Junior Powder dispense system

The Junior powder dispense system is an automated powder dosing system that enables precise, traceable, and accurate weighing and dispensing of sub-milligram to gram quantities of a wide range of materials. The powder dispense technology ensures powders are delivered with high accuracy and precision. An adaptive learning algorithm monitors and optimizes dosing parameters to compensate for variability in powder properties during the filling process.

Applications

• Biomass feedstock screening
• Dispensing catalysts and supports
• Repackaging bulk powders
• Solubility testing
• Polymorph screening
• Forced degradation testing
• Compound management
• Walk-up sample preparation
• Reference standard preparation

Key features

• Compatibility with a wide range of powders with diverse properties
• Compatibility with almost any receiving container
• Consistent and accurate powder dispensing with RSDs typically between 1% and 5%
• Unattended operation which allows overnight dispensing
• Precise and accurate dispensing of sub-milligram to gram quantities of material
• A learning algorithm, which dynamically monitors and automatically controls dispense rate to compensate for variability in powder properties for accurate dispenses
• Precise delivery of small amounts of powder without cross-contamination with patented SV valve caps
Available options

**Vial/plate gripper**
Plate handling:
- Maximum plate weight: 1000 g with grooves
Vial handling:
- Minimum vial diameter: 8 mm
- Maximum vial diameter: 60 mm

**Solid dispense**
Dispense technology: Dispense algorithm dynamically controls the dispensing head to adjust for powders with different densities, particle sizes, particle shapes and static charges
- **Classic powder dispense**: Traditional stirrer dispense mechanism
- **Storage vial (SV) powder dispense**: Unique vibratory dispensing mechanism for highly precise dispensing of small amounts as low as 0.5 mg
  - Hopper volume: 4 mL

**Viscous liquid dispense**
Technology: Positive displacement tip (PDT)
Disposable tips: 10–10,000 μL, from Eppendorf and Rainin
Viscosity: 1–1,000 cP

**Balance with integrated camera**
Maximum weight:
- Standard: 1200 g
- High-sensitivity option: 220 g
Sensitivity:
- Standard: 0.1 mg
- High sensitivity option: 0.01 mg
Resolution:
- Standard: 0.1 mg
- High-sensitivity option:
  - 0.01 mg (0–110 g)
  - 0.1 mg (110–220 g)
Repeatability (std dev):
- Standard:
  - High weight (measured >200 g): 0.25 mg
  - Low weight (measured up to 200 g): 0.15 mg
- High-sensitivity option:
  - High weight (measured at 200 g): 0.15 mg
  - Low weight (measured at 10 g): 0.04 mg
Response time: <22 s
Camera resolution: 1032 pixels (max wide) x 779 pixels (tall)

**Hotel storage capacity (microtiter format plates)**
- Maximum storage 1 mL plates: 15
- Maximum storage 2 mL plates: 15
- Maximum storage 4 mL plates: 12
- Maximum storage 8 mL plates: 12
- Maximum storage 20 mL plates: 12
- Maximum storage 40 mL plates: 9
- Maximum storage 125 mL plates: 9
- Maximum storage Rainin PDT boxes: 6
- Maximum storage shallow well plates: 15

**Facilities requirements**
Physical:
- With integrated enclosure:
  - 167 cm W x 91 cm D x 200 cm H ~ 150 kg
Electrical:
- 85–264 VAC, 50–60 Hz
Compressed dry air:
- 0.5 MPa to 0.9 MPa (70–130 psi), 16 L/min (8 mm hose)