

# Spectrum™ S-820

Precision batch dispensing for semiconductor applications

## Features and Benefits

- **Fluidmove® for Windows XP® software for easy-to-use programming control**
- **Patented Mass Flow Control automatically compensates for changes in fluid viscosity**
- **Automatic Pattern Recognition System for accurate identification of global and local fiducials**
- **Automated thermal management for reliable substrate heating and full temperature control of fluid delivery**



The Spectrum™ S-820 Series system is designed for batch production of semiconductor packaging processes, such as underfill, cavity fill, die attach, and encapsulation. The S-820 provides advanced dispensing process capability in an affordable package, and is ideal for labs, batch production, and new product development.

The S-820 performs with a wide range of fluids, processes, and substrates used in semiconductor packaging and assembly. It easily integrates with most jets, pumps, and valves from Nordson ASYMTEK, including the DispenseJet® DJ-9000.

Nordson ASYMTEK's advanced process control functions have been incorporated into the S-820 platform, bringing premium features to this batch system:

- Patented Mass Flow Control (MFC) uses weight-controlled dispensing and automatic calibration to deliver fluid amounts consistently throughout production.
- Calibrated Process Jetting (CPJ) uses weight control to ensure precise volumetric repeatability and optimize line speed for jet-on-the-fly operations.
- Jet on the fly (JOF) is a software feature that drives the DJ-9000 to dispense lines of dots

without stopping. Dispense time is significantly reduced when compared to traditional needle dispensing.

- Dynamic Dispense Control (DDC) offers precise and flexible control parameters through closed-loop servo technology. With encoders and feedback from the dispensing pump, you can specify different acceleration and deceleration values for the valve or pump, allowing for each dispense shot to be optimized for speed, accuracy, and yield.

The processes developed on the S-820 can be transferred to an inline Spectrum™ platform when your operation requires more than batch capacities. Production can be expanded with minimal configuration downtime and seamless transition from engineering development to inline manufacturing.

Several options can be added to the S-820 system to meet specific application requirements. The S-820 is fully supported by Nordson ASYMTEK's exclusive Fluidmove® for Windows XP® software, providing dispense programming control within a familiar Windows® environment.



# Specifications: Spectrum™ S-820

## Motion System

Type: Brushless DC servo motors, closed-loop with encoder feedback  
Encoder resolution: 10 micrometers  
X-Y acceleration: 0.25 g peak with S-curve jerk control  
X-Y velocity: 500 mm/s (20 in./s)  
Z-axis velocity: 500 mm/s (20 in./s)  
Positional accuracy:  $\pm 0.075$  mm (0.003 in.), 3 sigma  
X-Y repeatability:  $\pm 0.025$  mm (0.001 in.)  
Z-axis repeatability:  $\pm 0.025$  mm (0.001 in.)

## Dispense Area

Work envelope: 350 x 350 mm (14 x 14 in.)  
Z-travel: 75 mm  
Tool payload: 3 kg  
Workpiece payload: 2 kg

## Vision and Lighting

Vision: Vision system with Automatic Pattern Recognition  
Lighting: Programmable, on-axis, red/blue LED, 256 steps

## Computer

Windows-based laptop PC with mouse

## Software

User environment: Fluidmove® for Windows® XP  
Operating system: Windows® XP

## Fluid Delivery Method

DispenseJet® DJ-9000  
Heli-flow® DV-7000 and DV-8000 pumps  
DV-01, DV-02, DV-03, DV-04, DV-05, DV-09

## Facilities Requirements

### System footprint:

866 mm wide x 1123 mm deep (34 x 44 in.)  
Display extends 610 mm (24 in.)  
Height including light beacon: 2045 mm  
*Dimensional diagrams on next page.*

### Air supply:

621 kPa (6.1 atm, 90 psi)  
3 CFM @ 90 psi (28 liters/hr = 1 SCFM)  
May be higher depending upon application

### Power (mains):

200/240 VAC, 10 Amps (max), 50/60 Hz, single phase

### Weight:

364 kg (800 lbs)

## Other Standard Features

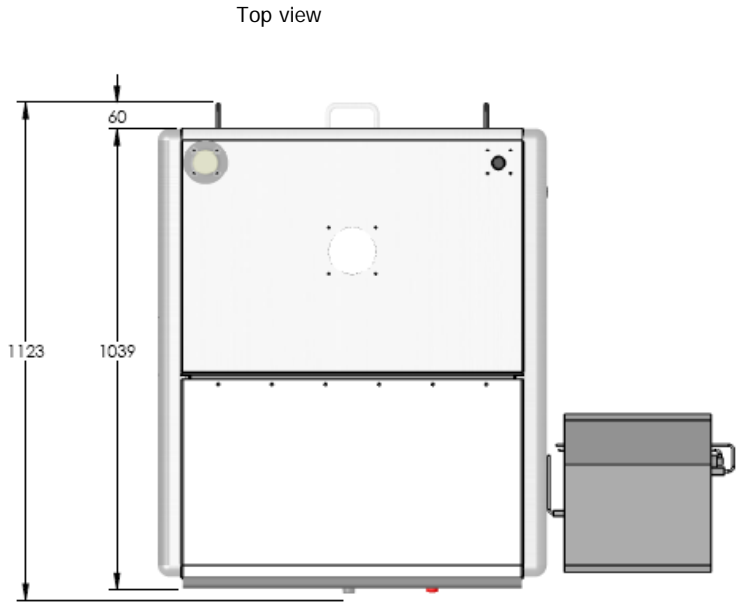
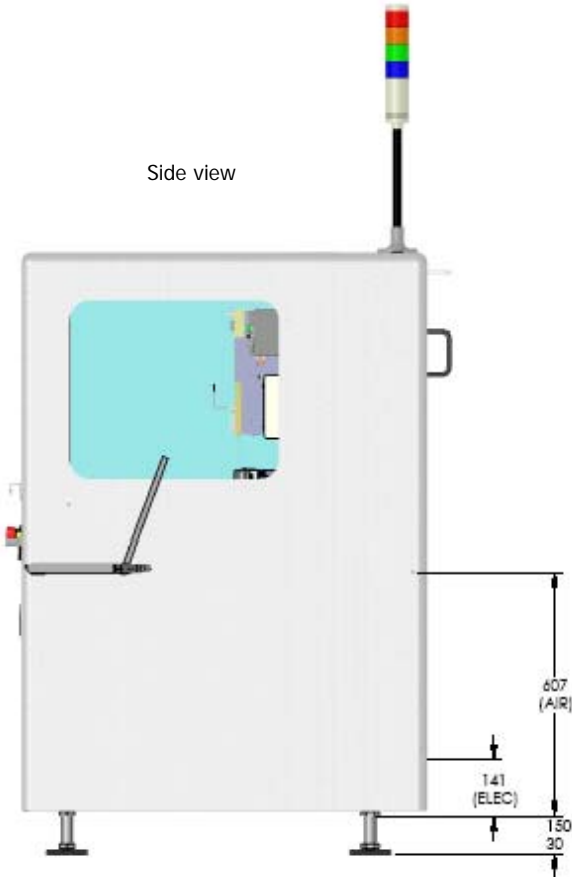
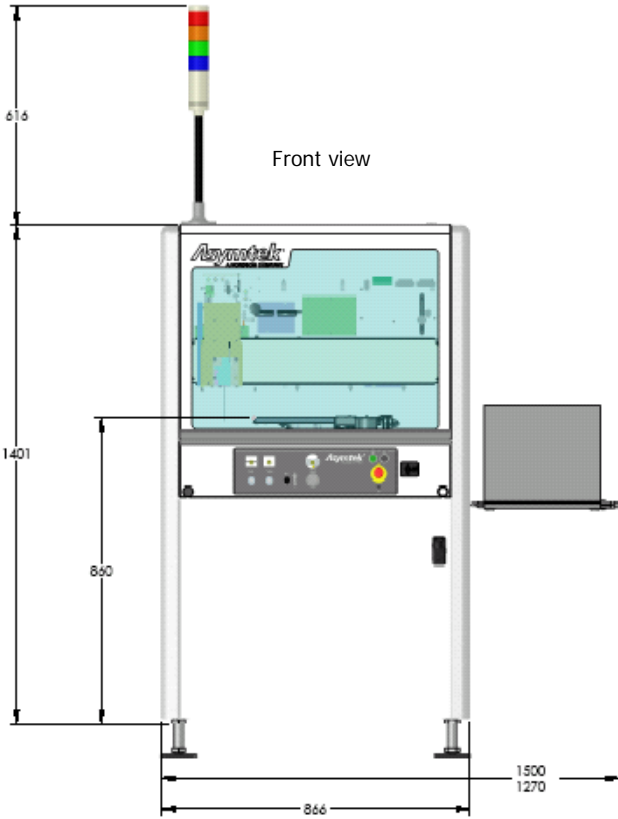
Heated vacuum tooling plate, 350 x 350 mm (14 x 14 in.)  
with software-programmable setpoints  
Integrated height sensor  
Needle heater control, software-programmable setpoints  
Needle tactile sensor  
Vacuum purge station  
Light beacon with audible alarm  
Precision air regulators  
Low air pressure alarm, with programmable setpoint  
Advanced process control modules:

- Mass flow control (MFC)
- Calibrated process jetting (CPJ)
- Jet on the fly (JOF)
- Dynamic dispense control (DDC)

## Options

Dual-action dispensing head  
Laser height sensor  
Low fluid sensor  
CADImport software program  
SECS/GEM interface  
Additional options are available: contact Nordson ASYMTEK for further information

# Dimensions: Spectrum™ S-820



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