REFURBISHED STEPPER

Cost Effective Micron Level Workhorse

Ultratech Model 1000

Serial number 268
Manufactured August, 1984
Minimum resolution: 1.25 micron

The UltraStep 1000 Wide Field 1:1 Projection Stepper System exposes reticle images in a step-and-repeat manner onto 3", 4", 5", and 6" wafers with fine line resolution (1.25um standard, 1.0um optional) and tight overlay accuracy.

The low cost and compact design of the UltraStep 1000 make it an ideal choice for chipmakers upgrading from older equipment to the more advanced UltraStep 1000.

The UltraStep 1000 can be integrated in a mix-and-match scenario with other, higher resolution steppers, maximizing throughput while minimizing production costs.

The Intelligent Autoloader included with this system allows the user to program custom belt speeds and sensor tolerances. This versatility results in successful wafer loads regardless of substrate size or thickness.

The HP 362 computer system contains the latest software for this model. The internal 500MB hard disk can store up to 20,000 recipe files.

SPECIFICATIONS:

Wafer Size:	3”, 4”, 5”, 6”
Loader Type:	Intelligent / Manual
Computer:	HP 362 with Hard Disk
Uniformity:	3.0 %
Depth of Focus:	5.0 ums @ 1.25um lines
Maximum Square:	14.1 x 14.1 mm
Maximum Aspect:	30 x 9.5 mm
Maximum Area:	27.5 x 10.6 mm
Reticle Size:	3” x 5” x 0.090”

Electronics drawer

Intelligent Autoloader

Stepper Equipment Inc
4151 Citrus Ave Rocklin, CA. . 95677
Office 916-632-1031 Fax 916-632-1018
E-mail info@stepequipment.com
Web www.stepequipment.com

Model 1000 Specifications

Automatic Functions

Auto Prealignment:	Dark field
Capture Window:	+ - 2 millimeters
Site by Site Alignment:	Dark field
Precision Repeatability:	+ / - 0.16 microns, 2 sigma, includes X, Y, and Theta
Alignment Accuracy:	Better than 0.1 micron
Target Capture Window:	+ / - 50 microns, scanning 200 micron target
Auto Focus:	Site by Site, pneumatic
Focus Monitor:	Automatic compensation for environmental fluctuations
Auto wafer level:	Site by Site, pneumatic
Autoloader:	Cassette to Cassette, SEMI standard
Manual Loader:	Input and Output slot, single wafer
Reticle Load and Align:	Less than 2 minutes
Field Change:	7 seconds

System specifications

Wafer Sizes:	2", 3", 4", 5", 6"
XY Stage:	Air bearing, laser metered, resolution of .00004 mm
Vibration Control:	Air cushioned granite table
Computer:	Hewlett Packard 9826 computer, 384K RAM, 5.25" floppy, 6" Display
Printer:	32 column impact printer with clean room paper
Throughput, site by site:	4"- 60wph, 5"- 40 wph, 6"- 30 wph

Lens Specifications

Lens Type:	Catadioptric
Lens Elements:	5 Total in two groups
Projection Ratio:	1:1
Exposure Spectrum:	Broadband, 390nm-450nm
Chromatic Correction:	Throughout exposure spectrum
Alignment Spectrum:	500nm-650nm
Numerical Aperture:	0.28 (1.25um), 0.32 (1.0um)
Resolution, Shoebox lens, .28NA:	Production - 1.25um, Working - 1.20um, Laboratory - 0.9um
Resolution, Cast lens, .28NA:	Production - 1.25um, Working - 1.20um, Laboratory - 0.9um
Resolution, Cast lens, .32NA:	Production - 1.0um, Laboratory - 0.9um
CD Control, total process budget:	+/- 0.19ums (2 sigma)
Effective Partial Coherence:	0.45
Depth of Focus, 1.25ums, .28NA:	5.0 microns
Depth of Focus, 1.0um, .32NA:	3.0 microns
Field Size:	Variable, 2.92cm2
Maximum Square:	14.1mm x 14.1mm
Maximum Aspect Ratio Rectangle:	30mm x 9.5mm
Maximum Area Rectangle:	27.5mm x 10.6mm

Illumination Specifications

Automatic Exposure Control:	Integrated dose monitored for exposure repeatability
Lamp Type:	200 watt mercury arc, pulsed to 500 watts during exposure
Mercury Vapor Control:	Built in
Exposure Uniformity, Series One Illuminator	+/- 5%
Exposure Uniformity, Series Two Illuminator:	+/- 3%

Reticle Specifications

Size (from standard 5"x5" plates):	3" x 5" x 0.090"
Pellicle Protection:	Chrome Side
KLA/NJS Inspectable:	Yes, 4 identical rows
Substrate:	Quartz or low expansion
Alignment Mark:	Scribe Area
Size:	200um square standard, optional cross mask size allows reduction of mark to 70um minimum
Design Flexibility:	Vertical or Horizontal alignment marks
Generation Technique:	E-Beam or optical step and repeat
Fields per reticle:	3 fields standard, up to 7 fields total (requires optional hardware)

Physical Specifications

Footprint:	14 feet square
Dimensions:	46" width x 45" depth x 63" height
Service Clearance:	Allow 24" on all sides, and in back
Weight:	2500 lbs
Facility Requirements:	No environmental chamber required
Ambient Temperature Control:	70 degrees , +/- 2 degrees Fahrenheit
Electrical:	115 volts, 50/60 Hz, 15 Amps, Inrush current, 35 Amps for 100 milliseconds
Nitrogen or Compressed Air:	Minimum 80 psi, 2 CFM, Dry to -40 degrees F dew point, filtered to 0.2 microns
Vacuum:	One line, minimum 20" Hg, 2 CFM
Exhaust:	Single exhaust to 3 - 10 CFM at 0.1" H20