



# Edwards EXT-255H, 255Hi, 255HVi

## Technical Specifications

Parameter	EXT255H	EXT255Hi	EXT255HVi	Notes
Mass				
DN100ISO-K inlet flange	5.6 kg	5.6 kg	6.5 kg	
DN100CF inlet flange	8.2 kg	N/A	N/A	
Inlet-flange	DN100ISO-K/ DN100CF	DN100ISO-K	DN100ISO-K	
Outlet-flange	DN25NW	DN25NW	DN25NW	
Vent-port	1/8 inch BSP	1/8 inch BSP	1/8 inch BSP	
Interstage-port	-	DN25NW	DN40NW	
Purge-flange	DN10NW*	DN10NW*	DN10NW*	
Inlet pumping speed				
N <sub>2</sub> † †	220 l s <sup>-1</sup>	220 l s <sup>-1</sup>	195 l s <sup>-1</sup>	Pb < 5 mbar (500 Pa) Qi < 70 sccm (1.17 mbar l s <sup>-1</sup> ) (117 Pa l s <sup>-1</sup> )
He † †	230 l s <sup>-1</sup>	230 l s <sup>-1</sup>	155 l s <sup>-1</sup>	Pb < 1 mbar (100 Pa) Qi = 0 sccm
H <sub>2</sub> † †	180 l s <sup>-1</sup>	180 l s <sup>-1</sup>	100 l s <sup>-1</sup>	Pb < 0.5 mbar (50 Pa) Qi = 0 sccm
Inlet compression ratio				
N <sub>2</sub> † †	> 1 x 10 <sup>8</sup>	> 1 x 10 <sup>8</sup>	3 x 10 <sup>8</sup>	Pb < 5 mbar (500 Pa)
He † †	4 x 10 <sup>5</sup>	2.5 x 10 <sup>5</sup>	2 x 10 <sup>5</sup>	Pb < 2 mbar (200 Pa)
H <sub>2</sub> † †	1.6 x 10 <sup>4</sup>	1.1 x 10 <sup>4</sup>	5 x 10 <sup>3</sup>	Pb < 1 x 10 <sup>-2</sup> mbar (1 Pa)
Interstage pumping speed ‡				
N <sub>2</sub> †	-	10 l s <sup>-1</sup>	21 l s <sup>-1</sup>	Pb = 5 mbar (500 Pa) Qi = 240 sccm (4 mbar l s <sup>-1</sup> ) (400 Pa l s <sup>-1</sup> ) Qp = 0 sccm
He†	-	10 l s <sup>-1</sup>	23 l s <sup>-1</sup>	Pb = 5 mbar (500 Pa) Qi = 100 sccm (1.67 mbar l s <sup>-1</sup> )(167 Pa l s <sup>-1</sup> ) Qp=<20 sccm (0.33 mbar l s <sup>-1</sup> )(33 Pa l s <sup>-1</sup> )
Ultimate pressure with rotary vane backing pump **				
DN100ISOK inlet flange	< 5 x 10 <sup>-9</sup>	< 5 x 10 <sup>-9</sup>	< 5 x 10 <sup>-9</sup>	
DN100CF inlet flange	< 5 x 10 <sup>-10</sup>	-	-	
Ultimate pressure with diaphragm backing pump ††				
DN100ISOK inlet flange	< 5 x 10 <sup>-8</sup>	< 5 x 10 <sup>-8</sup>	< 5 x 10 <sup>-8</sup>	
DN100CF inlet flange	< 5 x 10 <sup>-8</sup>	-	-	
Maximum backing pressure ††				
N <sub>2</sub>	12 mbar (1200 Pa)	12 mbar (1200 Pa)	12 mbar (1200 Pa)	
He	10 mbar (1000 Pa)	10 mbar (1000 Pa)	10 mbar (1000 Pa)	
H <sub>2</sub>	3 mbar (300 Pa)	3 mbar (300 Pa)	3 mbar (300 Pa)	
Minimum backing pump displacement	0.6 m <sup>3</sup> h <sup>-1</sup>	0.6 m <sup>3</sup> h <sup>-1</sup>	0.6 m <sup>3</sup> h <sup>-1</sup>	
Maximum continuous inlet pressure ***				
water-cooling at 15 °C ***	2 x 10 <sup>-1</sup> mbar, 20 Pa	2 x 10 <sup>-1</sup> mbar, 20 Pa	2 x 10 <sup>-1</sup> mbar, 20 Pa	
air-cooling at 35 °C***	2 x 10 <sup>-2</sup> mbar, 2 Pa	2 x 10 <sup>-2</sup> mbar, 2 Pa	2 x 10 <sup>-2</sup> mbar, 2 Pa	



# Edwards EXT-255H, 255Hi, 255HVi

## Technical Specifications cont.

Parameter	EXT255H	EXT255Hi	EXT255HVi	Notes
Operating attitude	Vertical and upright through to horizontal $\pm 2^\circ$			
Nominal rotational speed	60000 r min <sup>-1</sup>	60000 r min <sup>-1</sup>	60000 r min <sup>-1</sup>	
Standby rotational speed	42000 r min <sup>-1</sup>	42000 r min <sup>-1</sup>	42000 r min <sup>-1</sup>	
Starting time to 90% speed				
EXC100E	190 sec	190 sec	190 sec	
EXC120	130 sec	130 sec	130 sec	
EXC300	100 sec	100 sec	100 sec	
Cooling method	Forced-air/ water	Forced-air/ water	Forced-air/ water	
Ambient air temperature (forced-air cooling)	0 - 35 °C	0 - 35 °C	0 - 35 °C	
Water temperature (water-cooling)	10 - 20 °C	10 - 20 °C	10 - 20 °C	
Noise level (at 1 metre)	< 50 dB(A)	< 50 dB(A)	< 50 dB(A)	
Recommended controller	EXC120	EXC120	EXC120	
EXC120 maximum VA input	250 VA	250 VA	250 VA	with bakeout band
Quiescent power	25W	25W	25W	
Recommended backing pump †††	RV3	RV3	RV3	

\* Not supplied - pump supplied with port blanked.

†  $P_b$  = backing pressure,  $Q_i$  = flow through the interstage-port (EXT255Hi/EXT255HVi only),  $Q_p$  = flow through pump-inlet.

‡ Pumping speeds are without inlet-screen or inlet-strainer (EXT255Hi/EXT255HVi only). Inlet-screens and inlet-strainers reduce speed by approximately 10%.

\*\* Ultimate pressure 48 hours after bakeout with  $P_b < 1 \times 10^{-2}$  mbar (1 Pa).

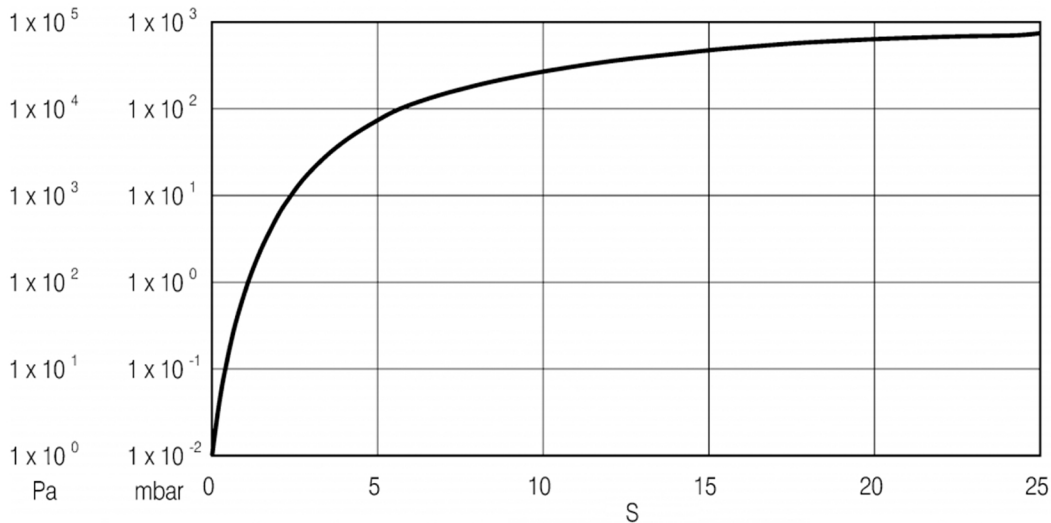
†† Ultimate pressure 48 hours after bakeout with  $P_b < 5$  mbar (500 Pa).

‡‡ Inlet pressure has risen to  $1 \times 10^{-3}$  mbar ( $1 \times 10^{-1}$  Pa).

‡‡‡ Above this pressure, rotational speed drops below nominal.

†††† A larger backing pump may be required for maximum throughput.

## Pumping Curves

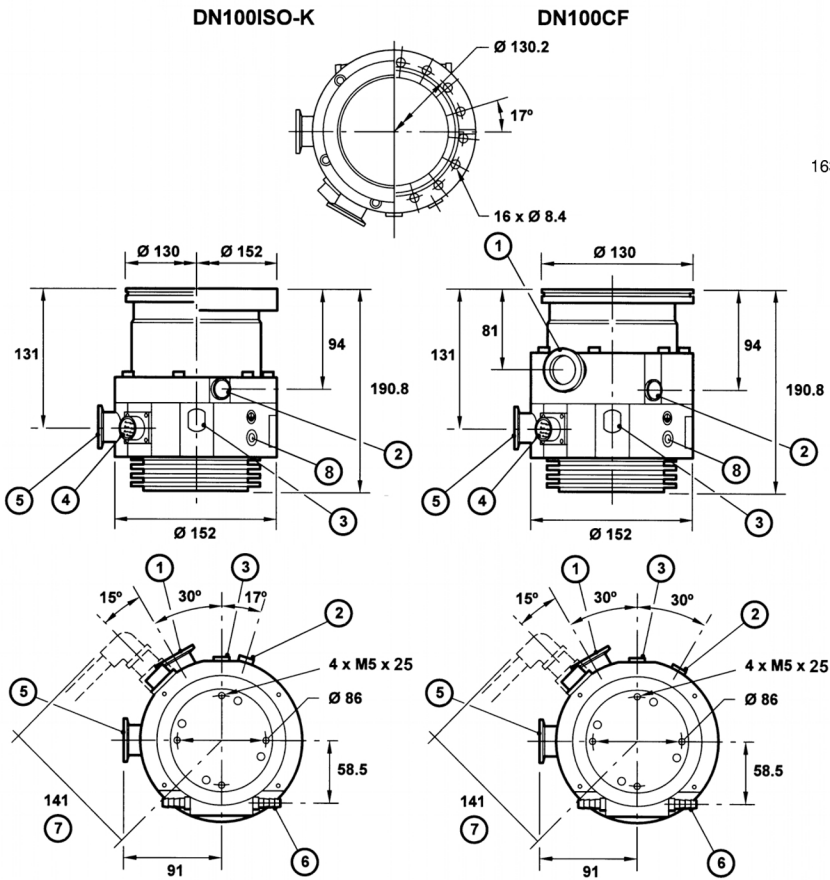


**Maximum allowed rise in backing pressure against time for controlled venting:  
system pressure (mbar/Pa) against time (s)**



# Edwards EXT-255H, 255Hi, 255HVi Dimensions

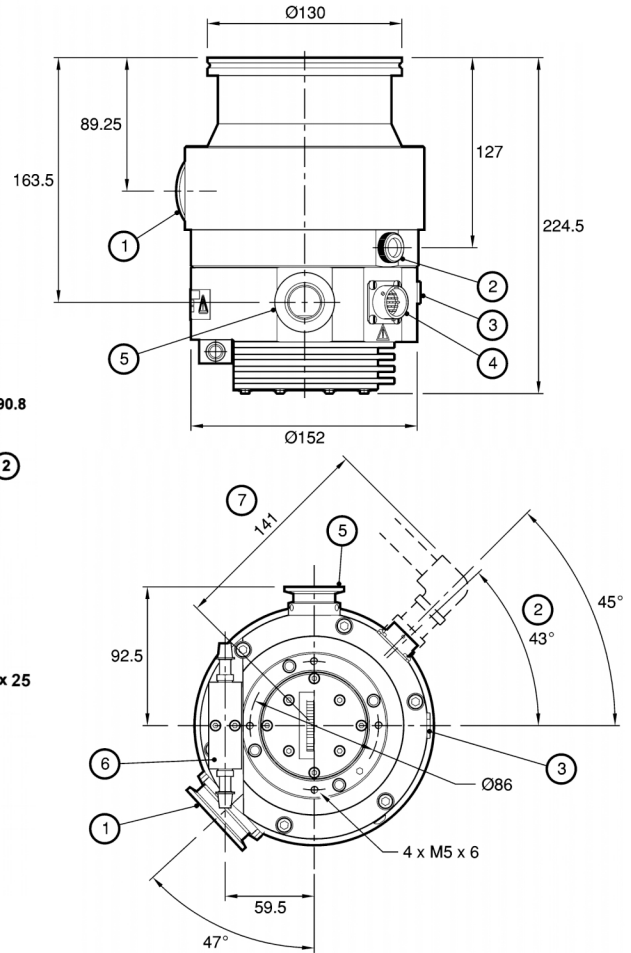
## EXT-255H, EXT-255Hi



1. Interstage-port (EXT255Hi only)
2. Vent-valve
3. Purge-port
4. Electrical supply connector

5. Backing-port
6. Cooling-water connectors
7. Allowance for right-angle cable connector
8. Earth (ground) bonding point

## EXT-255HVi



1. Interstage-port
2. Vent-valve
3. Purge-port
4. Electrical supply connector

5. Backing-port
6. Cooling-water connectors
7. Allowance for right-angle cable connector

## Applications

- mass spectrometry • GCMS • LCMS • ICPMS • electron microscopy
- surface analytical equipment • fusion technology • space research
- laser systems • electron tube manufacturing • physics experiments
- RGA • nuclear physics • thin film • vacuum metallurgy • powder materials processing