

# Archer™ 10XT+

## Overlay Metrology System

### Built on the industry leading Archer platform for optical overlay measurements.

The Archer 10XT+ overlay metrology system provides robust, accurate, reliable, and reproducible overlay registration and CD measurements on various substrate types, sizes, materials and thicknesses. The industry proven Archer platform provides fast, repeatable and the system-to-system matched performance required by fabs producing products for the IOT, automotive,  $\mu$ LED and mobile segments.

- High throughput for cost-effective overlay process monitoring for high volume manufacturing
- Advanced alignment microscope system and variable illumination for high and low contrast layer measurements
- Substrate support for Si, SiC, GaN, quartz, glass, GaAs and other transparent wafers
- Optional AIM® target capability for advanced overlay control (AIM+)

#### Productivity:

High system throughput supports high volume manufacturing sampling for critical layer control at the lowest CoO.

#### Reliability:

Industry leading, proven metrology platform delivers maximum uptime and high MTBF.

#### Accuracy and Precision:

Robust, accurate, repeatable and reproducible overlay metrology for your most challenging layers, including those with high variability.

#### Flexible Metrology:

Simultaneous optical overlay and CD measurement option saves time offering a flexible, low CoO opportunity.



#### 5D Analyzer®:

Customizable models and analysis recipes provide accurate corrections for all steppers and scanners within your fab. Multivariate analysis provides fast resolution to overlay excursions. Centralized database for all overlay results from your Archer overlay tools, steppers and scanners.

#### Transparent and Semi-Transparent Wafer Handling Capability:

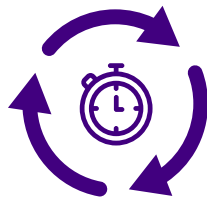
Optional wafer loading and alignment feature supports SiC, GaN, Quartz and other clear substrate types. Accommodates 150mm – 300mm sizes.

#### Thin & Thick Wafer Handling Capability:

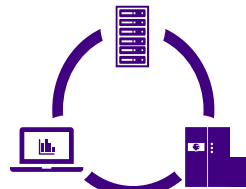
Optional feature accommodates wafers as thin as 350 $\mu$ m up to 1200 $\mu$ m thick substrates.



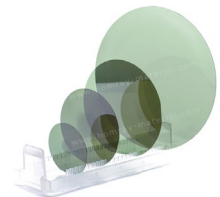
Productivity



Time Savings



Analysis



Substrate Options

## Archer 10XT+ Subsystems & Options

### Advanced Alignment Microscope System (AMS):

Three LEDs are utilized for improved wafer alignment and recipe success rate on low contrast layers.

### Variable Illumination System (VIS):

Colored filters within the optical path improve target contrast and measurement reproducibility on the most challenging and low contrast layers, including grainy metals.

### Automatic Noise Reduction Algorithm (ANRA) and Coherence Probe Microscopy (CPM):

Optional feature package to improve measurement capability on low contrast or asymmetrical targets due to variable film or CMP processing.

### Long PZT:

Optional extended range piezo increases Z fine focus measurement capability for higher topography layers.

### Advanced Imaging Metrology (AIM) targets:

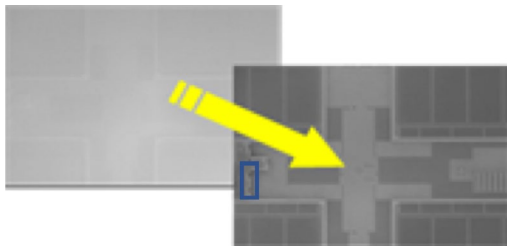
Optional license provides more robust overlay measurements results amid process variations caused by CMP and other processes.

### Critical Dimension (CD):

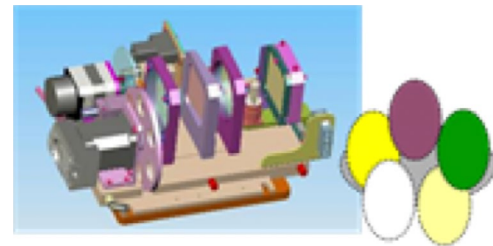
Optional feature to measure CD structures simultaneously with the overlay measurement recipe with no loss in system throughput. Ideal for less critical layers freeing up capacity for more critical layers on advanced CD tools and improved CoO.

### Recipe Database Manager:

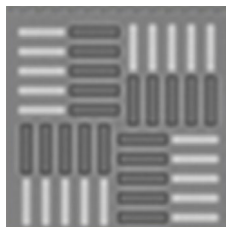
Optional offline software for recipe development and fleet recipe management. Improve tool productivity, recipe control and recipe success rate with automatic, imageless recipe creation opportunity for fast recipe creation and distribution to your fleet of tools before wafers arrive at that step.



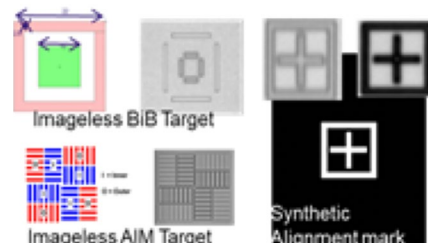
Improved AMS system robust to process variations and contrast



VIS (option) low contrast solution HW/SW package



AIM target (options)



Recipe database manager features automatic, imageless recipe creation

#### KLA SUPPORT

Maintaining system productivity is an integral part of KLA's yield optimization solution. Efforts in this area include system maintenance, global supply chain management, cost reduction and obsolescence mitigation, system relocation, performance and productivity enhancements, and certified tool resale.

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