Model 4700 / Titan Specifications

Automatic Functions

Alignment options	Machine Vision or Dark field alignment
Site by Site Alignment:	0.12um, 3 sigma
Enhanced Global Alignment	0.12um, 3 sigma
Auto Focus:	Continuous site by site, or global
Focus Gauge:	Automatic compensation for environmental fluctuations, image tilt
Auto wafer level:	Site by Site, electronic
Autoloader:	Robotic pick-and-place, no edge contact
Reticle loader	Robotic pick-and-place, interfaces directly

Throughput Specifications

* Actual throughput depends on customer application

Reticle Load and Align:	Less than 5 minutes
Titan 1.2 and Titan 1.0	103 wph (6"), 88 wph (8")
4700	98 wph (6"), 92 wph (8")

System specifications

Wafer Sizes:	3", 4", 5", 6", 8"
XY Stage:	Monolithic structure, linear motor drive, Active air isolation vibration control
Computer:	VME Bus controller; 68030 based CPU; color graphics monitor with 3.5" floppy and hard disk
Printer:	80 column printer, with clean room paper

Lens Specifications

Projection Ratio:	1:1
Exposure Spectrum:	Broadband exposure, G and H lines
Alignment Spectrum:	500nm-650nm
Resolution	1.0um, 1.2um
Depth of Focus:	3.0 um @ 1.0 um lines and spaces, 4.0ums @ 1.2um lines and spaces
Field Size: Titan 1.2um	Max Rectangle 50 x 25mm, Max Square 30.1 x 30.1mm
Field Size: Titan 1.0um	Max Rectangle 44 x 22mm, Max Square 26.7 x 26.7mm
Field Size: 4700	Max Rectangle 55 x 18mm, Max Square 26.7 x 26.7

Illumination Specifications

Automatic Exposure Control:	Integrated dose monitored for exposure repeatability
Irradiance @ wafer plane	Greater than 1250 mW/cm^2
Exposure Uniformity	+/- 2.0% (1.0 um lens) , +/- 2.5% (1.2 um lens)

Reticle Specifications

Size:	6" x 6" x 0.25" (Titan , 4700) , 5" x 5" x .090" (Titan only)
Pellicle Protection:	Chrome Side
KLA/NJS Inspectable:	Yes
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 optional, Machine Vision
Generation Technique:	E-Beam or optical step and repeat
Fields per reticle:	2 fields standard, up to 7 fields total (requires optional hardware)

Space Requirement

Footprint:	28 feet square ($2.5m^2$)
Dimensions:	56.2" width x 50.4" depth x 73" height (143cm x 127.5cm x 185cm)
Service Clearance:	Allow 24" on all sides, and in back
Weight:	Less than 5000 lbs (1.814 kilos) supported at four corners of base
Environmental Chamber	68" W x 100" D x 88.5" H (172cm x 254cm x 225cm)

Stepper Environmental Req.

Ambient Temperature Control:	70 degrees , +/- 2 degrees Fahrenheit
Humidity	20% to 50% noncondensing
Air quality:	Class 100 per Federal Standard 209B

Electrical Requirements

Electrical:	220 volts, 50/60 Hz, 15 Amps, Inrush current, 350 Amps for 5 milliseconds
Circuit breakers:	Separate 20 Amp circuit should be installed for each Model 2244i Each breaker should have separate ground wire returned to circuit breaker panel The circuit breaker panel should have it's ground bonded at the main transformer ground for building

Pneumatic Requirements

Nitrogen or Compressed Air:	Minimum 100 psi, 2 CFM max, Dry to -40 degrees F dew point, filtered to 0.2 microns
Vacuum:	Two lines, each supplying 20 inches Hg at 1 SCFM average under full load, 2 SCFM max
Exhaust:	15-20 CFM at 0.3 inch water (direct to house exhaust)