

## Flow Rate Comparison for Peripheral IV Catheters – GRAVITY

Gauge and Needle Length	Becton Dickinson				Smiths Medical			B. Braun	
	BD Nexiva™		BD Insite™ Autoguard™ mL/min <sup>2</sup>	BD Insite™ Autoguard™ BC mL/min <sup>2</sup>	ViaValve™ mL/min <sup>1</sup>	ProtectiV® Plus/ ProtectiV® mL/min <sup>1</sup>	Acuvance® mL/min <sup>1</sup>	B. Braun Introcan® Safety 3 mL/min <sup>3</sup>	B. Braun Introcan® mL/min <sup>3</sup>
	Single Port mL/min <sup>2</sup>	Dual Port mL/min <sup>2</sup>							
24G x 5/8"	19	19			24	24	24		26
24G x 3/4"	18	18	20	20		24		22	22
22G x 3/4"									
22G x 1"	33	33	35	37	38	38	38	35	35
22G x 1 3/4"									26
20G x 1"	61	61	65	63	65	65	65	65	65
20G x 1 1/4"	58	58	60	61	63	63	63	60	60
20G x 1 3/4"	51	51	55	54			54		57
18G x 1"									
18G x 1 1/4"	84	84	105	95	110	110	110	105	105
18G x 1 3/4"	79	79	95	87			100	95	100
18G x 2 1/2"									85
16G x 1 1/4"			220	193	220	215	215		215
16G x 1 3/4"			205	185					
16G x 2"							208		210
14G x 1 1/4"					360	325			350
14G x 1 3/4"			330						
14G x 2"							314		345

1 Flow Rate information from Smiths Medical product packaging. Testing was completed based on ISO recommendations for testing single-use intra-vascular catheters. A constant-level tank is used, fitted with a delivery tube and a male 6% Luer taper fitting. To ensure consistency, the "open" flow rate of the system is 525 +/- 25 mL/min., at a hydrostatic head height of 1000 +/- 5mm.

2 Flow Rate information from BD Product Catalog ©2016 BD, BD-0507 v2 [03/16]

3 Flow rate information from B. Braun Catalog 12-3210\_VAD53\_4/12\_KE5M & B.Braun Introcan® 3 VAD76\_8/14\_BB

# Flow Rate Comparison for Peripheral IV Catheters – POWER INJECTION

Gauge and Needle Length	Becton Dickinson					Smiths Medical			B. Braun	
	BD Nexiva™		BD Nexiva™ Diffusics™ mL/sec <sup>2,2</sup>	BD Insyte™ Autoguard™ mL/sec <sup>2</sup>	BD Insyte™ Autoguard™ BC mL/sec <sup>2</sup>	ViaValve™ mL/sec <sup>1</sup>	ProtectiV® Plus/ProtectiV® mL/sec <sup>1</sup>	Acuvance® mL/sec <sup>1</sup>	B. Braun Introcan® Safety 3 mL/sec <sup>3</sup>	B. Braun Introcan® mL/sec <sup>3</sup>
	Single Port mL/sec <sup>2</sup>	Dual Port mL/sec <sup>2,1</sup>								
24G x 5/8"					6.5	4.5	4.5			
24G x 3/4"			3			4.5				
22G x 3/4"										
22G x 1"	3	3	6.5		9.5	9	9	4.5		
22G x 1 3/4"										
20G x 1"	5.5	5.5	10		14	13	13	8		
20G x 1 1/4"	5.5	5.5	10		13	13	13	7.5		
20G x 1 3/4"	5.5	5.5					13			
18G x 1"										
18G x 1 1/4"	7	7	15		19	21	21	9.5		
18G x 1 3/4"	7	7					21	9		
18G x 2 1/2"										
16G x 1 1/4"							33			
16G x 1 3/4"										
16G x 2"							33			
14G x 1 1/4"							39			
14G x 1 3/4"										
14G x 2"										

<sup>1</sup> Flow Rate information from Smiths Medical product brochure. Methodology: Testing was conducted using a widely available contrast media (Omnipaque 300<sup>®</sup>) and a MEDRAD<sup>®</sup> Mark V Plus power injector at 21°C. Note these are maximum flow rates NOT suggested flow rates.

<sup>2</sup> Flow Rate information from BD Nexiva™ Close IV Catheter System Single Port Isovue 300 chart MS50576 [07/14]

<sup>2.1</sup> Flow Rate information from BD Nexiva™ Close IV Catheter System Dual Port Isovue 300 chart MS50575 [07/14]

<sup>2.2</sup> Flow Rate information from BD Nexiva™ Diffusics™ BD-0916 [03/16]

<sup>3</sup> Flow Rate information from B. Braun Introcan<sup>®</sup> 3 catalog VAD76\_8/14\_BB

**MSOUCA-1138**

**Smiths Medical ASD, Inc.**  
 Southington, CT 06489, USA  
 Phone: 1-860-621-9111  
 Toll-Free USA: 1-800-847-5831

[www.smiths-medical.com](http://www.smiths-medical.com) Find your local contact information at [www.smiths-medical.com/customer-support](http://www.smiths-medical.com/customer-support)

Smiths Medical is part of the global technology business Smiths Group plc. Product(s) described may not be licensed or available for sale in all countries. Please see the Instructions for Use/Operator's Manual for a complete listing of the indications, contraindications, warnings and precautions. PROTECTiV, ACUVANCE, ADVANTiV, ViaValve, Jelco, Generations of Safety, and the Smiths Medical and Jelco design marks are trademarks of Smiths Medical. The symbol ® indicates the trademark is registered in the U.S. Patent and Trademark Office and certain other countries. All other names and marks mentioned are the trade names, trademarks, or service marks of their respective owners. ©2018 Smiths Medical. All rights reserved. SS195393EN-112018