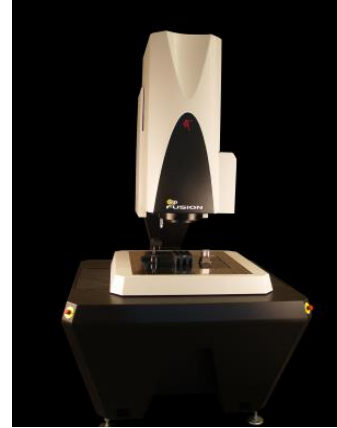




Multisensor Measurements
for Manufacturing Professionals

FUSION



*A New Departure
In Dimensional Metrology*



Optical Gaging Products





FUSION

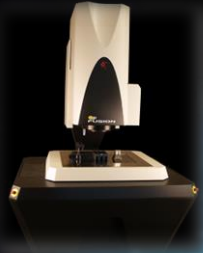
A “Fusion” of...

- Nostalgic Optical Concepts
- Superb Digital Imaging
- CAD Base Multisensor Metrology Software
- Optimized Electromechanical Systems
- Unprecedented Illumination
- Flexible Multisensor Variations

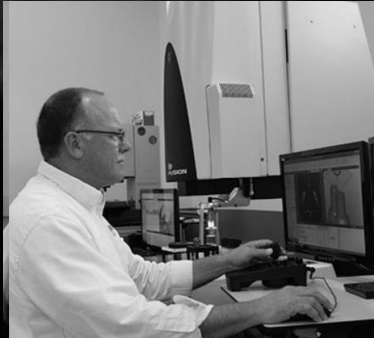




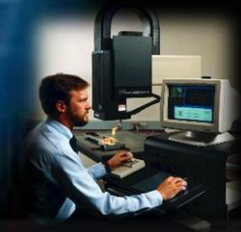
The Evolution of Large FOV Optics



FUSION 2016



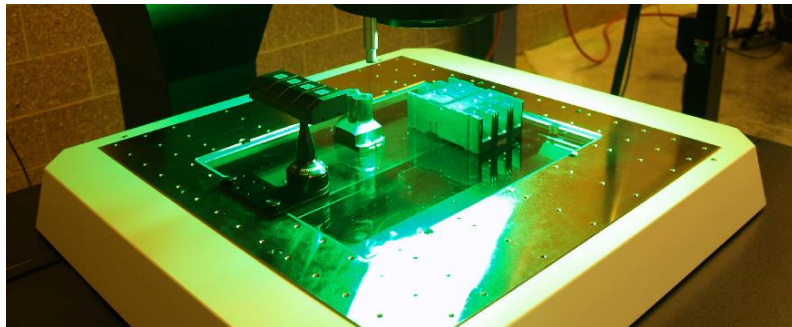
1986



Optical Gaging Products



Stage



- 350 x 250 x 250 mm travel
- Compound Stage
- 0.1 μm scales
- Dual Y Scales, Single Drive
- High Speed Drives
- Recirculating Cross Roller Bearings (HD)
- Single piece steel worktable



Measuring Capacity

- Measurement Range 400x300x250 at low mag
- Measurement Range 350x250x250 at High Mag
- Measurement Range 350x250x250 for other sensors





Performance

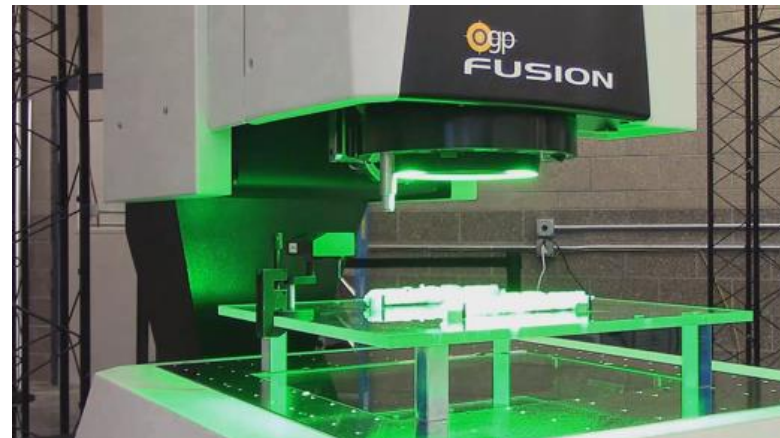
Velocity

- 400 mm/sec XY, 400% *
- 125 mm sec Z, 500%*

Acceleration

- 1000 mm/sec² XY, 300%*
- 300 mm/sec², 300%*

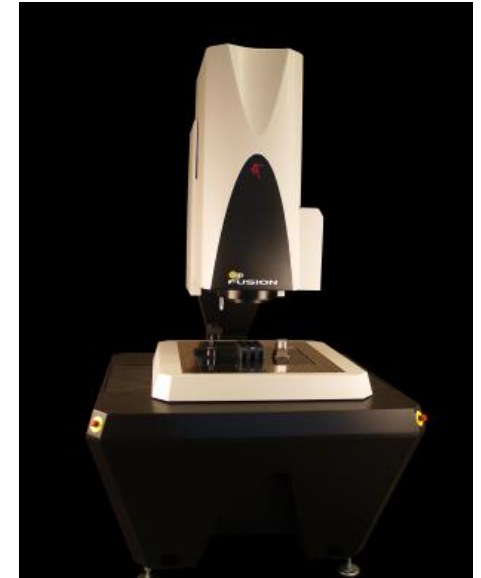
* As compared to traditional measurement system





Fusion Unit

- 1.7D x 1.5W x 2.5H Meters
- Weight - 1900 kg
- Load Capacity – 50kg
- Granite base
- Cast iron optics post
- Cast iron Z-slide
- Integrated Scanning Controller





**Multisensor Measurements
for Manufacturing Professionals**

Optics and Illumination



Optical Gaging Products

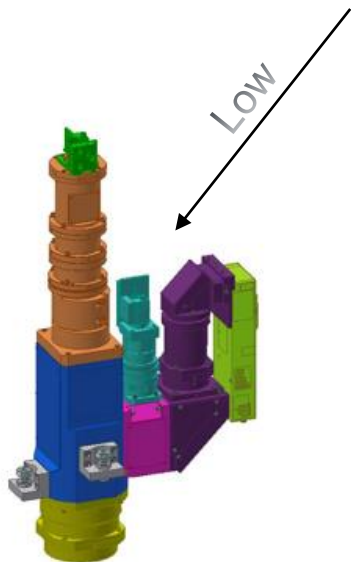




Flexible Optical Path

Two *Magnification Paths*

- 100mm Field of View
- Many Features at once
- Automatic Part ID
- Automatic Feature Extraction
- Large Depth of Field





Flexible Optical Path

Two Magnification Paths

- Performance on Par with Telestar optics
- Workhorse magnification – highly telecentric
- Small depth of field for surface distinction





Multi-Mag Advantages

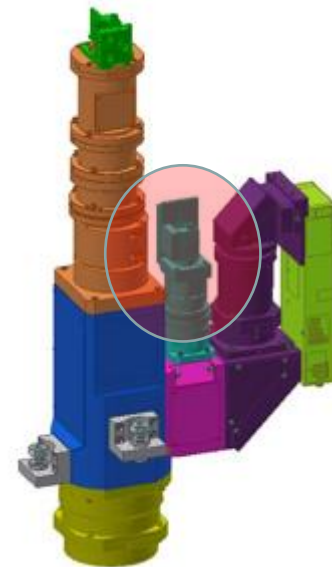
- Large Parts with Small Features
- Accucentric to relate measurements between optical magnifications
- Digital Zooming at each Optical Mag
- Z measurement in multiple ways





LFOV Details

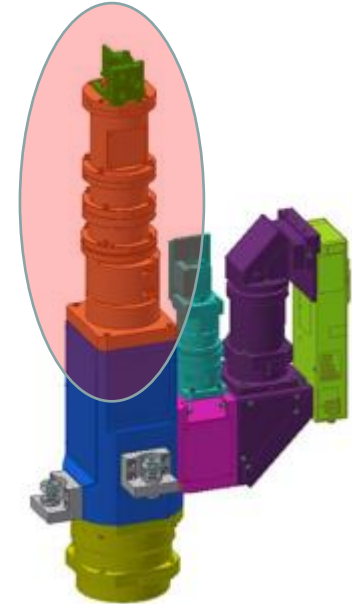
- 100 mm Diagonal FOV
- Working Distance 156mm
- F/100
- 1" Digital Camera
- 2048x 2048 Resolution
- 5 x 5 um Pixels





High Mag Details

- 20 mm Diagonal FOV
- 156mm Working Distance
- F/5
- 2/3" Digital Camera
- 2048 x 2048 Resolution
- 3 x 3 um Pixels



Back Light

- Low Mag – Center Portion
- Intermediate – Middle Ring and Center
- High Mag – Outer Ring, Middle Ring, and Center





Illumination

- TTL Light
 - Low Mag – Center Cluster of 15 LEDs
(1 equal to current Lumens)
 - High (or Int) Mag – 40 additional LED's



Oblique Light

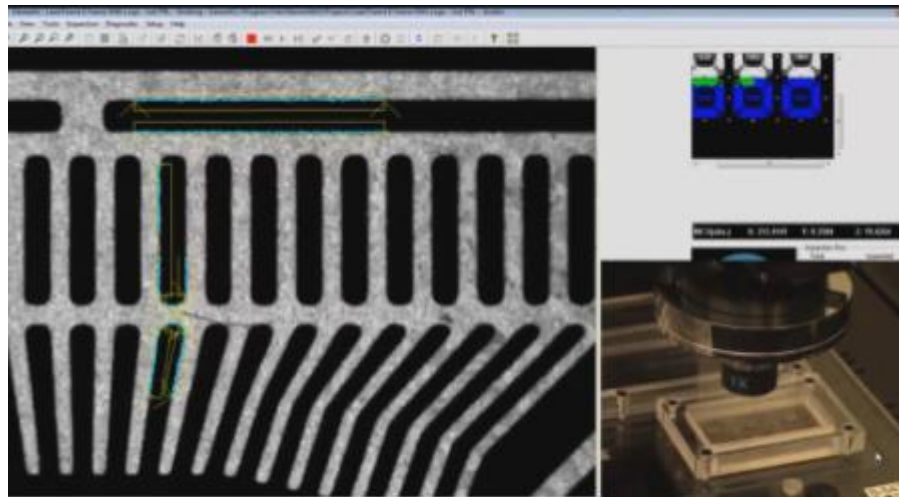
- High (or Int) Mag Oblique – 8 on a 156 mm focused fresnel lens
- Oblique Low Mag – Diffused Flood Light with 8 sectors
- TTL 40 additional LED's in 8 Controllable Sectors for Low Mag





Strobing

- Capable of strobing all light sources
- Continuous image capture





**Multisensor Measurements
for Manufacturing Professionals**

AutoMeasure and AutoID

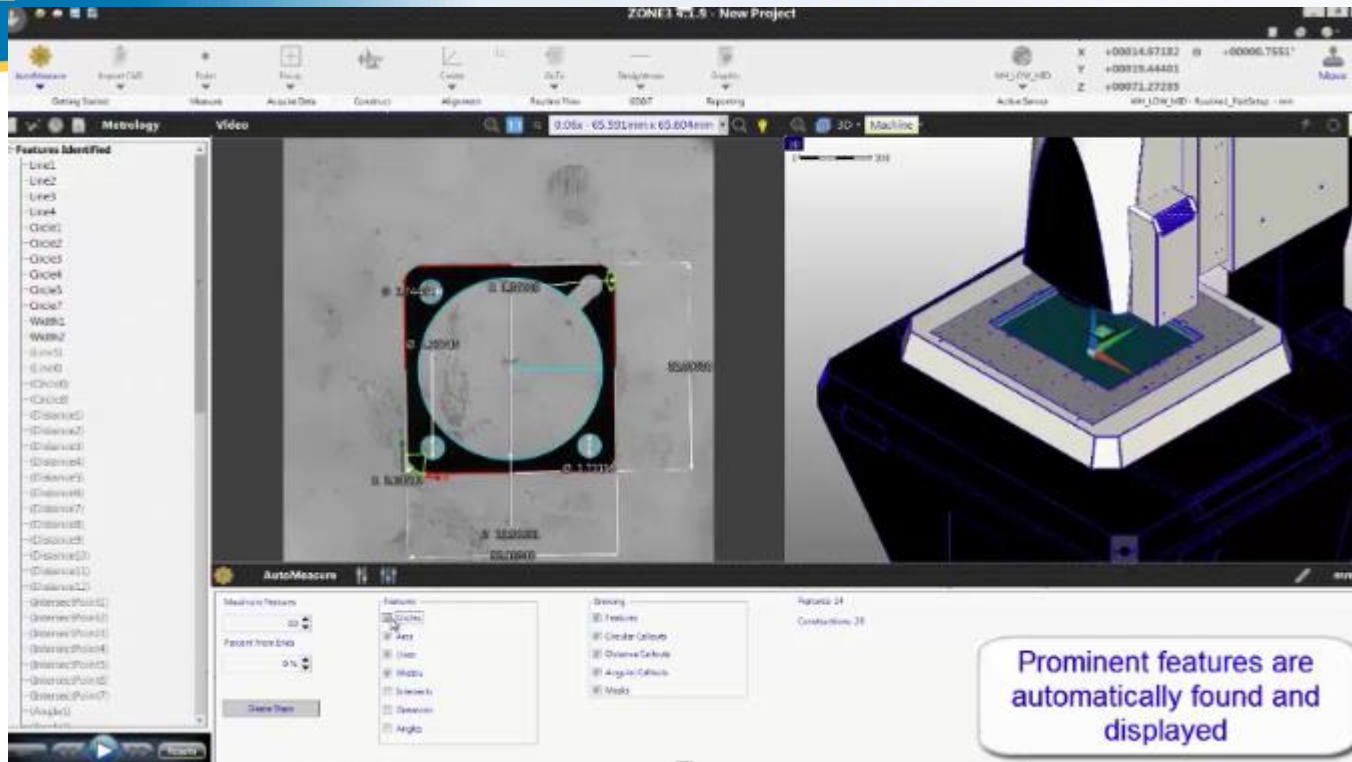


Optical Gaging Products





Fusion AutoID / AutoMeasure



Optical Gaging Products





**Multisensor Measurements
for Manufacturing Professionals**

Laser



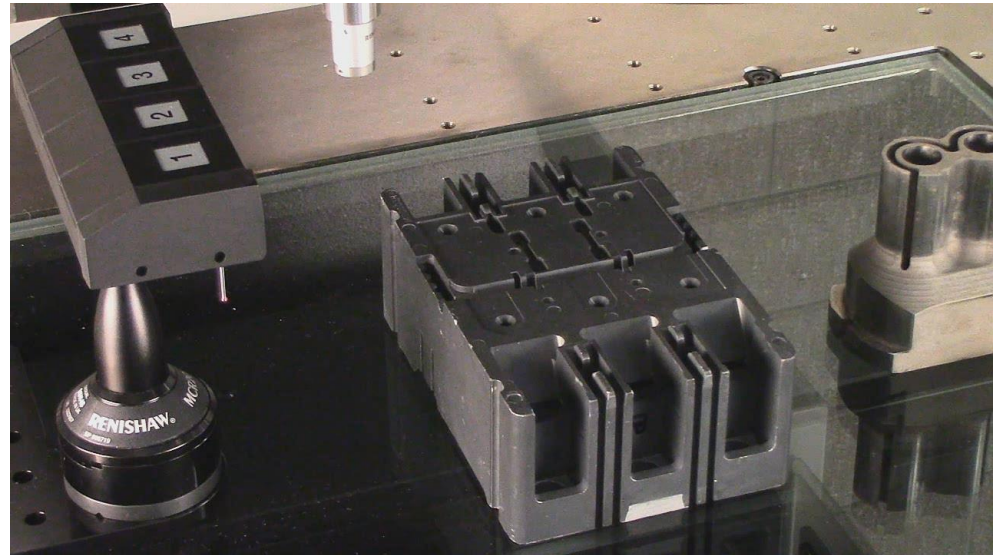
Optical Gaging Products



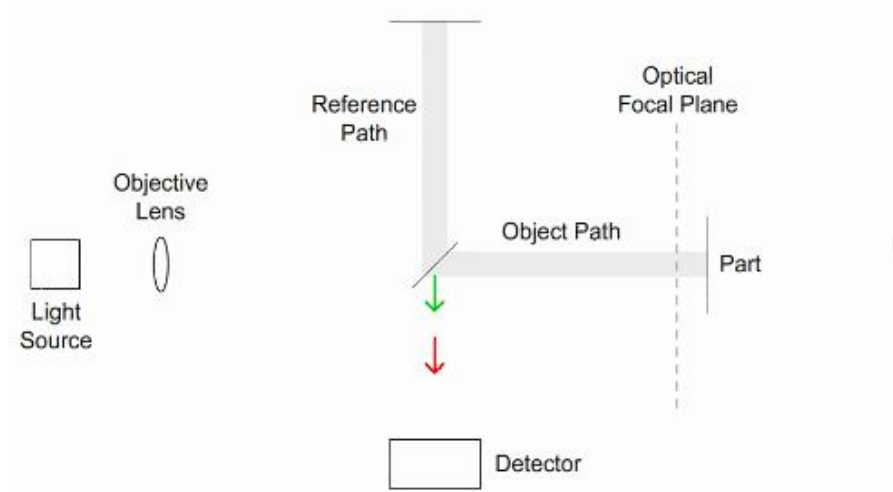


Range Finder

- Standard Feature
- Mounted in Oblique Illuminator
- Dual Laser indicator
- Joystick operation
- Indicates focal point
- Motion will show Z direction



- Telestar Plus
 - Parfocal, On-axis, TTL
 - 156 mm Working Distance
 - 1 μm accuracy
 - Designed for Sweeping up to 50mm





**Multisensor Measurements
for Manufacturing Professionals**

Tactile Probes and Deployment Sensors



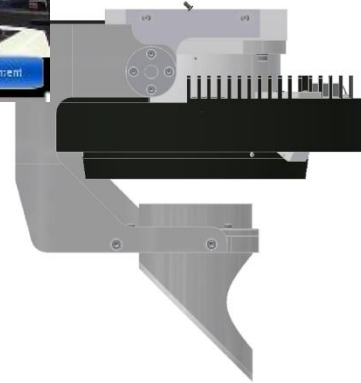
Optical Gaging Products





Rotational Deployment Possibilities

- Touch Probe
- Scanning Probe
- Rainbow Probe
- Parfocal Lenses for larger optical range
- Mirrors with/without rotary option for different orientations
- Designed for hardware adaptability





Touch/Scanning Probes

Touch Probe Adapter

- Right or Left Position X offset
- Optional Rotational Deployment with or without docking.
Coincident with optics

Scanning Probe Adapter with Sonic

- Right or Left X Offset
- Optional Swing Arm Deployment with or without docking.
Coincident with optics

Feather Probe on Rotational Deployment

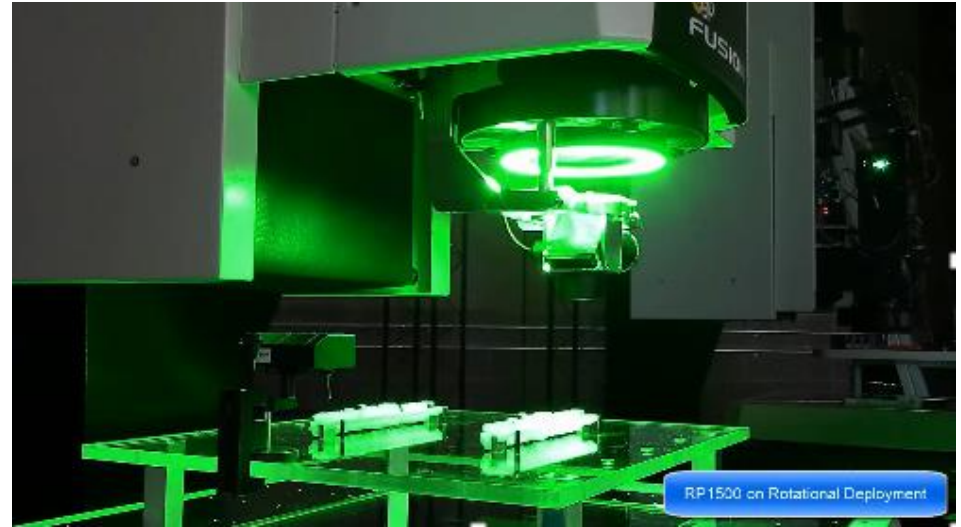




Rainbow Probe

RP1500 Model

- Right Angle Mounting
- Rotational Deployment
- Coincident with optics
- 32mm Working Distance
- 1.5mm capture range
- 10 μ m Spot
- 25 deg. angle capability
- Nanometer Resolution





Multisensor Measurements for Manufacturing Professionals

Thank You for
your Interest!
For More
Information...



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