

SEMI E21.1-1015

SPECIFICATION FOR CLUSTER TOOL MODULE INTERFACE 300 mm: MECHANICAL INTERFACE AND WAFER TRANSPORT

This Standard was technically approved by the Physical Interfaces & Carriers Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on August 31, 2015. Available at www.semiviews.org and www.semi.org in October 2015; originally published in 1992; previously published March 2009.

NOTICE: This Standard or Safety Guideline has an Inactive Status because the conditions to maintain Current Status have not been met. Inactive Standards or Safety Guidelines are available from SEMI and continue to be valid for use.

1 Purpose

1.1 The purpose of this Specification is to extend the range of SEMI E21 to include 300 mm diameter wafers.

2 Scope

2.1 This Specification provides 300 mm compatible values for all the parameters defined in SEMI E21.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

3.1 *SEMI Standards and Safety Guidelines*

SEMI E21 — Specification for Cluster Tool Module Interface: Mechanical Interface and Wafer Transport

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

4 Requirements

4.1 The standard is identical to SEMI E21 (see Related Information 1, § R1-1) except for the requirements listed in Table 1 and Figures 1 and 2.

Table 1 Mechanical Interface Requirements for 300 mm Diameter Wafers

	<i>SEMI E21 Requirements</i>	<i>300 mm Wafer Requirements</i>
Transport Maximum Reach ^{#1}	305.0 mm (12.01 in.)	380.0 mm (14.96 in.)
Inside Boundary Width-Interface Seal Zone ^{#2}	236.0 mm (9.29 in.)	336.0 mm (13.23 in.)
Outside Boundary Width-Interface Seal Zone ^{#2}	266.0 mm (10.47 in.)	366.0 mm (14.41 in.)
Wafer Transfer Zone Minimum Width ^{#2}	222.0 mm (8.74 in.)	322.0 mm (12.68 in.)
Alignment Pins Centerline Separation ^{#2}	300.0 mm (11.81 in.)	400.0 mm (15.75 in.)
Flange Width ^{#2}	340.0 mm (13.39 in.)	440.0 mm (17.32 in.)
Vertical Slot Opening (Inner boundary of Seal Zone)	46 mm (1.811 in.) Maximum	50 mm (1.969 in.)
Distance of Wafer Transfer Plane above Alignment Pin Datum Line (see Figure 1)	9.5 ± 0.5 mm (0.37 ± 0.02 in.)	15.5 ± 0.5 mm (0.61 ± 0.02 in.)
Vertical Motion Capability (see Figure 1)	6 ± 0.5 mm (0.24 ± 0.02 in.)	10 ± 0.5 mm (0.39 ± 0.02 in.)
Minimum Distance of Slot Top above Alignment Pin Datum on Attached Modules	(13 mm)	23 mm (0.906 in.)
Minimum Distance of Slot Bottom below Alignment Pin Datum on Attached Modules	(13 mm)	13 mm (0.512 in.)

#1 See Related Information R1-2.

#2 See Related Information R1-3.

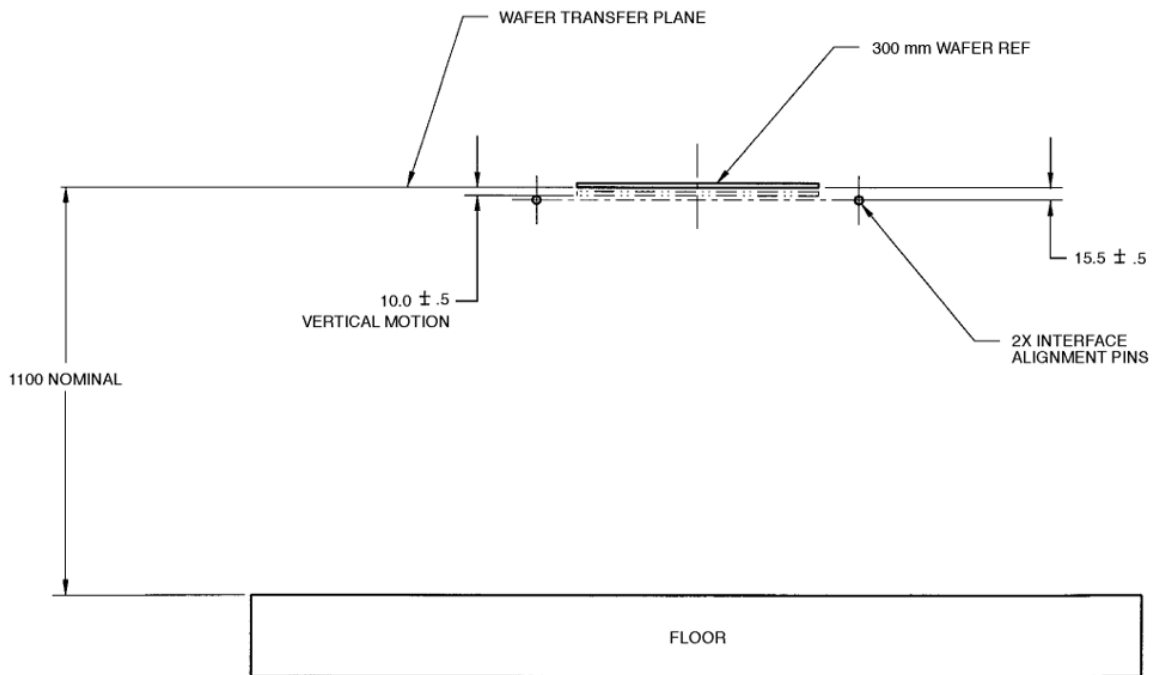


Figure 1
Proposed 300 mm Wafer Transport Plane Elevation

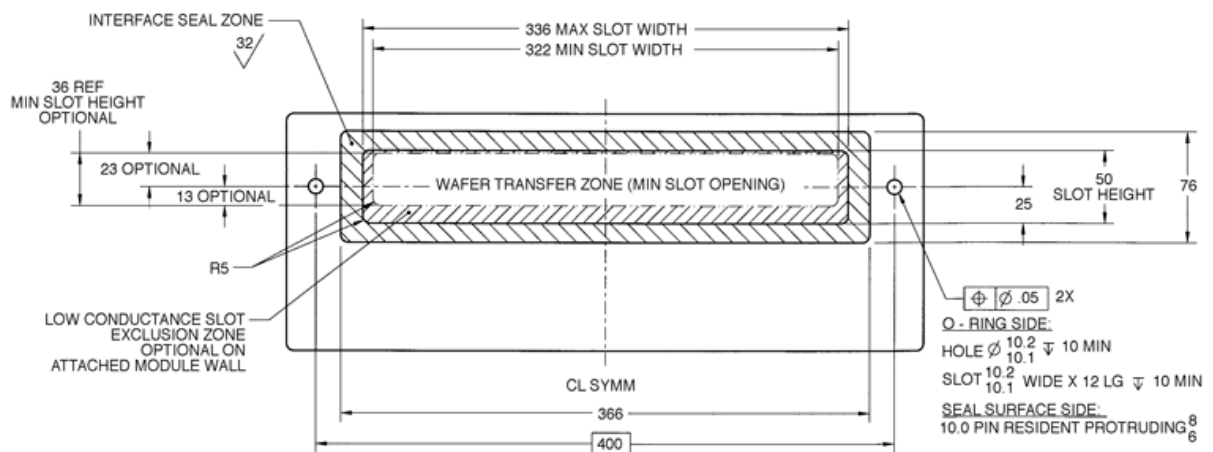


Figure 2
Proposed 300 mm Interface Plane