

# Spectrum™ II S2-900 Series

Scalable solutions for high-volume manufacturing and assembly

## Features and Benefits

- The Spectrum II series leverages over 30 years of Nordson ASYMTEK's automated fluid dispensing and jetting technology
- Scalable design matches current *and* future requirements for maximum return on investment
- The Spectrum II series continues Nordson ASYMTEK's market leadership with:
  - High precision X-Y-Z motion system
  - Total system wet dispense accuracy performance for dots and lines
  - Patented, closed-loop process controls for consistent dispense weight over long production runs
  - Independent X, Y, Z dual simultaneous valve dispensing option for increased productivity
  - Integrated vision system with on and off axis lighting options
  - Integrated substrate heating options for up to 6 stations
  - Programmable dual-axis tilt option

The scalable Spectrum II series is ideal for high-volume production of advanced dispensing processes, including underfill, cavity fill, die attach, and encapsulation.

**Scalability.** With its flexible, scalable configuration, the Spectrum II can be configured with single or dual lanes, and up to six heat stations with the dual-lane configuration. The platform is easily upgraded in the field when process needs change.

At only 600mm wide without optional pre- and post-heating stations, the Spectrum II maximizes use of precious production floor space.

**Advanced Process Control.** The Spectrum II reduces process variation, increases yield, and reduces cost. Software-managed temperature, fluid and air pressure provide closed-loop control that eliminates the need for operator adjustment. Calibrated Process Jetting (CPJ) automatically maintains volumetric repeatability during long production runs. Controlled Process Heat (CpH™) adds recipe-controlled heat management for improved thermal efficiency.

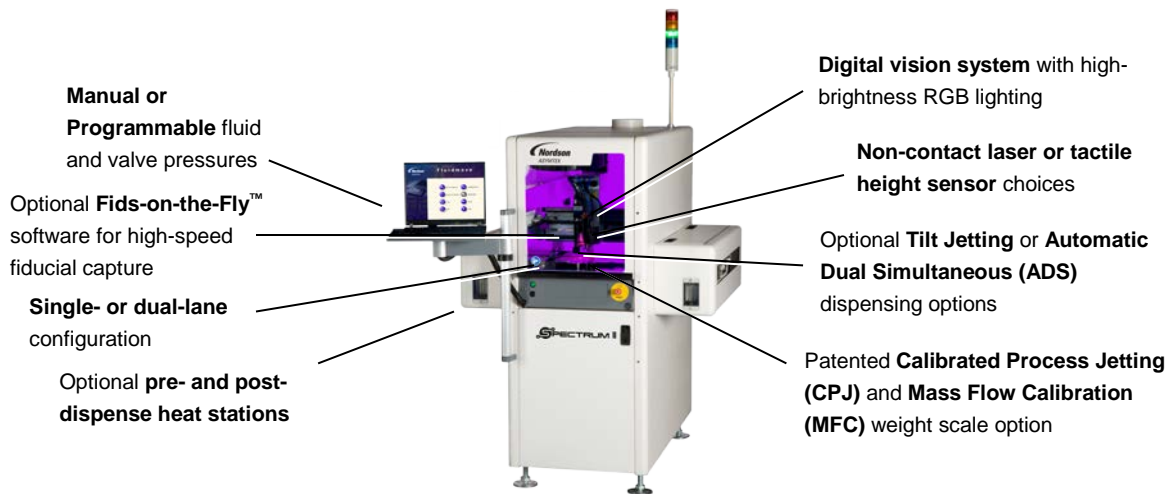
The Spectrum II's standard digital vision system's high-brightness LEDs with RGB three-color control provides good image contrast and detection capabilities for more accurate and consistent pattern recognition. For the most challenging vision applications, the Monocle™ Vision Package (MVP) enhances contrast and field of view size and resolution even further.

**Jet Technology.** Patented non-contact jetting offers many advantages over traditional needle dispensing. The NexJet® 8 system shoots "on the fly" using a patented high-speed actuator, jetting precise volumes of fluid in dots, lines and patterns with flow rates up to 500 mg/second and 300 dots/second.

**Expertise At Creating Value.** With over 30 years of precision fluid dispensing experience and a reputation for the best closed-loop process controls, Nordson ASYMTEK provides customers a reliable partner for fluid dispensing development and production. From initial process development through full-scale production, you are supported by our experienced worldwide engineering, applications development and technical service network.



# Spectrum™ II S2-900 Series Features and Configurations



## Additional Optional Features and Configurations

CpH™ - Controlled Process Substrate Heat  
 Dual-action dispensing (two applicators operate independently)  
 Exterior bulk fluid reservoir: 600 cc (20 oz), includes remote feed and fluid level sensor  
 Hot plate, process development (batch processing)  
 Low fluid sensor, magnetic or capacitive  
 Cleanroom compatibility

Monocle™ Vision Package (MVP) for increased contrast, field of view, and vision resolution  
 Material handling: MH-900 Series loader/unloaders, film frame wafer, bare wafer  
 SECS/GEM interface  
 Ventilation Interlocking for Volatile Organic Compound dispensing (e.g. flux or primer)

## Spectrum™ II S2-900 Series Key System Specifications

### Motion System

Z repeatability <sup>(1)</sup>: ±15 µm (0.0006 in.), 3 sigma  
 X-Y repeatability <sup>(1)</sup>: ±15 µm (0.0006 in.), 3 sigma  
 X-Y acceleration: 1 g peak  
 X-Y velocity: 1 m/s peak (40 in./s)  
 X-Y-Z encoder resolution: 1 µm

### Wet Dispensing Accuracy & Repeatability

#### Single Applicator:

C<sub>p</sub> ≥ 1.0: ±35 µm (0.0016 in.)  
 C<sub>pk</sub> ≥ 1.0<sup>(1)</sup>: ±40 µm (0.0016 in.)

### Z-Gap Performance

Z-Gap Repeatability <sup>(2)</sup>: ±15 µm (0.0006 in.), 3 sigma  
 Minimum Z-Gap Capability: 50 µm (0.002 in.)

### Dispense Area (X-Y)

339 x 410 mm (13.3 x 16.1 in.)

### Conveyor

Min. board/carrier width <sup>(3)</sup>: 34 mm (1.3 in.)  
 Max. board/carrier thickness: 12 mm (0.5 in.)  
 Max. board/carrier length:  
 One station: 340 mm (13.4 in.)  
 Three stations: 320 mm (12.6 in.)  
 Min. board/carrier length: 25 mm (1.0 in.)  
 Max. board/carrier width:  
 Single lane: 535 mm (21.1 in.)  
 Dual lane: up to 228 mm (9.0 in.)  
 (configuration dependent)

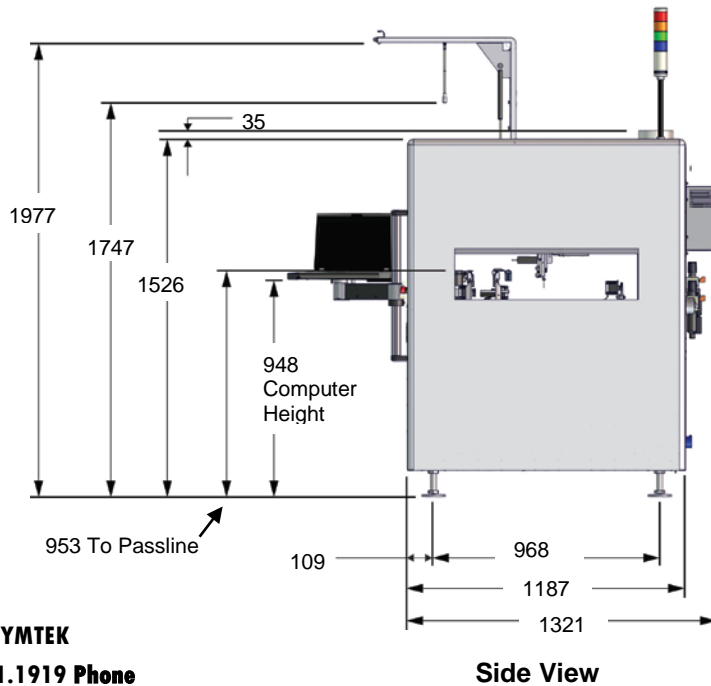
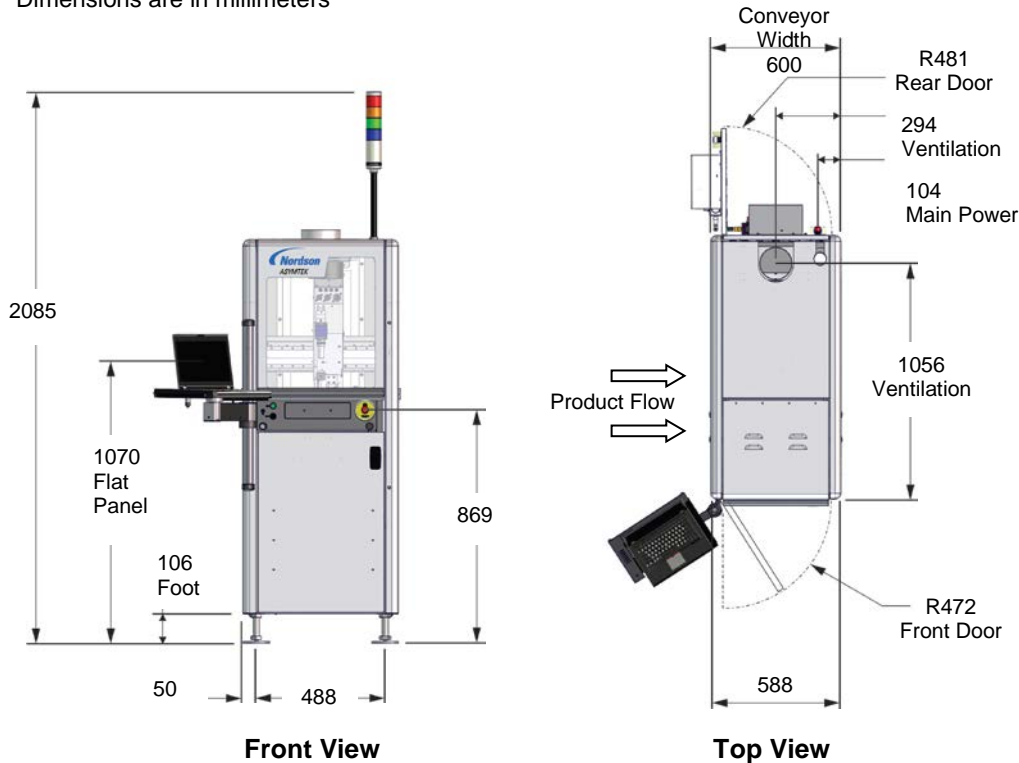
### Facilities Requirements

System footprint: Single heat station: 600 mm wide x 1321 mm deep (23.6 x 52.0 in.)  
 Two heat stations: 850 x 1321 mm (33.5x52.0 in.)  
 Three heat stations: 1100 x 1321 mm (43.3x52.0 in.)  
 Air supply: Two air supplies: one with 3 CFM @ 100 psi for contact tooling, a second one with 1 CFM @ 100 psi for the rest of the system (100 psi = 689 kPa, 6.8 atm)  
 Power (mains): Power supply accommodates 200-240 VAC, 47-63 Hz single phase, 30 A  
 Note: System can run on 120 VAC without heater option installed.  
 Ventilation: Downdraft or updraft  
 System weight <sup>(4)</sup>: 377-422 kg (830-930 lbs.)

- (1) Wet dispense C<sub>pk</sub> is tested against Nordson ASYMTEK standard sealant line path accuracy test method
- (2) Z-gap repeatability is tested with Nordson ASYMTEK standard white ceramic, performance with other substrates may vary
- (3) Contact factory regarding smaller boards/carriers
- (4) System weight varies depending on configuration

# Spectrum™ II S2-900 Series System Dimensions

Dimensions are in millimeters



For more information,  
speak with your local  
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your regional office.

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