reticle labs

Maskshop®

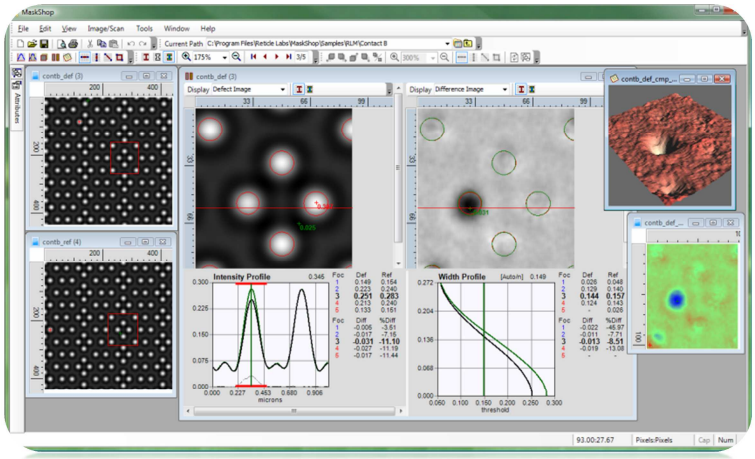
A Reticle Inspection and Aerial Image Metrology Software

ACCURATE

POWERFUL

FEATURE RICH

USER FRIENDLY



Key Features

Accurate 128 bit pixels

Linear & diagonal measurements

Metrology for areas, inertia moments, centroids, radii & statistics

Image overlay module for comparing images in 2D (horizontally)

Image compare module for comparing images in 3D (vertically)

Image manipulation such as resampling, alignment, rotation, mirror and more

3D graphical animated renditions in OpenGL graphics

Multi-document user interface for simultaneous analysis of multiple cases

Optimized for speed on various x86 processors

Integrated online help with documentation

Feature rich user interface written in .NET

What is it?

Maskshop is a semi-automatic user friendly defect metrology tool for analyzing and comparing images from Aerial, reticle inspection, SEM, AFM, simulation and a host of other tools.

What does it solve?

With maskshop you will not just be able to do metrology that otherwise you could not, but you will save time, reduce cost, and simultaneously improve quality. Maskshop is ideal for

Comparing Arial images in 2D & 3D

- Die-To-Die defect and reference images
- Two areas within an image (single die)
- Through focus analysis
- Can mimic user rules for image analysis

Measuring defect size from inspection tool images

- Works with RDMS to measure defects when classifying inspection tools images in an integrated process flow

Performing custom metrology on microscope images

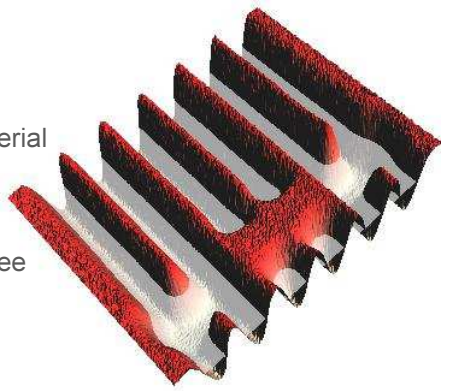
- Host of integrated metrology features

Comparing performance of two different microscopes

- For example, establish how well does a given Aerial tool perform against and another one

Comparing simulation results against experiment

- For example, how well do simulation results agree with Aerial images



reticle labs
www.reticlelabs.com
support@reticlelabs.com
sales@reticlelabs.com
(408) 390-0986 (sales)

Metrology for Inspection and Repair

BACKGROUND

With shrinking mask features, complicated OPC patterns, and various resolution enhancement techniques, the patterns found on current masks exhibit complex shapes and geometries. There is a pressing need to quantify shapes and patterns found on masks in two or three dimensions. MaskShop is an image processing software tool developed for analyzing inspection tool and aerial images.

It can accurately quantify the pattern mismatches in pre and post repaired defect images to a resolution far beyond the pixel size of the imaging system. It is particularly suited for aerial images obtained via a microscope, an inspection system, or simulation software.

Furthermore, it can overlay images obtained across different sources making it ideal for comparing the performance of an aerial imaging microscope against a simulation tool or an inspection system.

IMAGE OVERLAY MODULE

With the image overlay module users can (manually or automatically) select two areas from the same or different images, threshold and target the features, and then perform a very accurate overlay.

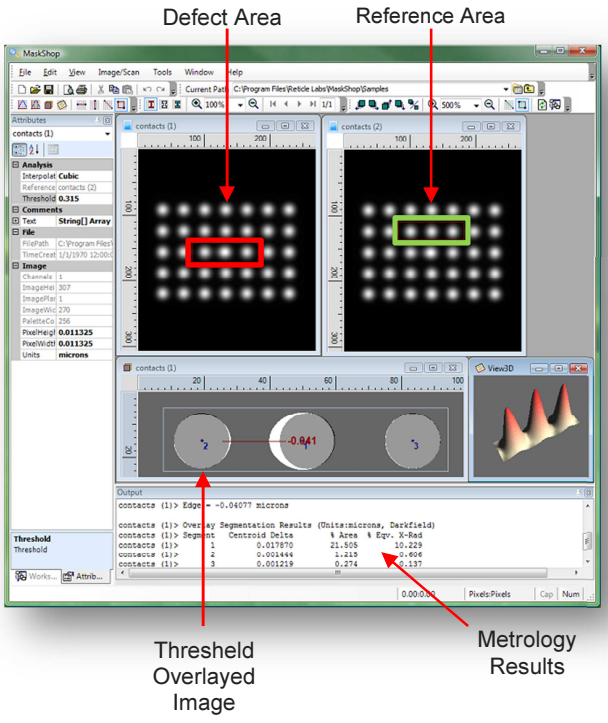
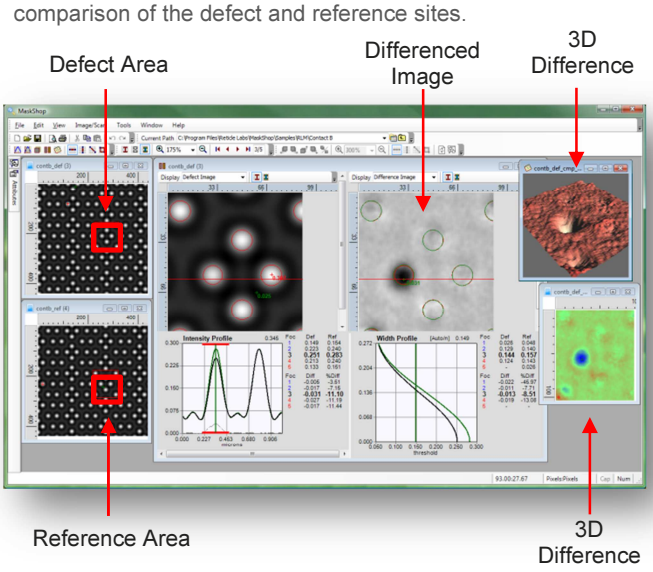


IMAGE COMPARE MODULE

With the image compare module users can (manually or automatically) select two areas from the same or different images and compare the image intensities over the selected field of view. The result is a 3D comparison of the defect and reference sites.



AHDC MODULE

Via Automated Heuristic Defect Classification (AHDC) algorithm maskshop can automatically process pairs of defect & reference images in batch mode with no user intervention. AHDC can handle any geometry.

RDMS INTEGRATION

Maskshop is fully integrated with the reticle labs Reticle Defect Management System (RDMS). Maskshop brings its powerful metrology capability to defect dispositioning. If you are ever unsure about the size of defects encountered on mask inspection systems during classification, you can move the images of interest to the Maskshop GUI with the push of a button and perform custom or fully automated metrology.

ABOUT RETICLE LABS

Reticle Labs specializes in image processing, software development and engineering analysis. Located in the Silicon Valley, Reticle Labs has been developing software and automation solutions to aid in the manufacturing processes for semiconductor and storage industries. Reticle Labs develops software; performs analysis and consults in a wide range of industrial applications that require strong analytical skills in engineering physics, mathematics, computer simulation, graphics, databases and complex algorithm development.