

## § 1214.115

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### § 1214.115 Standard services.

Standard services for the Space Shuttle are generically defined in NASA document NSTS 07700, Volume XIV. The standard services to be provided for a specific payload will be agreed to between NASA and the customer in the launch agreement and associated payload integration documentation. Typical standard services include the following for each customer.

(a) A standard launch that meets the criteria established in § 1214.117.

(b) Transportation of the customer's payload in the orbiter cargo bay in a location selected by NASA.

(c) One day of single-shift, on-orbit mission operations.

(d) A five-person flight crew: commander, pilot and three mission specialists.

(e) Orbiter flight planning services.

(f) One day of transmission of payload data to compatible receiving stations via an Independent Payload Data Stream. (Subject to availability, NASA may make excess orbiter instrumentation downlink capability available to payloads at no additional charge.)

(g) Deployment of a free flyer, provided the payload meets all the conditions stated in § 1214.118.

(h) NASA support of selected payload design reviews.

(i) Prelaunch payload installation, verification and orbiter compatibility testing.

(j) NASA payload safety reviews.

### § 1214.116 Typical optional services.

Typical optional services that may be provided by NASA include the following, and will be further defined and limited in payload integration documentation agreed upon by NASA and the customer.

(a) Use of Extended Duration Orbiter (EDO) capability or other mission kits to extend basic orbiter capability.

(b) Extravehicular activity (EVA) services.

(c) Transportation to orbit of all or a part of the customer's payload in other than the orbiter cargo bay.

(d) Unique payload/orbiter integration and test.

(e) Payload mission planning services, other than for launch, deployment and entry phases.

(f) Additional time on orbit.

(g) Payload data processing.

(h) Flight of payload specialists.

(i) Transmission of payload data via an Independent Payload Data Stream during additional time on orbit.

(j) Transmission of payload data via a Direct Data Stream.

### § 1214.117 Launch and orbit parameters for a standard launch.

To qualify for the standard flight price, all payloads must meet the following launch criteria:

(a) For dedicated flights:

(1) Launch from Kennedy Space Center (KSC) into the customer's choice of two standard mission orbits: 160 NM circular orbit, 28.5° inclination (nominal), or 160 NM circular orbit, 57° inclination (nominal).

(2) Launch on a date selected by NASA within the scheduling constraints specified in the launch agreement.

(3) Launch at a time, selected by NASA, from a launch window of not less than 1 hour (a more restrictive launch window may be provided as an optional service).

(b) For shared flights from KSC to the standard mission orbit of 160 NM circular orbit, 28.5° inclination (nominal):

(1) Launch on a date selected by NASA within the scheduling constraints specified in the launch agreement.

(2) Launch at any time of day, selected by NASA.

### § 1214.118 Special criteria for deployable payloads.

To qualify for the standard flight price, deployable payloads must meet certain criteria in terms of time of day of launch, and other factors. These criteria will be specified in the launch agreement and associated payload integration documentation.

### § 1214.119 Spacelab payloads.

(a) *Special provisions.* This § 1214.119 establishes the special provisions for Spacelab services provided to Space Shuttle customers. Where designated, provisions of this § 1214.119 supersede those of other portions of this document. The following five types of

Spacelab flights are available to accommodate payload requirements:

(1) Dedicated-Shuttle Spacelab flight (Ref. § 1214.119(d)(3)).

(2) Dedicated-pallet flight (Ref. § 1214.119(d)(4)).

(3) Dedicated-FMDM/MPRESS (flexible multiplexer-demultiplexer/multipurpose experiment support structure) flight (Ref. § 1214.119(d)(4)).

(4) Complete-pallet flight (Ref. § 1214.119(d)(5)).

(5) Shared-element flight (Ref. § 1214.119(d)(6)).

(b) *Definitions*—(1) *Spacelab elements*. Pallets (3-meter segments), pressurized modules (long or short), and the FMDM/MPRESS (1-meter cross-bay structure), all as maintained in the NASA-approved Spacelab configuration.

(2) *Spacelab standard flight price*. The price for standard services provided to Spacelab customers. If a customer elects not to use a portion of the standard services, the Spacelab standard flight price will not be affected. The Spacelab standard flight price is a pro rata share of:

(i) The dedicated flight price as defined in § 1214.102(c);

(ii) The standard price for use of the selected Spacelab elements; and

(iii) For complete-pallet and shared-element flights:

(A) The price for 6 extra days on orbit; and

(B) The price for 7 days of second-shift operation.

(c) *Mandatory use of dedicated-Shuttle Spacelab flight*. (1) The customer will be required to fly under the provisions of § 1214.119(d)(3), if the customer requires exclusive use of any of the following:

(i) Pressurized module (long or short).

(ii) Three pallets in the “1+1+1” configuration.

(iii) Four pallets in the “2+2” configuration.

(2) In the cases cited in paragraph (1)(i) of this section, if the customer requests, NASA will attempt to find compatible sharees to fly with the customer's payload. If NASA is successful, the customer's Shuttle standard flight price will be the greater of:

(i) The dedicated flight price less reimbursements from sharees actually flown; or

(ii) The computed Shuttle shared-flight price for the customer's Spacelab payload.

(d) *Reimbursement for standard services*. (1) Customers will reimburse NASA an amount equal to the Spacelab standard flight price computed according to the following provisions:

(2) *Earnest money*. For those customers required to pay earnest money in accordance with § 1214.103(h)(1), the total earnest money payment per payload for Spacelab payloads (including Shuttle services) will be either \$150,000 or 10 percent of the customer's estimated Spacelab standard flight price, whichever is less.

(3) *Dedicated-Shuttle Spacelab flight*. (i) A dedicated-Shuttle Spacelab flight is a Shuttle flight flown for a single customer who is entitled to select the Spacelab elements used on the flight.

(ii) In addition to the standard services listed in § 1214.119(j), the following standard services are provided to customers of dedicated-Shuttle Spacelab flights and form the basis for the Spacelab standard flight price:

(A) Use of the full standard services of the Shuttle and the Spacelab elements selected.

(B) One day of one-shift on-orbit operations.

(C) Standard mission destinations consistent with launch criteria as defined in § 1214.117.

(D) The available payload operations time of two NASA-furnished mission specialists.

(iii) Customers contracting for a dedicated-Shuttle Spacelab flight will reimburse NASA for standard services an amount that is the sum of:

(A) The dedicated flight price as defined in § 1214.102(c); and

(B) The price for the use of all Spacelab elements used (including all necessary mission-independent Spacelab equipment).

(4) *Dedicated 3-meter pallets and dedicated FMDM/MPRESS*. (i) A dedicated pallet (or a dedicated FMDM/MPRESS) is one that is flown for a single customer and includes all Spacelab hardware necessary to permit it to be flown on any shared flight as an autonomous

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payload (e.g., a dedicated 3-meter pallet may either be supplied with its own exclusive igloo or be flown without an igloo, if it requires only standard Shuttle services).

(ii) In addition to a pro rata share of the standard services listed in §1214.119(j), the following standard services are provided to customers of dedicated pallets (or dedicated FMDM/MPRESS) and form the basis for establishing the Spacelab standard flight price:

(A) A pro rata share of the standard services listed in §1214.115, where the basis for proration is the customer's Shuttle load factor as defined in §1214.119(1)(4)(i) for dedicated pallets and in §1214.119(1)(5)(ii) for a dedicated FMDM/MPRESS.

(B) The exclusive services of the pallet (or FMDM/MPRESS) and all Spacelab hardware provided to support the pallet (or FMDM/MPRESS).

(C) One day of one-shift on-orbit operations.

(D) Launch on a shared standard Shuttle flight as defined in §1214.117.

(E) A pro rata share of the on-orbit payload operations time of two NASA-furnished mission specialists, where the basis of proration will be the customer's Shuttle load factor.

(iii) Customers contracting for a dedicated-pallet (or FMDM/MPRESS) flight will reimburse NASA for standard services an amount that is the sum of:

(A) The product of the customer's Shuttle charge factor and the dedicated flight price as defined in §1214.102(c); and

(B) The price for the use of the pallet (or FMDM/MPRESS) selected (including all necessary mission-independent Spacelab equipment).

(5) *Complete pallet.* (i) A complete Spacelab pallet is one that is flown for a single customer, but flies with other Spacelab elements on a NASA or NASA-designated Spacelab flight and shares the common standard Spacelab services (e.g., shares an igloo with other pallets).

(ii) In addition to a pro rata share of the standard services listed in §1214.119(j), the following standard services are provided to customers of

complete pallets and form the basis for the Spacelab standard flight price:

(A) The pallet's pro rata share of standard services listed in §1214.115, where the basis of proration will be the customer's Shuttle load factor as defined in §1214.119(1)(6)(i).

(B) A pro rata share of 7 days of two-shift on-orbit operations, where the basis of proration will be the customer's Shuttle load factor.

(C) Mission destination selected by NASA in consultation with the customer.

(D) Assignment, with the customer's concurrence, to a Spacelab flight designated by NASA.

(E) Launch date established by NASA.

(F) A pro rata share of the on-orbit payload operations time of two NASA-furnished mission specialists and two payload specialists, where the basis of proration will be the customer's Shuttle load factor.

(G) Use of the entire volume above a pallet.

(iii) Customers contracting for complete-pallet flights will reimburse NASA for standard services an amount which is the sum of:

(A) The product of the customer's Shuttle charge factor and the sum of:

(1) The dedicated flight price as defined in §1214.102(c).

(2) The charge for 6 extra days of one-shift on-orbit operations.

(3) The standard price for additional services required to support a second shift of on-orbit operations for 7 days.

(B) The price for the use of a complete pallet, including all necessary mission-independent Spacelab equipment.

(6) *Shared element.* (i) A shared element is a Spacelab pallet, FMDM/MPRESS, or module that:

(A) May be shared by two or more customers on a NASA-designated Spacelab flight; and

(B) Shares common standard services with other Spacelab elements on the same flight.

(ii) In addition to a pro rata share of the standard services listed in §1214.119(j), the following standard services are provided to customers of shared elements and form the basis for the Spacelab standard flight price:

(A) For shared pallets, a pro rata share of the standard services provided by a pallet. The basis of proration will be the customer's Spacelab load fraction as defined in §1214.119(1)(7)(i)(A).

(B) For shared modules, a pro rata share of the standard services provided by a long module flown on a dedicated-Shuttle Spacelab flight. The basis of proration will be the customer's Spacelab load fraction as defined in §1214.119(1)(7)(i)(B). The type of pressurized module actually used to meet a customer's requirement for a shared module will be determined by NASA subsequent to launch agreement negotiations.

(C) A pro rata share of the element's share of standard services listed in §1214.115, where the basis for proration will be the customer's Spacelab load fraction.

(D) A pro rata share of 7 days of two-shift on-orbit operations, where the basis of proration will be the customer's Shuttle load factor as defined in §1214.119(1)(7)(i).

(E) Mission destination selected by NASA in consultation with the customer.

(F) Assignment, with the customer's concurrence, to a Spacelab flight designated by NASA.

(G) Launch date established by NASA.

(H) A pro rata share of the on-orbit operations time of two NASA-furnished mission specialists, where the basis of proration will be the customer's Shuttle load factor.

(iii) Customers contracting for shared-element flights will reimburse NASA for Standard services an amount that is the sum of:

(A) The product of the customer's Shuttle charge factor and the sum of:

(1) The dedicated flight price as defined in §1214.102(c);

(2) The charge for 6 extra days of one-shift on-orbit operations; and

(3) The standard price for additional services required to support a second shift of on-orbit operations for 7 days.

(B) The product of the customer's element charge factor and the price for the use of the Spacelab element being used, including all necessary mission-independent Spacelab equipment.

(e) *Minor delays.* The minor delay provisions of §1214.106 will apply only to those Spacelab payloads whose Shuttle load factor is equal to or greater than 0.05.

(f) *Postponement and termination.* (1) A customer may postpone the flight of a Spacelab payload one time with no additional charge if postponement occurs more than 18 months before the scheduled launch date.

(2) Postponement or termination fees for Spacelab payloads will consist of the sum of:

(i) A fee for postponement or termination of the Shuttle launch.

(ii) A fee for use of the Spacelab elements.

(3) For Shuttle launch postponement and termination fee customers will be governed by the provisions of §1214.107 or §1214.108, as appropriate.

(4) The postponement and termination fees for use of the Spacelab elements are computed as a percentage of the customer's price for use of the Spacelab elements and will be based on the table below. When postponement or termination occurs less than 18 months before launch, the fees will be computed by linear interpolation using the points provided.

Months before scheduled launch date when postponement or termination occurs	Fee for use of Spacelab element(s), percent of price for use of element(s)	
	Postponement	Termination
Dedicated Flights, Dedicated Elements, and Dedicated FMDM/MPSS		
18 or more .....	5	10
12 .....	14	20
3 .....	60	85
0 .....	75	100
Complete Pallets and Shared Elements		
18 or more .....	5	10
12 .....	18	80
9 .....	32	95
8 or less .....	95	100

(5) At the time of signing of the launch agreement, NASA will define a payload removal cutoff date (relative to the launch date) for each Spacelab payload to be flown on a shared flight.

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A customer may still postpone or terminate a flight after the payload's cut-off date; however, NASA will not be required to remove the payload before flight.

(6) Customers postponing or terminating the flight of a payload may also be subject to new or additional charges for optional services associated with Shuttle or Spacelab support provided by NASA.

(g) *Spacelab reflight.* (1) For Spacelab payloads, the provisions of §1214.110 apply.

(h) *Premature termination of Spacelab flights.* If a dedicated-Shuttle Spacelab flight, a dedicated-pallet flight or dedicated-FMDM/MPES flight is prematurely terminated, NASA will refund the optional services charges for planned, but unused, extra days on orbit. If a complete-pallet or shared-element flight is prematurely terminated, NASA will refund a pro rata share of the charges for planned, but unused, extra days on orbit to customers whose payload operations are, in NASA's judgment, adversely affected by such premature termination. The basis for proration will be the customer's Shuttle load factor.

(i) *Integration of payloads.* (1) The customer will bear the cost of the following typical Spacelab-payload mission management functions:

(i) Performing analytical design of the mission.

(ii) Generating mission requirements and their documentation in the Payload Integration Plan (PIP).

(iii) Providing mission-unique training and payload specialists (if appropriate).

(iv) Physically integrating experiments into racks and/or onto pallets.

(v) Providing payload-unique software for use during ground processing, on orbit or in POCC operations.

(vi) Providing operation support.

(vii) Ensuring the mission is safe.

(2) All physical integration (and de-integration) of payloads into racks and/or onto pallets will normally be performed at KSC by NASA. When the customer provides Spacelab elements, these physical integration activities may be done by the customer at a location chosen by the customer.

(3) Except for the restrictions noted in paragraph (i)(2) of this section, and the implementation of paragraph (i)(1)(vii), customers contracting for dedicated-Shuttle and dedicated-pallet flights may perform the Spacelab-payload mission management functions defined in paragraph (i)(1) of this section. NASA will assist customers in the performance of these functions, if requested. Charges for this service will be based on estimated actual costs, or actual costs where appropriate, and will be in addition to the price for standard services.

(4) For complete pallets or shared elements, NASA will normally perform the Spacelab-payload mission management functions listed in paragraph (i)(1) of this section. Charges for this service will be based on estimated actual costs, or actual costs where appropriate, and will be in addition to the price for standard services.

(5) Integration of payload entities mentioned in paragraphs (i)(2) through (i)(4) of this section with NASA-furnished Spacelab support systems and with the Shuttle will be performed by NASA as a standard service for all payloads flown on customer-furnished Spacelab elements. Customers will be available to participate as required by NASA in these levels of integration. Customer equipment will be operated only to the extent necessary for interface verification. Customers requiring additional payload operation after delivery of the payload to NASA will negotiate such operation as an optional service.

(j) *Common standard services for Spacelab payloads.* The following standard services are common to all Spacelab flights:

(1) Use of Shuttle<sup>1</sup> and Spacelab hardware.

(2) Spacelab interface analysis.

(3) A five-person NASA flight crew consisting of commander, pilot and three mission specialists.

(4) Accommodations for a five-person flight crew.

(5) Prelaunch integration and interface verification of preassembled racks and pallets (Levels III, II and I for

<sup>1</sup>Typical standard Shuttle services repeated for clarity.

NASA-furnished Spacelab hardware; Level I only for customer-furnished Spacelab hardware).

(6) Shuttle<sup>1</sup> and Spacelab flight planning.

(7) Payload electrical power.

(8) Payload environmental control.

(9) On-board data acquisition and processing services.

(10) One day of transmission of payload data to compatible receiving stations via an Independent Payload Data Stream. (Subject to availability NASA may make excess orbiter instrumentation downlink capability available to payloads at no additional charge.)<sup>1</sup>

(11) Use of NASA-furnished standard payload monitoring and control facilities.

(12) Voice communications between on-orbit flight personnel operating the customer's payload and a NASA-designated payload monitoring and control facility.

(13) NASA payload safety review.<sup>1</sup>

(14) NASA support of payload design reviews.<sup>1</sup>

(k) *Typical optional services for Spacelab payloads.* The following are typical optional Spacelab services.

(1) Use of special payload support equipment, e.g., instrument pointing system.

(2) Nonstandard mission destination.

(3) Additional time on orbit.

(4) Mission-independent training, use of, and accommodations for all flight personnel in excess of five.

(5) Mission-dependent training of all NASA-furnished personnel and backups.

(6) Analytical and/or hands-on integration (and de-integration) of the customer's payload into racks and/or onto pallets.

(7) Unique integration or testing requirements.

(8) Additional resources beyond the customer's pro rata share.

(9) Additional experiment time or crew time beyond the customer's pro rata share.

(10) Special access to and/or operation of payloads.

(11) Customer-unique requirements for: software development for the Command and Data Management Subsystem (CDMS) onboard computer, configuration of the Payload Operations

Control Center (POCC) and/or CDMS used during KSC ground processing.

(12) Extravehicular Activity (EVA) services.

(13) Payload flight planning services.

(14) Transmission of Spacelab data contained in the Shuttle OI telemetry link to a location other than a NASA-designated monitoring and control facility.

(15) Transmission of payload data via an Independent Payload Data Stream during additional time on orbit.

(16) Transmission of payload data via a Direct Data Stream.

(17) Level III/II integration of customer-furnished Spacelab hardware.

(1) *Computation of sharing and pricing parameters—(1) General.* (i) Computational procedures as contained in the following subparagraphs will be applied as indicated. The procedure for computing Shuttle load factor, charge factor and flight price for Spacelab payloads replaces the procedure contained in §1214.103.

(ii) Shuttle charge factors as derived herein apply to payloads meeting the launch and orbit criteria established in §1214.117. Customers will reimburse NASA an optional services fee for flights to nonstandard destinations.

(iii) The customer's total Shuttle charge factor will be the sum of the Shuttle charge factors for the customer's individual (dedicated, complete or shared) elements, with the limitation that the customer's Shuttle charge factor will not exceed 1.0.

(iv) Customers contracting for pallet-only payloads are entitled to locate minimal controls as agreed to by NASA in a pressurized area to be designated by NASA. There is no additional charge for this service.

(v) NASA will, at its discretion, adjust, up or down, the load factors and load fractions calculated according to the procedures defined in this section. Adjustments will be made for special space or weight requirements, which include, but not limited to:

(A) Sight clearances, orientation or placement limits.

(B) Clearances for movable payloads.

(C) Unusual access clearance requirements.

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(D) Clearances extending beyond the bounds of the normal element envelope.

(E) Extraordinary shapes.

The adjusted values will be used as the basis for computing charge factors and prorating services.

(2) *Definitions used in computations.* (i)  $L_c$ =Chargeable payload length, m. The total length in the cargo bay occupied by the customer’s experiment and the Spacelab element(s) used to carry it.

(ii)  $W_c$ =The weight, kg, of the customer’s payload and the customer’s pro rata share of the weight of NASA mission-peculiar equipment carried to meet the customer’s needs.

(3) *Dedicated-Shuttle Spacelab flight (1-day mission).* The total reimbursement is as defined in §1214.119(d)(3)(iii).

(4) *Dedicated-pallet flight (1-day mission).* (i) The Shuttle load factors, charge factors and nominal payload capacities for dedicated-pallet flights are shown in the table below. Subject to other Shuttle Spacelab structural limits, customers are entitled to use the payload weight capability of the pallets as indicated in the table. Payload weights in excess of those shown are subject to NASA approval and may entail optional services charges.

No. of Pallets	Load Factor		Charge Factor		Nominal Payload Capacity, kg	
	With Igloo	FMDM Configuration	With Igloo	FMDM Configuration	With Igloo	FMDM Configuration
1 .....	0.228	0.189	0.305	0.252	2,325	2,950
2 .....	0.392	NA	0.523	NA	4,470	NA
3-pallet train* .....	0.556	NA	0.742	NA	4,435	NA
2+1 config. ....	0.594	NA	0.792	NA	7,750	NA

\*Three pallets requiring the “1+1+1” configuration will be flown on a dedicated-flight basis [See § 1214.119(c)(1)].

(ii) *Total reimbursement.* The customer’s total reimbursement is as defined in §1214.119(d)(4)(iii).

(5) *Dedicated FMDM/MPESS flight (1-day mission)*—(i) *Shuttle charge factor.* The Shuttle charge factor for dedicated FMDM/MPESS flights is defined as:

$$\frac{\text{Shuttle Load Factor}}{0.75}$$

(ii) *Shuttle load factor.* (A) The Shuttle load factor is defined as the maximum of:

$$\frac{L_c}{18.29 \text{ m}}$$

or

$$\frac{W_c + 767}{21,542 \text{ kg}}$$

(B) The minimum value of  $L_c$  is based on the element length, plus clearances, and is 1.18 m.

(iii) *Total reimbursement.* The customer’s total reimbursement is as defined in §1214.119(d)(4)(iii).

(6) *Complete pallets (7-day mission).* (i) The Shuttle load factor and charge fac-

tor for a complete pallet are 0.198 and 0.228, respectively, and its payload weight capability is 2,583 kg. Subject to other Shuttle or Spacelab structural limits, customers are entitled to use this payload weight capability. Payload weight in excess of 2,583 kg is subject to NASA approval and may entail optional service charges.

(ii) *Total reimbursement.* The customer’s total reimbursement is as defined in §1214.119(d)(5)(iii).

(7) *Shared elements (7-day mission)*—(i) *Spacelab load fractions and Shuttle load factors*—(A) *Pallet.* Spacelab load fraction is the greater of:

$$\frac{W_c}{2,583 \text{ kg}}$$

or

$$\frac{\text{Payload volume, m}^3}{15 \text{ m}^3}$$

Shuttle load factor is the greater of:

$$\frac{\text{Payload volume, m}^3}{76 \text{ m}^3}$$

or

$$\frac{W_c}{4,319 \text{ kg}}$$

$$\frac{W_c}{13,045 \text{ kg}}$$

or

(B) *Pressurized module.* Spacelab load fraction and Shuttle load factor are identical and are the greater of:

$$\frac{2 \times (\text{Experiment volume}) + \text{Storage volume, m}^3}{40 \text{ m}^3}$$

(ii) *Shuttle charge factors and element charge factors for pressurized modules.* Shuttle charge factors and element charge factors are identical and are defined as follows:

If the Spacelab load fraction (and Shuttle load factor) is:	The element charge factor and Shuttle charge factor will be:
Less than 0.00435 .....	0.005
0.00435 to 0.87 .....	Spacelab load fraction divided by 0.87
Greater than 0.87 .....	1.0

(iii) *Element charge factors for shared pallets.*

If the Spacelab load fraction is:	The element charge factor will be:
Less than 0.0189 .....	0.0218
0.0189 to 0.87 .....	Spacelab load fraction divided by 0.87
Greater than 0.87 .....	1.0

(iv) *Shuttle charge factors for shared pallets.*

If the Shuttle load factor is:	The Shuttle charge factor will be:
Less than 0.00375 .....	0.005
0.00375 to 0.75 .....	Shuttle load factor divided by 0.75
Greater than 0.75 .....	1.0

(v) *Total reimbursement.* (A) The customer's total reimbursement is as defined in § 1214.119(d)(6)(iii).

(B) If a customer contracts for portions of more than one element, the charges for the use of the elements will apply individually to each element used.

(vi) *Pressurized module experiment volume.* Experiment volume in the pressurized module is defined to be the sum of the customer's payload volume in racks and in the center aisle.

(A) Rack volume is defined relative to basic Air Transportation Rack (ATR) configurations. The customer's rack volume will be defined as the volume of one or more rectangular parallelepipeds (rectangular-sided boxes) which totally enclose the cuss payload. Width dimensions will be either 45.1 or 94.0 centimeters. Height dimensions will be integral multiples of 4.45 centimeters. Depth dimensions will be 61.2 or 40.2 centimeters.

(B) Center aisle space volume is defined as the volume of a rectangular parallelepiped which totally encloses the customer's payload. No edge of the parallelepiped will be less than 30 centimeters in length.

(vii) *Pressurized module storage volume.* Storage volume in the pressurized module is defined as the volume of one or more rectangular parallelepipeds enclosing the customer's stowed payload. No edge of the parallelepiped(s) will be less than 30 centimeters in length.

(viii) *Pallet payload volume.* Volume of the customer's pallet-mounted payload is defined as the volume of a rectangular parallelepiped enclosing the pallet payload and customer-dictated mounting hardware. No edge of the parallelepiped will be less than 30 centimeters in length.