Non-stop CNC Vision Measuring System with Tracking Auto Focus (TAF)

Quick Vision QV STREAM PLUS

Captures images and tracks surfaces while in motion providing unsurpassed throughput

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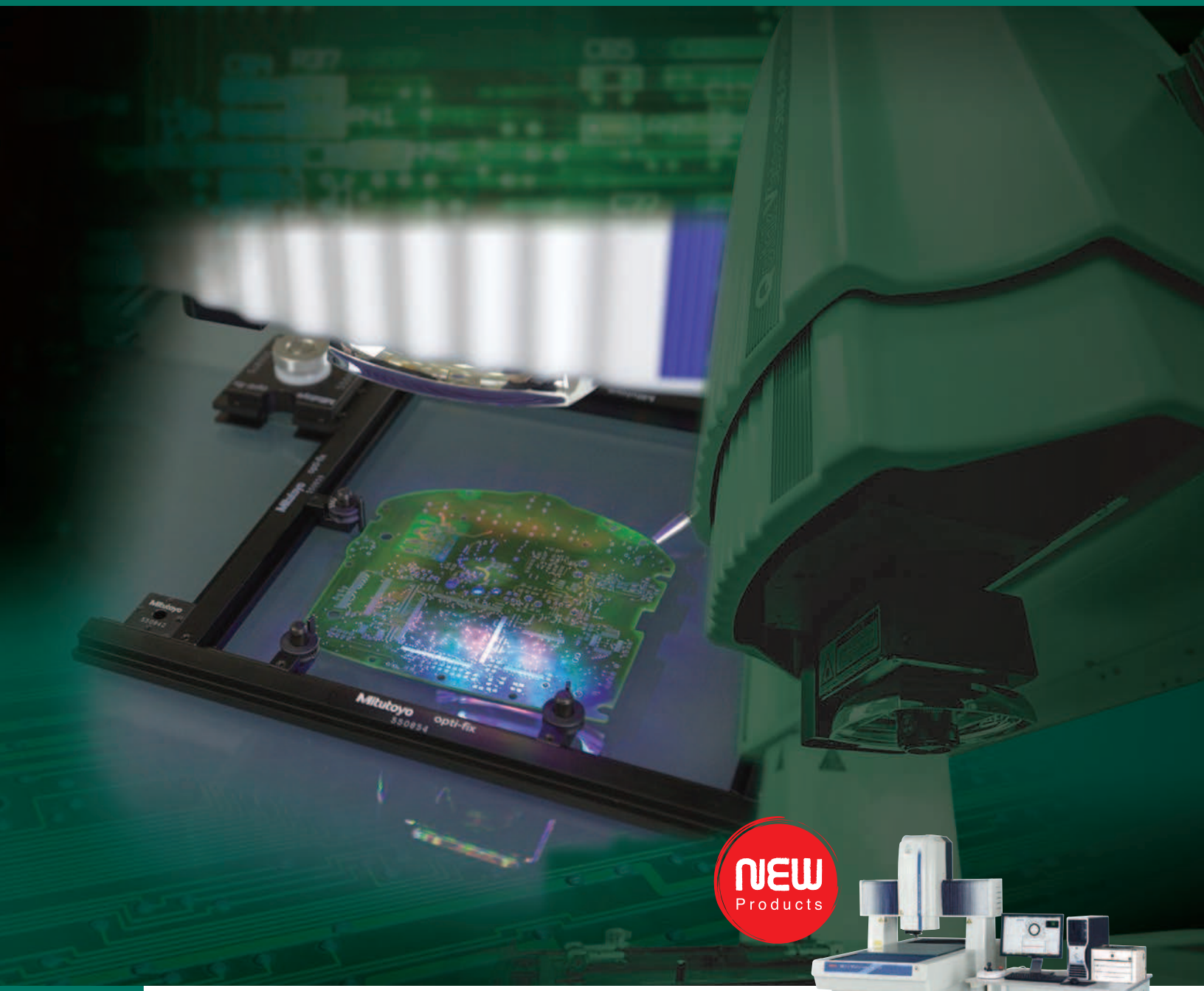
Vision Measuring Systems



Bulletin No. 2153

Mitutoyo

Non-stop CNC Vision Measuring System with Tracking Auto Focus (TAF)
Quick Vision QV STREAM PLUS

FEATURES

- Enables high-throughput measurement—more than five times higher than earlier models. *Using Mitutoyo sample workpieces
- New method captures the image continuously without stopping the stage.
- Includes a tracking auto focus (TAF) feature that tracks the contours of waves and warpage on the surface of the workpiece and maintains focus. This eliminates time spent for autofocusing.

SPECIFICATIONS

Specifications for QV STREAM PLUS Series systems with TAF

Order No.		363-176	363-186	363-196
Model		QV-X302T1S-D	QV-X404T1S-D	QV-X606T1S-D
Main unit				
Measuring range (X×Y×Z)		11.81"x7.87"x7.87" (300×200×200mm)	15.57"x15.57"x9.84"(400×400×250mm)	23.62"x25.59"x9.84"(600×650×250mm)
Performance				
Accuracy E1	X, Y axes (image)	(1.5+3L/1000) µm *1		
	Z axis (image)	(1.5+4L/1000) µm *1		
Accuracy E2	XY plane (image)	(2+4L/1000) µm *1		
Resolution		0.1µm		
TAF Z-axis resolution		0.3µm		
Operating temperature range		20±1°C		
Main equipment and features				
Imaging Device		B&W CCD		
Illumination Unit	Co-axial Light	Color LED		
	Transmitted Light	Blue LED		
	PRL	Color LED (quadrant)		
Observation unit		PPT 1X-2X-6X		

*1 Determined using Mitutoyo inspection methods. Optical magnification for which accuracy guaranteed: 2.5X objective (QV-HR2.5X or QV-SL2.5) + 2X tube lens

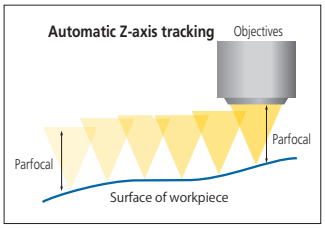
Tracking Auto Focus (TAF)

The TAF feature focuses continuously, adjusting to changes in the height of the object being measured. Automatic tracking of surface waves and warpage (in the Z axis height direction) improves measurement throughput. The feature also cuts out the hassle of focusing during manual measurement, reducing the work burden for measuring system operators.

Tracking Auto Focus (TAF)

AF principle	Objective coaxial autofocusing (knife edge method)				
Suitable objectives	QV-HR1x	QV-SL1x	QV-HR2.5x	QV-SL2.5x	QV-5x
Tracking range*2	6.3mm (±3.15mm)	6.3mm (±3.15mm)	1mm (±0.5 mm)	1mm (±0.5 mm)	0.25mm (±0.125mm)
Spot diameter*3	5.2µm	8.0µm	2.1µm	3.1µm	1.5µm
Laser source	Semiconductor laser (peak wavelength: 690nm)				
Laser power	0.9mW				
Laser safety	Class 2 (JIS C6802:2011, EN/IEC 60825-1:2007)				

*2 Varies according to workpiece surface texture and reflectance.
*3 These are design values.



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