

#### LIQUID INJECTION SYSTEM (LIS)

#### **Automated Liquid Feeding In Shake Flasks**

### **Technical Specifications**

5 VDC ± 5% **Input Voltage** 

**Height (Without Mounting System)** approx. 74 mm

**Additional Height on Shake Flask** approx. 70 mm

**Operating Temperature** 15 - 45 °C

**Charging Temperature** 15 – 40 °C

**Battery (built-in)** 

Li-lon Type Capacity 600 mAh

Runtime when fully charged<sup>1</sup> approx. 1 week Charging time approx. 3 h

Charging source Standard USB port that can source 500mA @ 5V

Radio

2.4 GHz Frequency Range<sup>2</sup> up to 30 m

**Pump Flow Rate** minimum: 100µl droplets

maximum: 1 mL/min

Cartridge

Sterilization Ethylene Oxide (EtO) Straight neck (no brim) Required flask type Required flask outside diameter 38 mm (± 0.3 mm)

Minimum flask inside diameter 33 mm

**Vessel Compatibility** Any shake flask size ranging from 100 mL to 5000 mL

> Flasks with or without baffles Glass and single-use flasks

Sticky Mat mounts

<sup>2</sup> Dependent on environment



Dependent on feeding profile





# Automated Liquid Feeding In Shake Flasks

## Recommended Operating Conditions

**Temperature** 10 – 45 °C

Humidity (Relative) 0 – 80% (non-condensing)

Filling Volume Recommended 3 - 20 mL

Maximum<sup>1</sup> 25 mL

**Calibration**Recommended every two years

Maximum Shaking Speeds<sup>2</sup>, <sup>3</sup>

100 – 125 mL shake flasks
250 rpm
250 – 300 mL shake flasks
300 rpm
500 – 2000 mL shake flasks
250 rpm

Please carefully determine acceptable shaking speeds with your setup.



<sup>1</sup> Dependent on shaking speed and diameter

<sup>2</sup> Tested with factory new Infors/Lauber spring clamps (full spring strength, not warped) with a 2.5 cm shaking diameter

<sup>3</sup> Values may differ when sticky mats or other adhesive mats are used or other add-ons are used (e.g., the Cell Growth Quantifier CGQ by SBI).