eVue

Digital Imaging System

DATA SHEET

The eVue™ digital imaging system is optimized for on-wafer test with Cascade Microtech's probe stations. The revolutionary multi-optical path, multi-camera design of eVue offers the perfect balance of optical resolution, digital zoom and live-motion video. The eVue utilizes 3MP cameras to enhance optical visualization and uses an increased color frame rate to ensure efficient wafer and in-die navigation. With the VueTrack™ on-site probe-to-pad alignment technology, eVue continues the tradition of innovation to increase productivity with fast navigation, set-up and unattended thermal test functionality.

FEATURES / BENEFITS

Easy, accurate navigation	Quick, easy probe tip navigation with large field of view and high magnification Fast and precise wafer, die, sub-die and small-pad probing with multi-cam, quad-view and picture-in-picture capabilities
VueTrack technology	Increase test productivity by unattended testing over multiple temperatures Enhance contact reliability with on-site probe tip tracking and automatic probe-to-pad alignment error correction functions
Real-time Z-profiling and XY correction	Automate small pad probing by optimizing Z-height, eliminating the potential for non-uniform probe overdrive Collect repeatable and accurate data by minimizing probe-to-probe alignment errors
Software tools for fast, accurate probe-to-pad alignment	Fast and accurate probe card alignment and planarization using multi-view function (up to 28 sub-views) Reduce measurement time using automatic RF probe tip alignment and ISS navigation
Easy image capture and export	Easy capture of high-resolution images (3 Megapixel) and ability to record live-motion views Easy export and email of image/video files

CascadeMicrotech®

OPTICAL PATH

Objective: Mitutoyo M Plan APO	Optical* path+camera	Optical path magnification	FOV X (mm)	FOV Y (mm)	Maximum image density**
2X	1	0.5	13.10	9.84	2.440
	2	2.0	3.28	2.46	
	3	5.0	1.31	0.98	
5X	1	0.5	5.24	3.94	15.252
	2	2.0	1.31	0.98	
	3	5.0	0.52	0.39	
10X	1	0.5	2.62	1.97	61.009
	2	2.0	0.66	0.49	
	3	5.0	0.26	0.20	
20X	1	0.5	1.31	0.98	244.036
	2	2.0	0.33	0.25	
	3	5.0	0.13	0.10	
50X	1	0.5	0.52	0.39	1525.228
	2	2.0	0.13	0.10	
	3	5.0	0.05	0.04	

* Maximum zoom ratio path 1 = 3.8, path 2 = 9.8, path 3 = 40

** Maximum image density is the ratio of camera array size to FOV @ 2048x1536 using optical path 3

OPTICAL APPLICATIONS

	N.A	**Resolving power***	**Working distance**	**Depth of focus**	**FOV Max eVue 40X and 10X**	**FOV Min eVue**	**Application 40X only ****		
Mitutoyo M Plan APO		µm	mm	µm	X,Y mm @ 0.5X mag	X,Y mm @ 20.0X mag	DC/CV, FA, DD	RF	Z Z Profiling
2X	0.055	5.0	34	91.00	13.10 x 9.84	0.33 x 0.25		◐	⊗
5X	0.14	2.0	34	14.00	5.24 x 3.94	0.13 x 0.09	◐	●	⊗
10X	0.28	1.0	33.5	3.50	2.62 x 1.97	0.07 x 0.05	◐	●	●
20X	0.42	0.7	20	1.60	1.31 x 0.98	0.03 x 0.02	●	◐	●
50X	0.55	0.5	13	0.90	0.52 x 0.39	0.01 x 0.01	◐		◐

● = Best, ◐ = Good, ⊗ = Not supported

* Resolving power and focal depth based on reference wavelength of 550 nm

** Minimum FOV listed is for eVue 40X models. For eVue 10X models, the minimum FOV is approximately 1/10 of the maximum FOV shown.

SOFTWARE

BASE PACKAGE	**eVue 10X and 10X PRO**	**eVue 40X and 40X PRO**
Standard Software Features	●	●
Single view (1024 x 768)	●	●
Color mode	●	●
Monochrome mode	●	●

SOFTWARE (CONTINUED)

PRO PACKAGE	eVue 10X PRO	eVue 40X PRO
Measuring tape tool	●	●
Cross-hair tool	●	●
Image annotations, text overlays, scale indicators*	●	●
Video capture with recording controls (AVI export)*	●	●
Image capture (BMP, JPG, TIFF), email option	●	●
Automatic pixel-to-micron video calibration (semi-auto stations)	●	●
Quick zoom toolbar, user defined presets	●	●
Manual Z-profile (with stage)	●	●
Single Z-profile map	●	●
Profile using wafer ring pattern	●	●
Fast auto-gain control*	●	●
Remote focus with range indicator*	●	●
Auto focus	●	●
Automatic Z-profile (with eVue-III)	●	●
Multiple Z-profiles (load / save)	●	●
Z-profile setup / guide	●	●
Profile using die locations	●	●
Real-time auto Z-height	●	●
Fast auto contact/separate focus tracking	●	●
Multi-view mode	●	●
Probe card alignment tool	●	●
High-resolution video (1280 x 1024)	●	●
Camera select (1, 2)	●	●
Camera select (1, 2, 3)	●	●
Single view	●	●
Multi-window views	●	●
Primary + 3, 5, 6, 7, 16, 28 sub views*	●	●
Multi-cam mode	●	●
Single view	●	●
Single view with magnifier	●	●
Picture-in-Picture view (PIP)	●	●
Dual view	●	●
Quad view (3 camera visualizer with pan and zoom)	●	●
Vertical / horizontal setup	●	●

*Requires Nucleus™ 4.1 or later

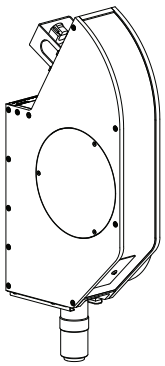
HARDWARE

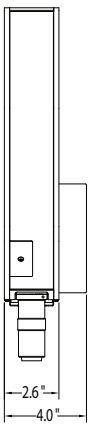
	eVue 10X	eVue 40X	eVue 10X PRO	eVue 40X PRO
Zoom range	0.5 - 5.0	0.5 - 20.0	0.5 - 5.0	0.5 - 20.0
Zoom resolution	0.1X through zoom range			
Zoom features	Par focal, Par centric, and Par theta throughout zoom range			
Remote focus resolution	0.2 µm	0.2 µm	0.2 µm	0.2 µm
Remote focus range	2 mm	2 mm	2 mm	2 mm
Auto focus			Yes	Yes
Optical path+camera	Two cameras	Three cameras	Two cameras	Three cameras
Imaging technology	Color imaging			
Illumination system	LED (solid state, long life) illumination system			
Standard video frame rates (1024 x 768)				
Color / Monochrome	45.5 fps	45.5 fps	45.5 fps	45.5 fps
High-resolution video frame rates (2048 x 1536)				
Color / Monochrome			13.1 fps	13.1 fps
Auto objective identification	Yes, when using intelligent objective mount			

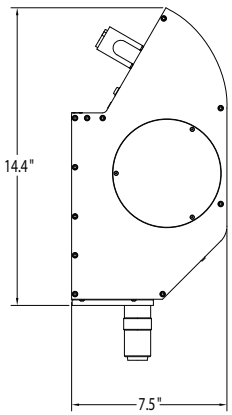
*Frame rates are typical values in frames per second (fps) and are effected by the scene being viewed, zoom ratio and camera exposure settings in the eVue system software.

HARDWARE / REQUIREMENTS

Weight	3.72 kg (8.2 lbs) without focus block
LED lamp life	5000 hours average (3-4 years typical usage @ 25°C)
Operating conditions	
Voltage	Input: 47-63 Hz, 100-240 VAC, 0.55 A (CE,UL,ETL), Output: 12 VDC, 2.08 A maximum
Temperature	+20°C to +50°C (+68°F to 122°F)
Humidity	20 to 85 %, non condensing
MTBF (mean time before failure of non-consumable parts)	30,000 (10 year useful life)
Recommended objective lenses	Mitutoyo 2X, 5X, 10X, 20X, 50X (M Plan APO, SL)
Computer requirements	Compatible with Cascade Microtech's eVue "certified" computer only







COMPONENTS INCLUDED IN ALL MODELS

Multi-CCD microscope/imager	Intelligent objective lens mount
Sub-micron programmable remote focus stage	Digital video PC interface card
Integrated LED illumination system	Video processing software
USB remote control box	Nucleus prober software integration module

AVAILABLE MODELS

	PRE-CONFIGURED PACKAGES BY PROBE STATION TYPE		
	Elite™ 300	**Summit™**	**Manual or standalone**
eVue 10X	**P/N 151-521**	**P/N 151-522**	**P/N 151-523**
10X standard zoom range (two cameras)	Included	Included	Included
2" heavy duty focus block	Not required	Included	Included
High-performance computer with 20" LCD monitor	Not required	Not required	Included
eVue 40X	**P/N 151-541**	**P/N 151-542**	**P/N 141-543**
40X extended zoom range (three cameras)	Included	Included	Included
2" heavy duty focus block	Not required	Included	Included
High-performance computer with 20" LCD monitor	Not required	Not required	Included
eVue 10X PRO	**P/N 151-531**	**P/N 151-532**	**P/N 151-533**
PRO package containing three software toolkits Multi-Z (optical Z-contact system, autofocus) Multi-cam (wafer-probe navigation, picture-in-picture) Multi-view (hi-res video, probe card alignment, probe zoom views)	Included	Included	Included
10X standard zoom range (two cameras)	Included	Included	Included
2" heavy duty focus block	Not required	Included	Included
High-performance computer with 20" LCD monitor	Not required	Not required	Included
eVue 40X PRO	**P/N 151-551**	**P/N 151-552**	**P/N 151-553**
PRO package containing three software toolkits Multi-Z (optical Z-contact system, autofocus) Multi-cam (wafer-probe navigation, Picture-in-Picture) Multi-view (hi-res video, probe card alignment, probe zoom views)	Included	Included	Included
40X extended zoom range (three cameras)	Included	Included	Included
2" heavy-duty focus block	Not required	Included	Included
High-performance computer with 20" LCD monitor	Not required	Not required	Included

ACCESSORIES AND UPGRADES

P/N 131-954 INTELLIGENT OBJECTIVE LENS MOUNT

The intelligent objective lens mount is used with eVue digital imaging systems, and includes a programmable memory device for storing microscope objective lens information (magnification, N.A. (Numerical Aperture), brand, serial number, pixel-to-µm ratio). This information is read from the Intelligent Mount when inserted into the eVue digital imaging system, and is used to automatically configure and optimize performance.

P/N 131-964 UPGRADE, PRO PKG

High-performance "PRO package" upgrade for eVue digital imaging systems

This will upgrade a basic eVue system to include all the features of the PRO package eVue versions.

The eVue PRO package upgrade includes the following:

Software toolkits

- Multi-Z (optical Z-contact system, autofocus)
- Multi-cam (wafer-probe navigation, Picture-in-Picture)
- Multi-view (high-resolution video, probe card alignment, multi-needle views)

On-site installation

OBJECTIVES

P/N 102-516 Mitutoyo M Plan APO 2X Objective	●
P/N 106-762 Mitutoyo M Plan APO 5X Objective	●
P/N 102-517 Mitutoyo M Plan APO 10X Objective	●
P/N 102-518 Mitutoyo M Plan APO 20X Objective*	●
P/N 102-293 Mitutoyo M Plan APO 50X Objective*	●

● = Recommended, ◐ = Available *Not compatible with Celadon VersaTile probe cards due to the high profile of the probe card.

VUETRACK TECHNOLOGY

The VueTrack technology provides a novel method to track probe tips and correct for drift, allowing a customer to run a probe station unattended at multiple temperatures with no operator intervention. The VueTrack technology significantly increases test productivity and test cell efficiency by eliminating the idle time between temperature transitions and automatically generating parametric and reliability data. The VueTrack technology is compatible with Cascade Microtech's Elite, Summit 12000B and S300 series of probe stations.

HTS ENHANCEMENTS

High Thermal Stability (HTS) enhancements minimize the thermal drift of the probe supporting components. They are made of high temperature stable materials such as Invar. Using HTS enhancements, transition and die soak time can be minimized to optimize the probe station's productivity.

AVAILABLE ITEMS*

VueTrack technology**

VueTrack 30-day demo license***

HTS platen

HTS probe card holder

HTS probe arms for probes (DCP or DCP-HTR or PTT needles)

HTS probe tips for DCP-HTR

VueTrack / HTS upgrade package

* Contact Cascade Microtech for details.

** Nucleus 4.1 or later and eVue PRO model required. Contact Cascade Microtech for Nucleus upgrade and/or eVue PRO upgrade.

*** Nucleus 4.1.2 and Cascade Microtech's on-site application training required. Contact Cascade Microtech for Nucleus upgrade and/or eVue PRO upgrade.

EVUE-DS-1013

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