

DGC-500NE

Product Data Sheet

Product number: NA

FULLY SWEEP
INLINE
PATHWAY

HIGH FLOW
COMPATIBILITY

HIGH CAPACITY
GAS REMOVAL

High-Throughput Degassing for Your Fluidic System

Improve data quality and reliability in your system with high-throughput degassing chambers from IDEX Health & Science.

IDEX Health & Science high-flow inline degassing chambers provide superior fluid conditioning for high-throughput assay systems. Our degassing chambers improve instrument precision and assay quality by removing dissolved gases from system fluids before they outgas and form bubbles that deteriorate precision dispensing, prevent mixing, disrupt separation air gaps, or interfere with any type of fluid contact detection.

Features:

- › Active very high-capacity dissolved gas removal
- › Fully-swept inline fluid path
- › Very high-flow rate compatibility
- › Barbed fluid connection for elastomeric tubing
- › Barbed vacuum connection for elastomeric tubing
- › Sturdy housing for membrane protection

Applications:

- › High-throughput clinical chemistry
- › High-throughput immunoassays
- › High throughput flow cytometry
- › Other high-throughput or fast flow applications

Description

The core functional element of this inline degasser is a fluid path lined by a highly permeable silicone-like membrane. While fluid flows through the space surrounding the membrane-lined liquid pathway, the membrane-lined pathway is evacuated and held at a precise vacuum level using a reliable PID-controlled IDEX Health & Science vacuum pump. The difference in gas concentration between the solution and vacuum drives the active removal of dissolved gases.



General

Parameter	Value
Class	Degassing chamber
Series	DGC
Product alias	DGC-500NE
Product number	NA

Maximum Ratings (Absolute)

Parameter	Value	Unit
Maximum operating pressure difference between fluid and vacuum	100	kPa
Maximum operating flow rate	4600	mL/min
Maximum operating vacuum level	16.7	kPa
Maximum operating temperature	40	°C
Maximum operating non-condensing humidity	70	%

Degassing

The following table contains nominal reference quantities

Parameter	Value	Unit
Degassing	Permeation through solid membrane	
Membrane material	Poly-4-methylpenten-1 (PMP)	
Flow rate for 50% degassing efficiency	500	mL/min
Recommended minimum degassing flow rate	200	mL/min
Recommended maximum degassing flow rate	500	mL/min
Recommended degassing vacuum	16.7	kPa
Vacuum connection	Barb 4.3 mm OD	
Vacuum connection location	On bottom lid	
Vacuum connection material	Polypropylene (PP)	
Recommended vacuum connection	Low gas permeability 3 mm ID elastomeric tube	

Fluidic

The following table contains nominal reference quantities

Parameter	Value	Unit
Internal fluid pathway	Shell side flow	
Pressure drop-flow rate relation, flow rate q in L/min	$2.9q^2 + 2.9q$	mbar/L/min
Fluid contact materials	Polypropylene (PP) Epoxy Poly-4-methylpenten-1 (PMP)	
Fluid connection	Barb 10 mm OD	
Fluid connection location	On top lid and side of chamber	
Fluid connection material	Polypropylene (PP)	
Recommended fluid connection	9 mm ID elastomeric tube	

Mechanical

Parameter	Value	Unit
Housing material	Polypropylene (PP)	
Outer dimensions	141 x 45 x 45	mm
Mounting	Secure in place using clamps or cable ties	
Mounting orientation	Upright with vacuum connection pointing downward OR Horizontal with vacuum connections pointing to the side	

Environmental

Parameter	Value	Unit
Operating temperature	5 to 40	°C
Operating non-condensing humidity	10 to 70	%
Storage temperature	-10 to 60	°C
Storage non-condensing humidity	10 to 70	%

Regulatory

Parameter	Value
REACH	Yes
RoHS	Yes

Typical Performance

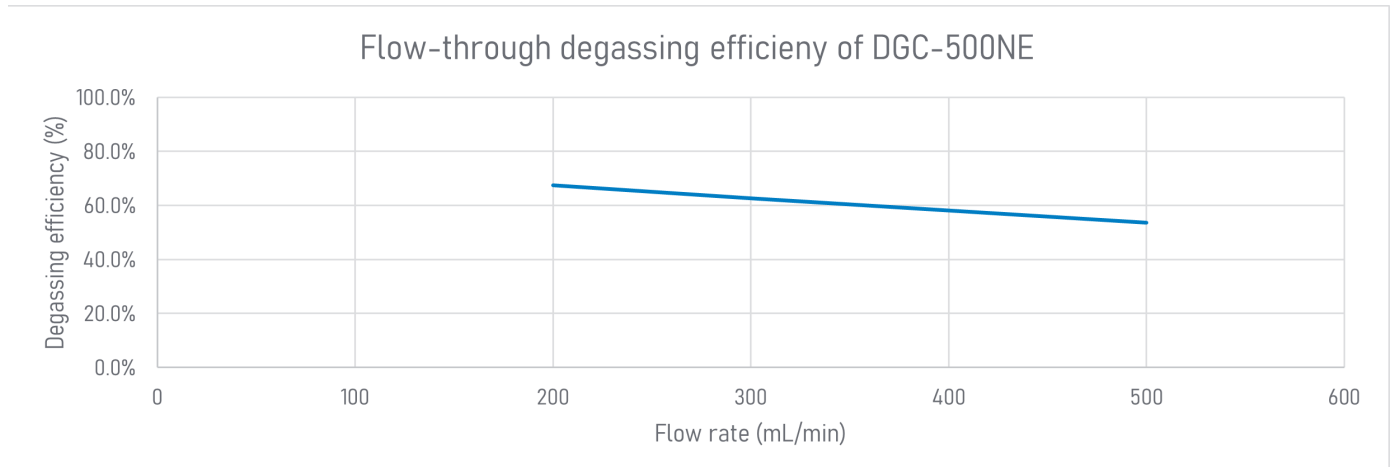
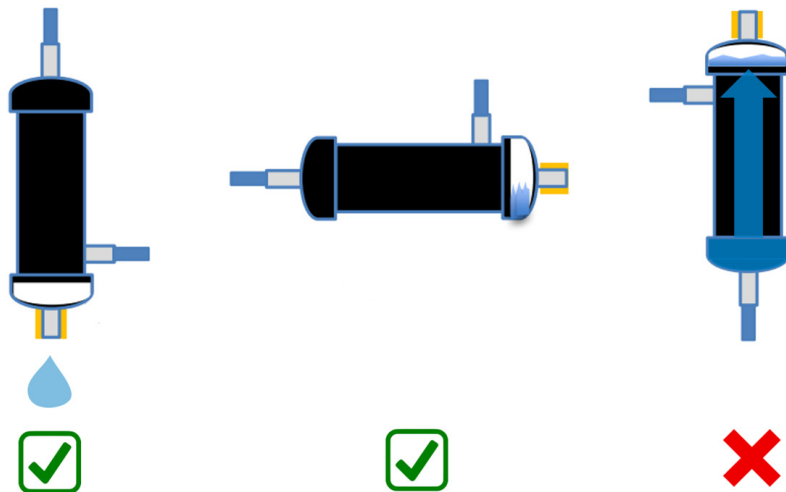


Figure 1: Figure 1: The plot shows the reference degassing efficiency of degassing chamber DGC-500NE tested under various flow rates. The degassing efficiency represents the percentage of removed dissolved oxygen with respect to its saturation concentration. The curve shows a typical minimum performance profile gained at 25 °C using deionized water and a vacuum level of 16.7 kPa. The chamber was operated with negligible back pressure connected to the discharge side of a continuous pump. Oxygen content was monitored using a dissolved oxygen sensor while the flow rate was measured using a mass flow meter.

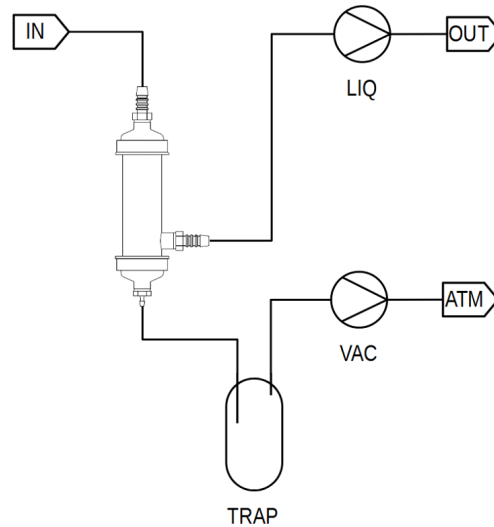
Mounting Orientation

Condensation will reach an equilibrium in the chamber such that a small amount of water will be present at the bottom of the vacuum space. We recommend that the DGC-500NE be mounted horizontally to avoid liquid filling the vacuum space and entering the vacuum line.

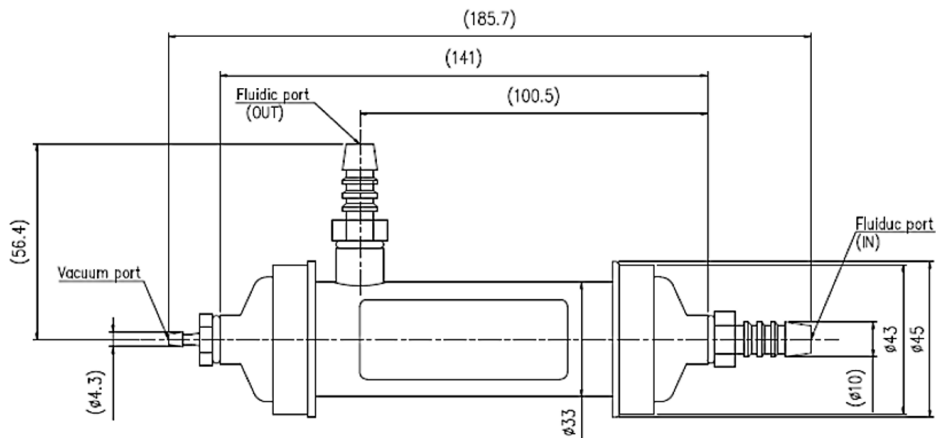


Integration

The DGC-500NE product must only be connected to the liquid pump suction side. Connecting the chamber to the discharge side will can lead to irreversible damage of the degassing membrane seal and leakage. The vacuum port must point downward. Always place a liquid trap between degasser chamber and vacuum pump for longer continuous operation in order to avoid spillovers into the vacuum line



Dimensions



Warranty

Seller warrants to buyer that each product will be free of defects in workmanship and material for the period of 1 year. The warranty period for all products commences on the date the product is deposited by the seller with the carrier for shipment. For complete warranty details refer to IDEX Health & Science LLC terms and conditions of sale which can be found at <https://www.idex-hs.com/about-us/legal-notices/terms-conditions-of-sale>.