

# DGC-500W

## Product Data Sheet

Product number: 100001222005

FULLY SWEPT  
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:

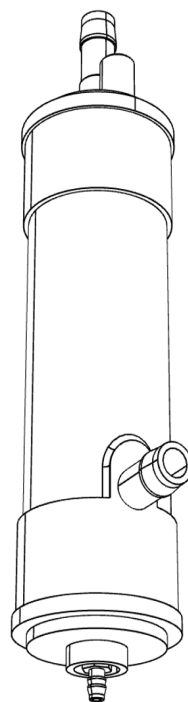
- › Active very high-capacity dissolved gas removal
- › Fully-swept inline fluid path
- › Very high-flow rate compatibility
- › Barbed fluid connection for elastomeric tubing
- › Barbed vacuum connection for elastomeric tubing
- › Sturdy housing for membrane protection

#### 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-500W
Product number	100001222005

## 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	Vinyl methyl silicone (VMQ)	
Degassing fluid volume	59	mL
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 volume	28	cm <sup>3</sup>
Pumpdown period to achieve 16.7 kPa vacuum using an IDEX Health & Science double stage vacuum pump	10	s
Vacuum connection	Barb 4.7 mm OD	
Vacuum connection location	On bottom lid	
Vacuum connection material	Brass, nickel-plated	
Recommended vacuum connection	Low gas permeability 3 mm ID elastomeric tube	

## Fluidic

Parameter	Value	Unit
Internal fluid pathway	Shell side flow	
Inline fluid volume	69	mL
Pressure drop-flow rate relation, flow rate q in mL/min	$2 \times 10^{-7} q^2 + 0.0005q$	kPa/mL/min
Fluid contact materials	Modified polyphenylene ether (mPPE) Ethylene propylene diene monomer (EPDM) Polyethylene (PE) Vinyl methyl silicone (VMQ)	
Fluid connection	Barb 11 mm OD	
Fluid connection location	On top lid and side of the chamber	
Fluid connection material	Modified polyphenylene ether (mPPE)	
Recommended fluid connection	10 mm ID elastomeric tube	

## Mechanical

Parameter	Value	Unit
Housing material	Modified polyphenylene ether (mPPE)	
Outer dimensions	186 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

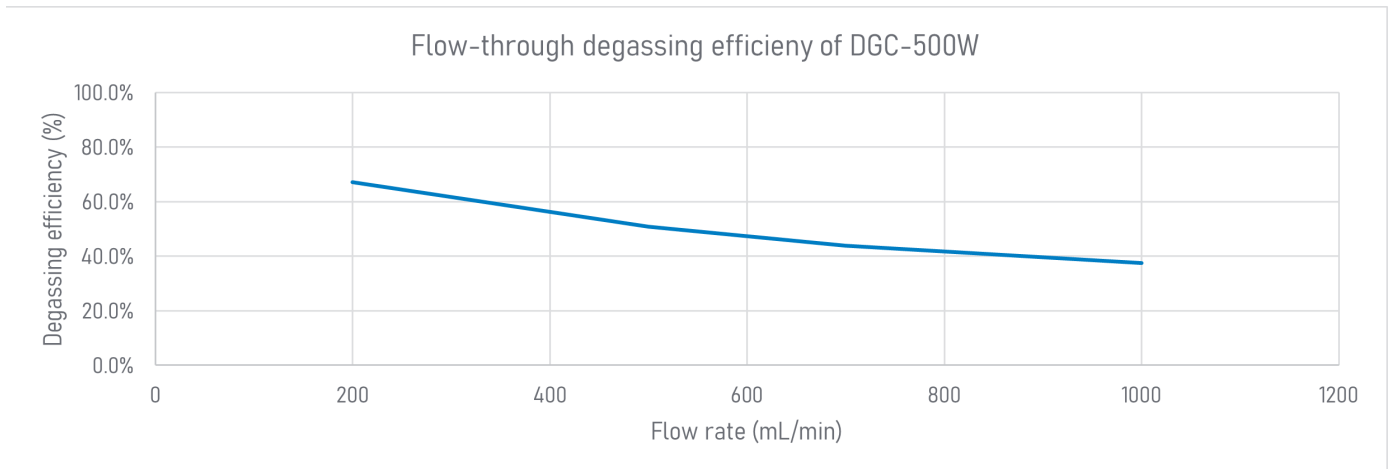
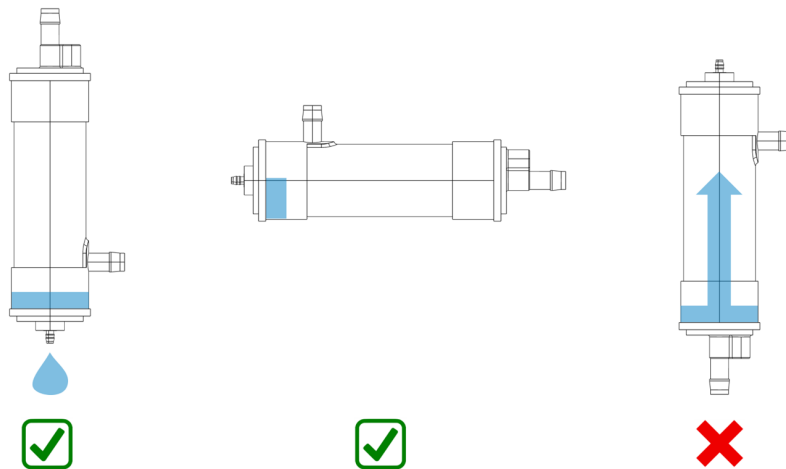


Figure 1: The plot shows the reference degassing efficiency of degassing chamber DGC-500W tested under various flow rates. The degassing efficiency represents the percentage of removed dissolved oxygen with respect to its saturation concentration. The curve shows a typical minimum performance profile 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 suction 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.

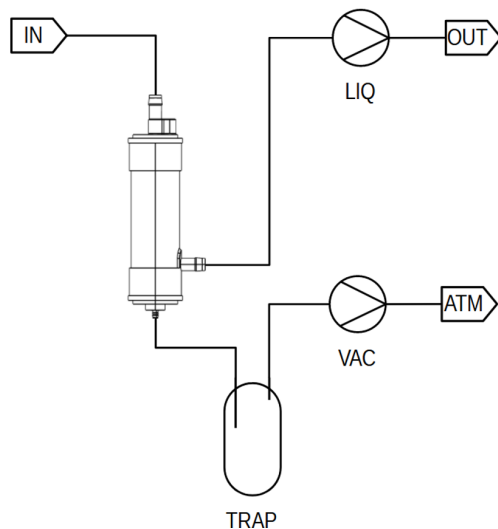
## Mounting Orientation

Condensation will reach an equilibrium in the chamber such that a small amount of water will be present in the vacuum space. We recommend that the DGC-500W be mounted vertically or horizontally to avoid liquid filling the vacuum space.

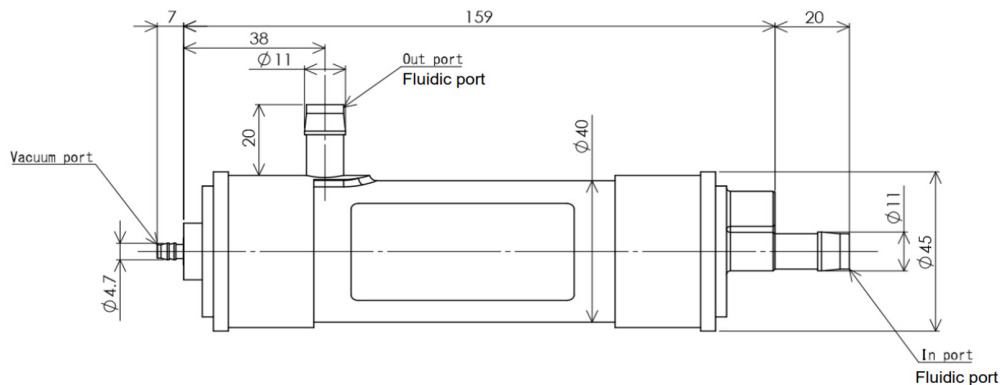


## Integration

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