



# Leybold Turbovac 90-450(i/iX)

## Technical Specifications

		90 i/iX	250 i/iX	350 i/iX	450 i/iX	T 350 i/iX	T 450 i/iX
High-vacuum connection	DN	63 ISO-K 63 CF	100 ISO-K 100 CF	100 ISO-K 100 CF	160 ISO-K 160 CF	100 ISO-K 100 CF	160 ISO-K 160 CF
Forevacuum connection	DN	16 ISO-KF	16 ISO-KF	25 ISO-KF	25 ISO-KF	25 ISO-KF	25 ISO-KF
<b>Pumping speed</b>							
N <sub>2</sub>	l/s	90	225	290	430	290	430
Ar	l/s	83	210	260	400	260	400
He	l/s	90	250	360	440	360	440
H <sub>2</sub>	l/s	78	210	350	420	320	400
<b>Gas throughput</b>							
N <sub>2</sub>	mbar x l/s	10	6	4.5	4.5	11.5	115
Ar	mbar x l/s	3	3	2	2	6	6
He	mbar x l/s	11	6	8	8	20	20
H <sub>2</sub>	mbar x l/s	11	>10	8	8	20	20
<b>Compression ratio</b>							
N <sub>2</sub>		1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>10</sup>	1 x 10 <sup>10</sup>
Ar		1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>	1 x 10 <sup>11</sup>
He		-	-	1 x 10 <sup>8</sup>	1 x 10 <sup>8</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>
H <sub>2</sub>		5 x 10 <sup>7</sup>	2 x 10 <sup>7</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>6</sup>	1 x 10 <sup>4</sup>	1 x 10 <sup>4</sup>
Ultimate pressure with 2-stage oil-sealed rotary vane vacuum pump		ISO-K / CF flange		mbar < 8 x 10 <sup>-8</sup> / < 5 x 10 <sup>-10</sup> (Torr) (< 6 x 10 <sup>-8</sup> / < 3.75 x 10 <sup>-10</sup> )			
<b>Max. forevacuum pressure</b>							
N <sub>2</sub>	mbar (Torr)	14 (10.5)	14 (10.5)	10 (7.5)	10 (7.5)	0.5 (0.375)	0.5 (0.375)
<b>Recommended forevacuum pumps</b>							
	TRIVAC	D 2,5 E / D 4 B	D 2,5 E / D 4 B	D 4 B	D 4 B	D 16 B	D 16 B
	SCROLLVAC	SC 5 D	SC 5 D / 15 D	SC 5 D / 15 D	SC 5 D / 15 D	SC 15 D / 30 D	SC 15 D / 30 D
	DIVAC	1.4 HV3	3.8 HV3	3.8 HV3	3.8 HV3	-	-
Operating speed	min <sup>-1</sup> (rpm)	72 000	72 000	60 000	60 000	60 000	60 000
Speed adjustment range	%	62 to 100	62 to 100	50 to 100	50 to 100	50 to 100	50 to 100
Run-up time, approx.	min	1.5	2	5.5	5.5	3.5	3.5
<b>Ambient temperature</b>							
during operation	°C			+5 to +45			
	(°F)			(41 to 113)			
during storage	°C			-15 to -70			
	(°F)			(+5 to -94)			
<b>Cooling</b>							
standard				Convection			
optional				Air or water			
<b>Cooling water connection</b>							
alternatively				Plug connection for 6 x 1 hose G 1/8" Screw-in thread			
Cooling water consumption	l/h	30 to 60	30 to 60	50 to 100	50 to 100	50 to 100	50 to 100
Permissible cooling water pressure	bar(g)	3 to 6					
Permissible cooling water temperature	°C	+15 to +35					
	(°F)	(+59 to +95)					



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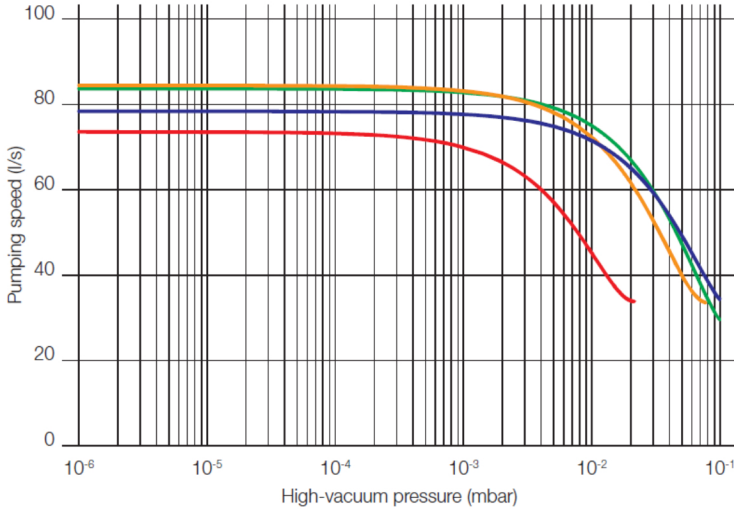
PHONE: 831-462-8900

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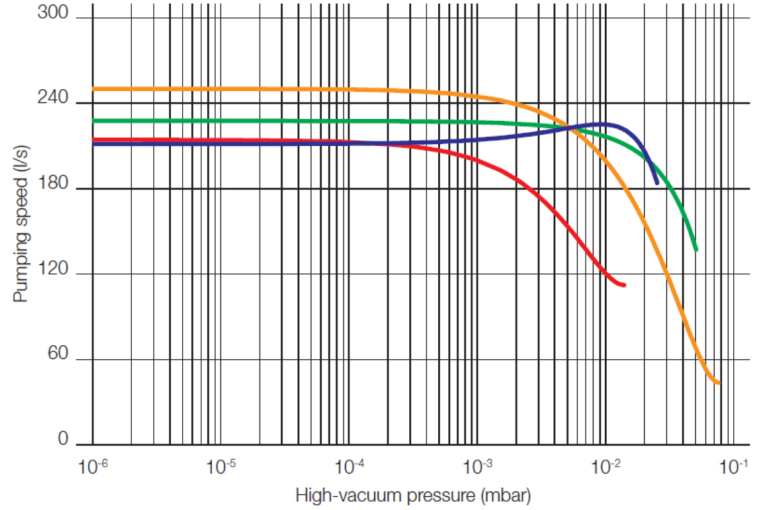
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# Leybold Turbovac 90-450(i/iX) Pumping Curves

### 90i



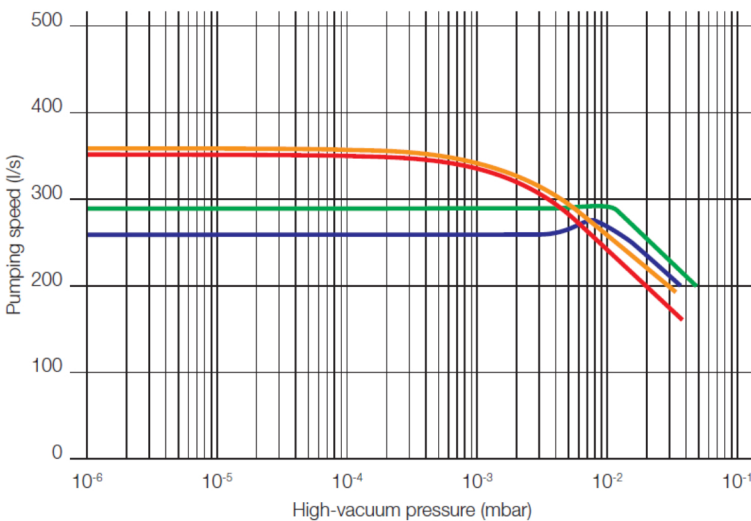
### 250i



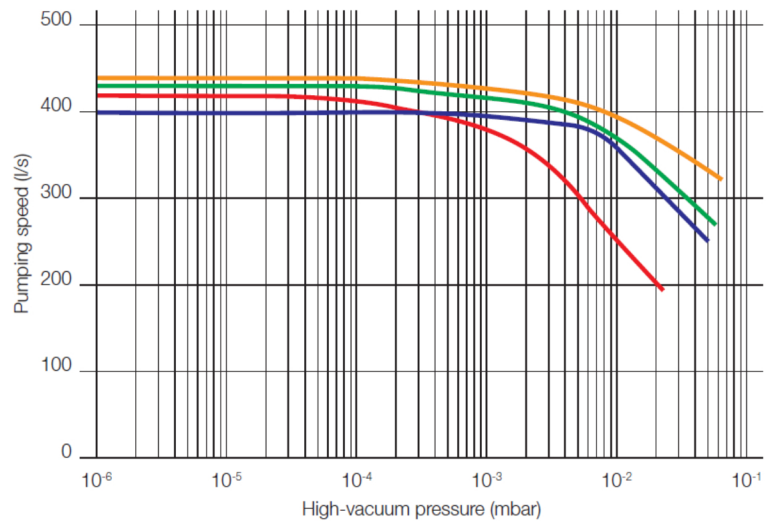
— Nitrogen — Argon

— Helium — Hydrogen

### 350i



### 450i





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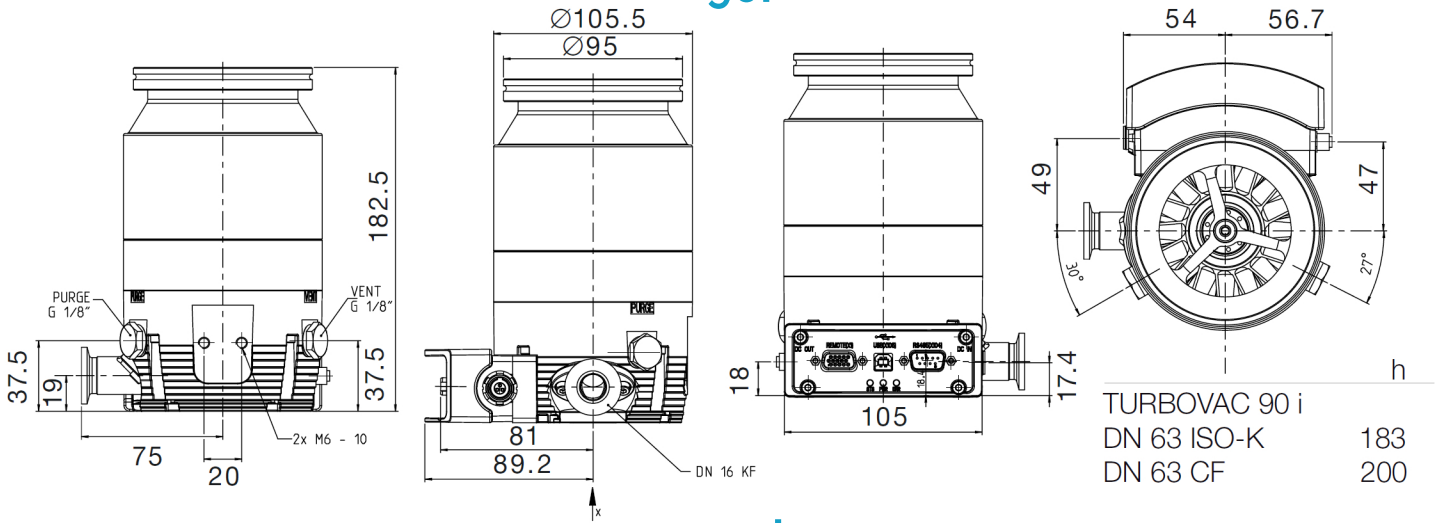
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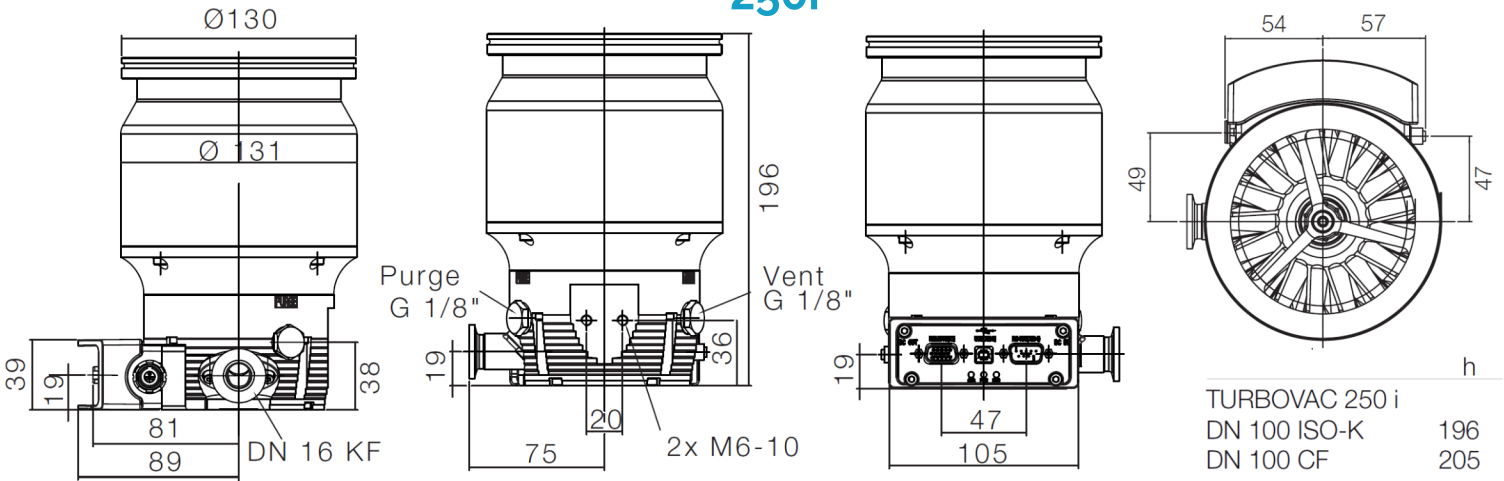
# Leybold Turbovac 90-450(i/iX)

## Dimensions

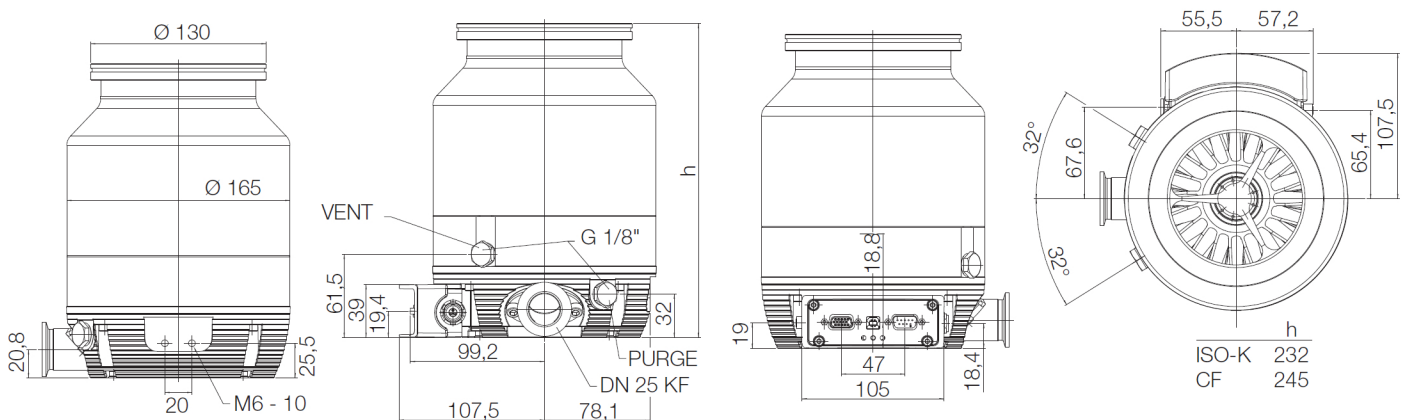
### 90i



### 250i



### 350i





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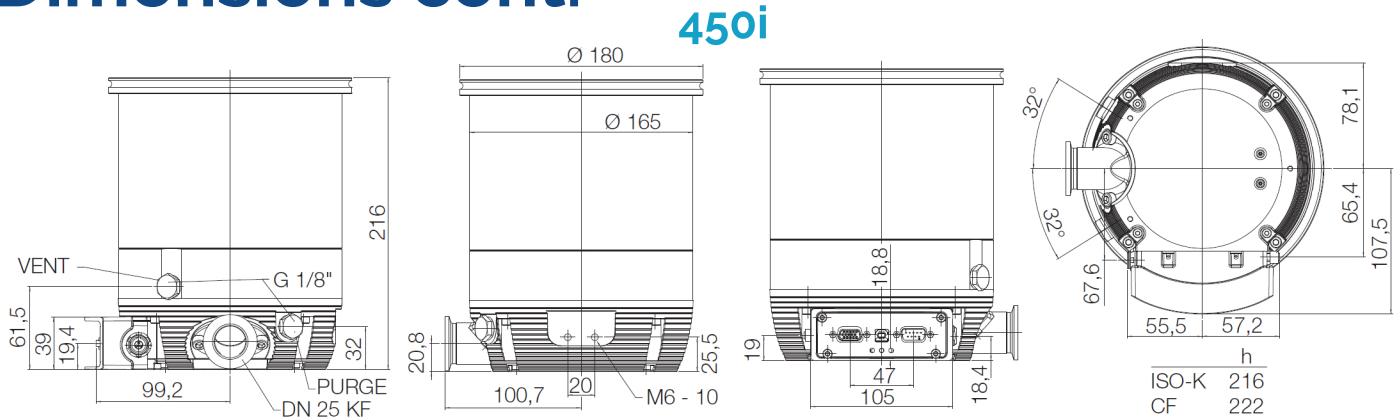
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## Leybold Turbovac 90-450(i/iX) Dimensions cont.



## Features & Benefits

- thermal isolation provides optimized cooling
- purge port protects bearings from critical gases & particles
- cutting edge rotor & drag stage design
- high performance & unparalleled pumping speed
- oil-free hybrid bearing system
- lifetime lubricated ball bearings
- reduced cost of ownership
- plug & play installation
- low noise & vibration
- integrated drive electronics

## Applications

- research & development • mass spectrometry • electron microscopy
- surface & X-ray analysis • particle accelerators • laboratory coating systems • MBE • UHV systems • life sciences • proton therapy • gamma sterilization • production of high quality implants • PVD • load locks & transfer chambers • electron beam welders • insulation vacuum & leak detection