Cascade
eVue V
Digital Imaging System

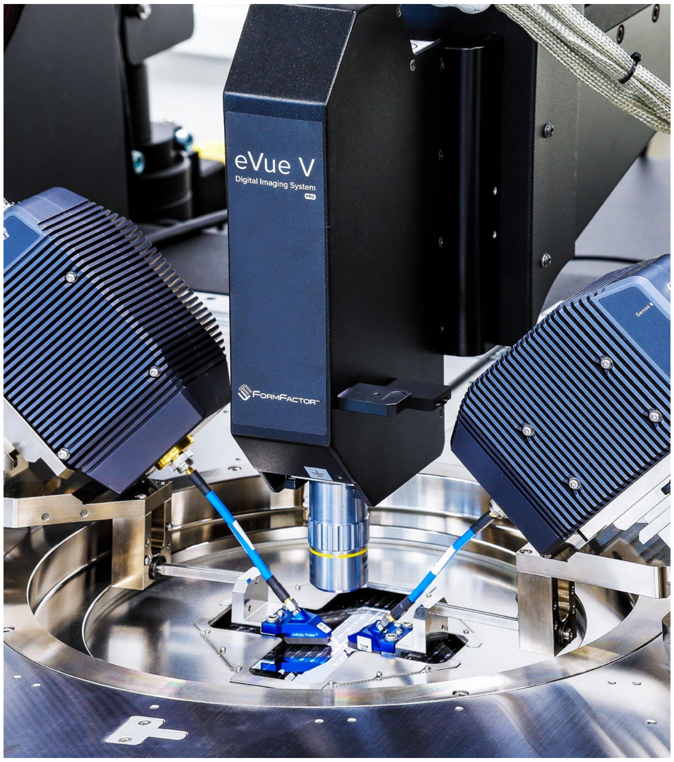
Overview

The eVue V is the latest generation of FormFactor's leading-edge digital imaging system. Equipped with a new sensor technology and high-quality optics it is the perfect choice for ultra-precise on-wafer measurements with unsurpassed automation features, providing increased throughput and highest productivity.

The eVue V is available for FormFactor's automated and manual probe stations and works seamlessly with Velox probe station control software. It is ideal for challenging applications, including IV/CV, small pad probing, ultra-low noise, RF/mmW, load-pull, high power and silicon photonics.

Smart features, including FormFactor's patent-pending Crash Protection and the Intelligent Objective Lens Mount make the eVue V a reliable and easy-to-use system.

As an integral part of FormFactor's patented Autonomous Measurement Assistants, the eVue V enables real unattended use with accurate automated probe-to-pad alignment over a wide temperature range, continuous calibration monitoring and re-calibration and automated probe cleaning.



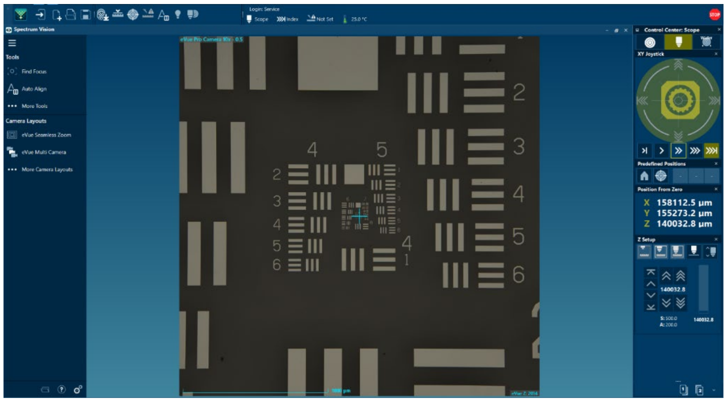
Contact Intelligence™

Features / Benefits

Maximized field-of-view with ultra-sharp image quality	• Large 20MP sensor • High magnification quality optics • Unique Megapixel Mode enables ultra-sharp image quality and video speed of up to 20 fps
Intelligent Objective Lens Mount	• Velox detects the objective lens automatically • No re-calibration necessary after lens exchange
Intelligent Crash Protection	• Protects valuable equipment from expensive damage, even when probes are in contact
Advanced Slim Design	• Seamless integration of frequency extenders and tuners with shortest distance to the DUT • Compatible with TopHat for perfect shielding • cTUVus and CE certified
Application Flexibility	• Ideal for IV/CV, small pad probing, RF/mmW, load-pull, high power and silicon photonics • Certified for high-voltage measurements • Tested for ultra-low noise measurements

Features / Benefits (continued)

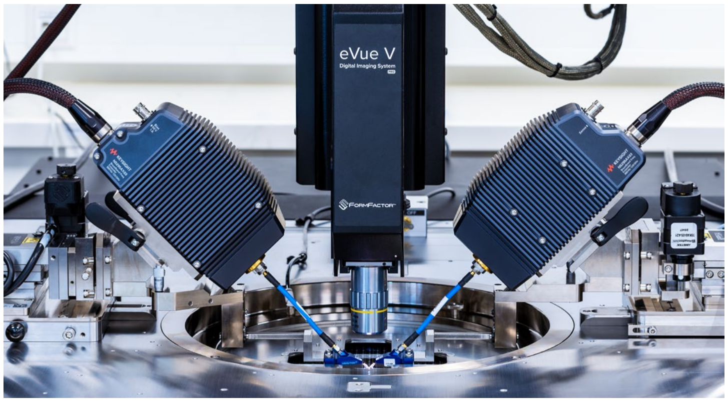
Seamless Integration with Velox Probe Station Control Software	• Up to eight detailed views • Find Focus guarantees a perfect image even with uneven wafers • CellView allows easy navigation and orientation on parts of the wafer that are out of view
Autonomous Measurement Assistants	• Part of FormFactor's patented Autonomous Measurement Assistants • Automated probe-to-pad alignment over a wide temperature range • Continuous RF calibration monitoring and re-calibration • Increased throughput and highest productivity
Remote Operation	• eVue V can be conveniently operated from home or anywhere in the world via remote access to Velox Probe Station Control Software



X 158112.5 µm
Y 155273.2 µm
Z 140032.8 µm

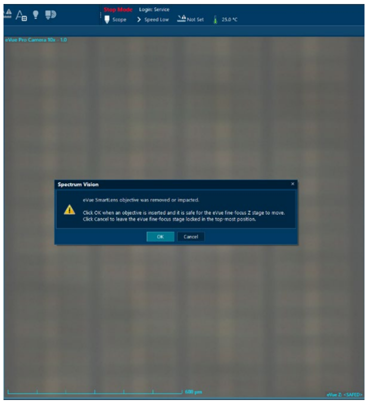
Maximized field-of-view with ultra-sharp image quality

The large 20MP sensor and a range of high-quality optics provide maximum optical resolution. Optimized with FormFactor's unique Megapixel Mode the system enables ultra-sharp image quality and video speed of up to 20 fps.



Advanced Slim Design

The slim design of the eVue V enables seamless integration of frequency extenders and tuners with shortest distance to the DUT, considerably reducing insertion loss and maximizing accuracy for S-parameters and load-pull applications.



Spectrum Vision

eVue SmartLens objective was removed or impacted.

Click OK when an objective is inserted and it is safe for the eVue fine-focus Z stage to move.
Click Cancel to leave the eVue fine-focus stage locked in the top-most position.

PATENT
PENDING

Patent-pending Crash Protection

The eVue V comes with FormFactor's patent-pending crash detection, which protects valuable equipment from expensive damage, even when probes are in contact. When accidently hitting the test equipment or probes, the microscope will instantly stop all movements and retract the objective lens. Additional software fences can be defined in the Velox probe station control software, setting a limit of how much the microscope can be moved.

Intelligent Objective Lens Mount

Objective lens exchange is easy and fast with the Intelligent Objective Lens Mount, which automatically detects the lens and all associated calibration data, enabling faster time to measurement without any re-calibration.

Standard Features	eVue V 10x	eVue V 10x Pro	eVue V 40x Pro
Find Focus	✓	✓	✓
Home Position	✓	✓	✓
Auto Illumination	✓	✓	✓
Easy brightness levels	✓	✓	✓
Easy preset zoom levels	✓	✓	✓
eVue Follow Mode	✓	✓	✓
Auto Z	✓	✓	✓
Z-profiling	✓	✓	✓
Crash Detection	✓	✓	✓
Smart Lens	✓	✓	✓
Polarizer Analyzer (Optional)	✓	✓	✓
Upgradable to 10x Pro or 40x Pro	✓	✓	

Pro Features			
Multi Camera Imaging		✓	✓
Adaptive Megapixel Mode		✓	✓
CellView		✓	✓
Zoom anywhere		✓	✓
Detail Views		✓	✓
Auto Focus*		✓	✓

*Available only with eVue remote panel. In Velox, Auto Focus has been replaced by Find Focus. Please read the Velox User Guide.

Autonomous Probing Capabilities			
Autonomous DC	✓	✓	✓
Autonomous RF	✓	✓	✓
Autonomous Silicon Photonics	✓	✓	✓

The new eVue V microscope on CM300xi with Autonomous RF setup

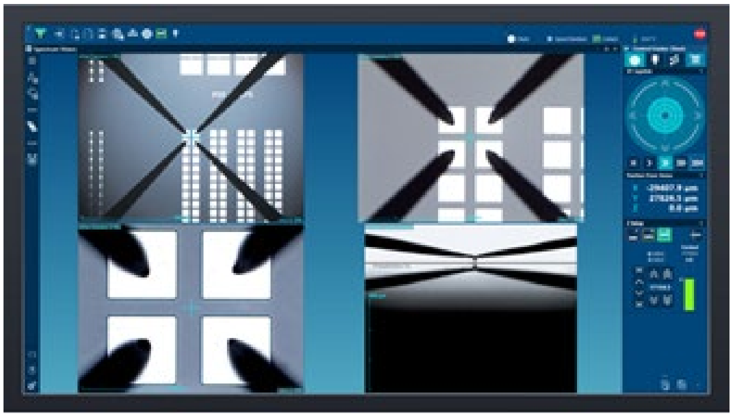
The new eVue V microscope on CM300xi with Autonomous SiPh setup

Standard Features

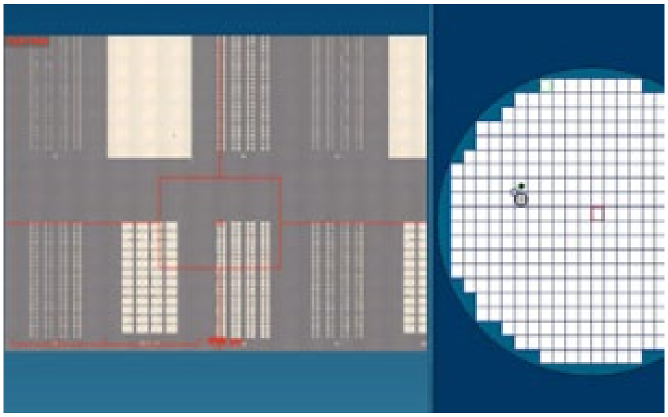
Find Focus	• The focus algorithm guarantees a perfect image even with uneven wafers
eVue Follow Mode	• Device surface stays in focus when the chuck moves up or down
Crash Detection	• Patent-pending eVue crash detection protects your valuable equipment from expensive damage, even when probes are in contact • eVue will instantly stop all movements and retract the objective lens, when hitting a probe, cable or an instrument
Smart Lens	• eVue automatically knows which lens is installed • No re-calibration necessary after lens exchange • Automated system setup after lens exchange
Polarizer/Analyzer (Optional)	• Simplified observation with polarised light • Suitable for improving the contrast of low magnification objectives

Pro Package Features

Adaptive Megapixel Mode	• Automatically adjusts the resolution of the microscope camera to the zoom level • The further you zoom into the image, the higher the image resolution • Optimum system speed
Detail View	• Up to eight detailed views of the displayed image • Views can be enlarged or reduced separately • Adjust the zoom range of individual detailed views
Zoom Anywhere	• Zoom in or out on a subject without physically moving • Capture images from a distance without compromising on image quality
Cell View	• Creates a stitched image of the whole wafer with the capture of just one die • Easy on-die orientation • Fastest navigation to parts of the wafer that are out of view
Multi-Camera Imaging	• Up to four simultaneous live views for accurate probe tip placement • Shows wafer and probes in horizontal and vertical direction • Several zoomed-in views of single probes
Auto Focus	• Available for legacy probe stations and for probe stations with eVue Remote panel



Multi-Camera Imaging: Up to four simultaneous live views for accurate probe tip placement.



Cell View: Creates a stitched image of the whole wafer with the capture of just one die.

Recommended Objective

	eVue V 10x	eVue V 10x Pro	eVue V 40x Pro
100 µm pads	10X objective	10X objective	10X objective
30 µm pads	20X objective	20X objective	10X objective
1-5 µm nodes	20X objective	20X objective	10X objective

Upgrade Path

	From eVue V 10x	From eVue V 10x Pro
To eVue 10x Pro	797-00298	n/a
To eVue 40x Pro	797-00299	797-00299
To 40x Pro 60 Days Trial	797-00304	797-00304

General Specifications

	eVue V 10x	eVue V 10x Pro	eVue V 40x Pro
Zoom Range	0.5 to 5.0	0.5 to 5.0	0.5 to 20.0
Working Distance with 10X M Plan APO	34 mm	34 mm	34 mm
Internal Fast Focus Motor	4 mm	4 mm	4 mm
FOV, 10X objective, 2x magnification (mm)	0.64 x 0.64	0.64 x 0.64	0.64 x 0.64
Resolution	20 MP	20 MP	20 MP
Frame Rate	20 fps	20 fps	20 fps

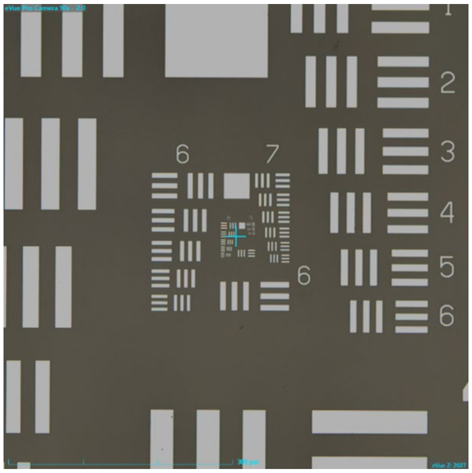
Optional Features

VueTrack™	PATENTED TECHNOLOGY	• Automated probe-to-pad alignment for positioners or probe cards • Utilizes the eVue microscope to detect the location of the wafer alignment markers as well as the location of the probes • The trained alignment can be re-used for all wafers of one lot
VueTrack Pro™	PATENTED TECHNOLOGY	• Additional to VueTrack features, if motorized positioners are used, VueTrack enables additional automatic adjustment of probes

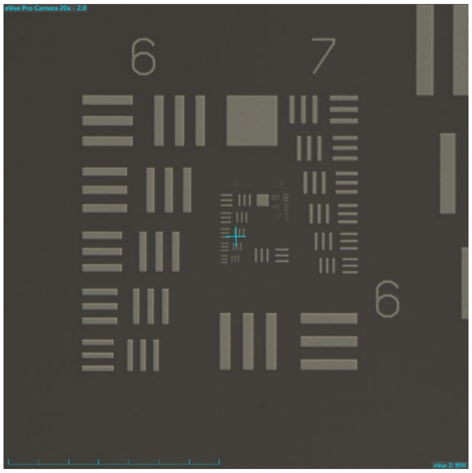
Optical Specifications

Objective (Mitutoyo M Plan APO)	N.A.	Optical Resolution (µm)	Working Distance (mm)	Depth of Focus (µm)	FOV (mm) @0.5x Zoom	FOV (mm) @5x Zoom	FOV (mm) @20x Zoom
2X	0,055	5,0	34	90,9	12,363	1,236	0,309
5X	0,14	1,96	34	14,3	4,945	0,494	0,124
10X	0,28	0,98	33,5	3,6	2,473	0,247	0,062
20X	0,42	0,65	20	1,2	1,236	0,124	0,031
SL 50X	0,42	0,65	20,5	0,5	0,495	0,05	0,012

Ultra-sharp image quality over the complete Field of View*

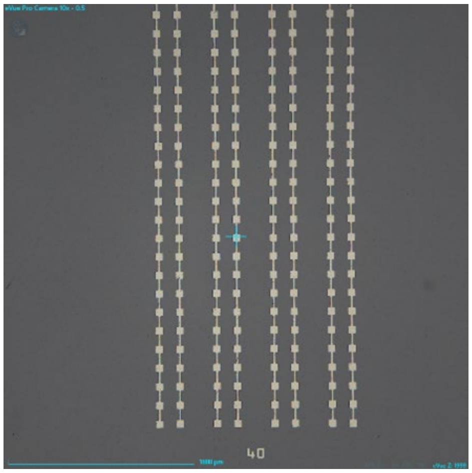


eVue V - 10X objective, 2.0 Zoom

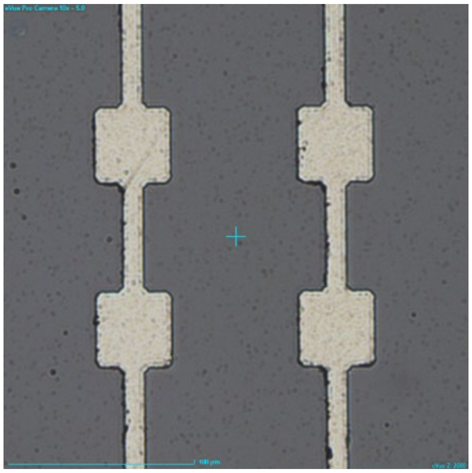


eVue V - 20X objective, 2.0 Zoom

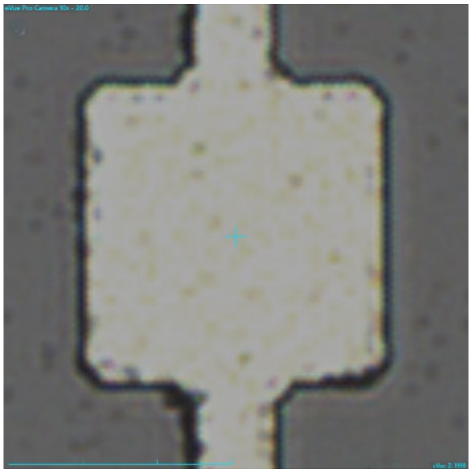
Large usable working area



eVue V 10x and 40x Pro – 10X objective, 0.5 Zoom (40 µm pad)



eVue V 10x and 40x Pro – 10X objective, 5.0 Zoom (40 µm pad)



eVue V 40x Pro – 10X objective, 20.0 Zoom (40µm pad)

**Test structure USAF1951*

Other

Certification	cTUVus certified to UL61010-1 & CAN/CSA No. 61010-1
	CE Compliant to EN61010-1 & IEC61010-1
	VCCI CISPR32 Class A, FCC part 15 Class A, IEES-003 Class A, EN61326-1 Class A, & KN61326-1 Class A compliant
	Emission tests are performed for all the following voltages and frequencies: * Japan 100Vac/50Hz * Taiwan 110Vac/60Hz and 220Vac/60Hz * US and Canada 115/60Hz * Korea 220Vac/60Hz * Europe 230Vac/50Hz * inquire regarding additional countries
Weight	2.5 kg (5 lbs) without focus block and objective lens
Illumination system	LED (solid state, long life) illumination system
Recommended objectives lenses	Mitutoyo M Plan APO: 2X; 5X; 10X; 20X Mitutoyo M Plan APO SL: 50X The limits for other objectives are 220 g to 275 g
Computer requirements	Requires FormFactor-specified computer and Velox 3.4 or above

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