

Nano, Capillary and Micro LC Columns

Delivering high performance separations to -omics research

Our columns have been specifically designed to combine high performance with ease of use. From the “plug and spray” EASY-Spray columns to the innovative nanoViper fitted Acclaim PepMap range and the Monolithic PepSwift and ProSwift columns.

- **LC-MS Compatible Formats**
Offering the highest sensitivity
- **1200 bar Compatible Nano Columns**
With increased length to increase peak capacity
- **Monolithic Polymer Phases**
For high throughput peptide and protein analysis



The Bio LC web page contains the latest news, applications and downloads for the nano, capillary and microbore range. Visit www.thermoscientific.com/columns

NanoLC

Technical Resources



visit www.thermoscientific.com/chromexpert
to access the following information:

- Application Areas by Column Format
- Chemistries



EASY-Spray Columns

“Plug and Spray” nano LC columns for routine and robust performance.

- Simple to use format
- Routine research methodology
- Excellent performance for peptide separations
- Available with wide pore phases and monoliths for the separation of intact proteins

Acclaim PepMap C18 100Å

Particle size (µm)	Length (mm)	50µm ID	75µm ID
2	150	ES801	ES804
	250	–	ES802
	500	–	ES803
	750	–	ES805
3	150	–	ES800

Acclaim PepMap C18 300Å

Particle size (µm)	Length (mm)	50µm ID	75µm ID
5	150	–	ES812

PepSwift

Length (mm)	200µm ID
250	ES810



EASY-Spray Emitters

Integrated sprayer coupled with a transfer line.

- Pre-made connections
- Easy installation in the MS Ion Source
- No chromatography required

EASY-Spray Emitters

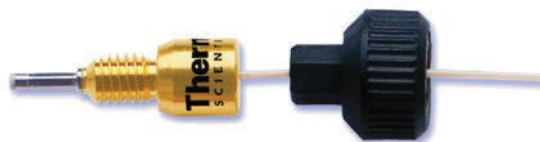
Description	Cat. No.
EASY-Spray Emitter, nanoflow (Emitter ID 7µm, Transfer line ID 20µm, Transfer line length 500mm)	ES791
EASY-Spray Emitter, microflow (Emitter ID 20µm, Transfer line ID 75µm, Transfer line length 500mm)	ES792



nanoViper Fingertight Fittings

Designed to be a virtually dead volume-free fingertight UHPLC fitting system.

- Provides virtually zero-dead-volume connections
- Compatible with backpressures up to 1000 bar (14,500 psi)
- Suitable for temperatures up to 80°C
- Easy to use 1/32" PEEK sheathed fused silica and fingertight design
- Works with virtually any valve and any column from any manufacturer



The nanoViper connections come preassembled and high pressure tested. The fittings do not “grab” the tubing at a single point. It seals at the tip and not with a ferrule. Nor does it “grab” the tubing at a single point. It is this feature that gives nanoViper fittings their UHPLC, virtually dead-volume-free capabilities.

nanoViper Fingertight Fittings

Length (mm)	Green 10µm ID	Orange 20µm ID	Brown 50µm ID	Black 75µm ID	Red 100µm ID	Purple 150µm ID
70	-	6041.5120	6041.5123	6041.5126	6041.5810	6041.5817
150	6041.5118*	6041.5121	6041.5124	6041.5127	6041.5811	6041.5818
250	-	-	-	6041.5730	6041.5812	6041.5819
350	-	6041.5240	6041.5540	6041.5735	6041.5813	6041.5820
450	-	-	-	-	6041.5814	6041.5821
550	-	6041.5260	6041.5560	6041.5760	6041.5815	6041.5822
650	-	6041.5275	6041.5575	6041.5775	6041.5824	-
750	-	6041.5280	6041.5580	6041.5780	6041.5816	6041.5823
850	-	-	-	6041.5785	-	-
950	-	6041.5122	6041.5125	6041.5128	-	-
1100	-	-	-	6041.5711	-	-

*180mm Length

Trap Column Cartridges Holders with nanoViper Fittings

Description	Cartridge Length (mm)	Fitting ID (µm)	Cat. No.
µ-Precolumn holder for trap cartridges with 2 x 100mm length nanoViper fittings	5	30	164649
	15	75	164650

Sample Loops with nanoViper Fittings

Volume (µL)	Cat. No.	Quantity
1	6826.2401	1 Each
5	6826.2405	1 Each
10	6826.2410	1 Each
20	6826.2420	1 Each
50	6826.2450	1 Each
125	6826.2412	1 Each

Find out more about how SMART Digest Kits can benefit your workflow at:
www.thermoscientific.com/SMARTdigest



nanoViper Application Kits

nanoViper fittings are also included in tubing and application kits designed for use with the UltiMate 3000 RSLCnano systems.

nanoViper Fitting Kits for UltiMate 3000 RSLCnano Systems

Description	Tubing	Samples	Trap Column	Separation Column	RSLCnano Systems
Direct Injection nano LC Kit	Y	Y	–	Y	6720.0300
Direct Injection capillary LC Kit	Y	Y	–	Y	6720.0305
Preconcentration nano LC kit	Y	Y	Y	Y	6720.0310
Preconcentration capillary LC kit	Y	Y	Y	Y	6720.0315
Preconcentration monolithic LC kit	Y	Y	Y	Y	6720.0320
2D salt plugs kit	Y	Y	Y	Y	6720.0325
Automated off line SCX-RP peptides kit	Y	Y	Y	Y	6720.0330
Automated off line RP-RP peptides kit	Y	Y	Y	Y	6720.0340
Tandem nano LC kit	Y	Y	Y	Y	6720.0335
FLM nanoViper tubing kit (All tubing for nano LC preconcentration)	Y	–	–	–	6041.5100
MS connection kit	Y	–	–	–	6720.0345
EASY-Spray connection kit (Supports direct injection as well as preconcentration)	Y	Y	Y	–	6720.0395



Acclaim PepMap NanoLC columns

The standard for peptide separations in proteomics

- High-resolution protein identification
- Highest sensitivity in LC-MS
- Fitted with nanoViper fittings as standard



Acclaim PepMap C18 100Å

Particle size (µm)	Length (mm)	nanoViper Column				nanoViper FS
		50µm ID	75µm ID	300µm ID	1000µm ID	75µm ID
2	50	164561	164563	164560	164454	–
	150	164562	164534	164537	164711	164769
	250	164709	164536	–	–	164734
	500	164710	164540	–	–	164738
3	50	164712	164567	164716	164717	–
	150	164713	164568	164571	164572	164738
	250	164714	164569	–	–	–
	500	164715	164570	–	–	164739
	750	–	–	–	–	164939
5	50	–	–	164901	164899	–
	150	–	–	164902	164900	–

Note: nanoViper FS Columns have 45mm of Fused Silica for use with PEEK sleeves and Microtight unions

Acclaim PepMap C8 100Å

Particle size (µm)	Length (mm)	nanoViper Column			
		50µm ID	75µm ID	300µm ID	1000µm ID
3	150	–	164706	164722	164723

Acclaim PepMap C4 300Å

Particle size (µm)	Length (mm)	nanoViper Column			
		50µm ID	75µm ID	300µm ID	1000µm ID
5	150	–	164707	164720	164721

Acclaim PepMap C18 300 Å

Particle size (µm)	Length (mm)	nanoViper Column			
		50µm ID	75µm ID	300µm ID	1000µm ID
5	150	–	164708	164718	164719

Accucore NanoLC Columns

Accucore 150-C18

		nanoViper Column
Particle size (µm)	Length (mm)	75µm ID
2.6	150	16126-157569
	500	16126-507569

Accucore 150-C4

		nanoViper Column
Particle size (µm)	Length (mm)	75µm ID
2.6	150	16526-157569
	500	16526-507569

Accucore 150-Amide-HILIC

		nanoViper Column
Particle size (µm)	Length (mm)	75µm ID
2.6	150	16726-157569



MSPac™ DS-10 MS Desalter Cartridge

Built for LC-MS compatibility

- High confidence with low peak carryover
- Antibody and protein desalting with a high load capacity
- High pH stability: 0 - 14
- IEX, pH-gradient, SEC fraction use
- MS sensitivity improvement



MSPac DS-10 MS Desalter Cartridge

Item	Cat. No.
Desalter Cartridge - 2 Pack	089170
Cartridge Holder	069580

Monolithic Capillary and Micro HPLC Columns

High-speed peptide and protein separations

- High-resolution for protein identification, biomarker discovery, and systems biology
- High column-to-column reproducibility
- nanoViper fittings for easy column installation

The monolithic structure offers a high-quality alternative to traditional microparticulate sorbents, providing important advantages to the chromatographic separation. High-sensitivity proteomics and biotech applications are easily performed using these columns.



PepSwift

Length (mm)	PepSwift		
	100µm ID	200µm ID	500µm ID
5	–	164558	–
50	164584	164557	164585
250	164543	164542	–

ProSwift RP-4H

Length (mm)	ProSwift		
	100µm ID	200µm ID	500µm ID
100	–	–	164925
250	164922	164923	–
500	164921	–	–

ProSwift C4 RP-5H

Length (mm)	ProSwift		
	100µm ID	200µm ID	500µm ID
100	–	–	164931
250	164929	164930	164932
500	164928	–	–



Trap columns – nano trap design

Acclaim PepMap C18 100Å

Type	Part number	Particle Size	ID	Bed Length (mm)	Total Length	Quantity
nanoViper Column	164535	3	75	20	150	2 Pack
	164705	3	75	20	70	2 Pack
	164564	5	100	20	150	2 Pack
Classic Column	164197	5	100	10	150	2 Pack
	164199	5	100	20	150	2 Pack
	164213	5	200	20	150	2 Pack

Note: 164705 is a shorter total length used for vented column set up for example with EASY nLC 1000

Trap Columns – Cartridge (Set of 5)

Acclaim PepMap C18 100Å

Length (mm)	300µm ID	1000µm ID
5	160454	160434
15	–	160438

Acclaim PepMap C8 100Å

Length (mm)	300µm ID
5	161194

Acclaim PepMap C4 300Å

Length (mm)	300µm ID
5	163591

Acclaim PepMap C18 300Å

Length (mm)	300µm ID
5	163589

Accucore 150-C18

Length (mm)	300µm ID
5	16126-900379

Accucore 150-C4

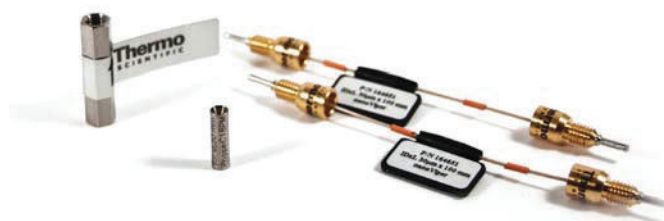
Length (mm)	300µm ID
5	16526-900379

Accucore 150-Amide-HILIC

Length (mm)	300µm ID
5	16726-900379

µ-Precolumn™ holder, 5mm, with 30µm ID connecting tubing, nanoViper fittings

Length (mm)	300µm ID
5	164649



1st dimension columns for 2D separations

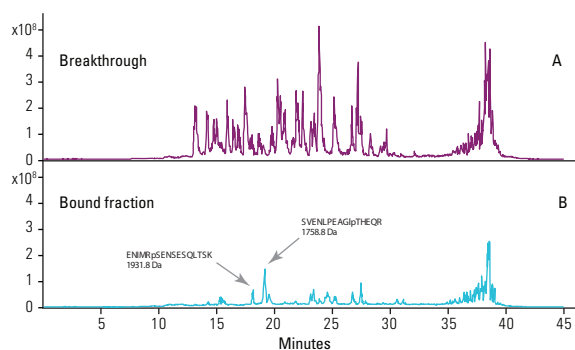
Improving separation efficiency with multidimensional analysis.

There are dedicated application kits which utilize either SCX or RP as the first dimension
 A TiO₂ trapping column can be added to the application for phosphopeptide analysis

1st dimension columns

Chemistry	Part Number	Description	Application
SCX	164565	300µm ID x 10cm, packed with Poros 10 S, nanoViper column	2D Salt plugs
	164566	1.0mm ID x 15cm, packed with Polysulfoethyl ASP, 5µm, 300Å, nanoViper column	Automated off-line 2D LC of Peptides, micro SCX x nano RP
RP	164592	300µm ID x 15cm, packed with Acclaim PA2, nanoViper column	Automated off-line 2D LC, Cap RP (basic) x Nan RP (acidic)
TiO ₂	164205	100µm ID x 1cm packed with TiO ₂	Phosphopeptide analysis
	164215	200µm ID x 1cm packed with TiO ₂	Phosphopeptide analysis

Isolation of two synthetic phosphopeptides from a BSA tryptic digest



Trap Column: 200µm ID x 1cm, packed with TiO₂, 5µm
100µm ID x 1cm, packed with Acclaim PepMap C18, 5µm

Separation Column: Acclaim PepMap C18, 3µm, 75µm x 15cm

Loading Solvent: 0.05% HFBA in DI H₂O

Wash Solvent: 0.01% HFBA in DI H₂O

Mobile Phase A: 0.05% TFA in DI H₂O

Mobile Phase B: 0.04% TFA in acetonitrile/
 DI H₂O (80:20 v/v)

TiO₂ Trap
 Mobile Phase: 250mM NH₄HCO₃ in DI H₂O, pH 9.0

Gradient: 3–40% acetonitrile in 30 min

Flow Rate: 300nL/min

Loading Flow: 8µL/min

Injection Volume: 5µL

Detection: MS

EASY-Columns

Excellence in nanoscale separations

- Compatible with any nanoscale HPLC system
- Simple, flexible design

EASY-Column capillary LC columns are produced with a focus on design simplicity using metal-free fused capillaries and can be used on any nano LC system



EASY-Columns

Description	Cat. No.	Quantity
EASY-Column, 2cm, ID 100µm, 5µm, C18-A1 (Trap column)	SC001	3 Pack
EASY-Column, 10cm, ID 75µm, 3µm, C18-A2 (Analytical column)	SC200	1 Each
EASY-Column, 10cm, ID 75µm, 3µm, C18-A2 (Analytical column)	SC2003	3 Pack
HPLC-to-Column Connector kit Zero-dead-volume union (1/32in OD tubing), 10x SC603	SC600	1 Each
A/B Mixing Tee & Venting Tee for two-column setup Nanoliter-dead-volume tee (1/32in OD tubing), 10 sleeves for 360µm OD fused silica (10xSC603).	SC601	1 Each
Connector Kit for two-column setup Zero-dead-volume union (1/32in OD tubing), Nanoliter-dead-volume tee (1/32 inch OD tubing), 10x SC603	SC602	1 Each
Sleeves (2cm, 1/32in OD) for 360µm OD fused silica	SC603	30 Pack

Nano Instruments

Thermo Scientific nanoLC systems offer market leading performance and integrate seamlessly with all Thermo Scientific nanoESI sources and MS families



EASY-nLC1200

Operational simplicity and excellent performance

- Increased robustness
- Improved performance at 1200 bar
- Improved throughput
- Intelligent maintenance

EASY-nLC1200

Operational simplicity and excellent performance

- Easily configured for routine nano LC
- Wide range of flows available from 20nL/min to 50 μ L/min
- Customized application set up easily established



For more product information visit our website:
www.thermoscientific.com/en/products/nano-capillary-systems.html