

GLASS FLOW CONTROL TUBES



APPLICATIONS

For over 25 years, BD Diagnostics-Accu-Glass has supplied precision bore glass flow restrictors where it is critical to maintain a precise flow rate. By example, Accu-Glass flow restrictors are commonly used in:

- Medication infusion pumps for ambulatory drug therapy
- Regulating the flow of gases in a number of applications where flow control is essential
- Flush devices used with disposable blood pressure transducers

ADVANTAGES OF GLASS

Glass is used as a flow restrictor due to its unique properties:

- Inert and has minimal interaction with drugs, gases, and solvents
- Dimensionally stable due to a low coefficient of expansion
- Environmentally safe and is unchanged by sterilization, storage or further processing

Accu-Glass flow restrictors are produced from molten glass, which is first drawn into tubing. The inside diameter (ID) can be manufactured as small as 0.001 inch (0.025mm) and controlled to ± 0.00004 inch (0.001mm). Application of Poiseuille's Law permits the consideration of ID, length, and pressure to design a flow restrictor best suited for the application.

VALUE ADDED PROCESSES

After the flow restrictors are cut to length, Accu-Glass can perform a number of secondary operations that provide enhanced value:

- 100% automated flow testing
- Color coding to identify different flow rates
- Special or custom packaging available such as vacuum sealing

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PHYSICAL PROPERTIES

Glass Type	Borosilicate
Expansion Coefficient ($\times 10^{-7}/^{\circ}\text{C}$)	55
Density (g/cm^3)	2.33
Strain Point ($^{\circ}\text{C}$)	530
Annealing Point ($^{\circ}\text{C}$)	570
Softening Point ($^{\circ}\text{C}$)	785
Working Point ($^{\circ}\text{C}$)	1140

TYPICAL DIMENSIONS

FEATURE	AVAILABLE SIZE RANGE INCHES / mm	TOLERANCE INCHES / mm
O.D.	0.030 / 0.762	$\pm 0.001 / \pm 0.0254$
	0.150 / 3.81	$\pm 0.003 / \pm 0.0762$
I.D.	0.001 / 0.0254	$\pm 0.00004 / \pm 0.001$
	0.010 / 0.254	$\pm 0.0001 / \pm 0.00254$
Length (Score Break Cut)	0.220 - 6.00 / 5.588 - 152.4	$\pm 0.010 / \pm 0.254$
Length (Saw Cut)	0.020 - 6.00 / 0.508 - 152.4	$\pm 0.005 / \pm 0.127$

EXAMPLE OF AIR FLOW VS I.D. SIZE

