

This specification is intended to inform CSD manufacturers and launch service providers. It is compatible with 2002206 Rev A "Payload Specification for 6U, 12U and 27U".

**FEATURES**

A Canisterized Satellite Dispenser (canister or CSD) is a box that encapsulates the payload (PL) during launch and dispenses it on orbit. Canisters reduce risk to the primary payload and so maximize potential launch opportunity. Their relatively small size enables placement on most launch vehicles (LV). Canisters also ease restrictions on payload materials and components. This specification currently encompasses canisters for three sizes of payloads. The 6U, 12U and 27U incorporate two tabs running the length of the ejection axis. The canister may grip these tabs, providing a secure, modelable, preloaded junction during launch. To maintain compatibility with existing standards the 6U can be made with typical rails as used in CubeSat. Note however with rails the payload is not preloaded in its canister and may chatter during launch.

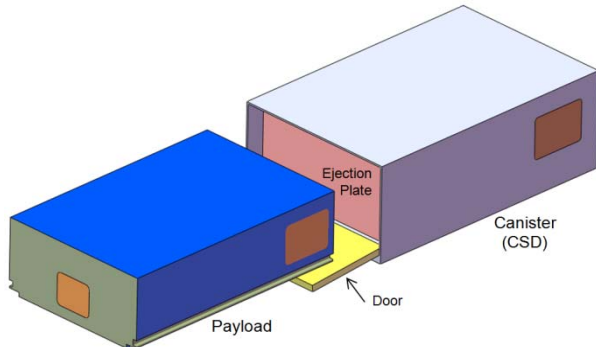


Figure 1: Payload Deploying From CSD

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**REVISION HISTORY**

Revision	Date	Design	Review
-	13-Jun-2011	RH	WH

Changes from previous revision:  
 This is the initial release.

**COMMON REQUIREMENTS**

1. Mounting surface to LV shall be electrically conductive.
2. Access panels to payload shall be removable with small flat or Phillips screwdriver or 3/32 in hex key. Torque spec, if applicable, shall be imprinted on CSD.
3. An ejection plate shall push on -Z face of payload to deploy. Plate shall fully encompass payload deployment switch zone and be flat to 0.5mm. See payload specification for deployment switch zone dimensions.
4. Payload shall be oriented in CSD per Figure 6.
5. Ejection Plate shall be electrically grounded to CSD walls. Payload side of ejection plate shall be conductive.

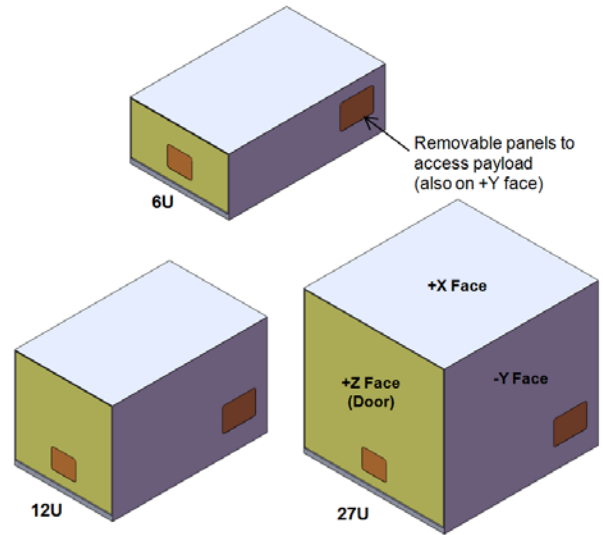


Figure 2: CSD

**ELECTRICAL INTERFACE TO LV**

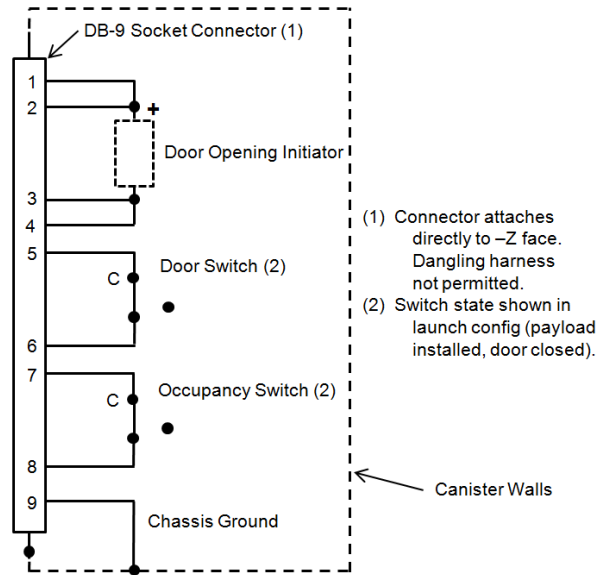


Figure 3: Electrical Interface to LV

PARAMETERS

SYM	Parameter	Conditions	Units	6U		12U		27U	
				Min	Max	Min	Max	Min	Max
M	Mass	Empty	kg	-	7.2	-	10.8	-	15.1
Depth	CSD depth, from origin, +X		mm	-	163	-	276	-	389
Width	CSD width, from origin, +/- Y		mm	-	140	-	140	-	195
Length	CSD length, from origin, +Z	Door closed	mm	-	470	-	470	-	470
ΔV	Payload ejection velocity	Max payload mass, infinite CSD mass	m/sec	0.5	5.0	0.5	5.0	0.5	5.0
V	Voltage provided from LV to open door	-34 to +71 °C, power to pins 1&2, return from pins 3&4	Vdc	22	36	22	36	22	36
I	Current available from LV to open door	-34 to +71 °C, power to pins 1&2, return from pins 3&4	A	5.0	-	5.0	-	5.0	-
T	Electrical pulse width provided from LV to open door	-34 to +71 °C, power to pins 1&2, return from pins 3&4	sec	4.0	10.0	4.0	10.0	4.0	10.0
Wire	Electrical wiring	Wiring shown in Figure 3.	AWG	20	26	20	26	20	26
RS	Switch terminal resistance	Closed circuit, door and occupancy switches	ohm	0.0	0.2	0.0	0.2	0.0	0.2
IIR	Inrush current capacity of switch	<0.5 sec, 30 Vdc, <10e-5 torr, Door and occupancy switches	A	-	4.0	-	4.0	-	4.0
ISS	Steady state current capacity of switch	30 Vdc, <10e-5 torr, door and occupancy switches	A	-	2.0	-	2.0	-	2.0
PT	Payload travel required for occupancy switch change state	+Z travel from launch position	mm	300	440	300	440	300	440
DP	Door position for door switch change of state	Angle (0 deg is closed)	deg	0.4	5.0	0.2	5.0	0.15	5.0
FEP	Ejection plate force on payload	During launch and deployment	N	0	200	0	200	0	200
LVF	LV flatness	Interface to CSD -X face	mm	0.0	0.3	0.0	0.3	0.0	0.5
TML	Total Mass Loss	Per ASTM E 595-77/84/90	%	0	1.0	0	1.0	0	1.0
CVCM	Collected Volatile Condensable Material	Per ASTM E 595-77/84/90	%	0	0.1	0	0.1	0	0.1
DP	LV de-pressurization rate	During launch	psi/sec	0	0.5	0	0.5	0	0.5

PLACARD

Canister Complies with Specification 2002220 Rev ____ Payload Complies with Specification 2002206 Rev ____  <p style="text-align: center;"><u>Canister</u></p> Responsible Organization: Contact Name, Email and Phone Number:  PN and SN: Empty Mass [kg]:  <p style="text-align: center;"><u>Payload</u></p> Responsible Organization: Contact Name, Email and Phone Number:  PN and SN: Installed Mass [kg]: Installation Date:  <p style="text-align: center;"><u>Assembly</u></p> Total Launch Mass [kg]: Ready for Launch (Date and Name):
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Requirements

1. Locate on +Z face (door).
2. Minimum text height 0.12 in.
3. Engrave, etch or stamp.
4. Tag shall be replaceable.
5. Text shall be legible in poorly lit room and under direct sunshine.
6. May add additional information as desired.

6U, 12U & 27U CSD

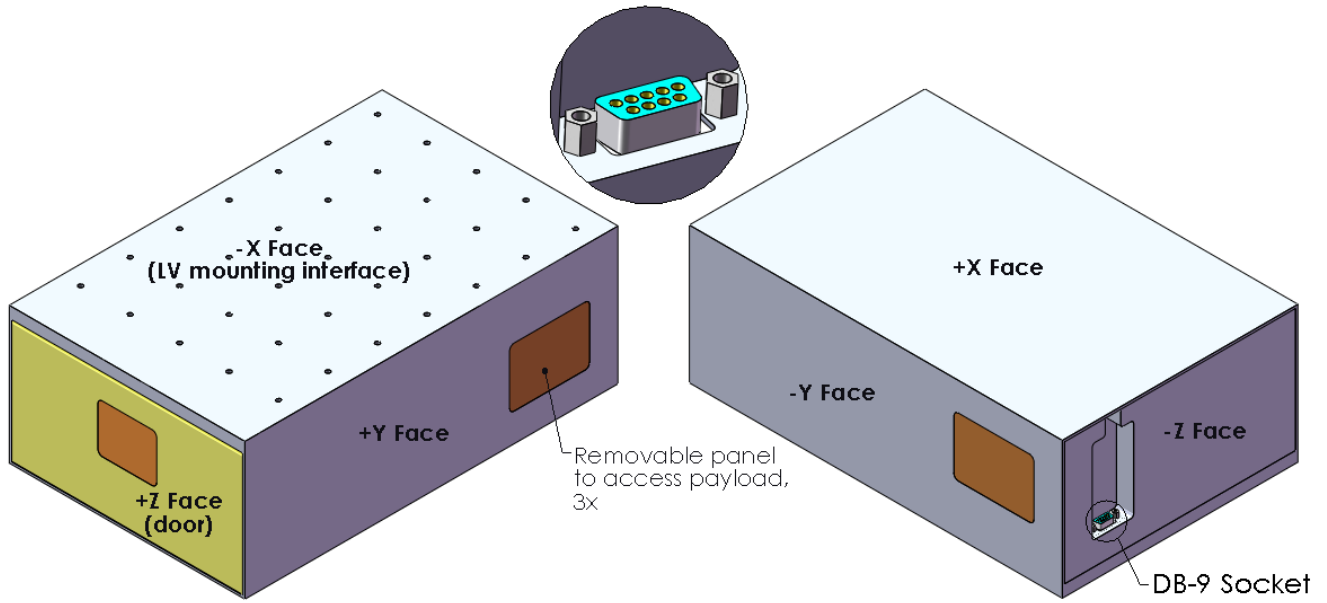


Figure 4: CSD, 6U shown

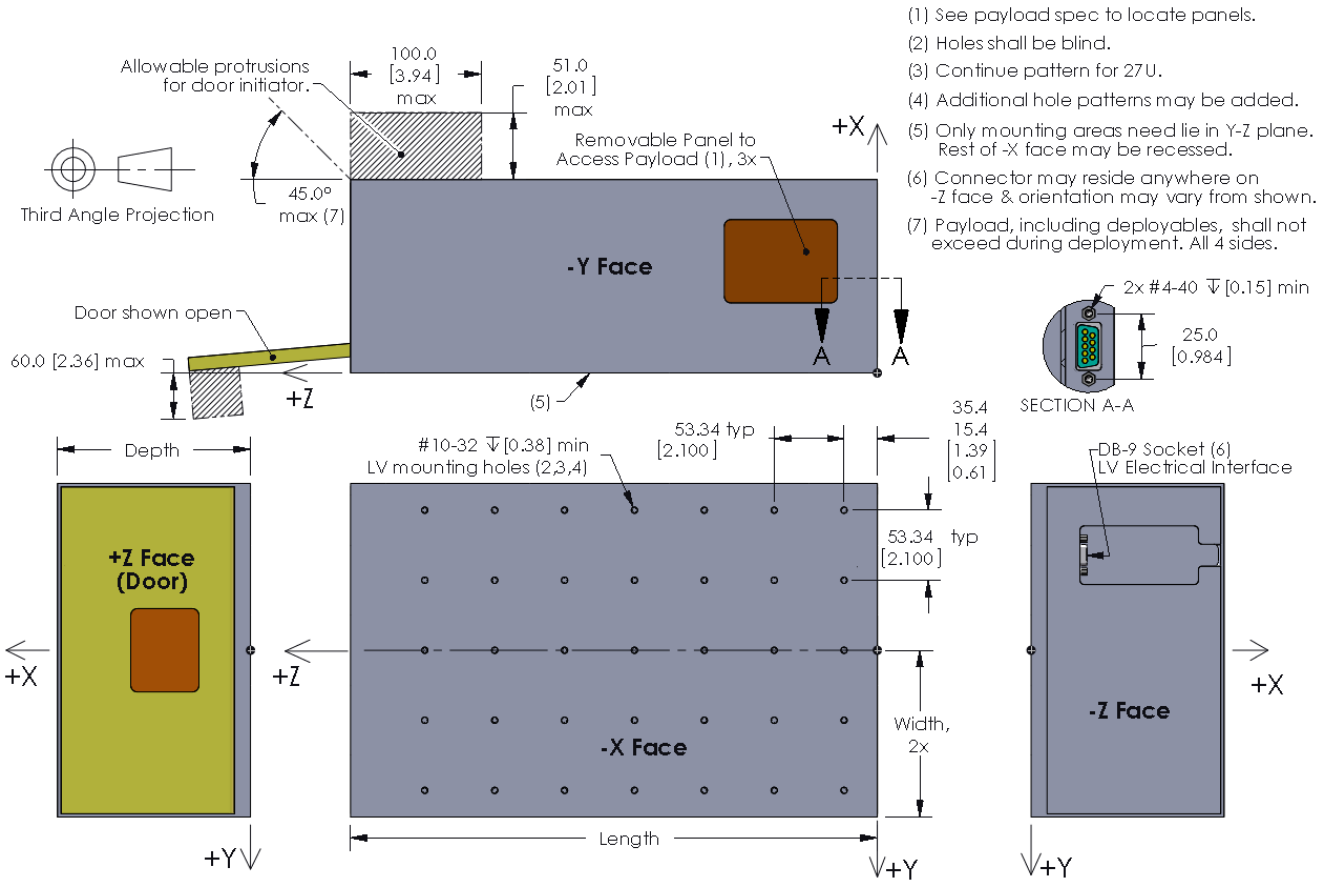


Figure 5: CSD, mm [in]

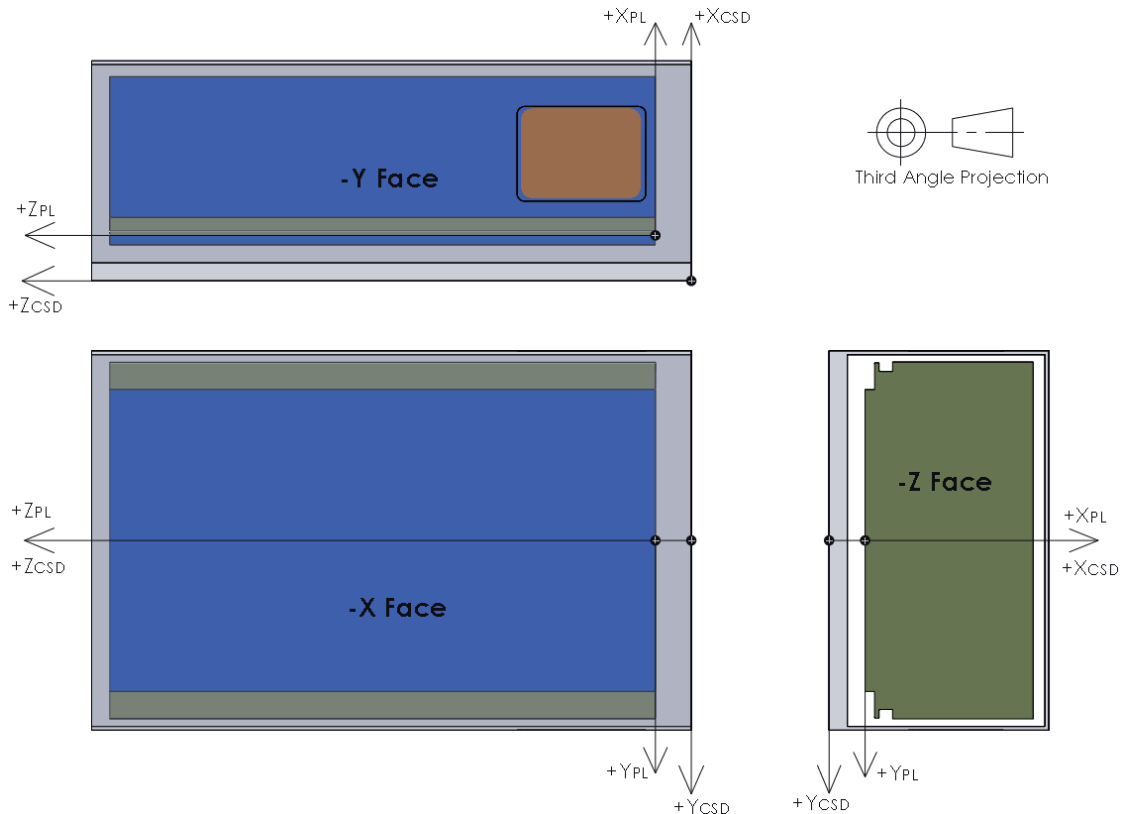
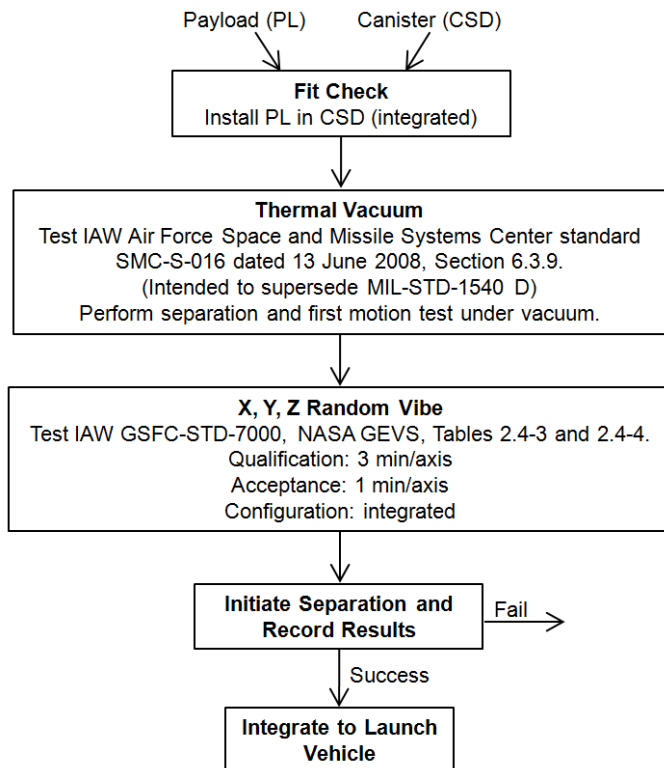


Figure 6: Payload in CSD

**TEST AND INTEGRATION FLOW**

Test levels are for launch environment, not necessarily on-orbit.



**ADDITIONAL INFORMATION**

Verify this is the latest revision of the specification by visiting [www.planetarysystemscorp.com](http://www.planetarysystemscorp.com). Simple step models and 3D PDFs of the payloads and canisters are also available. Please contact Ryan Hevner, [ryanh@planetarysystemscorp.com](mailto:ryanh@planetarysystemscorp.com) with questions or comments. Feedback is welcome in order to realize the full potential of this technology.

**AUTHORS**

Specification created by:  
 Ryan Hevner, Planetary Systems Corp  
 Walter Holemans, Planetary Systems Corp  
 Jordi Puig-Suari, Cal. Poly. San Luis Obispo  
 Robert Twiggs, Morehead State University

With contributions from and special thanks to:  
 Bruce Yost, NASA Ames  
 Jim White, Colorado Satellite Services  
 Andrew Kalman, Pumpkin Inc.  
 Adam Reif, Pumpkin Inc.