Monocle™ Vision Package (MVP)
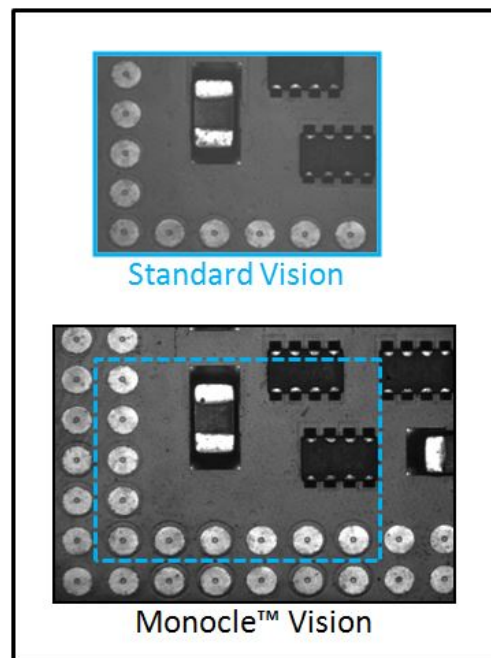
High Resolution Optics and Lighting to Accurately Recognize Complex Substrates

Features and Benefits

- Expansive view of larger substrates with up to 20x15mm field of view

- Crisp, clear imaging with 1.4M-pixel digital camera

- Elimination of parallax vision errors with telecentric optical lens

- Image contrast on a wide variety of surfaces through use of 5-channel On + Off Axis Lighting

- "Odd-form" fiducial capturing captures a variety of substrates and devices

- Alternate fiducials for varying incoming substrate reflectivity from multiple sources

- Automatic pattern switching for maintaining production up time in complex production environments

Standard Vision

Monocle™ Vision

Advanced Electronics Packaging. The Monocle™ Vision Package (MVP) easily handles new vision system challenges to enhance total system wet dispense accuracy. As packaging and devices become smaller, board and wafer densities become higher and substrates lose contrast or reflectivity, new capabilities for automatically recognizing parts and target dispense locations are necessary. The MVP utilizes a new, high-resolution, 1.4M-pixel camera, telecentric optical lenses, five independently controlled on- and off-axis light sources, and new software fiducial finding capabilities.

Camera & Optics. Higher resolution image capture with the MVP allows for larger, expansive fields of view and smaller pixel-to-micron ratios than previous vision systems to improve fiducial finding and achieve accurate targeting of your desired dispense position. Telecentric lenses further improve fiducial finding accuracy when fiducials are not at the center of the field of view, reducing parallax error by as much as 30μm.
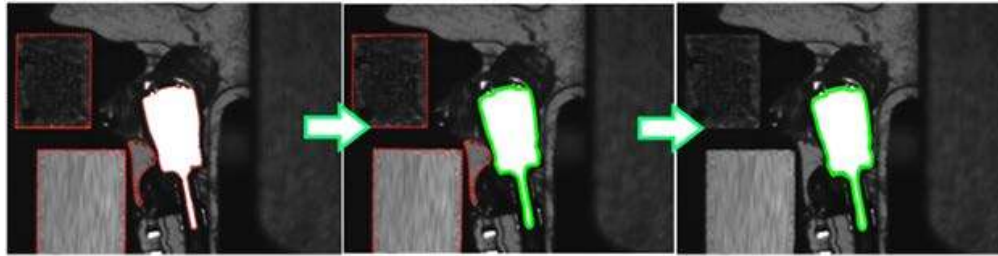
Lighting. A good digital camera and lens require good lighting in order to capture and create useable images for fiducial finding. Light intensity and angle of incidence to reflective and diffuse substrates significantly affect image contrast for fiducial finding algorithms. Independent control of the 5 channels of on- and off-axis lighting in the MVP allows you to create contrast with a single hardware set and ensure good fiducial finding for all your parts.

Software. New features built into ASYMTEK's Fluidmove® software suite further enhance productivity and equipment up-time. Varying substrate reflectivity from multiple supply chain sources is easily overcome with alternate fiducial chains. Multiple dispense patterns can be automatically changed in a single process program by finding different fiducials. Non-rectangular, "odd form" fiducials are easily handled with new shape-finding fiducial capturing to return accurate finds and dispense location targets.

The Monocle Vision Package is the vision system you want when you need to find a target dispense location automatically and accurately - every time.

Nordson ASYMTEK

Monocle™ Vision Package (MVP)

Example of "Odd Form" Fiducial with Shape Finder

0 dB Gain

12 dB Gain

Example of Software Programmable Camera Gain Adjustment

Feature/Capability	Monocle™ Vision Package (MVP)
Maximum Field of View	20mm x 15mm (10mm x 7mm standard)
Optical Magnification	0.5x, 1.0x (standard), 2.0x
Optical Lens Type	Telecentric
CCD Pixels	1400 x 1024 pixels
CCD Natural Resolution	7.4µm per pixel
Lighting	Independently controlled 1-channel On-Axis, 4-channels Off-Axis
Lighting Color	White LED, optional color filters available
Platform Compatibility	Spectrum II*, Vantage

* Requires Fluidmove® software version 6.1.3 or higher; contact Nordson ASYMTEK for integration to other platform models

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