

## APPENDIX C - BOLUS ACCURACY

The SIGMA Spectrum IV Pump may have an optional bolus mode of operation. This feature allows the user to perform a BOLUS SETUP action. To utilize this feature the pump must be programmed with either a specific rate or a specific amount to be delivered in a certain amount of time.

If the pump is currently operating in mL/hr delivery mode, the bolus rate value is entered in mL/hr and the volume is entered in milliliter (mL). The time is entered in minutes and seconds (min:sec). Limits are placed on the minimum and maximum amount of time for the bolus delivery. The limit constraints are contained within the software of the Spectrum Pump and are necessary to control the maximum or minimum flow rate of the bolus infusion.

The accuracy of the bolus volume is dependent on the resultant flow rate that is obtained from the calculation of volume to be delivered in the time requested. For example if the maximum bolus volume is 300 mL, the maximum flow rate is obtained with a bolus time of 18:01 (min:sec) or a flow rate of approximately 999 mL/hr. Using this maximum bolus volume, and delivering the volume in the shortest amount of time, the mean value of 300 mL  $\pm$ 5% may be expected. Where as using a minimum bolus volume (0.5 mL), and delivering the volume in a short amount of time (1 minute), the mean value of 0.5 mL  $\pm$ 16% may be expected.