

MODEL 3DN-450

The 3Dn-450 dispensing tool from nScript gives you a unique combination of precision and flexibility. The 3Dn-450 is up to your challenge; it can provide you with consistent dispensing for simple but routine runs, or meet the demands of the most difficult 3D dispense applications. And with its cast aluminum or granite base, precision frame system, and highly accurate stages, the 3Dn-450 enjoys the best X/Y/Z accuracy in the industry.



X/Y Stage Type	3Dn-450 (Standard)	3Dn-450-HP
X/Y Travel	Linear motor gantry	Linear motor gantry
X/Y Accuracy	450mm × 450mm	450 mm × 450mm
X/Y Repeatability	±5µm	±2µm
X/Y Resolution	±2µm	±1µm
Max X/Y Travel Speed	0.1µm	0.1µm
Max X/Y Linear Accel.	500mm/s	3m/s
Z Stage Type	2g–20m/s² (no-load)	2g–20m/s² (no-load)
Z Travel	Ball screw servo	Ball screw servo
Z Accuracy	150mm	150mm
Z Repeatability	±6µm	±4µm
Z Resolution	±1µm	±1µm
Max Z Travel Speed	0.5µm	0.5µm
	300 mm/s	400 mm/s

Standard Equipment

Computer and Software

- Pentium 4™ with CD-ROM Drive
- Windows XP™ Operating System
- 17" LCD Monitor and Video Monitor
- Ethernet Network Port and RS232

Frame and Base

- Motion Base: granite base, aluminum risers, and bridge
- Machine Frame: Welded Steel

I/O

- Digital I/O: 8 inputs, 8 outputs PSO†
- Analog I/O: 4 inputs (12-bit), 2 outputs (16-bit)

Installation Requirements

- Air Supply – 80 PSI to 120 PSI
- Power – 120V at 30A

† The PSO (Position Synchronized Output) option provides versatile, on-the-fly synchronization of a laser's pulse and power output with XYZ motion.

Available Options

Conformal Mapping

- Laser sensor for normal and extended working distance
- Target Mapping – z-data of specific points on a given substrate
- Grid Mapping – coplanarity surface measurement over a symmetric grid
- Path Mapping – provides z-data along a custom predefined path

Vision System

- Digital camera link and firewire cameras
- Fixed focal length telecentric or high-magnification lenses
- Inspection for pattern matching or part presence
- Detect and measure colorimetric/monochromatic variations
- 2D and 3D complex feature gauging/measurement
- Inspection for aesthetic part variation

Dispense Pump

- Smart Pump™ 20 – 20 picoliter control
- Smart Pump™ 100 – 100 picoliter control
 - Dynamic flow control allows for adjustment as material properties change over time
 - Precise starting and stopping without tailing; tight volumetric control
- Positive Displacement Pump – nL control and cluster placement
- Air Pressure Pump – nL control and high volume placement
- Micro Mixer Pump – Real time 3 part mixing

Optional Accessories

- Ultrasonic needle cleaner
- Substrate heating
- Pre-heat and post-heat
- Free-standing loaders/unloaders
- Exhaust port
- Laser processing
- Vacuum chuck



Precise. Conformal. Reconfigurable.

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