

# 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 Calibration 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 advanced dispensing processes, including 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 Nordson ASYMTEK jets, pumps, and valves, including the DispenseJet® DJ-9500 and NexJet System.

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

- For valve and pump dispensing, Patented Mass Flow Calibration (MFC) uses weight-controlled dispensing and automatic calibration to deliver consistent fluid amounts throughout production.
- For jet dispensing, Calibrated Process Jetting (CPJ) uses weight control to ensure precise volumetric repeatability and optimized line speed for jet-on-the-fly operations.
- Jet-on-the-Fly (JOF) is a software feature that drives the DJ-9500 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, the user can specify different acceleration and deceleration values for the valve or pump, allowing each dispense shot to be optimized for speed, accuracy, and yield.

Several options can be added 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.

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



# Specifications: Spectrum™ S-820

## Motion System

Type:	Brushless DC servo motors, closed-loop with precision encoder feedback
Encoder resolution:	10 microns
X-Y acceleration:	0.25 g peak with S-curve jerk control
Placement accuracy:	±100 µm (0.004 in.), 3 sigma
X-Y repeatability:	±25 µm (0.001 in.)
Z-axis repeatability:	±25 µm (0.001 in.)
Z-travel:	75 mm (3.0 in.)

## Dispense Area <sup>(1)</sup>

350 x 350 mm (14.0 x 14.0 in.)

## Payload

Tool (z-axis):	3 kg (6.6 lbs)
Workpiece:	2 kg (4.4 lbs)

## Vision and Lighting

Vision:	Vision system with Automatic Pattern Recognition
Lighting:	Programmable, on-axis, red/blue LED, 255 light levels

## Computer

Windows-based laptop PC with mouse

## Software

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

## Fluid Delivery Method

DispenseJet®:	DJ-9000, DJ-9500
NexJet™ System:	NJ-7
Auger pump:	Heli-flow® DV-7000, DV-8000
Valve:	DV-01B, DV-02, DV-03, DV-05, DV-07, DV-09, SV-100

## Facilities Requirements

System footprint:	866 mm wide x 1123 mm deep (34.0 x 44.0 in.)
Display:	Extends 610 mm (24 in.)
Height:	2045 mm (80.5 in.) with light beacon <i>Complete dimensional diagrams are on the next page.</i>
Air supply:	85 liters/min, 620 kPA (3 CFM @ 90 psi) <i>Note: may be higher depending upon application.</i>
Power:	200/240 VAC, 10 amps (max), 50/60 Hz, single phase
Weight:	364 kg (802 lbs)

## Other Standard Features

Advanced process control modules:  
Mass flow calibration (MFC)  
Calibrated process jetting (CPI)  
Jet-on-the-Fly (JOF)  
Dynamic Dispense Control (DDC)  
Heated vacuum tooling plate with programmable setpoints  
350 x 350 mm (14.0 x 14.0 in.)  
Light beacon with audible alarm  
Low air pressure alarm with programmable setpoint  
Mechanical tactile height sensor  
Needle heater control with programmable setpoints  
Precision air regulators  
Vacuum purge station

## Options

CAD Import software program  
Impingement tooling  
Dual-action dispensing head  
Laser height sensor  
Low fluid sensor  
Needle heater  
SECS/GEM interface

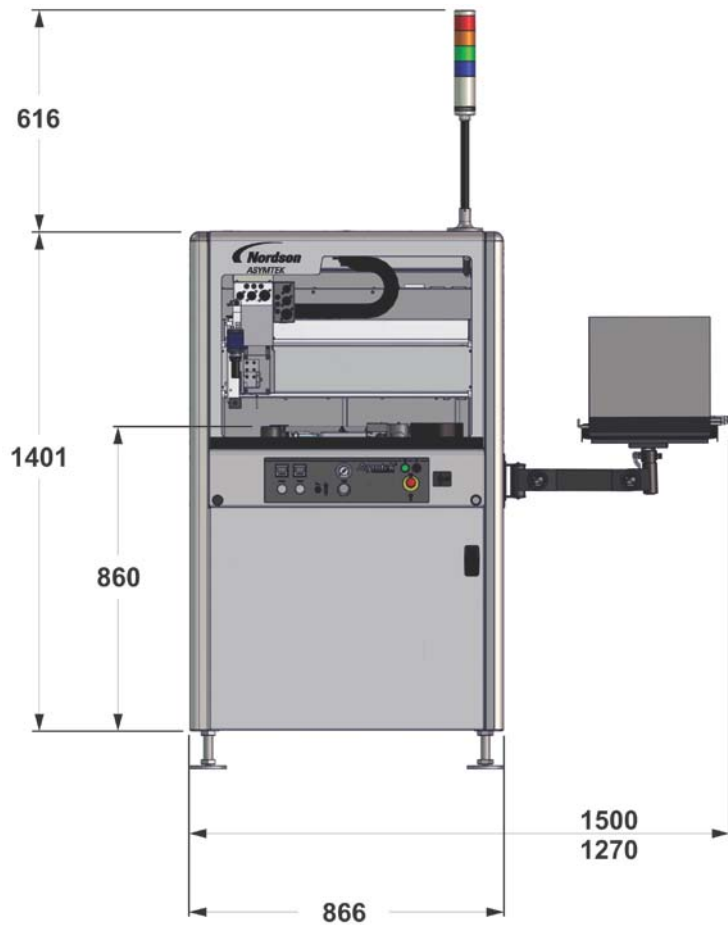
*(1) Dispense area includes mounted camera and valve (i.e., overlapping area of camera and valve travel).*

Additional options are available: contact Nordson ASYMTEK for further information

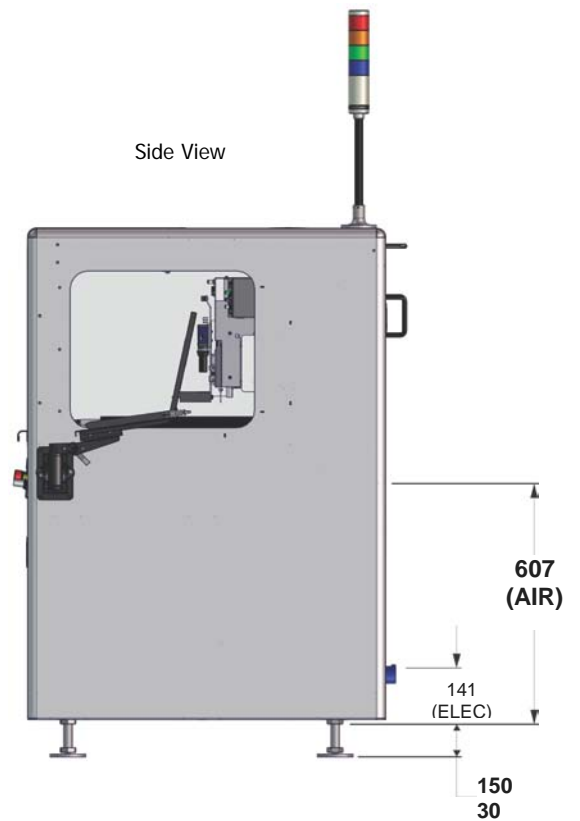
# Dimensions: Spectrum™ S-820

Dimensions are in millimeters

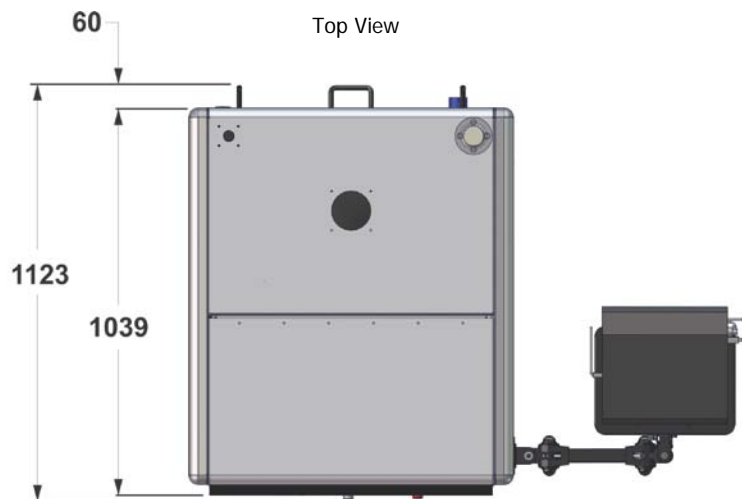
Front View



Side View



Top View



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