



HPLC columns

Thermo Scientific μPAC Neo HPLC Columns

Benefits

- Sample coverage with excellent sensitivity
- Column-to-column reproducibility
- Robust performance
- Sample flexibility

Keywords

μPAC Neo HPLC columns, micro pillar array, bottom-up proteomic analysis, retention time stability

μPAC separations—better by design

Thermo Scientific™ μPAC™ (micro Pillar Array Column) technology is unique—it is built by precise micromachining chromatographic separation beds from silicon. This approach brings four critical and unique characteristics:

- **Perfect order**—Thermo Scientific™ μPAC™ Neo HPLC Columns are designed with a perfect order, eliminating heterogeneous flow paths. The ordered flow path of the μPAC Neo columns minimizes the dispersion to the overall separation resulting in sharper and more intense chromatographic peaks.
- **Reproducibility**—The unique micromachining manufacturing results in columns which are virtually identical. The increased injection-to-injection and column-to-column reproducibility provides increased confidence in results throughout the duration of a research study.
- **Performance and robustness**—μPAC Neo columns operate at moderate pressure allowing longer flow paths for increased separation performance and sensitivity. Operating at lower back pressures also allows for longer column lifetime.
- **High throughput**—Dedicated μPAC column for high throughput, routine, comprehensive, and single cell proteomic analyses.

μPAC Neo columns

Sample coverage

μPAC Neo columns provide comprehensive coverage with enhanced separating power compared to previous generation μPAC columns.

Column-to-column reproducibility

Each column is manufactured using the same lithographic mask, making every column identical and providing consistent chromatographic performance from column-to-column.

High flow rate flexibility

The column can be operated at moderate LC pump pressures up to 450 bar over a wide range of flow rates:

- 50 cm μPAC Neo LC column: 0.1–0.75 μL/min
- 110 cm μPAC Neo LC column: 0.1–0.75 μL/min
- 50 cm Low Load μPAC Neo column: 0.1–0.75 μL/min
- μPAC Neo High Throughput column: 0.1–2.5 μL/min

Specifications

| Description | Column specification | | | |
|----------------------|-----------------------|------------------------|--------------------------------|---------------------------------|
| Column type | Micro Pillar Array | | | |
| Packing material | Silicon chip | | | |
| Stationary phase | Reversed-phase C18 | | | |
| Endcapped | Yes | | | |
| Maximum pressure | 450 bar | | | |
| Pillar diameter | 2.5 μm | | | |
| Interpillar distance | 1.25 μm | | | |
| pH | 2.0–7.0 | | | |
| Porosity | 59% | | | |
| Maximum temperature | 60 °C | | | |
| | 50 cm μPAC Neo column | 110 cm μPAC Neo column | 50 cm Low Load μPAC Neo column | μPAC Neo High Throughput column |
| Pillar height | 16 μm | 30 μm | 16 μm | — |
| Bed width | 180 μm | 180 μm | 180 μm | — |
| Bed length | 50 cm | 110 cm | 50 cm | 5.5 cm |
| Pore size | 100–300 Å | 100–300 Å | Non-porous | 100–300 Å |
| Flow rate range | 0.1–0.75 μL/min | 0.1–0.75 μL/min | 0.1–0.75 μL/min | 0.1–2.5 μL/min |
| Gradient length | 15–60 min | 90–150 min | 15–60 min | <15 min |
| Sample load | 10–500 ng | 500–2000 ng | 0.1–10 ng | 10–500 ng |

Learn more at thermofisher.com/lowflowHPLCcolumns