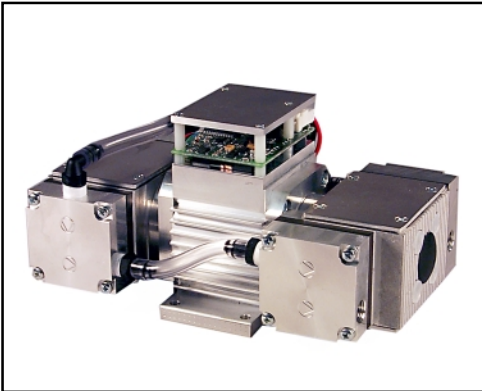


Type: N84.3, N84.4, N85, N85.3, N86, N89

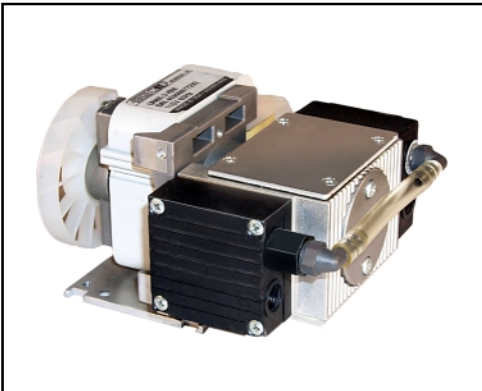
Diaphragm Vacuum Pumps and Compressors



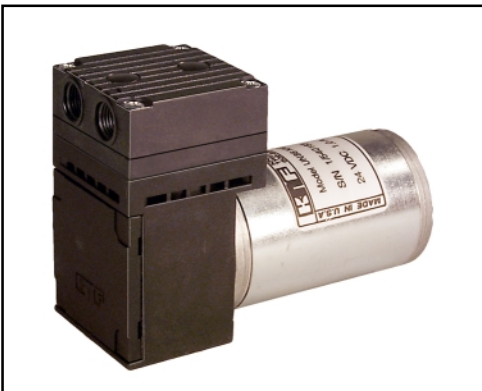
**Single, Twin and Four-Head Designs
OEM Installation Models
with AC, DC or Brushless DC Motor**



N84.4AN B with brushless DC motor



N85.3KNI shown with AC motor



N86KNDC shown with DC motor

Description

These designs represent a new generation of diaphragm pumps from KNF. They are optimized for efficiency and durability using the latest CAD/FEA methods. Featuring KNF's patented, structured diaphragm and multi-port valve system, they provide the best performance and reliability available in their size range.

Features

- **Available in a variety of models** - Select from 4.2 to 9 LPM flow, vacuum to 29.86 in. Hg or pressure to 30 psig, in single, twin and four-head configurations, with AC, DC or optional brushless DC motors.
- **Exclusive multi-port valve system** - KNF's new multi-port valve system consists of a circle of smaller holes sealed by an elastomeric disk. This enhances the efficiency and tolerance to condensate droplets.
- **Patented, structural molded diaphragm** - KNF molds a unique structure into the diaphragm to distribute stress over a wide area. This precision control of flexibility improves efficiency and lifetime. The traditional metal clamping disk, a potential source of leaks and corrosion, is eliminated.
- **Flexible OEM Design** - With KNF's Project Pump program, standard products are optimized with a variety of inexpensive modifications to meet your exact OEM requirements. The end product will result in a perfect fit based on your design, and may be more economical.
- **Medium Transfer is Contamination-Free** - Pumped medium stays clean because the pumps are oil-free and have no sliding seals to wear away. Diaphragms coated with Teflon® resin are available on most models.
- **Low Noise Level** - The enclosed compressor housing minimizes ambient noise and keeps dirt away from critical components.
- **Variety of Accessories** - Accessories include shock mounts, mufflers, noise & dust filters and hose connectors.

Suggested Applications

- Pneumatic Air Supplies
- Air/Gas Sampling Systems
- Vacuum Drying, Degassing
- Health Care Appliances
- Compact Roughing Pump
- Food Quality Monitors

Typical Performance Data

Type	Free Flow	Vacuum	Pressure
N84.3ANI	4.2 l/min. (0.15 SCFM)	5 mbar (29.8 in. Hg)	4.5 psig
N84.3ANDC	5.0 l/min. (0.18 SCFM)	5 mbar (29.8 in. Hg)	4.5 psig
N84.4ANDC	4.8 l/min. (0.17 SCFM)	2 mbar (29.86 in. Hg)	4.5 psig
N85KNI	5.0 l/min. (0.18 SCFM)	100 mbar (27 in. Hg)	21 psig
N85.3KNI	5.0 l/min. (0.18 SCFM)	25 mbar (29.2 in. Hg)	4.5 psig
N85.3KNDC	5.0 l/min. (0.18 SCFM)	25 mbar (29.2 in. Hg)	4.5 psig
N86KNI	6.0 l/min. (0.21 SCFM)	100 mbar (27 in. Hg)	30 psig
N86KNDC	6.5 l/min. (0.23 SCFM)	100 mbar (27 in. Hg)	22 psig
N89KNI	9.5 l/min. (0.34 SCFM)	100 mbar (27 in. Hg)	7 psig
N89KNDC	9.0 l/min. (0.32 SCFM)	100 mbar (27 in. Hg)	7 psig

N84.3 (AC)

Type	N84.3ANI
Head Configuration	Two-Stage
Max. Flow	4.2 lit/min (0.15 SCFM)
Max. Vacuum	5 mbar (29.8 in. Hg)
Max. Cont. Pressure	.3 bar (4.5 psig)

Electrical/Mechanical

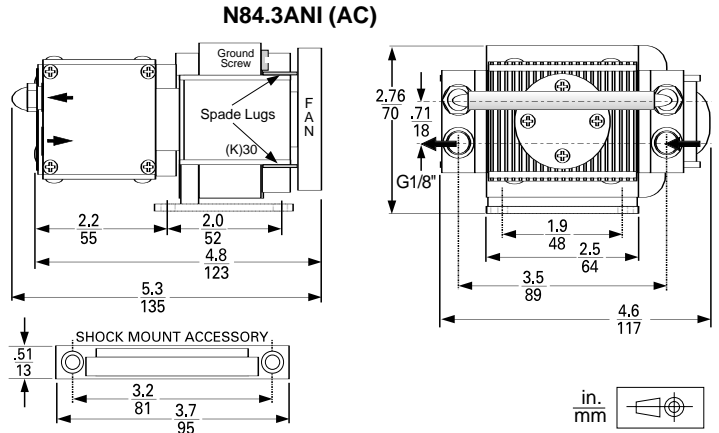
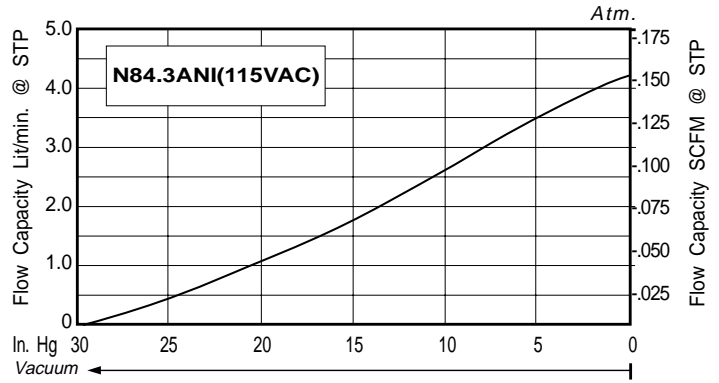
Motor Voltage/Hz	115 VAC (60 Hz) / 230 VAC (50 Hz)
Full Load Amps	1.2 Amps / 0.6 Amps
Motor Type	IP00 Shaded Pole
Motor Protection	Thermal Reset

Environmental

Max. Ambient Temperature	40°C (105°F)
Max. Medium Temperature	40°C (105°F)
Net Weight	1.35 kg (3 lbs.)

Materials of Construction

Model Number	Head	Diaphragm	Valves
N84.3ANI	Aluminum	EPDM	NBR



N84.3 (DC)

Type	N84.3ANDC
Head Configuration	Two-Stage
Max. Flow	5 lit/min (0.18 SCFM)
Max. Vacuum	5 mbar (29.8 in. Hg)
Max. Cont. Pressure	.3 bar (4.5 psig)

Electrical/Mechanical

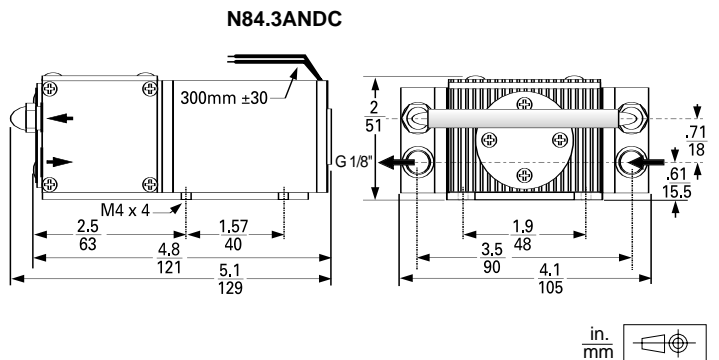
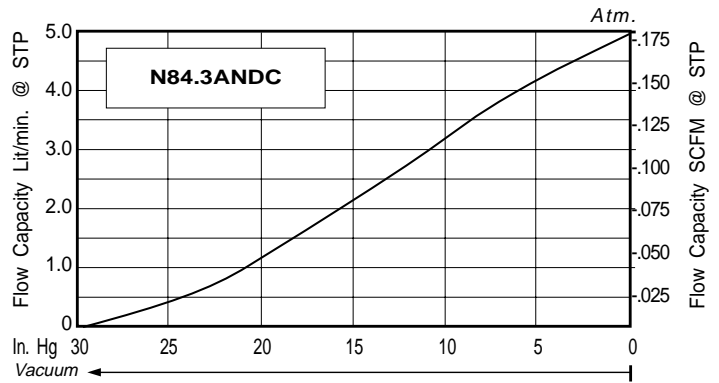
Motor Volts DC	6 VDC	12 VDC	24 VDC
Full Load Amps	3 Amps	1.5 Amps	0.75 Amps
Motor Type	Permanent Magnet Brush Type		
Motor Protection	None		

Environmental

Max. Ambient Temperature	40°C (105°F)
Max. Medium Temperature	40°C (105°F)
Net Weight	.9 kg (2.2 lbs.)

Materials of Construction

Model Number	Head	Diaphragm	Valves
N84.3ANDC	Aluminum	EPDM	NBR



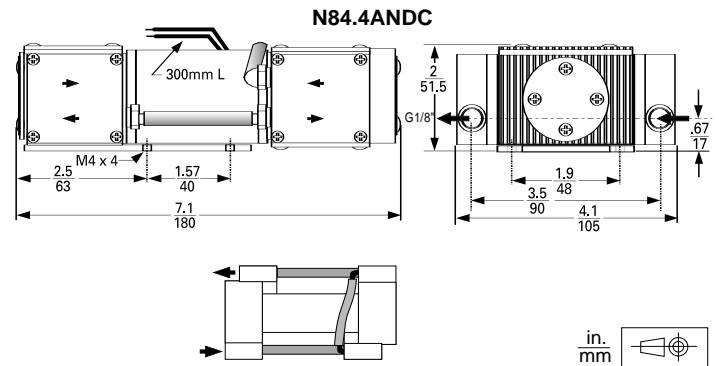
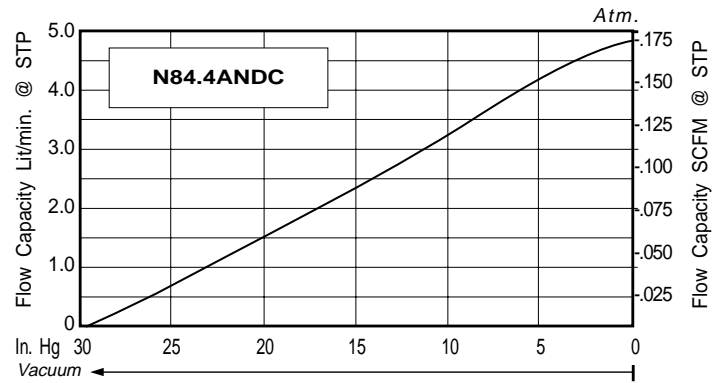
N84.4 (BLDC)

Type	N84.4ANDC		
Head Configuration	Four-Stage		
Max. Flow	4.8 lit/min (0.17 SCFM)		
Max. Vacuum	2 mbar (29.86 in. Hg)		
Max. Cont. Pressure	.3 bar (4.5 psig)		

Electrical/Mechanical			
Motor Volts DC	6 VDC	12 VDC	24 VDC
Full Load Amps	5.8 Amps	3.6 Amps	1.8 Amps
Motor Type	Permanent Magnet Brush Type		
Motor Protection	None		

Environmental	
Max. Ambient Temperature	40°C (105°F)
Max. Medium Temperature	40°C (105°F)
Net Weight	1.4 kg (3.1 lbs.)

Materials of Construction			
Model Number	Head	Diaphragm	Valves
N84.4ANDC	Aluminum	EPDM	NBR



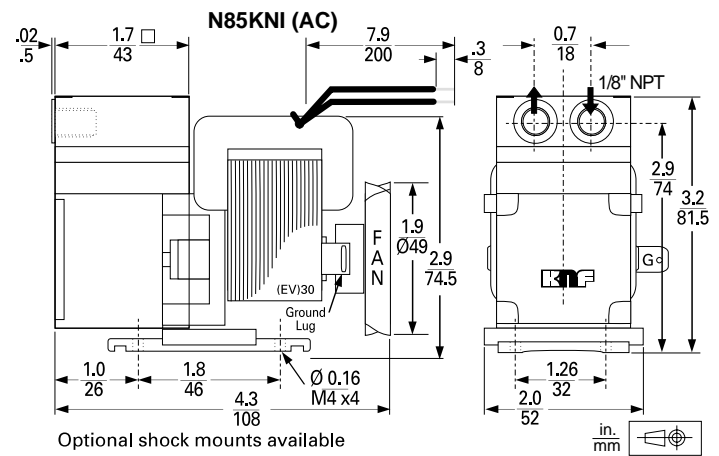
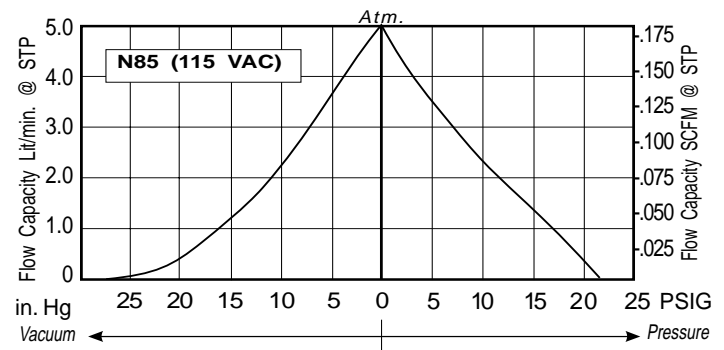
N85 (AC)

Type	N85KNI		
Head Configuration	Single Stage		
Max. Flow	5 lit/min (0.18 SCFM)		
Max. Vacuum	100 mbar (27 in. Hg)		
Max. Cont. Pressure	1.5 bar (21 psig)		

Electrical/Mechanical	
Motor Voltage/Hz	115 VAC (60 Hz) / 230 VAC (50 Hz)
Full Load Amps	0.8 Amps / 0.45 Amps
Motor Type	IP00 Shaded Pole
Motor Protection	Thermal Reset

Environmental	
Max. Ambient Temp.	40°C (105°F)
Max. Medium Temp.	40°C (105°F)
Net Weight	0.88 kg (2 lbs.)

Materials of Construction			
Model Number	Head	Diaphragm	Valves
N85KNI	Ryton®	EPDM	Neoprene



Optional shock mounts available

N85.3 (AC)

Type	N85.3KNI	N85.3KTI
Head Configuration	Two-Stage	
Max. Flow	5 lit/min (0.18 SCFM)	
Max. Vacuum	25 mbar (29.2 in. Hg)	35 mbar (28.9 in. Hg)
Max. Cont. Pressure	.3 bar (4.5 psig)	

Electrical/Mechanical

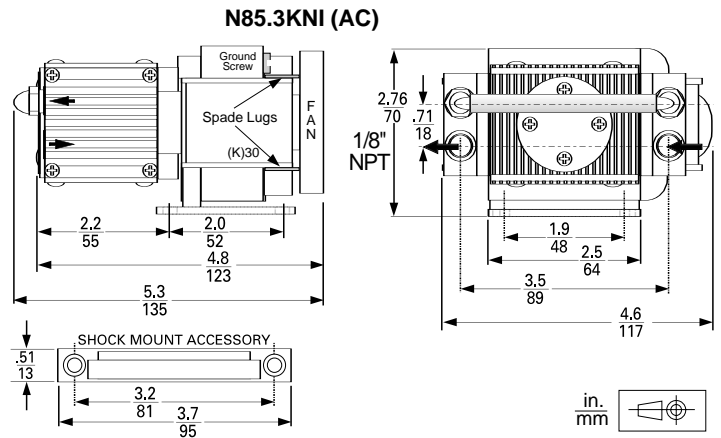
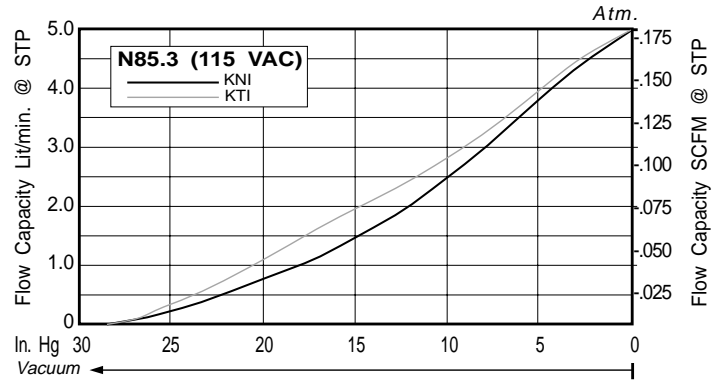
Motor Voltage/Hz	115 VAC (60 Hz) / 230 VAC (50 Hz)	
Full Load Amps	1.2 Amps / 0.7 Amps	
Motor Type	IP00 Shaded Pole	
Motor Protection	Thermal Reset	

Environmental

Max. Ambient Temperature	40°C (105°F)	
Max. Medium Temperature	40°C (105°F)	
Net Weight	2 kg (4.2 lbs.)	

Materials of Construction

Model Number	Head	Diaphragm	Valves
N85.3KNI	Ryton®	EPDM	Neoprene
N85.3KTI	Ryton®	Teflon®	Kalrez®



N85.3 (DC)

Type	N85.3KNDC	N85.3KTDC
Head Configuration	Two-Stage	
Max. Flow	5 lit/min (0.18 SCFM)	5.5 lit/min (0.19 SCFM)
Max. Vacuum	25 mbar (29.2 in. Hg)	35 mbar (28.9 in. Hg)
Max. Cont. Pressure	.3 bar (4.5 psig)	

Electrical/Mechanical

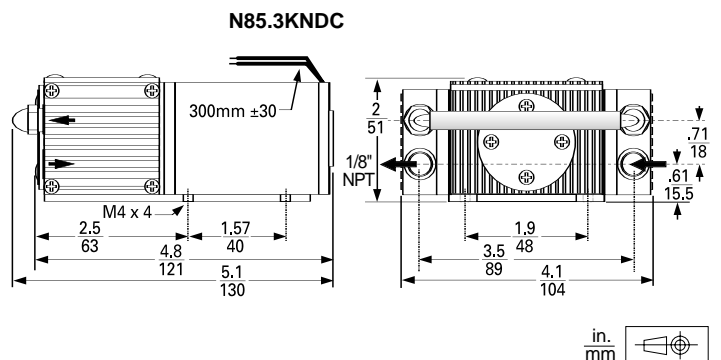
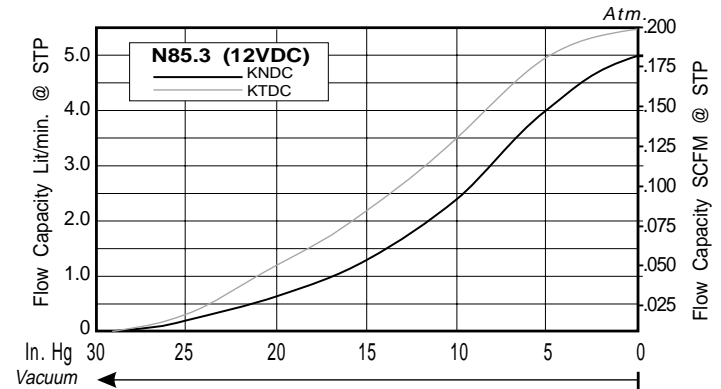
Motor Volts DC	6 VDC	12 VDC	24 VDC
Full Load Amps	2.4 Amps	1.2 Amps	0.6 Amps
Motor Type	Permanent Magnet Brush Type		
Motor Protection	None		

Environmental

Max. Ambient Temperature	40°C (105°F)	
Max. Medium Temperature	40°C (105°F)	
Net Weight	.72 kg (1.6 lbs.)	

Materials of Construction

Model Number	Head	Diaphragm	Valves
N85KNDC	Ryton®	EPDM	Neoprene
N85KTDC	Ryton®	Teflon®	Kalrez®



N86 (AC)

Type	N86KNI	N86KTI
Head Configuration	Single Stage	
Max. Flow	6 lit/min (0.21 SCFM)	5.5 lit/min (0.19 SCFM)
Max. Vacuum	100 mbar (27 in. Hg)	160 mbar (25.2 in. Hg)
Max. Cont. Pressure	2 bar (30 psig)	

Electrical/Mechanical

Motor Voltage/Hz 115 VAC (60 Hz) / 230 VAC (50 Hz)

Full Load Amps 1.2 Amps / 0.6 Amps

Motor Type IP00 Shaded Pole

Motor Protection Thermal Reset

Environmental

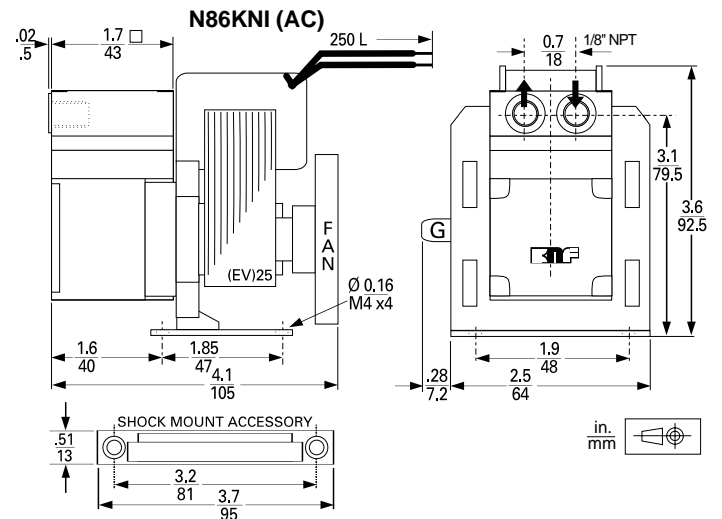
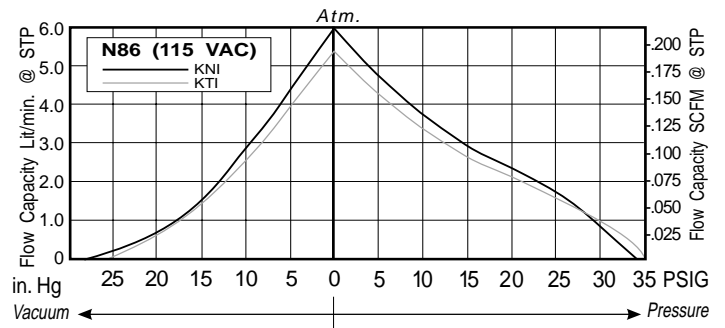
Max. Ambient Temperature 40°C (105°F)

Max. Medium Temperature 40°C (105°F)

Net Weight 1.1 kg (2.5 lbs.)

Materials of Construction

Model Number	Head	Diaphragm	Valves
N86KNI	Ryton®	EPDM	Viton®
N86KTI	Ryton®	Teflon®	Kalrez®



N86 (DC)

Type	N86KNDC	N86KTDC
Head Configuration	Single Stage	
Max. Flow	6.5 lit/min (0.23 SCFM)	6 lit/min (0.21 SCFM)
Max. Vacuum	100 mbar (27 in. Hg)	160 mbar (25.2 in. Hg)
Max. Cont. Pressure	1.5 bar (22 psig)	

Electrical/Mechanical

Motor Volts DC 6 VDC 12 VDC 24 VDC

Full Load Amps 2.6 Amps 1.3 Amps 0.65 Amps

Motor Type Permanent Magnet Brush Type

Motor Protection None

Environmental

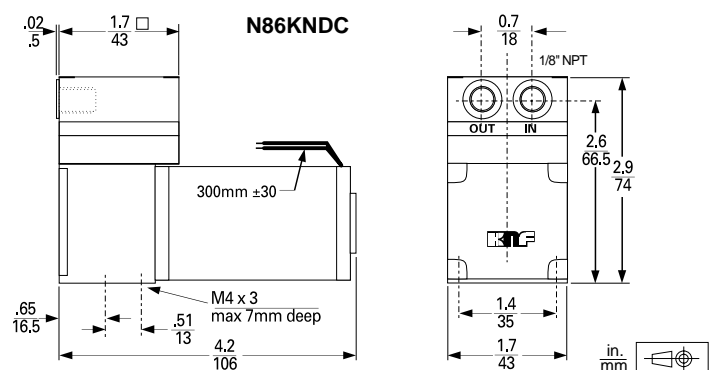
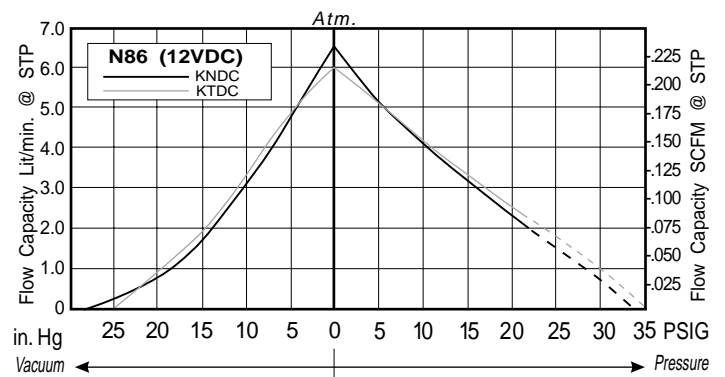
Max. Ambient Temperature 40°C (105°F)

Max. Medium Temperature 40°C (105°F)

Net Weight .58 kg (1.3 lbs.)

Materials of Construction

Model Number	Head	Diaphragm	Valves
N86KNDC	Ryton®	EPDM	Viton®
N86KTDC	Ryton®	Teflon®	Kalrez®



N89 (AC)

Type	N89KNI	N89KTI
Head Configuration	Single Stage	
Max. Flow	9.5 lit/min (0.34 SCFM)	
Max. Vacuum	100 mbar (27 in. Hg)	170 mbar (24.9 in. Hg)
Max. Cont. Pressure	0.5 bar (7 psig)	

Electrical/Mechanical

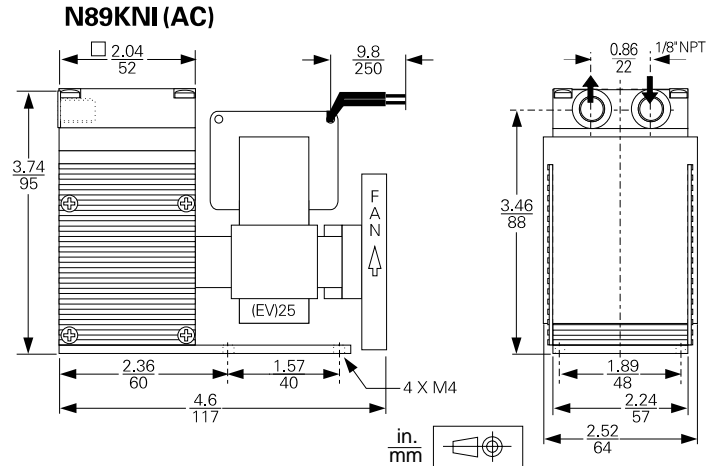
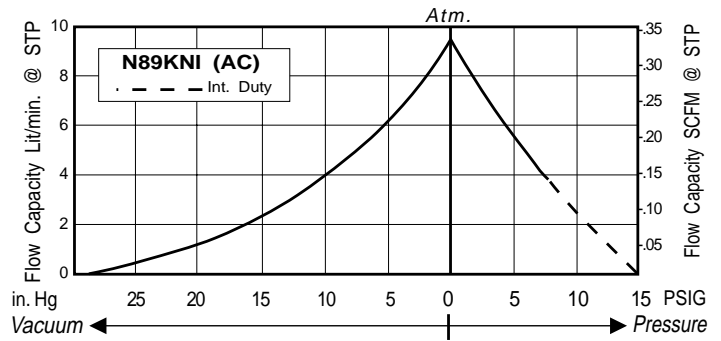
Motor Voltage/Hz	115 VAC (60 Hz) / 230 VAC (50 Hz)	
Full Load Amps	1.2 Amps / 0.6 Amps	
Motor Type	IP00 Shaded Pole	
Motor Protection	Thermal Reset	

Environmental

Max. Ambient Temperature	40°C (105°F)	
Max. Medium Temperature	40°C (105°F)	
Net Weight	1.3 kg (2.9 lbs.)	

Materials of Construction

Model Number	Head	Diaphragm	Valves
N89KNI	Ryton®	EPDM	Neoprene
N89KTI	Ryton®	Teflon®	Kalrez®



N89 (DC)

Type	N89KNDC	N89KTDC
Head Configuration	Single Stage	
Max. Flow	9 lit/min (0.32 SCFM)	
Max. Vacuum	100 mbar (27 in. Hg)	170 mbar (24.9 in. Hg)
Max. Cont. Pressure	0.5 bar (7 psig)	

Electrical/Mechanical

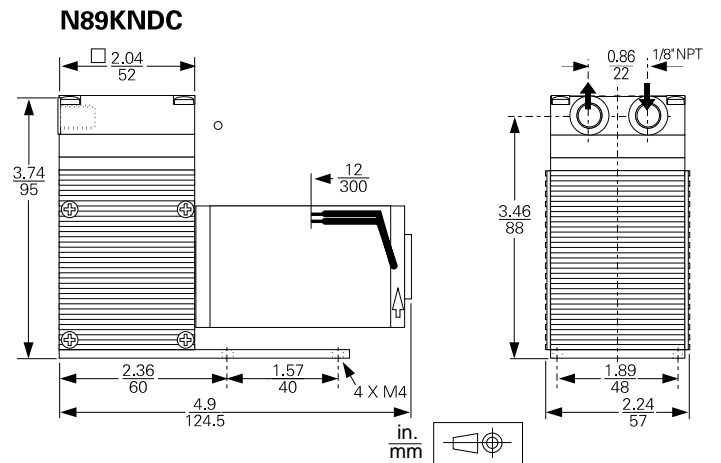
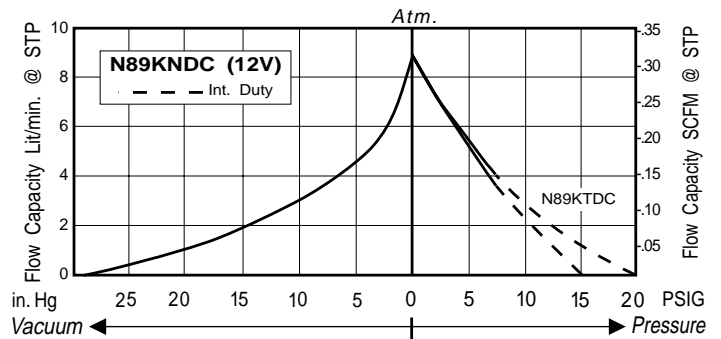
Motor Volts DC	6 VDC	12 VDC	24 VDC
Full Load Amps	1.7 Amps	0.85 Amps	0.5 Amps
Motor Type	Permanent Magnet Brush Type		
Motor Protection	None		

Environmental

Max. Ambient Temperature	40°C (105°F)	
Max. Medium Temperature	40°C (105°F)	
Net Weight	.9 kg (2 lbs.)	

Materials of Construction

Model Number	Head	Diaphragm	Valves
N89KNDC	Ryton®	EPDM	Neoprene
N89KTDC	Ryton®	Teflon®	Kalrez®



Notes: Standard continuous performance ratings are based on technical data and test results of nominal units at sea level with an ambient temperature of 70° F (21° C) and nominal electrical supply are listed above. Dimensions and performance characteristics given are for reference only. Higher performance models, cost efficient OEM modifications, a wide variety of motor options and different materials of construction may be available. Teflon® and Kalrez® are registered trademarks of DuPont. Viton® is a registered trademark of DuPont Dow Elastomers, Ryton® is a registered trademark of Phillips 66. Specifications subject to change without notice.