SEMI E6-0914
GUIDE FOR SEMICONDUCTOR EQUIPMENT INSTALLATION DOCUMENTATION

This Standard was technically approved by the Gases Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on May 12, 2014. Available at www.semiviews.org and www.semi.org in September 2014; originally published in 1982; previously published March 2003.

1 Purpose

1.1 Within the semiconductor industry, the diversity and complexity of equipment creates difficult challenges for facilities design and equipment installation. This Guide should benefit equipment suppliers and semiconductor manufacturers by communicating, in a standardized way, the information necessary to prepare the facility and to efficiently install semiconductor equipment.

2 Scope

2.1 This Standard applies to the facilities interface of all semiconductor production equipment and supplier-provided support equipment.

2.2 The recommended equipment installation documentation should cover all installation requirements from receiving until hookup is complete.

2.3 The series of data sheets included should address all site facilities necessary to support semiconductor equipment processing.

2.4 The data sheets provide a consistent format for both the equipment supplier and equipment purchaser to use in compiling and interpreting equipment installation data.

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 Limitations

3.1 SEMI E6 applies to the facility interface of semiconductor equipment only. Other equipment interfaces, such as the physical interfaces for material handling (see SEMI E106 and related standards) and software interfaces (see SEMI Information & Control Standards) are defined by other SEMI Standards.

3.2 This Guide is not intended to address the internal connections of the equipment that are typically completed by the equipment supplier. This Document includes only information related to the utility connections on the equipment or support equipment that are the responsibility of the semiconductor manufacturer's equipment installation team.

3.3 This Guide is not intended to address the documentation provided for equipment start-up, qualification, or commissioning.

4 Referenced Standards and Documents

4.1 *SEMI Standards and Safety Guidelines*

SEMI E30 — Generic Model for Communications and Control of Manufacturing Equipment (GEM)

SEMI E63 — Mechanical Specification for 300 mm Box Opener/Loader to Tool Standard (BOLTS-M) Interface

SEMI E70 — Guide for Tool Accommodation Process

SEMI E72 — Specification and Guide for 300 mm Equipment Footprint, Height, and Weight

SEMI E73 — Specification for Vacuum Pump Interfaces – Dry Pumps

SEMI E74 — Specification for Vacuum Pump Interfaces – Turbomolecular Pumps

SEMI E76 — Guide for 300 mm Process Equipment Points of Connection to Facility Services

Documents Document Sharing Hub

Full document details: SEMI E6-0914

SEMI E106 — Provisional Overview Guide to SEMI Standards for Physical Interfaces and Carriers for 300 mm Wafers

4.2 *Other Documents*

SEMI AUX030 — Codes for Referencing Gases, Gas Mixtures and Vaporizable Materials Used in Digital Mass Flow Controllers

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

5 Terminology

NOTE 1: A complete list of equipment installation terminology can be found in SEMI E70.

5.1 *Definitions*

5.1.1 *idle* — the condition where the equipment is energized and readied for processing (all systems ready and temperatures controlled) but is not actually performing any active function such as material movement or processing.

5.1.1.1 *idle average flow* — the average flow rate when the equipment is in idle condition. Idle average flow should be measured at the equipment point of connection.

5.1.2 *maximum pressure* — the highest supply pressure that can be used for the equipment to operate correctly. Maximum pressure should be measured at the equipment point of connection and may be driven by process requirements or component limits.

5.1.3 *maximum pressure fluctuation* — the maximum supply pressure change during the processing cycle for the equipment to operate correctly.

5.1.4 *minimum pressure* — the minimum supply pressure that must be maintained or exceeded for the equipment to operate correctly. Minimum pressure should be measured at the equipment point of connection.

5.1.5 *processing cycle* — a sequence wherein all of the material contained in a processing unit is processed. This is often used as a measure of action or time. (See Figure 1.) [SEMI E30]

5.1.5.1 *process average flow* — the average flow rate over the processing cycle. Process average flow should be measured at the equipment point of connection.

6 Ordering and Use

6.1 Semiconductor manufacturers may use this Standard when procuring semiconductor equipment to specify type and format of facility interface information to be provided by equipment supplier.

6.2 Orders for semiconductor equipment in accordance with this Standard should include the standard number and date of issue. The request should also include documentation due date, the data transmission method, file format for data, file format for drawings, and any additional information to be included that is not covered in SEMI E6.

6.3 *Roles and Responsibilities* — The equipment supplier submits information requested in SEMI E6. Unless otherwise specified, equipment suppliers should submit the utilities and installation information prior to the equipment ship date. The semiconductor manufacturer's equipment engineers, facilities engineers, and installation managers use equipment information provided to prepare the facility and efficiently install the tool.

7 Installation Documentation Recommendations

7.1 Consider every step from receiving until hookup is complete. All requirements should be indicated. The following is a list of recommended equipment installation documentation to be provided by the equipment supplier.

7.1.1 *Administrative Interface Information* — The administrative interface information should include an installation contacts sheet naming all relevant supplier and purchaser contacts for commercial and technical questions. Also included should be installation roles and responsibilities for the supplier and purchaser (see Related Information 1).

7.1.2 *Shipping and Receiving Information* — Documentation should include information such as container inventory, storage, and unpacking instructions. Suppliers should include information about the size, weight, type and number of containers in which this equipment is shipped. Include detailed lists of all supplied components and parts. How the containers are to be received, handled and stored should be documented. Any special staging, inspection, and uncrating

Documents
Document Sharing Hub
Full document details: SEMI E6-0914

instructions should be provided. If containers cannot be unloaded by hand the necessary equipment should be listed (see Related Information 2).

7.1.3 *Move-In, Placement, and Assembly Instructions* — Documentation should include information such as moving, positioning, wall mounting, leveling, alignment, floor loading, floor mounting, pedestal mounting, and seismic restraint of equipment. Detailed instructions should be provided for all assembly and hookup steps required to make the equipment functional. List any necessary parts, resources and special equipment to be provided by the purchaser (see Related Information 3).

7.1.4 *Installation ESH Information* — Document any concerns relating to environmental, safety, and health aspects of installation of the equipment (see related SEMI Safety Guidelines).

7.1.5 *Data Sheets and Drawings* — Recommended data sheets are defined in the following sections of this Document. Equipment suppliers should reference and provide all necessary equipment drawings and schematics with these data sheets (see §§ 9 through 19).

NOTE 2: Additional documentation covering items such as testing, training, sign-off, qualification, and commissioning should also be provided as necessary to complete the tool accommodation process making the equipment process capable.

NOTE 3: See SEMI E76 for 300 mm equipment point of connection documentation recommendations, point of connection location recommendations, as well as recommendations for providing pre-facilitation templates and jigs.

8 Data Sheets Overview

8.1 The following table shows the data sheets included in SEMI E6.

Table 1

Data Sheet Number	*Data Sheet Title*
100	Equipment Identification
200	Environmental Conditions
300	Physical Characteristics
400	Electrical Power
500	Water
600	Bulk Chemicals
700	Drains
800	Gases
900	Vacuum
1000	Exhaust

8.2 Equipment suppliers should provide data for all necessary facilities even if not specifically covered in the data sheets included in this Standard. (See § 19, Other Data Sheets.)

8.3 *Data Sheet Format*

8.3.1 The data sheets in this Document are designed to facilitate use of electronic communication and database storage of the facility interface information.

8.3.2 The format shown also provides a recommendation for printed output of the information.

8.3.3 The data sheets shown define data relationships that can be used for spreadsheet or database storage of the information.

- A number, 100–1000, identifies each datasheet.
- A letter, starting with A, identifies each column of the data sheet.
- A number, starting with 1, identifies each row of the data sheet.
- Data item names are in the first row of each data sheet.

Documents Document Sharing Hub
Full document details: SEMI E6-0914

- Units of measure for the data are in the second row of each data sheet. (In many cases a simple data definition such as text or number is provided in this row.)
- Specific equipment data starts in row 3 of each data sheet. One row per equipment component in data sheets 200 and 300. One row per connection in data sheets 400 through 1000.

8.4 *Data Entry*

8.4.1 As defined above, data entry involves the first three rows. Row 1 identifies data item. Enter the unit of measure for data in row 2. For example: mm. Specific equipment data will be entered starting in row 3.

8.4.1.1 Preferred units of measure are listed in row 2 of each data sheet. If data entered is in units different from the units specified in row 2 change the units specified in row 2 to match the data. If two units of measure are shown in row 2 select the unit of measure that matches the entered data.

8.4.1.2 Data values should be entered in the units of measure used to design the equipment.

8.4.1.3 Data values should be entered as numbers only. For example: 12.0 or 300 (do NOT enter 300 mm).

8.4.1.4 Not every data item will have a value because all data items do not apply to all equipment. The equipment supplier should insert N/A (not applicable) for any item that does not apply to that particular equipment component or connection. Do NOT use the N/A designation in place of missing data or data that is not available. If data is applicable to the equipment and not available leave the cell blank. If necessary, include reason for blank cells in comments cell.

8.4.2 The unique Equipment Component identifier is the first column, A, of each data sheet 200–1000.

8.4.2.1 The data sheets are designed to document all facilities connections including connections made to support equipment; therefore a unique equipment component name should be used to locate each connection. Included equipment components should be the mainframe unit plus any other support equipment provided by the equipment supplier, including but not limited to vacuum pumps, process chambers, load lock pumps, water heaters, gas boxes, gas panels, chillers, radio frequency generators, and electrical power distribution panels.

8.4.3 The unique Connection Number is the second column, B, of each data sheet 400–1000.

8.4.3.1 There should be a unique Connection Number, or identifier, for every connection. If a utility type has more than one connection, each point of connection should have a number.

8.4.3.2 A consistent Connection Numbering system should be used to identify all connections in all documents relating to the equipment.

8.4.4 The Connection Label is the third column, C, of each data sheet 400–1000. The Connection Label and Connection Number system should provide a clear link between all documentation and the actual connection on the equipment.

8.4.5 Utility Type is the fourth column, D, of each data sheet 400–1000. A consistent Utility Type naming convention should be used to identify the utility types in all documents relating to the equipment (e.g., SEMI AUX030 should be used for defining gases).

8.4.6 Fitting Size, Fitting Material, and Fitting Type (found in most data sheets) refer to connectors or fittings on the equipment; such that the equipment purchaser can identify and procure the matching connector for fit up to the equipment. Do not define the facilities side connectors in these data sheets.

8.4.7 Comments are the last column of each data sheet 400–1000. All comments should be entered in a single cell at the end of the row corresponding to the connection requiring comment. Comments may need to be repeated in comments cell for each similar connection. General comments for equipment model may be included in the comments cell in table 100, or if specific to an equipment component in tables 200 or 300.

8.5 *Data Collection*

8.5.1 Actual measured utility data, based upon representative operating conditions, is preferred over unverified estimates or calculations.

8.5.2 All data measures of flow rate, chemical waste, dump volumes, etc., should be based upon the supplier's standard process and production rate.

Documents
Document Sharing Hub
Full document details: SEMI E6-0914

8.5.3 All specifications and measurements in data sheets 400–1000 should be at the equipment point of connection.

8.5.4 If utility consumption data entered into the data sheet is not measured data, note in the comments cell how the data was obtained. For example: calculated data or estimated data.

8.6 The following, §§ 9 through 19, include recommendations on how to complete each individual data sheet.

9 Equipment Identification Data Sheet

9.1 Include in Data Sheet 100, Equipment Identification the requested information for general equipment identifiers, descriptions, installation documentation references and data sheet set revision.

9.2 The 10 data sheets that follow the equipment identification data sheet are specific to equipment component and connection requirements (e.g., gases, exhaust, vacuum, etc.) and describe the needs of the equipment identified in the equipment identification data sheet.

9.3 Data Sheet 100, Equipment Identification contains the following items:

NOTE 4: Many of the items in data sheet 100 should be included in a header on each page of any SEMI E6 Data print outs or reports.

9.3.1 *Equipment Install Data ID (100A)* — Enter a unique reference number (or file name) as a reference for this equipment installation data set which includes all data sheets 100 through 1000.

9.3.2 *Equipment Install Data Revision (100B)* — Enter the revision number (or code) for this equipment installation data set.

9.3.3 *Equipment Install Data Revision Date (100C)* — Enter the data of the last revision to this equipment installation data set.

9.3.4 *SEMI Standard Name and Revision Date (100D)* — Enter the name and revision of the version of SEMI E6 that this data set is in conformance with. For example SEMI E6-96.

9.3.5 *Equipment Name (100E)* — Enter the name for this equipment.

9.3.6 *Equipment Model Number (100F)* — Enter the equipment supplier's model number for the equipment.

9.3.7 *Generic Process Type (100G)* — Enter the generic process type the equipment was designed to perform. For example metal etch, Al PVD, or copper CMP.

9.3.8 *Wafer Size (100H)* — Enter in mm the size of wafer the equipment was designed to process. For example: 200 or 300.

9.3.9 *Number of Equipment Components (100I)* — Enter the number of stand-alone modules provided by the supplier that together make the equipment process capable. Typically one for the mainframe plus one for each piece of supplier provided support equipment. These equipment components will be named in column A of data sheets 200 and 300. This number will be the rows required in data sheet 200 and 300.

9.3.10 *Equipment Comments (100J)* — Enter any comments necessary to clarify or add to information given for this equipment.

9.3.11 *Equipment Supplier Name (100K)* — Enter legal name of equipment supplier.

9.3.12 *Equipment Supplier Street Address (100L)* — Enter legal address for equipment supplier.

9.3.13 *Equipment Supplier City, State, Country, Mail Code (100M)* — Enter city, state, country, and mail code corresponding to legal address.

9.3.14 *Equipment Supplier Phone (100N)* — Enter phone number corresponding to legal address.

9.3.15 *Administrative Interface Information Reference (100O)* — Enter reference for document containing relevant supplier and purchaser contacts (see ¶ 7.1.1 and Related Information 1).

9.3.16 *Optional Order Specific Data Purchasing Company (100P)* — If needed enter name of company purchasing the equipment.

Documents Document Sharing Hub
Full document details: SEMI E6-0914

9.3.17 *Optional Order Specific Data Purchase Order Number (100Q)* — If needed enter the P.O. Number issued by the purchaser for procuring the equipment.

9.3.18 *Optional Order Specific Data Purchaser's Equipment ID (100R)* — If needed enter the number used by the purchaser to track the purchased equipment.

9.3.19 *Optional Order Specific Data Equipment Serial Number (100S)* — If needed enter the number issued by the supplier and used to track the equipment as purchased.

Table 2 Data Sheet 100 — Equipment Identification (See SEMI E6 § 9)

100 Equipment Identification				
	A	*B*	*C*	*D*
1	*Equipment Install Data ID*	*Equipment Install Data Revision*	*Equipment Install Data Revision Date*	*SEMI Standard Name and Revision Date*
2	text	text	text	text
3				SEMI E6 mmyy

100 Equipment Identification						
	E	*F*	*G*	*H*	*I*	*J*
1	*Equipment Name*	*Equipment Model Number*	*Generic Process Type*	*Wafer Size*	*Number of Equipment Components*	*Equipment Comments*
2	text	text	text	mm	#	text
3						

100 Equipment Identification					
	K	*L*	*M*	*N*	*O*
1	*Equipment Supplier Name*	*Equipment Supplier Street Address*	*Equipment Supplier City, State, Country, Mail Code*	*Equipment Supplier Phone*	*Administrative Interface Information Reference*
2	text	text	text	text	text
3					

100 Equipment Identification				
	P	*Q*	*R*	*S*
1	*Optional Order Specific Data Purchasing Company*	*Optional Order Specific Data Purchase Order Number*	*Optional Order Specific Data Purchaser's Equipment ID*	*Optional Order Specific Data Equipment Serial Number*
2	text	text	text	text
3				

10 Environmental Conditions Data Sheet

10.1 Include in Data Sheet 200, Environmental Conditions, requested information for the environmental conditions necessary to operate the equipment such as room temperature, room humidity, room cleanliness, heat loading, and vibration. Include only conditions for area surrounding the equipment, do not refer to internally controlled specifications for integrated minienvironments, chambers, or lenses, etc.

Documents
Document Sharing Hub
Full document details: SEMI E6-0914

10.2 Data Sheet 200, Environmental Conditions, contains the following items:

10.2.1 *Equipment Component (200A)* — Enter the name of the equipment component for the data in this row. The same component names should be used in the following data sheets.

10.2.2 *Maximum Installation Distance from Mainframe (200B)* — Enter the maximum line of sight or straight line distance between the mainframe and equipment component. Also, indicate the limiting factors for this distance. For example: 6 meters, user routing constraints may cause distance to be significantly less.

10.2.3 *Minimum Cleanroom Classification (200C)* — Enter the minimum cleanroom classification that defines the cleanroom environment necessary for equipment to operate correctly.

10.2.4 *Cleanroom Classification Standard (200D)* — Enter a reference for the cleanroom classification standard used to specify the cleanroom class in 200C. For example: Fed Std 209E or ISO 14644.

10.2.5 *Target Room Temperature (200E)* — Enter the optimal temperature setting within the minimum and maximum ranges for the room where the equipment is located.

10.2.6 *Minimum Room Temperature (200F)* — Enter the minimum room temperature for the equipment to operate correctly.

10.2.7 *Maximum Room Temperature (200G)* — Enter the maximum room temperature for the equipment to operate correctly.

10.2.8 *Room Temperature Fluctuation (200H)* — Enter the maximum room temperature change during one hour for the equipment to operate correctly.

10.2.9 *Heat Loading Idle Average (200I)* — Enter the average heat flow rate in idle condition into the room where the equipment component is located. Do not include heat removed by other means such as process cooling water or exhaust. The room should be at target temperature and humidity.

10.2.10 *Heat Loading Process Average (200J)* — Enter the average heat flow rate during the processing cycle into the room where the equipment component is located. Do not include heat removed by other means such as process cooling water or exhaust. The room should be at target temperature and humidity.

10.2.11 *Target Room Relative Humidity (200K)* — Enter the optimal relative humidity at the target temperature for the room where the equipment is located.

10.2.12 *Minimum Room Relative Humidity (200L)* — Enter the minimum relative humidity at the target room temperature for the equipment to operate correctly.

10.2.13 *Maximum Room Relative Humidity (200M)* — Enter the maximum relative humidity at the target room temperature for the equipment to operate correctly.

10.2.14 *Room Relative Humidity Fluctuation (200N)* — Enter the maximum relative humidity change during one hour for the equipment to operate correctly.

10.2.15 *Vibration Sensitivity (200O)* — Enter the vibration requirements or reference a document specifying the ambient vibration sensitivity and ambient acoustic noise sensitivity of the equipment. Include in reference material the description of methods used such as displacement, 1/3 octave band analysis, accelerance, maximum velocity at frequency, maximum ambient sound pressure levels, etc.

10.2.16 *Vibration Generation (200P)* — Enter the vibration generated by the equipment that stimulates the mounting structure or reference a document defining the equipment generated dynamic loads (at the support points defined in the floor loading diagram—see ¶ 11.2.10) such as impulse force magnitudes in the front-to-rear direction, etc. Include in reference material the description of methods used such as spectral accelerometer measurements of the equipment mounted on a pedestal of specified stiffness, etc. Include equipment-generated acoustic noise, such as the sound pressure level spectra radiated outward from the equipment enclosure.

10.2.17 *Other Vibrations Requirements (200Q)* — Enter or reference any other equipment support vibration requirements such as support pedestal stiffness requirements in all three directions, coupled mass requirements, or minimum building structural stiffness (three axis x, y, z) requirements.

NOTE 5: Vibration sensitivity and generation values for dynamic loads and motions should be specified in the three directions: up and down (z), front to back (y), and side to side (x).

Documents Document Sharing Hub
Full document details: SEMI E6-0914

10.2.18 *Other Conditions (200R)* — Include in other any special environmental conditions such as lighting, ESD, electromagnetic, or audible noise conditions for the equipment components.

10.2.19 *Environmental Conditions Comments (200S)* — Enter any comments necessary to clarify or add to information given for this equipment component.

Table 3 Data Sheet 200 — Environmental Conditions (See SEMI E6 § 10)

200 Environmental Conditions							
	A	*B*	*C*	*D*	*E*	*F*	*G*
1	*Equipment Component*	*Maximum Installation Distance from Mainframe*	*Minimum Cleanroom Classification*	*Cleanroom Classification Standard*	*Target Room Temperature*	*Minimum Room Temperature*	*Maximum Room Temperature*
2	text	meters	text	text	degrees C	degrees C	degrees C
3							
4							
5							
6							

200 Environmental Conditions							
	H	*I*	*J*	*K*	*L*	*M*	*N*
1	*Room Temperature Fluctuation*	*Heat Loading Idle Average*	*Heat Loading Process Average*	*Target Room Relative Humidity*	*Minimum Room Relative Humidity*	*Maximum Room Relative Humidity*	*Room Relative Humidity Fluctuation*
2	degrees/hour	watts	watts	%	%	%	%/hour
3							
4							
5							
6							

200 Environmental Conditions					
	O	*P*	*Q*	*R*	*S*
1	*Vibration Sensitivity*	*Vibration Generation*	*Other Vibrations Requirements*	*Other Conditions*	*Environmental Conditions Comments*
2	text	text	text	text	text
3					
4					
5					
6					

11 Physical Characteristics Data Sheet

11.1 Include in Data Sheet 300, Physical Characteristics the requested information for physical attributes such as size, weight, layout, clearances, and floor loading data.

11.2 Data Sheet 300, Physical Characteristics contains the following items:

11.2.1 *Equipment Component (300A)* — Enter the name of the equipment component for the data in this row. The name should be the same name used in Data Sheet 200.

Documents
Document Sharing Hub
Full document details: SEMI E6-0914

11.2.2 *Shipping and Receiving Information Reference (300B)* — Enter reference for document containing all relevant shipping and receiving information (see ¶ 7.1.2 and Related Information 2).

11.2.3 *Number of Shipping Containers (300C)* — Enter the total number of containers or crates used to ship the equipment and all supplier provide support equipment.

11.2.4 *Move-in, Placement and Assembly Instructions Reference (300D)* — Enter reference for document containing all installation instruction (see ¶ 7.1.3 and Related Information 3).

11.2.5 *Number of Cleanroom Move-in Pieces (300E)* — Enter the total number of pieces of equipment to be moved into the manufacturing cleanroom.

11.2.6 *Biggest Move-in Piece Length, Width, Height, Weight (300F, 300G, 300H, 300I)* — Enter the size and weight of the largest single move-in piece of the equipment.

11.2.7 *Installation ESH Information Reference (300J)* — Enter reference for document containing all relevant environmental, safety, and health information related to equipment installation (see related SEMI Safety Guidelines).

11.2.8 *Assembled Length, Width, Min. Height, Max Height, Weight (300K, 300L, 300M, 300N): 300O)* — Enter the size and weight of the equipment component. Minimum and maximum height should include travel of any provided leveling feet.

11.2.9 *Operational Clearance Front, Right, Left, Back, Top Bottom (300P, 300Q, 300R, 300S, 300T) 300U)* — Enter the operational clearances on all sides of equipment necessary for safety, operation, and maintenance. (Right and left should be as viewed from the front.)

11.2.10 *Floor Loading Diagram Reference (300V)* — Enter the reference for the floor-loading diagram showing the static weight loads at each equipment support point.

11.2.11 *Drawing References (300W)* — Enter references, such as drawing numbers, for any drawings, schematics, instructions, jigs or fixtures showing equipment. For example: Equipment Footprint Drawing YYYYY. Submit referenced material to equipment purchaser with this data sheet.

NOTE 6: Information regarding 300mm equipment may be found in SEMI E72 and SEMI E63.

11.2.12 *Physical Conditions Comments (300X)* — Enter any comments necessary to clarify or add to information given for this equipment component.

Table 4 Data Sheet 300 — Physical Characteristics (See SEMI E6 § 11)

300 Physical Characteristics							
	A	*B*	*C*	*D*	*E*	*F*	*G*
1	*Equipment Component*	*Shipping and Receiving Information Reference*	*Number of Shipping Containers*	*Move-in, Placement and Assembly Instructions Reference*	*Number of Cleanroom Move-in Pieces*	*Biggest Move-in Piece Length*	*Biggest Move-in Piece Width*
2	text	text	#	text	#	mm	mm.
3							
4							
5							
6							

Documents Document Sharing Hub
Full document details: SEMI E6-0914

300 Physical Characteristics							
	H	*I*	*J*	*K*	*L*	*M*	*N*
1	*Biggest Move-in Piece Height*	*Heaviest Move-in Piece Weight*	*Instillation ESH Information Reference*	*Assembled Length*	*Assembled Width*	*Minimum Assembled Height*	*Maximum Assembled Height*
2	mm	kg	text	mm	mm	mm	mm
3							
4							
5							
6							

300 Physical Characteristics							
	O	*P*	*Q*	*R*	*S*	*T*	*U*
1	*Assembled Weight*	*Operational Clearance Front*	*Operational Clearance Right*	*Operational Clearance Left*	*Operational Clearance Back*	*Operational Clearance Top*	*Operational Clearance Bottom*
2	kg	mm	mm	mm	mm	mm	mm
3							
4							
5							
6							

300 Physical Characteristics			
	V	*W*	*X*
1	*Floor Loading Diagram Reference*	*Drawing References*	*Physical Characteristics Comments*
2	text	text	text
3			
4			
5			
6			

12 Electrical Power Data Sheet

12.1 Include in Data Sheet 400, Electrical Power the requested information for equipment connections to facilities systems including but not limited to electrical power distribution and conditioning systems.

12.2 Data Sheet 400, Electrical Power contains the following items:

12.2.1 *Equipment Component (400A)* — Enter the name of the equipment component where the connection is located. The name should the same name used in Data Sheet 200 and 300. For example: Mainframe, Vacuum Pump, or Chiller.

12.2.2 *Electrical Power Connection Number (400B)* — Enter a unique connection number for every utility connection. For example: 401, 402, 403, and so on.

12.2.3 *Connection Label on Equipment (400C)* — Enter the name found on the label that identifies this physical connection on the equipment. For example input power or power ground.

12.2.4 *Utility Type (400D)* — Enter the name of electrical service to be provided through the connection. Examples: Normal Power, Conditioned Power, Uninterruptible Power, Standby Power and Emergency Power. If selection is not Normal Power, specify reason in Electrical Power Comments cell.

Documents
Document Sharing Hub
Full document details: SEMI E6-0914