# Vacuum Pump Protection Filters

## 16 models specifically designed to protect vacuum pumps from both solid and liquid contamination

The nano F-Series[1] range of vacuum pump protection filters are manufactured from cast aluminum alloy providing enhanced strength and feature an E-Coat™ finish for optimum corrosion protection.

This range encompasses 16 filters with connections from 3/8" to 3" and rated flows from 4 to 288 scfm. The modular design allows close coupling of filters to simplify installation and maintenance.


## Custom engineered media for optimum filtration performance

Elements are constructed with an oleophobic borosilicate microfiber media with a custom engineered anti re-entrainment layer. This unique design provides exceptional dirt holding and drainage capabilities while minimizing pressure drop for optimum energy efficiency.

Specifically designed to prevent damage to vacuum pumps by eliminating solid and liquid contamination.

**Applications Include:**

- Chemical
- Dental
- Food & Beverage
- Laboratories
- Manufacturing
- Medical
- Packaging
- Paint Applications
- Pharmaceutical
- Pneumatic Conveying
- Printing & Paper

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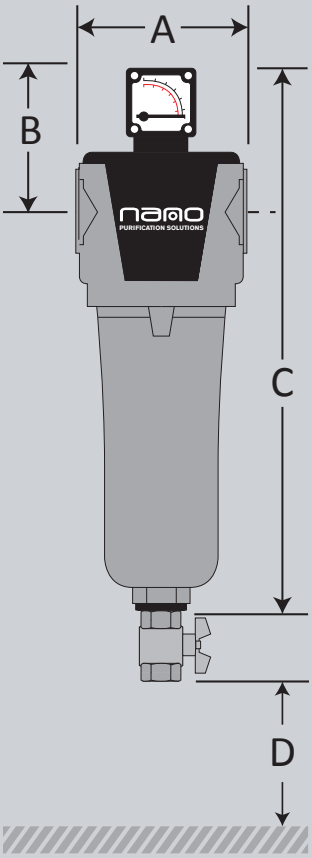
# Technical Specification

| Filter Model | Inlet & Outlet [1] | Exhaust Flow Rate [2] (vacuum displacement) | | Dimensions (inches) | | | | Approx. Weight | Replacement Element |
|---|---|---|---|---|---|---|---|---|---|
| | NPT | scfm | Nm³/h | A | B | C | D | lbs | Part No. |
| NPP 0035 (grade) | ⅜" | 4.1 | 7 | 2.75 | 2.56 | 9.09 | 2.75 | 1.3 | E 0035 (grade) |
| NPP 0050 (grade) | ½" | 6.5 | 11 | 2.75 | 2.56 | 10.7 | 2.75 | 1.5 | E 0050 (grade) |
| NPP 0070 (grade) | ½" | 11.8 | 20 | 3.94 | 4.13 | 13.6 | 3.15 | 3.5 | E 0090 (grade) |
| NPP 0085 (grade) | ¾" | 14.7 | 25 | 3.94 | 4.13 | 13.6 | 3.15 | 3.5 | E 0090 (grade) |
| NPP 0125 (grade) | ¾" | 20.6 | 35 | 3.94 | 4.13 | 18.4 | 3.15 | 4.4 | E 0135 (grade) |
| NPP 0135 (grade) | 1" | 23.5 | 40 | 3.94 | 4.13 | 18.4 | 3.15 | 4.4 | E 0135 (grade) |
| NPP 0175 (grade) | 1" | 29.4 | 50 | 3.94 | 4.13 | 18.4 | 3.15 | 4.4 | E 0175 (grade) |
| NPP 0280 (grade) | 1 ¼" | 44.1 | 75 | 4.80 | 4.41 | 20.9 | 3.15 | 6.2 | E 0325 (grade) |
| NPP 0325 (grade) | 1 ½" | 50.0 | 85 | 4.80 | 4.41 | 20.9 | 3.15 | 6.2 | E 0325 (grade) |
| NPP 0400 (grade) | 1 ½" | 59.0 | 100 | 5.75 | 4.80 | 21.7 | 3.94 | 9.2 | E 0450 (grade) |
| NPP 0450 (grade) | 2" | 67.5 | 115 | 5.75 | 4.80 | 21.7 | 3.94 | 9.2 | E 0450 (grade) |
| NPP 0700 (grade) | 2" | 106 | 180 | 5.75 | 4.80 | 33.7 | 3.94 | 13.9 | E 0700 (grade) |
| NPP 0850 (grade) | 2 ½" | 118 | 200 | 8.27 | 5.39 | 26.2 | 3.94 | 18.7 | E 1000 (grade) |
| NPP 1000 (grade) | 3" | 138 | 235 | 8.27 | 5.39 | 26.2 | 3.94 | 18.7 | E 1000 (grade) |
| NPP 1250 (grade) | 3" | 212 | 360 | 8.27 | 5.39 | 34.8 | 3.94 | 23.1 | E 1250 (grade) |
| NPP 1500 (grade) | 3" | 288 | 490 | 8.27 | 5.39 | 41.1 | 3.94 | 26.4 | E 1500 (grade) |




| specifications | NPP 0035 to 0050 | NPP 0070 to 1500 |
|---|---|---|
| vacuum indicator / gauge | NDV 50 | NDV 1500 |
| design operating pressure range | full vacuum to 232 psig | |
| condensate drain (included) | manual valve [3] | |
| filter housing material | cast aluminum with E-Coat™ & powder top coat finish | |

| element performance | PP5 | PP1 |
|---|---|---|
| particle removal (micron) | 5 | 1 |
| maximum oil carryover at 68°F (ppm or mg/m³) | 1 | 1 |
| pressure drop - clean | 0.3 psid | 0.6 psid |
| pressure drop - recommended replacement | 1.5 psid | 1.5 psid |
| recommended operating temperature range | 35°F to 212°F | |
| design operating temperature range | 35°F to 248°F | |
| flow direction through element | outside to inside | |
| maximum element life | 12 months or 8000 hours | |

| vacuum correction factors | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| operating vacuum | psia | 14.7 | 13.0 | 11.6 | 10.2 | 8.7 | 7.3 | 5.8 | 3.3 | 2.9 |
| | in Hg | 29.9 | 26.6 | 23.6 | 20.7 | 17.7 | 14.8 | 11.8 | 8.9 | 5.9 |
| | mbar abs | atm | 900 | 800 | 700 | 600 | 500 | 400 | 300 | 200 |
| | Torr | 760 | 675 | 600 | 525 | 450 | 375 | 300 | 225 | 150 |
| correction factor | | 1.00 | 0.93 | 0.86 | 0.79 | 0.71 | 0.64 | 0.57 | 0.50 | 0.43 |

*(1) Inlet and outlet connections are NPT threaded to ANSI B2.1.*

*(2) Free air conditions when operating at atmospheric pressure. For vacuums refer to the vacuum correction factor table above.*

*(3) Models NPP 0070 to NPP 1500 can be adapted to use 1/4" drains with a reducer. Drain flasks are available for liquid collection for vacuum (or atmospheric pressure) applications only.*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