

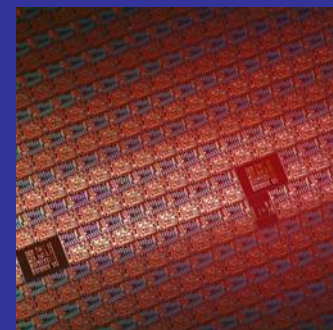


Accelerating the next technology revolution

E152 Standard

IEUVI Mask TWG

September 30, 2012, Brussels, Belgium



TF Face-Face Meeting Held in July



- **EUV Reticle Handling TF met face-face at SEMICON West (7/9/12).**
- **The most significant progress was the compromise made among parties for max carrier weight specification.**

E152 Revision Line Items



- **Consensus reached:**

1. Maximum carrier weight increase
2. Addition of eight (8) carrier info pad configurations
3. Correction of KC pin spec error
4. Clarification of carrier orientation
5. Clarification of reticle positioning on inner pod baseplate
6. Clarification of outer pod door force and torque
7. Clarification RFID location in outer pod door
8. Clarification / specification of the height of OHT flange

- **More discussion needed:**

9. Add pockets a requirement for Type-B baseplate
10. Add four (4) purge ports
11. Add carrier presence/detection sensing features

No Consensus Reached To Require Pockets on Type-B Baseplate, Rather Than An Option



- **Key for-argument:** Streamline robotic gripping with Type-A to eliminate potential automation confusion
- **Key opposing-argument:** Pocket is already an option in E152. To eliminate the other option, where baseline was built on, needs data to ensure no particle impact. (no data)
- **The result:** Lack of a consensus proposal



Type A
Type B (Optional)
(w/5 pockets 3.5mm deep)



Type B

No Consensus Reached on Purging Ports



- The issue: Disagree on how many to have and where to place them although agree that purging ports are needed. And, no sufficient public data to reconcile the disagreement.
- Proposal: Ballot 4 ports as two separate items, 2 each.
(Hoping at least 2 ports can be approved)

Areas to consider:

- Actual / true needs
- Automation interfacing
- Company-specific outer pod door design

(some limitation may be inherited from company-specific RSP200 design or patent compliance)

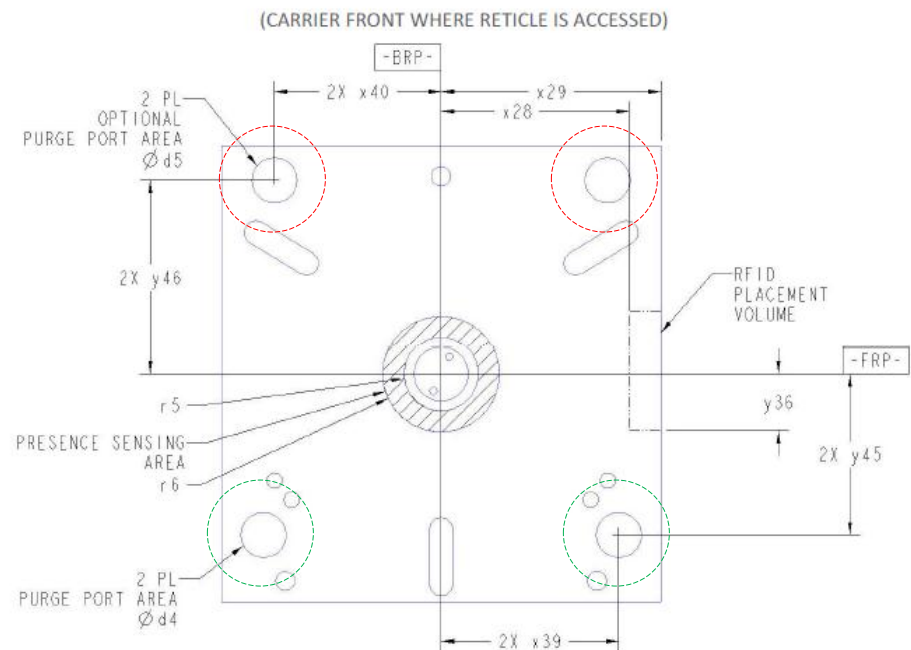


Figure 10
Bottom View of Outer Pod Door

Consensus Reached on Maximum Carrier Weight



Maximum EUV-Pod Weight Specification:						
	Baseplate (g)	Inner Pod (g)	Outer Pod (g)	Total Weight (g)	Total w/mask (g)	Total w/mask (LB)
E152	625	1100	2000	3100	3420	7.54
Proposed	675	1200	2500	3700	4020	8.86
“Consensus”	710	1260	2625	3885	4205	9.27

The tentatively consensus max weight is 1.73 LB, or 785 grams heavier than current E152 spec.

Areas to consider:

- Carrier design
- Carrier materials
- Automation robotic payload
- Ergonomics

Proposal



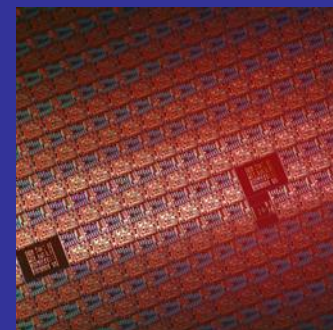
- **To immediately start balloting items where there are consensuses**
- **Work on the remaining issues, in parallel**



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More Discussions

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Is Pod Inspection Capability Still Necessary?



Inspection capability
discussion in Feb
TWG

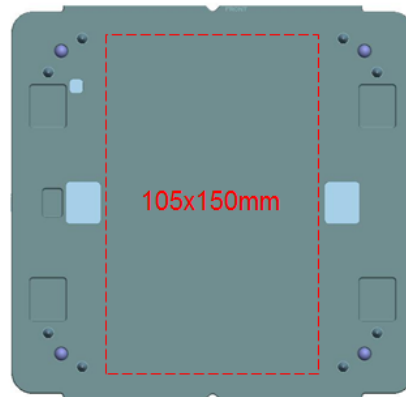
Proposal for Pod Inspection Tool (or Capability)



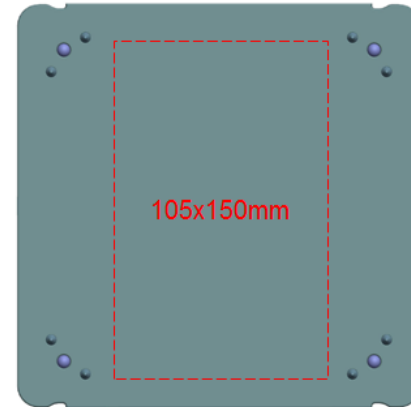
Basic requirements:

1. Pod surface inspection: central 105x152mm; 1 um sensitivity
2. Throughput: <10min
3. Cost: low

Question: Do we really need it? Requirement if we do?



Type-A baseplate



Type-B baseplate

Two New Areas Identified In Feb '12 TWG For Investigation



- **Reticle over head transport (OHT) in wafer fabs**
 - Investigate vibration impact associated with OHT. *Excessive vibrations can cause particles.*
 - Related SEMI standards already exist.
- **Consolidation of tool front-end development**
 - Goal: ensure best particle-free handling capability is implemented on all tools, and eliminate duplicate efforts

Consensus:

Risk is low and no TWG action required.

Discussion conclusion:

Requirement can be managed through tool purchase spec. No TWG action required.