture Plate, individually wrapped. Flat bottom	✓	✓	50	0.38-0.57	191	500021
12 well Cell Culture Plate, individually wrapped. Flat bottom	✓	✓	50	0.76-1.14	359	500022
6 well Cell Culture Plate, individually wrapped. Flat bottom	✓	✓	50	1.9-2.9	951	500023
100mm diameter Cell Culture Dish, inner pack 20 x 15	✓	✓	300	11-16.5	55	500024
60mm diameter Cell Culture Dish, inner pack 20 x 25	✓	✓	500	4.2-6.3	21	500025
35mm diameter Cell Culture Dish, inner pack 20 x 25	✓	✓	500	1.8-2.7	9	500026
35mm Glass Bottomed Cell Culture Dish. 20mm dia glass	✓	✓	200	1.8-2.7	9	500027
175cm ² Cell Culture Flask, 750ml volume, plug seal cap	–	✓	40	35-52.5	175	500028
75cm ² Cell Culture Flask, 250ml volume, plug seal cap	–	✓	100	15-22.5	75	500029
25cm ² Cell Culture Flask, 50ml volume, plug seal cap	–	✓	200	5-7.5	25	500030
175cm ² Cell Culture Flask, 750ml volume, filter vent cap	–	✓	40	35-52.5	175	500031
75cm ² Cell Culture Flask, 250ml volume, filter vent cap	–	✓	100	15-22.5	75	500032
25cm ² Cell Culture Flask, 50ml volume, filter vent cap	–	✓	200	5-7.5	25	500033
Cell Scraper, 25cm. Individually packed, Sterile	–	✓	100	–	–	500065
50ml Centrifuge Tubes in racks of 25 x 18	–	✓	450	5.0-45	–	500034
50ml Centrifuge Tubes, free standing in bags of 50 x 10	–	–	500	5.0-45	–	500038
50ml Centrifuge Tubes, free standing, sterile	–	✓	500	5.0-45	–	500039
50ml Centrifuge Tubes, 'Easy Flip' top cap, sterile, Dnase/Rnase free	–	✓	500	5.0-45	–	500044
50ml Centrifuge Tubes Bulk, bags of 25 x 20	–	–	500	5.0-45	–	500036
15ml Centrifuge Tubes. 50/rack x 18	–	✓	900	1.5-14	–	500035
15ml Centrifuge Tubes, 'Easy Flip' top cap. sterile, Dnase/Rnase free	–	✓	500	1.5-14	–	500043
15ml Centrifuge Tubes Bulk, bags of 50 x 10	–	–	500	1.5-14	–	500037
Microcentrifuge Tube 0.5ml, Conical, Sterile. Inner bags of 1000	–	✓	5000	–	–	500040
Microcentrifuge Tube 1.5ml, Conical, Sterile. Inner bags of 1000	–	✓	5000	–	–	500041
Microcentrifuge Tube 2.0ml, Conical, Sterile. Inner bags of 1000	–	✓	5000	–	–	500042
"Mini" Serological Pipette 5ml, sterile, individually wrapped	–	✓	200	–	–	500047
"Mini" Serological Pipette 10ml, sterile, individually wrapped	–	✓	150	–	–	500048
"Mini" Serological Pipette 25ml, sterile, individually wrapped	–	✓	100	–	–	500049
Serological Pipette, 1ml, sterile, individually wrapped	–	✓	500	–	–	500050
Serological Pipette, 2ml, sterile, individually wrapped	–	✓	500	–	–	500051
Serological Pipette, 5ml, sterile, individually wrapped	–	✓	200	–	–	500052
Serological Pipette, 10ml, sterile, individually wrapped	–	✓	200	–	–	500053
Serological Pipette, 25ml, sterile, individually wrapped	–	✓	150	–	–	500055
PCR tubes 0.2ml strip of 8 plus caps. Bags of 125 x 10	–	✓	1250	–	–	500056
PCR tubes 0.2ml singles, bags of 1000 x 10	–	✓	10000	–	–	500057
PCR tubes 0.5ml singles, bags of 1000 x 10	–	✓	10000	–	–	500058
Filter Pipette Tips, 0.1-10µl, sterile, racks of 96 x 20	–	✓	1920	–	–	500059
Filter Pipette Tips, 10-100µl, sterile, racks of 96 x 20	–	✓	1920	–	–	500060
Filter Pipette Tips. 100-1000µl, sterile, racks of 96 x 20	–	✓	1920	–	–	500061
Syringe Filter, 30mm dia. PES 0.22µm. Individually packed	–	✓	45	–	–	500062
Syringe Filter, 30mm dia. MCE 0.22µm. Individually packed	–	✓	45	–	–	500063
Syringe Filter, 30mm dia. Nylon 0.45µm. Individually packed	–	✓	45	–	–	500064
Ultrajet Pipette Controller with 220V AC charger, Euro plug	–	–	1	–	–	500067
Ultrajet Pipette Controller with 220V AC charger, Euro plug UK adaptor	–	–	1	–	–	500072
Spare 220V AC Charger for Ultrajet	–	–	1	–	–	500068
Spare Lithium Battery for Ultrajet	–	–	1	–	–	500069
Ultrajet Filter 0.45µm	–	–	1	–	–	500070
Chromatrap Pro-A Chromatin Immunoprecipitation 24-Assay Kit See separate brochure at www.chromatrap.com	–	–	1	–	–	500071

Custom manufacture

Porvair Sciences Ltd has a long history of successfully helping customers develop new and innovative microtitre plates and equipment. Porvair Sciences expertise in polymer moulding, surface treatment, specialist assembly and general understanding of life science applications makes the company ideal for custom manufacture. We can also undertake 'private labelling' of our standard products. Current customers for custom manufacture include the following groups:

- *Scientific instrument companies*
- *Pharmaceutical R&D laboratories*
- *Cell biology companies*
- *Compound library suppliers*
- *Diagnostic companies*
- *Military contractors*
- *Microarray research companies*



Techniques which Porvair Sciences use in the generation of custom products include:

- *Polymer ultrasonic welding*
- *Plasma surface treatment of polymers*
- *'Two-shot' injection moulding*
- *Co-sintering of polymers/silicas*

Porvair Sciences offers rapid solutions to problems by consultancy, design and speedy prototyping for biotech, pharmaceutical and life science companies.



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250001	38	286111	13	320004	39	360029	33	360080	11	390108	57	500050	63
250002	38	286112	13	321001	39	360030	33	360082	33	390109	57	500051	63
250003	38	286113	55	321002	39	360031	33	360090	33	390110	57	500052	63
250004	38	286114	55	321003	39	360032	33	360098	55	390111	57	500053	63
250005	38	286115	13	321004	39	360033	33	360107	33	391001	57	500055	63
250006	38	286116	55	322001	39	360034	33	360108	33	500007	46	500056	63
250007	38	300003	10	322002	39	360035	32	360111	33	500008	46	500057	63
250008	38	301002	27	322003	39	360036	32	360112	33	500009	52	500058	63
250009	38	301004	21	322004	39	360037	32	360113	33	500010	52	500059	63
250010	38	301006	27	324001	29	360038	32	360114	33	500011	36	500060	63
250011	38	301010	27	324002	29	360039	32	360115	11	500012	36	500061	63
250012	38	301012	27	324011	29	360040	32	360117	11	500013	36	500062	63
250013	38	301014	27	324012	29	360043	32	360118	32	500014	50	500063	63
250014	38	301018	27	324021	29	360044	32	360119	32	500020	63	500064	63
250015	38	301060	27	324022	29	360045	32	361001	33	500021	63	500065	63
250016	38	301070	27	324031	29	360046	32	361002	33	500022	63	500066	6
250017	38	301502	27	324032	29	360047	32	361003	33	500023	63	500067	63
250018	38	301506	27	324041	28	360048	32	361004	33	500024	63	500068	63
250019	38	301510	27	324042	28	360049	32	380001	55	500025	63	500069	63
250024	38	301512	27	324051	28	360050	32	390001	57	500026	63	500070	63
250026	38	303002	24	324052	28	360051	32	390002	57	500027	63	500071	63
271012	41	303004	24	327001	30	360052	32	390003	57	500028	63	500072	63
271014	41	303006	24	327002	30	360053	32	390004	57	500029	63	500074	13
271016	41	303008	24	360002	11	360056	33	390005	57	500030	63	500075	13
271018	41	303010	24	360004	11	360057	33	390006	57	500031	63	500076	36
271020	41	303012	24	360006	55	360058	33	390007	57	500032	63	500077	36
271022	41	311001	26	360008	32	360059	33	390008	57	500033	63	500078	36
271023	41	311003	26	360010	55	360060	32	390009	57	500034	63	500079	23
271024	41	311010	26	360011	33	360061	32	390010	57	500035	63	500080	36
271026	41	311030	26	360013	11	360062	32	390011	57	500036	63	500090	51
271028	41	311503	26	360014	55	360063	33	390012	57	500037	63		
271030	41	312001	26	360016	32	360064	32	390013	57	500038	63		
271032	41	312003	26	360017	32	360065	33	390014	57	500039	63		

Chemical compatibility chart

This chemical compatibility chart should be used as a general guide. It is recommended that tests are performed if there is any doubt about material compatibility

Chemicals	Membranes			Plate matrix	
	Cellulose nitrate	Nylon	PVDF	Polystyrene	Polypropylene
Acids					
Acetic acid 25%	S	S	S	S	S
Acetic acid 100%	X	M	?	M	?
Formic acid 25%	S	X	S	M	S
Formic acid 100%	M	X	S	M	S
Hydrochloric acid 25%	S	X	S	S	S
Hydrochloric acid 100%	X	X	S	M	S
Nitric acid 25%	S	?	S	X	S
Nitric acid 65%	X	X	M	X	S
Phosphoric acid 25%	S	?	S	M	S
Sulphuric acid 25%	S	?	S	S	S
Sulphuric acid 98%	X	X	X	X	S
Alcohols					
Amyl alcohol	S	S	S	S	S
Benzyl alcohol	M	S	S	X	S
Ethanol (ethyl alcohol) 70%	M	S	S	M	S
Ethanol (ethyl alcohol) 98%	X	S	S	M	S
Ethylene glycol	M	S	S	S	S
Glycerol	S	S	S	S	S
Isopropanol, n-propanol	S	S	S	S	S
Methanol 98%	X	S	S	M	S
Phenol	S	S	M	M	S
Propylene glycol	X	S	S	S	S
Bases					
Ammonium hydroxide 25%	X	S	M	M	S
Ammonium hydroxide 1N	S	S	S	M	S
6N Sodium hydroxide	X	?	X	S	S
Potassium hydroxide	X	?	S	M	S
Sodium hydroxide 5%	X	S	S	M	S
Sodium hydroxide 1N	X	S	S	M	S
Esters					
Amyl, Propyl, Butyl acetate	X	S	M	X	M
Benzyl benzoate	S	?	M	?	M
Ethyl acetate, Methyl acetate	X	S	M	X	M
2-Ethoxyethyl acetate	X	?	S	X	M
Methyl cellosolve acetate	X	S	S	X	M
Hydrocarbons					
Gasoline, Kerosene	S	S	S	S	M
Hexane	S	S	S	X	M
Toluene	S	S	S	X	M
Xylene	S	S	S	X	M
Carbon tetrachloride	S	S	S	X	M
Chloroform	S	S	S	X	M
Freon	S	S	S	X	M
Methylene chloride	M	S	S	X	M
Monochlorobenzene	S	S	S	X	M
Perchloroethylene	S	S	S	X	M
1,1,1-Trichlorethane	M	S	S	X	X
1,1,2-Trichlorethane	X	S	S	X	X
Trichloroethylene	S	S	S	X	M
Ketones					
Acetone	X	S	X	X	M
Cyclohexanone	X	S	M	X	M
Methyl ethyl ketone	X	S	M	X	M
Miscellaneous					
Acetronile	X	S	S	X	S
Dimethylsulfoxide (DSMO)	X	?	X	M	S
Dioxane	X	S	X	X	S
Ethyl ether	M	S	S	X	S
Formaldehyde 30%	S	?	S	X	S
Hydrogen peroxide 30%	S	S	S	S	S
Methyl cellosolve	X	S	S	X	S
Pyridine	X	M	S	X	M
Tetrahydrofuran	X	S	X	X	S

S = suitable M = short term contact X = unsuitable ? = not tested Tests were performed at room temperature

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