**Supplementary table 1. Mean volume delivered, infusion duration and flow rates for each infusion pump**

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| --- | --- | --- | --- | --- | --- |
| **Infusion pump name; height and back pressure combination** | **Mean total volume (mL) delivered at the infusion end point stated by manufacturer (V27 or V24), ±SD** | **Mean infusion duration (h)\*, ±SD** | **Mean peak flow rate of the infusion (Fpeak) (mL/h), ±SD** | **Mean flow rate until infusion end point stated by manufacturer (Favg24 or** **Favg27) (mL/h), ±SD** | **Mean flow rate until end of infusion\* (Favgend) (mL/h)** |
| ***Baxter Infusor LV10 (240mL volume, expected delivery time 24 h, set flow rate 10mL/h D5W or 11mL/h NS)*** | | | | | |
| 0cm, 0mmHg | 237.6 ±0.8 | 22.4 ±0.5 | 13.9 ±1.0 | 9.9 ±0.0 | 10.6 ±0.3 |
| 0cm, 10mmHg | 235.5 ±3.0 | 24.4 ±0.9 | 12.5 ±0.9 | 9.8 ±0.1 | 9.7 ±0.4 |
| 0cm, 15mmHg | 223.8 ±24.5 | 25.2 ±4.2 | 12.2 ±1.3 | 9.3 ±1.0 | 9.6 ±1.5 |
| 0 cm, 30mmHg | 228.4 ±9.0 | 25.0 ±1.0 | 12.1 ±0.5 | 9.5 ±0.4 | 9.5 ±0.4 |
| -40cm, 0mmHg | 224.3 ±12.8 | 25.0 ±1.4 | 12.0 ±1.0 | 9.3 ±0.5 | 9.3 ±0.5 |
| -20cm, 0mmHg | 233.4 ±4.1 | 23.6 ±1.5 | 12.4 ±0.8 | 9.7 ±0.2 | 10.0 ±0.6 |
| +20cm, 0mmHg | 239.1 ±1.6 | 21.2 ±0.4 | 14.2 ±0.3 | 10.0 ±0.1 | 11.3 ±0.2 |
| +40cm, 0mmHg | 241.9 ±1.0 | 21.6 ±1.5 | 16.0 ±1.0 | 10.1 ±0.0 | 11.2 ±0.7 |
| -20cm, 10mmHg | 231.1 ±6.2 | 24.4 ±1.1 | 12.3 ±1.1 | 9.6 ±0.3 | 9.6 ±0.4 |
| +20cm, 10mmHg | 238.3 ±0.5 | 22.6 ±0.5 | 13.8 ±0.6 | 9.9 ±0.0 | 10.5 ±0.3 |
| ***Leventon Dosi-Fuser® (250mL volume, expected delivery time 24 h, set flow rate 10.4mL/h)*** | | | | | |
| 0cm, 0mmHg | 221.3 ±21.1 | 28.6 ±4.7 | 12.5 ±0.4 | 9.2 ±0.9 | 8.8 ±1.5 |
| 0cm, 10mmHg | 211.9 ±21.9 | 30.2 ±3.9 | 11.8 ±0.6 | 8.8 ±0.9 | 8.2 ±1.1 |
| 0cm, 15mmHg | 183.2 ±30.4 | 42.4 ±14.9 | 12.0 ±0.7 | 7.6 ±1.3 | 6.3 ±2.0 |
| 0 cm, 30mmHg | 183.9 ±9.6 | 36.4 ±1.3 | 11.5 ±0.5 | 7.7 ±0.4 | 6.6 ±0.4 |
| -40cm, 0mmHg | 178.5 ±18.1 | 38.0 ±6.5 | 10.4 ±0.6 | 7.4 ±0.8 | 6.5 ±1.0 |
| -20cm, 0mmHg | 222.1 ±25.7 | 28.2 ±4.4 | 11.7 ±0.6 | 9.3 ±1.1 | 8.8 ±1.2 |
| +20cm, 0mmHg | 208.7 ±31.7 | 32.6 ±10.1 | 13.1 ±1.4 | 8.7 ±1.3 | 8.0 ±2.0 |
| +40cm, 0mmHg | 202.6 ±24.7 | 33.8 ±5.3 | 13.6 ±0.8 | 8.4 ±1.0 | 7.4 ±1.3 |
| -20cm, 10mmHg | 188.2 ±23.8 | 35.6 ±6.6 | 11.1 ±0.4 | 7.8 ±1.0 | 7.1 ±1.4 |
| +20cm, 10mmHg | 195.9 ±31.8 | 36.0 ±11.3 | 12.8 ±0.5 | 8.2 ±1.3 | 7.2 ±1.7 |
| ***Nipro SurefuserTM (240 mL volume, expected delivery time 24 h, set flow rate 10.4mL/h)*** | | | | | |
| 0cm, 0mmHg | 233.8 ±14.0 | 24.8 ±2.4 | 14.2 ±1.7 | 9.7 ±0.6 | 9.9 ±0.9 |
| 0cm, 10mmHg | 223.5 ±19.5 | 26.6 ±2.3 | 13.2 ±2.0 | 9.3 ±0.8 | 9.3 ±0.8 |
| 0cm, 15mmHg | 200.1 ±20.1 | 32.4 ±8.2 | 11.5 ±1.2 | 8.3 ±0.8 | 7.8 ±1.6 |
| 0 cm, 30mmHg | 188.6 ±47.2 | 47.4 ±28.0 | 11.9 ±2.7 | 7.9 ±2.0 | 6.7 ±3.4 |
| -40cm, 0mmHg | 186.5 ±23.9 | 37.2 ±13.7 | 11.3 ±2.6 | 7.8 ±1.0 | 7.1 ±2.1 |
| -20cm, 0mmHg | 218.1 ±22.1 | 27.4 ±3.2 | 13.2 ±2.7 | 9.1 ±0.9 | 9.0 ±1.1 |
| +20cm, 0mmHg | 245.4 ±5.3 | 23.0 ±1.2 | 15.8 ±3.0 | 10.2 ±0.2 | 10.7 ±0.5 |
| +40cm, 0mmHg | 239.3 ±9.9 | 23.8 ±2.0 | 14.2 ±1.1 | 10.0 ±0.4 | 10.4 ±0.9 |
| -20cm, 10mmHg | 209.7 ±23.2 | 28.6 ±4.2 | 12.1 ±1.6 | 8.7 ±1.0 | 8.7 ±1.2 |
| +20cm, 10mmHg | 239.7 ±10.3 | 23.8 ±2.2 | 14.6 ±1.8 | 10.0 ±0.4 | 10.3 ±0.8 |
| ***B. Braun Easypump® (270mL volume, expected delivery time 27 h, set flow rate 10 mL/h)*** | | | | | |
| 0cm, 0mmHg | 259.5 ±8.8 | 28.0 ±4.1 | 24.0 ±2.3 | 9.6 ±0.3 | 9.6 ±1.5 |
| 0cm, 10mmHg | 261.6 ±3.9 | 27.0 ±2.4 | 22.1 ±0.6 | 9.7 ±0.1 | 9.8 ±0.9 |
| 0cm, 15mmHg | 197.7 ±30.0 | 48.0 ±11.8 | 20.8 ±3.2 | 7.3 ±1.1 | 5.8 ±1.4 |
| 0 cm, 30mmHg | 222.9 ±31.5 | 40.0 ±10.5 | 22.1 ±2.6 | 8.3 ±1.2 | 7.0 ±2.0 |
| -40cm, 0mmHg | 249.0 ±18.6 | 30.0 ±4.9 | 22.2 ±1.3 | 9.2 ±0.7 | 8.9 ±1.3 |
| -20cm, 0mmHg | 240.6 ±29.8 | 33.4 ±9.8 | 22.3 ±3.1 | 8.9 ±1.1 | 8.3 ±2.0 |
| +20cm, 0mmHg | 266.9 ±0.8 | 24.2 ±1.5 | 24.3 ±2.0 | 9.9 ±0.0 | 11.0 ±0.7 |
| +40cm, 0mmHg | 218.0 ±27.3 | 43.8 ±12.4 | 24.8 ±1.4 | 8.1 ±1.0 | 6.7 ±3.0 |
| -20cm, 10mmHg | 259.7 ±2.5 | 27.4 ±2.5 | 23.3 ±1.3 | 9.6 ±0.1 | 9.6 ±1.0 |
| +20cm, 10mmHg | 263.8 ±4.6 | 26.6 ±2.4 | 24.2 ±2.6 | 9.8 ±0.2 | 10.1 ±0.8 |
| ***ambIT® Continuous (240mL infusion, expected delivery time 24 h, set flow rate 10mL/h)*** | | | | | |
| 0cm, 0mmHg | 224.4 ±4.0 | 24.0 ±0.0 | 10.2 ±1.2 | 9.4 ±0.2 | 9.4 ±0.2 |
| 0cm, 10mmHg | 222.4 ±5.9 | 24.0 ±0.0 | 9.5 ±0.4 | 9.3 ±0.2 | 9.3 ±0.2 |
| 0cm, 15mmHg | 218.4 ±6.1 | 24.0 ±0.0 | 9.3 ±0.2 | 9.1 ±0.3 | 9.1 ±0.3 |
| 0 cm, 30mmHg | 222.6 ±5.3 | 24.6 ±0.9 | 10.2 ±1.5 | 9.3 ±0.2 | 9.1 ±0.4 |
| -40cm, 0mmHg | 222.3 ±5.7 | 24.0 ±0.0 | 9.4 ±0.2 | 9.3 ±0.2 | 9.3 ±0.2 |
| -20cm, 0mmHg | 225.1 ±2.6 | 24.0 ±0.0 | 10.2 ±0.8 | 9.4 ±0.1 | 9.4 ±0.1 |
| +20cm, 0mmHg | 223.5 ±4.2 | 25.6 ±3.6 | 9.6 ±0.4 | 9.3 ±0.2 | 8.9 ±0.8 |
| +40cm, 0mmHg | 223.1 ±2.5 | 24.2 ±0.4 | 9.9 ±0.5 | 9.3 ±0.1 | 9.2 ±0.1 |
| -20cm, 10mmHg | 224.4 ±8.4 | 24.0 ±0.0 | 9.8 ±0.9 | 9.4 ±0.3 | 9.4 ±0.3 |
| +20cm, 10mmHg | 222.4 ±3.4 | 24.2 ±0.4 | 9.5 ±0.2 | 9.3 ±0.1 | 9.2 ±0.1 |

\*until Tend (when flow rate declined to <10% of the set flow rate specified by the manufacturer)