Falcon 830 Plus specification

System Type: Falcon 830 Plus series
Customer:
Date:

#	Criteria	Specifications	Test	Customer Score
#	**Safety and Standards**			
1	Industry Safety Compliance:	The system will be in compliance with SEMI S2-93A Standard: Safety Guidelines for Semiconductor Manufacturing Equipment. Semi S2: Product Safety Guidelines -Semi S8: Product Ergonomic Guidelines -SEMI E1.9 Mechanical Specification for Cassettes Used to Transport and Store 300mm Wafers (Revision 0701) -SEMI E15.1 Specification for 300mm Tool Load Port (Revision 0303) -SEMI E19 Standard Mechanical Interface (SMIF) (Revision 0702) -98/37/EC CE machinery directive -EN 60204 electrical safety of machinery -EN 292 mechanical safety of machinery -USA requirements per UL 61010 standard -U.S. Federal GSA – Federal Standard 209 “Airborne Particulate Cleanliness Classes in Clean Rooms and Clean Zones”ISO – ISO14644-4 Clean Rooms and Associated Controlled Environments -ISO ISO14644-1 Clean rooms and Associated Controlled Environments, Part 1 – Classification of Air Cleanliness -Institute of Environmental Sciences and Technology - IES-RP-CC-006.2 “Testing Clean Rooms” -Institute of Environmental Sciences and Technology - IES-RP-CC-002.1 “Laminar Flow Clean Air Devices” -Institute of Environmental Sciences and Technology - IES-RP-CC-001.3 “HEPA and ULPA Filters” -SEMI E78 Electrostatic Compatibility - Guide to Assess and Control Electrostatic Discharge (ESD) and Electrostatic Attraction (ESA) for Equipment (Revision 1102)	Appropriated documents and certificate	
Handling				
2	Wafer Sizes	200mm,300mm	Run 20 lots of 300mm wafers in Auto cycle	
3	Wafer min thickness	Down to 400 microns [less is application pending]		
4	Wafer max warpage	Up to 500 microns for 8" wafer [more is application pending]		
5	Wafer Cassettes	Standard Cassettes: Entegris, Empak or Fluoroware , 25-wafer FOUPS [other - customization pending]shin-etsu		
6	Wafer Alignment	The system will automatically perform wafer alignment prior to inspection based on wafers flat or notch position.		
7	Wafer Mapping	The equipment has a slot map sensor that detects the presence of casstte and wafers in the cassette on a slot by slot basis. The equipment has a slot map sensor at each Loading port. The slot map sensor has the capability to detect cross-slotted wafers. The slot map sensor has the capability to detect double-slotted wafers. .A wafer protrusion sensor is supplied to protect wafer safety (optional)		
8	Wafer Handling	(Number of particles added by equipment during a typical measurement cycle: According to Class 100 Standards) The system will not damage [touch or scratch] any wafer on the top side of the wafer. The equipment’s E15.1 load ports will be capable of accepting FOUPs from an operator, Person-Guided Vehicle (PGV) or Automated Guided Vehicle (AGV) docking. There is an error indicator when a load port hardware/software error occurs or the operator is violating the operation scenario. Load time for first wafer including OCR reading: 28 -32 secs Wafer Exchange time: Up to 15 Secs.		
9	Wafer ID reader	The reader system is capable of reading wafer ID inscriptions as specified in SEMI T7, barcode BC412 according to SEMI T1, and OCR with 12 characters including two checksum characters, single density as specified in SEMI M12/M13. Both inscriptions should be captured within a single reading window.		
2D, Surface Defect Detection Definitions				
10	Surface Defects	Foreign material, Particles, Scratches, Embeded, Discoloration, (etc.)		
11	Minimum surface defect size	At least 4 optical pixels with high contrast [more than 30GL] stand alone real defect	Built in performance target or customer wafer with know real defect can be used for testing	
12	Repeatability	>97%	Perform 10 scans of wafer wth known defects according to acceptable criteria and compare results. (See Issue # 11)	
Probe Mark [PM]				
13	Probe Mark defetcs	(PM min and max areas, PM count, PM proximity violation, PM pad Edge Violation) No applicable	Built in performance target or customer wafer with know real defect can be used for testing	
14	Repeatability	95%	Perform 10 scans of wafer wth known defects according to acceptable criteria and compare results. (See Issue # 11)	

Critical Dimension Measurement				
15	Gold Bumps and Bond Pad XY size	Gold Bump and Bond Pad shape and positioning violation		
16	Accuracy	2 optical pixles	Built in performance target can be used for test	
17	Repeatability [sigma]	1.5 optical pixles		
18	Solder Bumps Diameter	Solder Bump diameter and positioning violation		
19	Accuracy	2 optical pixle		
20	Repeatability [sigma]	1.5 optical pixles		
2D Throughput: WPH (Wafer Per Hour) for surface Inspection of 8" Wafer [Application Pending] Basic estimation - Final Commitment based on application study only				
21	x 1 [8.5 um pixel size]:	up to 80 WPH	Run full cassette in full production mode and calculate value of WPH Depends on the parameter when a special algorithm, such as SRD, is used it can be slower.	
22	x1.7 [4.8 um pixel size]:	up to 44 WPH		
23	x2.5 [3.4 um pixel size]:	up to 35 WPH		
24	x5 [1.7 um pixel size]:	up to 14 WPH		
2D Throughput: WPH (Wafer Per Hour) for surface Inspection of 12" Wafer [Application Pending] Basic estimation - Final Commitment based on application study only				
25	x 1 [8.5 um pixel size]:	up to 55 WPH	Run full cassette in full production mode and calculate value of WPH Depends on the parameter when a special algorithm, such as SRD, is used it can be slower.	
26	x1.7 [4.8 um pixel size]:	up to 30 WPH		
27	x2.5 [3.4 um pixel size]:	up to 21 WPH		
28	x5 [1.7 um pixel size]:	up to 6.7 WPH		
ming				
29	**O/S**	**Windows XP Pro, SP2**		
30	Recipe / Setup (On and Off-Line)	Automatic “golden die” image generation from production wafer. Interactive graphical tools for various zone definition. User-defined detection parameters per defects and zones.		
31	Die Edit on and Off Line capability (if purchased as an option)	Ability to program the system by remote PC and perform diagnostics		
32	Review and Verification (Inspectify™Virtual Off Line)	On line using high resolution live B&W and True Color video camerasOff-line review and classification of defects images [B&W and/or color]		
33	OCR - upper /bottom	Automatic reading of wafer ID (alpha numeric, dot matrix and barcode)		
SPC				
34	Camtek SPC	Camtek Statistical Process Control software package. Available as on-line and stand alone installations		
35	Yield Data	Yeild data exists per wafer/lot		
36	Histograms	Distribution charts of all 2D and 3D metrology and surface defect results		
37	Reports	Analysis by lot, wafer and die levels		
38	Filtering	Defects classification and filtering by defect types		
Facilities				
39	Clean Room Specifications	Class 100		
40	System Power	230+/-10%, 50-60Hz, 11amps		
41	Vacuum	0.45 Bar +/- 15%, 0.25Liter/sec		
42	Pressure	6-8Bar +/- 15%, 4 Liter/sec		
43	Humidity	°.5C - 30C (59F - 86F), 50% - 70% Relative Humidity		
44	Vibration	VC-C according to SPIE Generic Vibration criterion		
45	Size	L=2.45m H=2.15m D=1.4m		
46	Weight	1,100 kg		
Installati				
47	Mean Time To Assist (MTTA) - according to semi standards	Less than 15 minutes	Run in poduction mode for one month and calculate MTTA	
48	Mean Time To Repair (MTTR) - according to semi standards	Less than 120 minutes	Run in poduction mode for one month and calculate MTTR	
49	Mean Time Between Failure (MTBF) according to semi standards	At least 1200 hours	Run in production mode for 2 months and calculate MTBF	
50	Uptime - according to semi standards	95% or better		