

nEXT730, 930 AND 1230 TURBOMOLECULAR PUMP

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Edwards are proud to offer the nEXT730, nEXT930 and nEXT1230 turbomolecular pumps, these larger pumps offer choices for customers requiring higher pumping speeds from 730 up to 1250 l/s for nitrogen.

As well as addressing the R&D market, where high compression, faster pumping speeds are required, these pumps are also designed to meet the requirements of the coating market and other diffuse market sectors such as Heat treatment, Furnace applications, Ebeam welding, Etch, Ion implant, Degassing and Cylinder evacuation.

For our OEM customers derivative versions of these products can be developed, just like the existing nEXT pumps, and like the existing nEXT pumps split flow variants are possible. This will give benefits for our customers with larger instruments as well as the possibility to reduce the total number of pumps on existing instruments.

The new products offer market leading performance for pumps of their class, and in a compact footprint. The pumps feature bearings with a typical life time of at least 4 years with no maintenance, which can then be replaced simply and economically by the customer themselves when required or customers may choose from our other service support offerings.

The pumps are able to operate in any orientation*, and are supported by a full range of accessories for cooling, venting, powering and control.

* for nEXT1230, inverted option available

FEATURES AND BENEFITS

- Class leading pumping speeds
- Outstanding compression ratios
- Ease of integration and installation
- Assured reliability
- End user service capability
- Full nEXT established communication interface



TECHNICAL DATA

| | | nEXT730Q | nEXT730D | | nEXT730H | |
|---|---------------------------------|---------------------|---|-----------------------|---------------------|----------------------|
| Inlet flange | | DN 160 ISO-K | DN 160 ISO-K | DN 160 CF | DN 160 ISO-K | DN 160 CF |
| Main inlet pumping speed | | | | | | |
| Inlet pumping speed ls ⁻¹ | N2 | 730 | 730 | 690 | 720 | 680 |
| | Ar | 665 | 665 | 620 | 655 | 610 |
| | He | 820 | 820 | 760 | 850 | 790 |
| | H2 | 715 | 715 | 670 | 755 | 710 |
| Gas throughput | | | | | | |
| Gas throughput mbar ls ⁻¹ | N2 | >40 | 14 | | 4 | |
| | Ar | 6.8 | 3.5 | | 2.6 | |
| | He | >50 | 21 | | 7 | |
| | H2 | >50 | >> 14 | | 17 | |
| Peak compression ratio backing port to main inlet port | | | | | | |
| Compression ratio*** | N2 | >1x10 ⁸ | > 1x10 ¹¹ | | >1x10 ¹³ | |
| | Ar | >1x108 | > 1x10 ¹¹ | | >1x10 ¹³ | |
| | He | 1x105 | 1.2x108 | | 5x10 ⁹ | |
| | H2 | 1x104 | 4.0x106 | | 3x108 | |
| Ultimate pressure** | mbar | <1x10 ⁻⁷ | < 3.5x10 ⁻⁹ | < 6x10 ⁻¹⁰ | <7x10 ⁻⁹ | <1x10 ⁻¹⁰ |
| Max. permissible backing pressure | mbar | 6 | 15 | | 12 | |
| Normal rotational speed | rpm | | 49200 | | | |
| Start time to 90% speed (sec) | min | | 2.5 | | | |
| Max. power consumption | W | | 500 (default), 600 (max.) | | | |
| Power consumption at ultimate pressure | W | | 40 | | | |
| Type of protection | IP | | 54 | | | |
| Recommended cooling method | | Water* | | Convection* | | |
| Optional cooling | | n/a | | Air or Water* | | |
| Cooling water connection | inch | | Plug-in connection for 6x1 hose/alternative G 1/8 | | | |
| Cooling water consumption | l/h | | 60 | | | |
| Critical cooling water pressure | bar(g) | | 6 | | | |
| Permissible cooling water temperature | °C | | 15 to 35 | | | |
| Mass (kg) | kg | 15.4 | 14.6 | 19.6 | 14.6 | 19.6 |
| Recommended backing pump* | | | nXRi, XDS35i, E2M28** | | | |
| Noise level with convection cooling with radial air cooler | dB(A) | < 40 n/a | | < 40 < 55 | | |
| Water cooled/forced air cooled max. bake out | °C | n/a | | 100 | | |
| Purge gas flow | mbar · ls ⁻¹ sccm | | | 0.4 24 | | |
| Vent/purge port | inch | | G 1/8 | | | |

*Depending on the ambient temperature, the gas type and throughput, performance may be limited by the cooling method.

**Please contact the supplier to discuss your specific system details and the achievement of ultimate pressure.

***The compression ratio of a TMP describes the performance of the TMP design for the compression of a gas type at special conditions. The compression data were measured only using the CF flange variants.

TECHNICAL DATA

| | nEXT930Q | | nEXT930D | |
|---|---------------------------------|---|---------------------------|-----------------------|
| Inlet flange | | DN 200 ISO-K | DN 200 ISO-K | DN 200 CF |
| Main inlet pumping speed | | | | |
| Inlet pumping speed ls ⁻¹ | N2 | 925 | 925 | 720 |
| | Ar | 865 | 865 | 810 |
| | He | 905 | 905 | 840 |
| | H2 | 735 | 735 | 690 |
| Gas throughput | | | | |
| Gas throughput mbar ls ⁻¹ | N2 | >40 | | 14 |
| | Ar | 6.8 | | 3.5 |
| | He | >50 | | 21 |
| | H2 | >50 | | >> 14 |
| Peak compression ratio backing port to main inlet port | | | | |
| Compression ratio*** | N2 | >1x108 | | > 1x10 ¹¹ |
| | Ar | >1x108 | | > 1x10 ¹¹ |
| | He | 1x105 | | 1.2x108 |
| | H2 | 1x104 | | 4.0x106 |
| Ultimate pressure** | mbar | <1x10 ⁻⁷ | < 3.5x10 ⁻⁹ | < 6x10 ⁻¹⁰ |
| Max. permissible backing pressure | mbar | 6 | | 15 |
| Normal rotational speed | rpm | | 49200 | |
| Start time to 90% speed (sec) | min | | 2.5 | |
| Max. power consumption | W | | 500 (default), 600 (max.) | |
| Power consumption at ultimate pressure | W | | 40 | |
| Type of protection | IP | | 54 | |
| Recommended cooling method | | Water* | | Convection* |
| Optional cooling | | n/a | | Air or Water* |
| Cooling water connection | inch | Plug-in connection for 6x1 hose/alternative G 1/8 | | |
| Cooling water consumption | l/h | | 60 | |
| Critical cooling water pressure | bar(g) | | 6 | |
| Permissible cooling water temperature | °C | | 15 to 35 | |
| Mass (kg) | kg | 15.4 | 15.4 | 21.7 |
| Recommended backing pump* | | nXRI, XDS35i, E2M28** | | |
| Noise level with convection cooling with radial air cooler | dB(A) | < 40 n/a | | < 40 <55 |
| Water cooled/forced air cooled max. bake out | °C | n/a | | 100 |
| Purge gas flow | mbar · ls ⁻¹ sccm | | 0.4 24 | |
| Vent/purge port | inch | | G 1/8 | |

*Depending on the ambient temperature, the gas type and throughput, performance may be limited by the cooling method.

**Please contact the supplier to discuss your specific system details and the achievement of ultimate pressure.

***The compression ratio of a TMP describes the performance of the TMP design for the compression of a gas type at special conditions. The compression data were measured only using the CF flange variants.

TECHNICAL DATA

| nEXT1230H | | | | |
|---|---------------------------------|----------------------|---|--|
| Inlet flange | | DN 200 CF | DN 200 ISO-F | DN 200 ISO-K |
| Main inlet pumping speed | | | | |
| | N2 | | 1250 | |
| Inlet pumping speed ls ⁻¹ | Ar | | 1150 | |
| | He | | 1350 | |
| | H2 | | 1150 | |
| Gas throughput | | | | |
| | N2 | | 9 | |
| Gas throughput mbar ls ⁻¹ | Ar | | 3 | |
| | He | | >20 | |
| | H2 | | >20 | |
| Peak compression ratio backing port to main inlet port | | | | |
| | N2 | | >1x10 ¹¹ | |
| Compression ratio*** | Ar | | >1x10 ¹¹ | |
| | He | | 4x10 ⁸ | |
| | H2 | | 1x10 ⁷ | |
| Ultimate pressure** | mbar | <5x10 ⁻¹⁰ | | indicate higher pressure for ISO-K and ISO-F |
| Max. permissible backing pressure | mbar | | 15 | |
| Normal rotational speed | rpm | | 42000 | |
| Start time to 90% speed (sec) | H | min | 2.5 | |
| Max. power consumption | W | | 660 (default), 800 (max.) | |
| Power consumption at ultimate pressure | W | | 50 | |
| Type of protection | IP | | 54 | |
| Recommended cooling method | | | Water* | |
| Optional cooling | | | Forced air cooling* | |
| Cooling water connection | inch | | Plug-in connection for 6x1 hose/alternative G 1/8 | |
| Cooling water consumption | l/h | | 60 | |
| Critical cooling water pressure | bar(g) | | 15 | |
| Permissible cooling water temperature | °C | | 15 to 35 | |
| Mass (kg) | H | kg | 32.6 | 24.9 |
| Recommended backing pump* | | | nXRi, XDS35i, E2M28** | |
| Noise level with convection cooling with radial air cooler | dB(A) | | <44 <55 | <44 <55 |
| Water cooled/forced air cooled max. bake out | °C | 100 | | n/a |
| Purge gas flow | mbar · ls ⁻¹ sccm | | 0.4 24 | |
| Vent/purge port | inch | | G 1/8 | |

*Depending on the ambient temperature, the gas type and throughput, performance may be limited by the cooling method.

**Please contact the supplier to discuss your specific system details and the achievement of ultimate pressure.

***The compression ratio of a TMP describes the performance of the TMP design for the compression of a gas type at special conditions. The compression data were measured only using the CF flange variants.



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