

Agilent LLRP Pilot-scale Preparative Columns

Data Sheet



Introduction

High performance liquid chromatography is one of the most powerful techniques for purification of complex chemical compounds. Greater economy and flexibility can be gained by packing your own pilot-scale preparative columns. We have extended our Load & Lock column range with a new design to increase the flexibility and reduce operating costs of your pilot or production facility. The Agilent Load & Lock Remove Process (LLRP) is the only system that performs Dynamic Axial Compression (DAC) or Static Axial Compression (SAC). The undocking feature in the SAC mode facilitates the movement of the packed columns anywhere in the facility – without the packing station. In addition, you can pack multiple columns of the same or three different diameters or variable packed bed lengths on a single packing station.

Key Benefits

- **High Performance**—Agilent LLRP columns combine excellent packed-bed stability with enhanced flow distribution to deliver high-quality purification with improved speed, flexibility, and ease-of-use.
- **High Productivity**—Sorbent can be unpacked, cleaned and re-packed if the column becomes contaminated, reducing downtime.
- **Flexible**—Choose between Dynamic Axial Compression and Static Axial Compression, both providing consistent and high quality chromatography.
- **Fast**—Columns take only 30 minutes to pack, significantly less time than waiting for a supplier to send a new pre-packed column.
- **Economical**—Designed for low cost of ownership, all the 10, 15 and 20 cm (4, 6 and 8 inch) inner diameter Agilent LLRP columns conveniently use the same 468 MultiPacker Station, and you can save on run time and sorbent costs by only packing the length of the column necessary for the purification.
- **Safe with solvents**—Powered by compressed air for safe use with any solvent, even in hazardous locations.



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Highest performance from the unique fluid and sample distribution plate

Fluid and sample distribution is the key parameter to effective column separations and so we designed a unique flow distribution system that improves column performance by diffusing the sample more efficiently over the complete bed surface. This proprietary design has been proven to minimize backpressure and peak broadening while optimizing sample loading.

Agilent LLRP Columns with 468 MultiPacker Station – the only system which performs Dynamic Axial Compression and Static Axial Compression

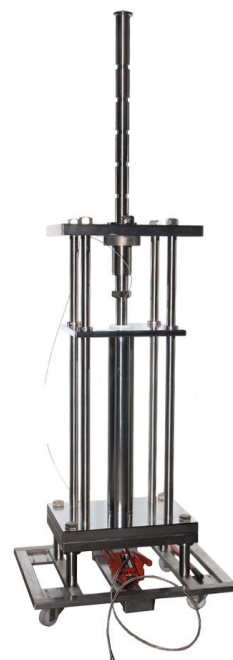
The Agilent LLRP column is unique in that it offers dynamic and static axial compression. Axial compression has been used for many years to extend the life of preparative columns and improve their performance. By using axial compression, the sorbent particles form a tightly packed, void-free bed for high performance chromatography. Once the column is packed, the 468 MultiPacker Station can continue to apply dynamic axial compression to the packed bed to maximize the column's performance and longevity or the column plunger can be locked and the column removed from the packing station, for use at the purification site. The flexibility provided by operation in DAC or SAC mode ensures the delivery of consistent and high-quality chromatography. The stable packed bed ensures excellent permeability and extended column life-times. Polymeric sorbents and soft gels are easily packed using DAC mode and then usually operated in SAC mode.



80 x 20 cm (length x id)



80 x 15 cm (length x id)



80 x 10 cm (length x id)

Preserve space - the unlocking (SAC) feature facilitates the use of the packed columns anywhere in the facility without transporting the 468 MultiPacker Station with the column to the purification site.



Easily pack and use various inner diameters 10 cm (4 inch), 15 cm (6 inch) and 20 cm (8 inch) id and bed lengths with the widest possible array of sorbent types by using one single packing station.

Designed for easy operation

Requiring only compressed air, the Agilent 468 MultiPacker Station uses no electric power, making it safe to use with any type of solvent, and the perfect solution for hazardous environments. It is the most flexible pilot or production packer available. A single Agilent 468 MultiPacker Station accepts three different column diameters of Agilent LLRP columns, when you need to purify different quantities of material you only need a new column kit. This simple step saves money and ensures you use the best size of column for your particular application.

In addition, you can vary the amount of packing material to customize the column length, minimizing solvent consumption and cost of purification. Whether purifying a few grams or kilograms of material, your system can be tailored to maximize throughput while reducing costs.

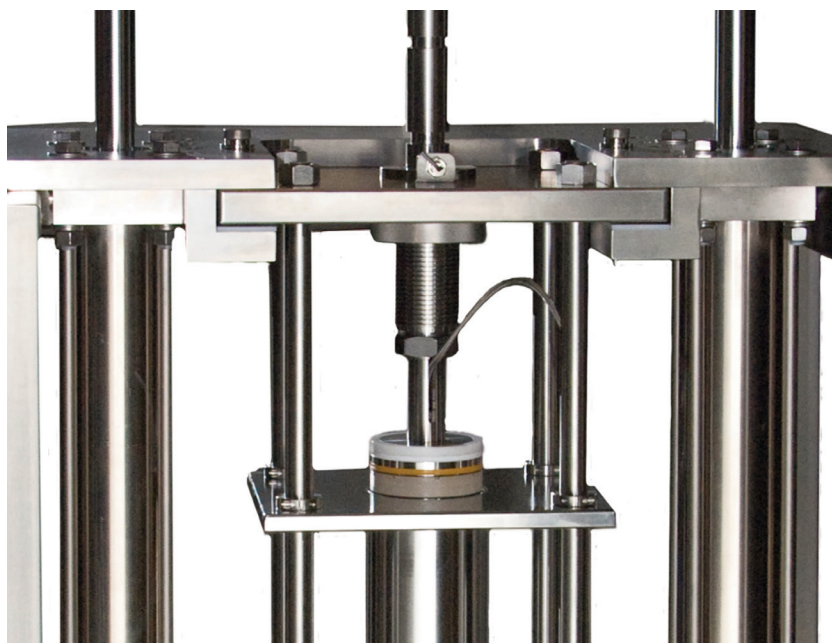
All commercially available sorbents can be successfully packed into Agilent LLRP columns. It is also compatible with virtually any particle size sorbent and is designed to pack column bed lengths from 5 cm to 48 cm.

DAC and SAC capability in a single system

The SAC mode allows you to pack multiple columns and protects fragile sorbents from being crushed and yet maintain separation integrity.



Removal of the sorbent by plunger extension to ease the unpacking process and minimize handling of sorbent and solvents.



Unique piston design with a proprietary high performance fluid distribution plate on the column inlet and outlet - enhanced loadability up to 20% compared to other available packers.

Technical Specifications

Internal diameter		10 cm (4 inch)	15 cm (6 inch)	20 cm (8 inch)
Length		80 cm	80 cm	80 cm
Min. bed length		5 cm	5 cm	5 cm
Max. bed length		48 cm	48 cm	48 cm
Total volume		6.3 L	14.1 L	25.1 L
Sorbent capacity		2.3 kg	6.4 kg	11.3 kg
Column plunger compression		Top-down		
Max. working pressure		100 bar (1,500 psi)		
Max. hydraulic pressure		27 bar (400 psi)	55 bar (830 psi)	95 bar (1,430 psi)
Ratio hydraulic versus mechanical pressure on bed		0.4:1.0	0.8:1.0	1.4:1.0
Utilities required		6 bar (90 psi) clean air		
Column dimensions	Width	84 cm (33 inch)		
	Height	can vary between 175 cm (69 inch) to 224 cm (88 inch) depending on the bed height		
	Depth	66 cm (26 inch)		
	Weight (*with water jacket)	463 kg (1020 lb) *503 kg (1110 lb)	476 kg (1050 lb) *531 kg (1170 lb)	499 kg (1100 lb) *562 kg (1240 lb)
486 MultiPacker Station	Width	168 cm (69 inch)		
	Height	can vary between 196 cm (77 inch) as shipped, to 281 cm (110.5 inch) during addition of the slurry		
	Depth	224 cm (88 inch)		
	Weight	455 kg (1003 lb)		

Ordering Information

Description	80 cm × 10 cm (4 inch) (L × id)	80 cm × 15 cm (6 inch) (L × id)	80 cm × 20 cm (8 inch) (L × id)
Agilent LLRP Column	PCG93RP80X10SP	PCG93RP80X15SP	PCG93RP80X20SP
Agilent LLRP Column with SS Water Jacket	PCG93RP80X10SPWJ	PCG93RP80X15SPWJ	PCG93RP80X20SPWJ
Agilent LLRP Column Spare Part Kit	PCG93LLRP100KIT	PCG93LLRP150KIT	PCG93LLRP200KIT
Agilent 486 MultiPacker Station	PCG93LLRPPACK468		

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Product specifications and descriptions in this document are subject to change without notice.

© Agilent Technologies, Inc., 2011
Published in USA, February 1, 2011
Publication Number 5990-6665EN



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