



GFD®



Serving our customers since 1989

MEET YOUR NEW LAB ASSISTANT.

The Glass Filter Dryer (GFD®) is an innovative piece of laboratory/pilot plant equipment. It is a miniature version of a production filter dryer, allowing easy lab scale filtration and drying with the same reliability and benefits as full size PSL filter dryer products.

The different sizes available means that there will be a GFD® to meet any laboratories' needs.

This modern laboratory apparatus works under vacuum and pressure, has a heated jacket for drying and a removable filtration basket for collection of the product. The GFD® technology supersedes old style laboratory filtration and drying methods such as Büchner filtration and tray drying.



STANDARD GFD® FEATURES

GFD® Lab

GFD® Lab
PLUS

Combined Filtration & Drying	✓	✓
Manual Agitator Raise/Lower	✓	Option Available
Automatic Agitator Raise/Lower	✗	✓
Stainless Steel Vessel	Option Available	Option Available
Removable Filter Basket	✓	✓
Digital Display & Touch Screen	✗	✓
Recipe Input & Sequencing	✗	✓
Real-Time Value & Graph Display	✗	✓
Process Data Recording & Export	✗	✓

AGITATOR

Allows smoothing and ploughing of filter cake

Aids uniform drying of filter cake

Available in PTFE Coated Stainless Steel, 316L Stainless Steel or C22 Hastelloy

AGITATOR RAISE LOWER SYSTEM

Adjustable Agitator Height

Available in manual or automated system

NOZZLES

Slurry In and Cake washing

Easy connection to process utilities (nitrogen purge, vacuum, etc)

Ancillary Equipment Controls (IR temperature probe, Pressure monitoring, etc.)

REMOVABLE FILTER BASKET

Totally removable for ease of product collection

Interchangeable meshes are available in various materials and pore size (Available in Polypropylene or PTFE Baskets only)

Also available in Metallic sintered mesh

MOTOR

Bidirectional Agitator Drive Motor up to 100rpm

GLASS VESSEL

Manufactured from Borosilicate 3.3 glass

Easy to clean

Extremely chemical and heat resistant

316L Stainless Steel and C22 Hastelloy options available.

HEATED JACKET

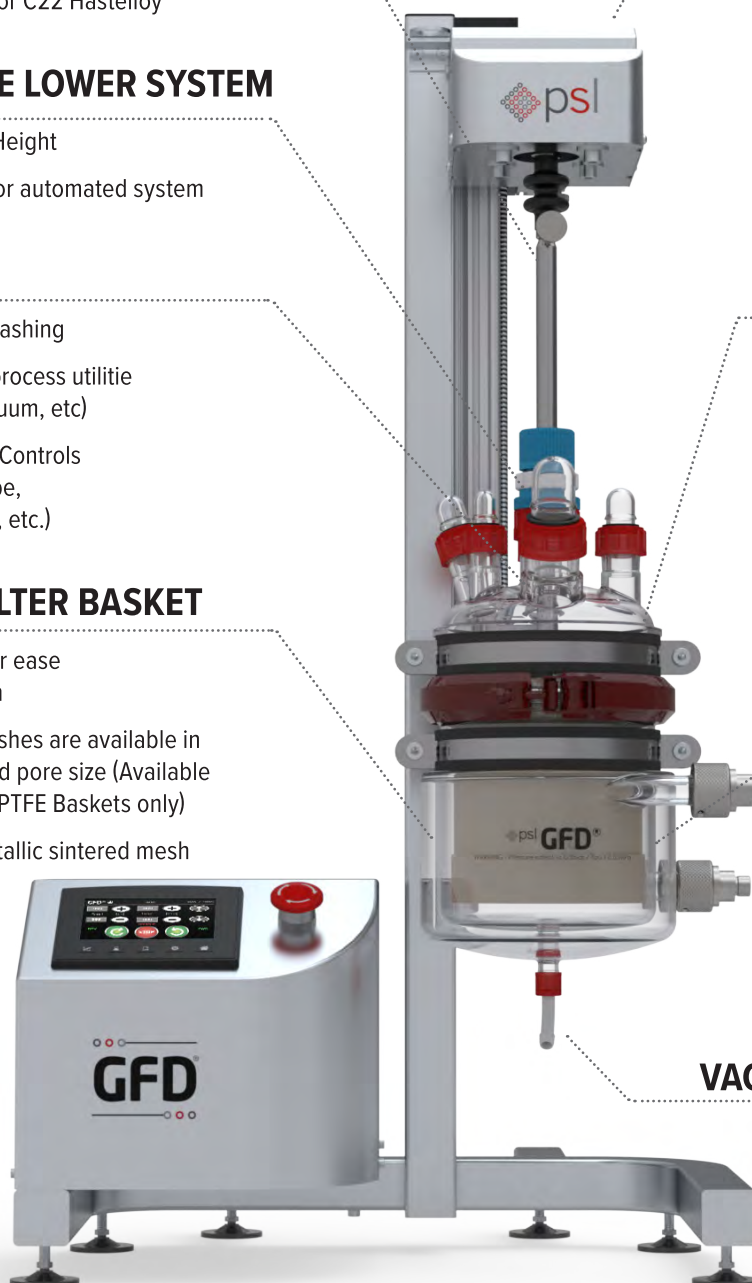
Aids quick and effective drying of the product

Aid control of temperature sensitive processes

Temperature control unit (TCU) Package option available

VACUUM/DRAINAGE NOZZLE

Vacuum Package option available



Direct Scale-Up



010 Series



050 Series



500 Series

Laboratory Synthesis up to Pilot Scale.

GFD® Lab Specifications	010 Series	050 Series	500 Series
Filtration Area	0.002m ²	0.01m ²	0.05m ²
Filter Cake Volume (Max)	0.1 Litre	0.5 Litre	5 Litres
Filter Cake Volume (Min)*	0.03 Litres	0.18 Litres	0.93 Litres
Filter Cake Depth (Max)	50mm	50mm	100mm
Filter Cake Depth (Min)*	12.5mm	18mm	18.5mm
Vessel Volume	0.3 Litres	2 Litres	10 Litres
Vessel Operating Temperature (Min)*		-25°C (-13°F)	
Vessel Operating Temperature (Max)*		150°C (302°F)	
Vessel Operating Pressure (Min)		Full Vacuum	
Glass Vessel Operating Pressure (Max)		0.5 barg (7.25 psi)	
Metallic Vessel Operating Pressure (Max)		4 barg (58 psi)	
Dimensions (HxWxD) (mm)	980 x 530 x 330	980 x 530 x 330	1680 x 780 x 650

Minimum recommended depth for efficiency of agitator during drying phase.
 Vessel operating temperature dependant on basket and seal material options selected.

TAKING YOUR PROCESS FURTHER...TOGETHER

At PSL, we provide our industry partners with more than just process hardware. Our process staff are experienced with various synthesis & formulation processes and can help you make the most of your GFD® for your R&D activities.

C.O.P.E.™ - the sister company of PSL - was formed in 2015 to offer an intermediate step towards your product commercialisation. The Center of Process Excellence is a collaborative place where our industry partners can work side-by-side with our technical experts in a flexible and non-GMP environment to explore new process techniques & ideas with efficiency,

This unique approach will allow you to maximize the performance of your GFD® according to your unique process application. Our C.O.P.E.™ staff understand the complexity of your development activities and are here to support your every step of the way.

Our GFD® Process services include:

Process Trials with your specific product/application

Cycle Development Studies (filtration, washing, drying, recovery, cleaning)

Scale-up Studies

Analytical Support using custom test instruments and software

Process Optimization & Trouble-Shooting

Training & Education

Consulting Services



Center of Process Excellence

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MAXIMIZING YOUR GFD® PERFORMANCE

Our dedicated customer care technicians are here to aid the smooth installation, operation and maintenance of your new or existing GFD® system.

Our GFD® after-sales services include:

Spare Parts

Operator Training (installation, operations and maintenance)

Site Qualification Support (IQ and OQ)





◦ Quality ◦ Innovation ◦ Global Relationships

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**INSPIRING A NEW GENERATION TO PROVIDE
GLOBALLY ENHANCING, INNOVATIVE AND
QUALITY PROCESS SOLUTIONS.**

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PSL is an award winning international manufacturer providing quality, innovative technology with process development expertise to the pharmaceutical, biopharmaceutical, chemical and laboratory industries since 1989.

Our experienced engineering teams work closely with our in-house chemists to accelerate process development and create the most suitable and ergonomic solutions.