Quantum® Q-6800 Series
Automated Fluid Dispensing System with Advanced Process Controls

Features and Benefits

- Large dispense area (423 x 458 mm) is ideal for a wide-range of substrate sizes and dual-valve dispensing
- Laser height sensor enables fast, non-contact dispense height measurement
- Digital vision system incorporates high-brightness, three-color RGB LEDs for superior image contrast and detection
- Patented Calibrated Process Jetting™ (CPJ) software automatically compensates for changes in fluid viscosity
- Fids-on-the-Fly™ option captures fiducials faster than stop-and-capture mode for higher UPH

The Quantum® system is a robust dispensing platform delivering an exceptional combination of versatility, productivity and value. The Quantum has many standard features, such as laser height sensing and digital vision system with RGB lighting, for enhanced fiducial find. An integrated weight scale in combination with patented process control maintains consistent fluid dispense mass and improves production yield. The Quantum is the ideal dispensing solution for customers who demand excellent performance and value.

Versatility. With its robust, large-format frame, the Quantum system can easily accommodate applications requiring larger substrates or parts. The larger dispense area is well suited for dual-valve dispensing and a wide variety of fluids and processes. To match your production requirements, the system is configurable with either a single or dual-lane conveyor.

Dispensing Technology. The Quantum system supports most Nordson ASYMTEK jets, pumps, and valves, including the DispenseJet® DJ-9500 and NexJet® NJ-7 valves. Patented non-contact jetting offers many advantages over traditional needle dispensing. Nordson ASYMTEK’s jet valves dispense “on-the-fly” without stopping, using a patented high-speed mechanism, jetting precise volumes of fluid in dots, lines and patterns. Dispense time is significantly reduced with jetting compared to needle dispensing.

Advanced Process Control. Nordson ASYMTEK’s automated closed-loop process control capabilities have been incorporated into the Quantum system, enhancing yield capabilities. Calibrated Process Jetting (CPJ) for jet dispensing uses weight control to ensure precise volumetric repeatability and optimized line speed for jet-on-the-fly operations. For valve and pump dispensing, patented Mass Flow Calibration (MFC) uses weight-controlled dispensing and automatic calibration to continuously deliver consistent fluid amounts.

Value. With a reputation for innovation, comprehensive process solutions from Nordson ASYMTEK ensure a maximum return on investment and low cost of ownership. From initial process development through full-scale production, you are supported by our experienced worldwide engineering, applications development and technical service network.
**Quantum® Q-6800 Series Features**

The Quantum system with Nordson ASYMTEK’s applicator technology works as a reliable and cost-effective solution for many demanding fluid dispense applications for PCBA, SMT and other electronic assembly including:

- CSP, BGA and board-level underfill
- Surface mount adhesives
- Corner and edge bonding
- Dam and fill
- MEMS assembly
- Larger board or substrate size

**Nordson ASYMTEK Applicators**

have an established reputation for quality, flexibility and low cost of ownership.

**Digital vision system with high-brightness RGB lighting**

**Laser height sensor** provides non-contact high-speed dispense height measurement

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**NexJet® Applicator**

**DispenJet® Applicator**

**Helix-flow® Applicator**

**Calibration Station and Weight Scale** enables quick, repeatable and accurate set-up and patented closed-loop dispensed weight process control

**Optional pre- and post-dispense heat stations**

**Standard Features**

- Digital vision system with high-brightness RGB lighting
- Laser height sensor
- Weight scale with Calibrated Process Jetting/Mass Flow Calibration
- Calibration module: vacuum purge, and fiducial marks for automatic setup
- Single dispense station lift table or on-rail clamps
- Single valve support
- Light beacon with audible alarm
- Low pressure sensor
- Manual fluid and valve pressure

**Optional Features**

- CPJ+ automatic dispensed weight control
- Contact or impingement heat tooling
- Dual-valves: dual-action (two applicators operate independently); dual-simultaneous (two applicators on one synchronous head)
- Dual-lane configuration
- Fids-on-the-Fly™ software
- Low fluid sensor (magnetic or capacitive)
- Pre- and post-queue stations
- SECS/GEM interface
Specifications: Quantum® Q-6800 Series

Motion System
Z repeatability (a): ±25 µm (0.001 in.), 3 sigma
X-Y repeatability (a): ±25 µm (0.001 in.), 3 sigma
X-Y acceleration: 1 g peak
X-Y velocity: 1 m/s peak (40 in./s)

Wet Dispensing Accuracy (2)
Single Applicator:
X-Y placement accuracy (a): ±75 µm (0.003 in.), 3 sigma

Vision and Lighting
Camera resolution: 640 x 480 pixels
Field of view: 8.0 x 6.0 mm (0.31 x 0.24 in.)
Lighting: Red/Green/Blue LEDs

Computer
Laptop with Windows® operating system
Software
Fluidmove® for Windows® operating system
Fluid Delivery Method
Supports all Nordson ASYMTEK DispenseJet®, NexJet®(4), encoded auger pumps. An integration kit may be required.

Dispense Area (X-Y)
423 x 458 mm (16.7 x 18.0 in.), single applicator
Conveyor
Max. board/carrier length: One station: 600 mm (23.6 in.)
Three stations: 320 mm (12.6 in.)
Min. board/carrier length: 25 mm (1.0 in.)
Max. board/carrier width (5,10): Single lane: 520 mm (20.4 in.)
Dual lane: up to 220 mm (8.6 in.)
Min. board/carrier width (6): 25 mm (0.98 in.)
Max. board/carrier thickness: 12 mm (0.5 in.)
Max. overboard clearance: 25 mm (0.98 in.)
Underboard clearance (5,10): 45 mm (1.77 in.) beyond board edge clearance with lift table
38 mm (1.49 in.) beyond board edge clearance with on-rail clamps
Edge clearance (5,10): 10 mm (0.39 in.), lift table
7.1 mm (0.28 in.), on-rail clamps
Transport height: Conforms to SMEMA standard for conveyor height; height adjustable from 891-965 mm (35.1 - 38.0 in.) from floor to bottom of the part
Load capacity (7): 1 kg (2.2 lbs.)
Operation modes: Automatic (SMEMA), manual, pass-through

Facilities Requirements
System footprint: 1000 x 1329 mm (39.4 x 52.3 in.)
Air supply (8): 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, 50/60 Hz single phase, 30 A
Ventilation: Rear, 0.188 m³/s; 152.4 mm duct
System weight (9): 435-490 kg (960-1080 lbs.)

Belt types: ESD O-ring,
ESD high-temp 6-mm flat belt,
ESD high-temp 4-mm flat belt

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Standards Compliance
SEMI-S2; SEMI-S8; SMEMA; CE

Additional options may be available: contact Nordson ASYMTEK for further information.
Dimensions are in millimeters

For more information, speak with your local representative or contact your regional office.

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