Micralign™ Projection Mask Aligner

System description

The Micralign Series Projection Mask Alignment instrument is a nominally 1:1 annular-field, linear-scan broadband imaging system for exposing wafers. Optical adjustments can be made and operating parameters can be selected to permit small deviations from the 1:1 condition for overlay matching to accommodate minor differences in the size of wafer patterns. The Micralign can process substrates from as small as 12 mm squares to 150 mm round SEMI standard substrates, and soon up to 200 mm round SEMI standard substrates in the near future.

The Projection Optics function over a wide range of wavelengths, from deep UV to visible, 240-436 nanometers. By means of the selectable compensating filter, the spectral characteristics of the illumination can be tailored to various photoresists.

The uniformity of the illumination can be monitored with a built-in uniformity tester. An adjustable slit can be set to compensate for non-uniformities within the mercury (Hg) lamp.

The Projection Optics consists of four mirrors and four corrective lenses. The corrective lenses also function as windows, sealing the optical system against adverse environments.

A split-field binocular head microscope with selectable magnifying elements provides a high-contrast full-color view of the mask patterns imaged on the wafer. The microscope permits low-power viewing for row–and-column alignment, as well as high power viewing for fine alignment. Automatic Fine Alignment (AFA) is available when selected by the user.

Beta Squared Lithography, Inc.