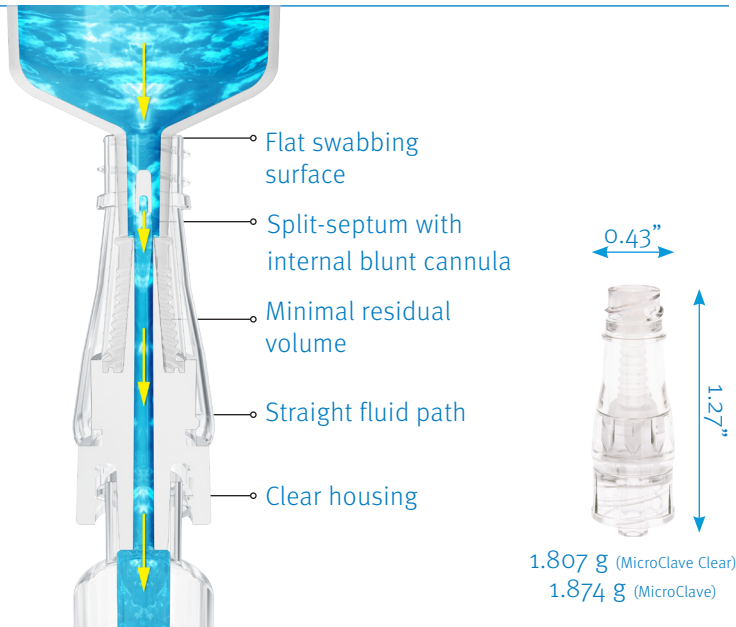
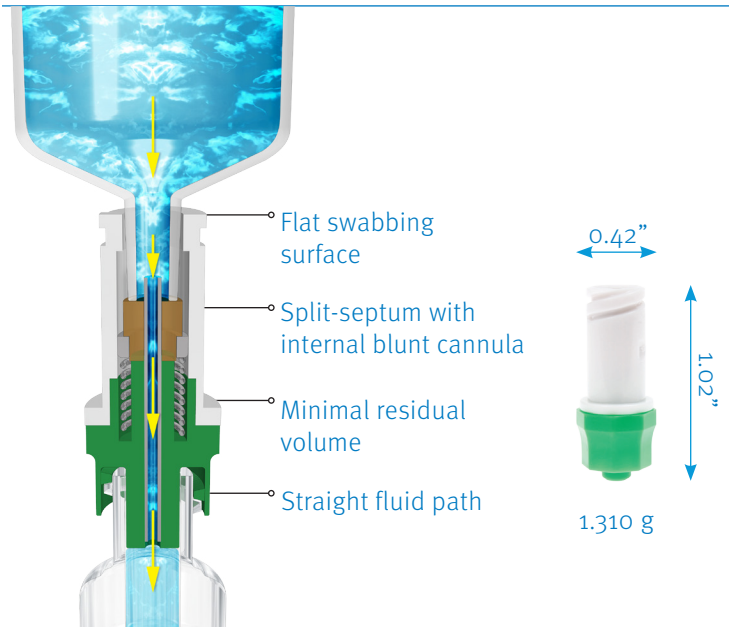


# MicroClave<sup>®</sup> and Bionector/Bionecteur Comparative Matrix

## MicroClave by ICU Medical Inc.



## Bionector by Laboratories Pharmaceutiques, Vygon



PRODUCT PERFORMANCE	MICROCLAVE TECHNOLOGY	BIONECTOR TECHNOLOGY
Base Technology	Internal cannula and silicone compression seal split-septum. Internal cannula windows are exposed by the insertion of a male luer, and cannula enters the male luer's internal space to achieve flow.	Internal stainless steel cannula and spring-actuated polyisoprene split-septum. Internal cannula opening is exposed by the insertion of a male luer, and cannula enters the male luer's internal space to achieve flow.
Displacement	Neutral: 0 to -0.01 mL -0.0049 mL and -2.2 cm Published <sup>1</sup>	Neutral: 0 to -0.01 mL -0.0054 mL and -2.4 cm Published <sup>1</sup>
Residual Volume	0.04 mL	0.02 mL
Fluid Path	Straight through polycarbonate cannula.	Straight through stainless steel cannula.
Moving Parts in Fluid Path	No	No
Contains Latex	No	No
Contains Metal	No	Yes
Number of Assembly Parts	3, of which 1 moves on luer access.	6, of which 3 move on luer access.
Fluid Residual External on Disconnect	Minimal	Minimal
Clamping Sequence	None required	None required
Flow Rate	165 mL/min	110 mL/min
Clear Available	Yes	No
Antimicrobial Available	Yes	No
Bacterial Transfer Performance	The least amount of bacterial transfer of any connector tested. <sup>2</sup>	Exhibits a higher bacterial transfer rate than MicroClave. <sup>2</sup>
High Pressure Compatibility	400 psi maximum pressure or 10 mL/sec.	300 psi

Performance data on file at ICU Medical Inc. San Clemente, CA 92673. Reference ENG-433

Bionector and Vygon are trademarks of Vygon Pharmaceutiques.

1. Evaluation: Needleless Connectors. ECRI Institute Health Devices, Sept. 2008, Volume 37, Number 9

2. Ryder M, deLancey Pulcini E, Parker A, James G. Presented at the American Society for Parenteral and Enteral Nutrition Meeting, February 2013. Comparison of bacterial transfer and biofilm formation on intraluminal catheter surface among eight connectors in a clinically simulated in vitro model.