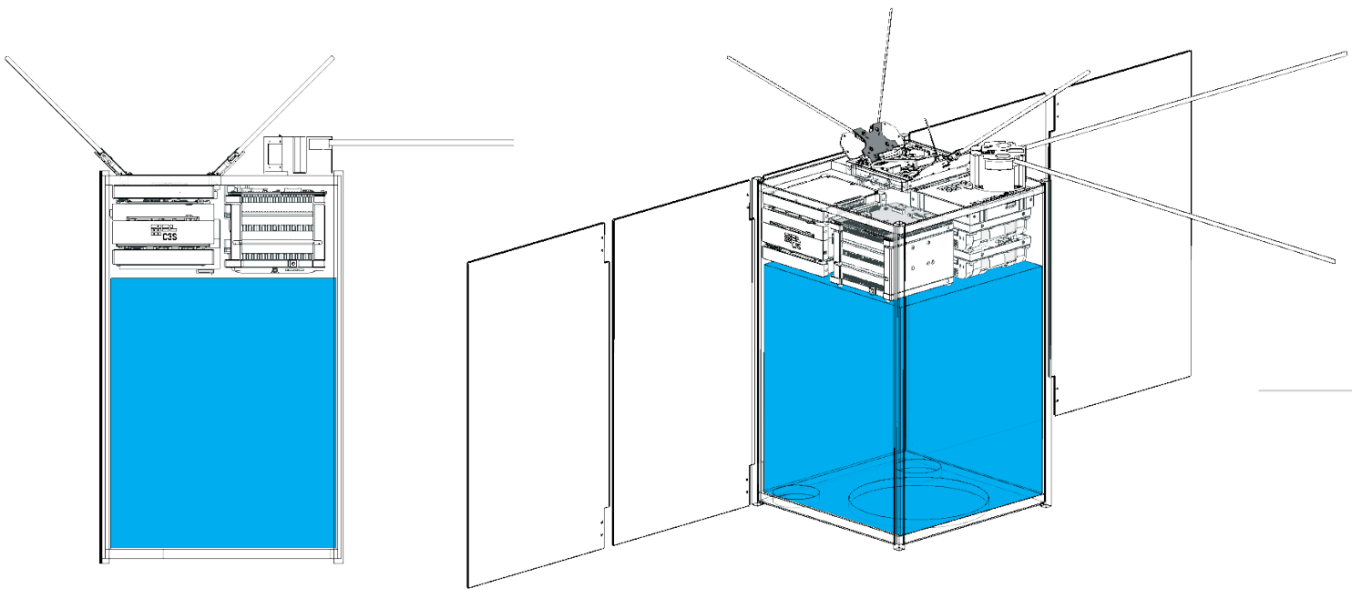
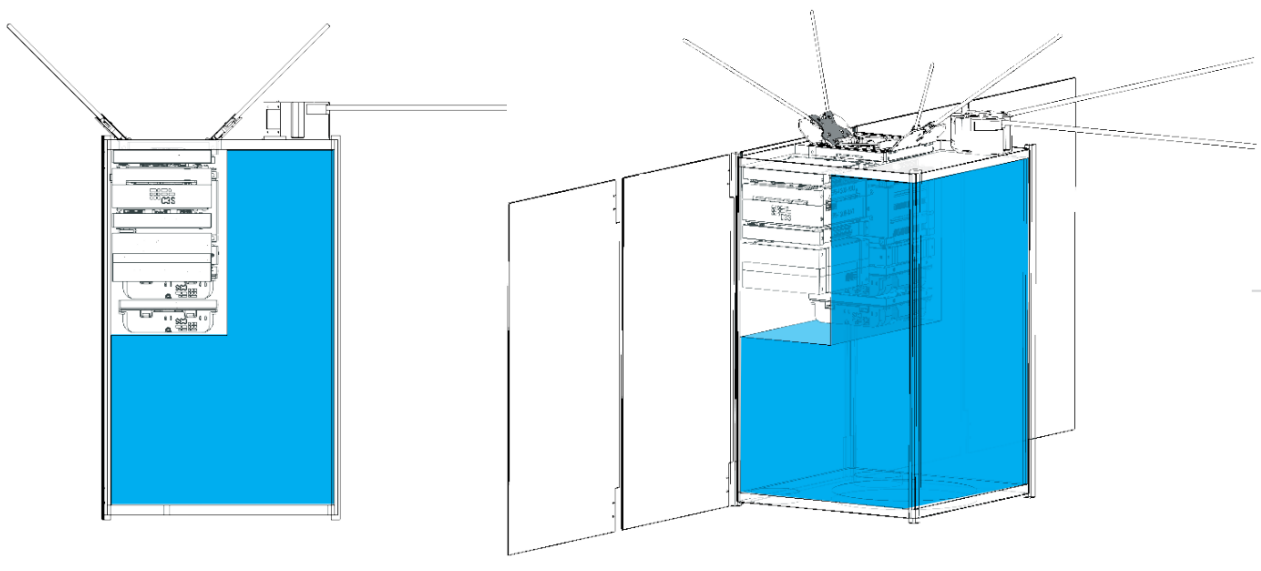
12U

Available PAYLOAD BAY



NORMAL PAYLOAD
11.1 L



L-SHAPED PAYLOAD
10.8 L

Payload Dimensions	216.2 × 216.2 × 242 mm
Payload Mass* Based on our preferred pod	18kg
Spacecraft Mass* Payload excluded	6 kg
Spacecraft Dimensions	226.3 × 226.3 × 366 mm

* Up to, depending on configuration

PARAMETERS		VALUES		NOTES
Payload Power (Sun Tracking)		peak power: 140-505 W		EPS 1200, 2000
Platform Power	**Average power consumption:**	7.9 W		
	Peak power consumption:	25 W		
Battery Capacity		58-620 Wh		Depending on battery pack
Payload Voltage Channels	**EPS 1200**	3V3, 5 V, Vbat (9.9-12.3 V)		
	EPS 2000	Vbat (23.1-28.7 V or 26.4-32.8 V)		
Solar array (SAR)	**Voltage range**	6-25 V		
	Channel power	12 W		
	Channel number	Up to 20		
Absolute Knowledge Error (AKE)**		Baseline: 0.4 deg High Performance: 0.004 deg		Baseline: Coarse Attitude Determination and Control. High Performance: Includes star tracker over Baseline configuration, offering Fine Attitude Determination and Control. 1-sigma, angular magnitude
Absolute Performance Error (APE)**		Baseline: 0.6 deg High Performance: 0.017 deg		
Jitter		30 urad		RMS, over complete spectrum.
Slew Rates		up to 2 deg/s/axis		Dependent on payload inertia and pointing constraints.
Frequency		5 Hz		
Modes		Detumbling, Safe and Normal mode.		
Pointing Constraints (3-axis)		Sun, Moon, Ground Target, (Off-) Nadir, Velocity, Inertial Reference (e.g. Star Coordinates), Satellite Tracking.		
GNSS	**Position Accuracy**	2 m		CEP
	Velocity Accuracy	0.1 m/s		CEP
	Time delay	5 ns		
	Beacon transmitter (ISL) RF parameters	137.1–137.925 MHz (VHF)		
Mechanical		Card Guide, Box-in-a-Box		
Payload Data Interfaces (fixed)		1 × SPI (LVCMOS3V3) 1 × SPI (LVDS I/O) 2 × (LVCMOS3V3 I/O) 2 × SpaceWire	1 × CAN 2.0B 1 × USB 2.0 1 × USB 3.0 1 × Gigabit Ethernet	Limitations on simultaneous use of multiple interfaces may apply LVDS options: 2 × TX/RX or 4 × TX or 4 × RX
Payload Data Interfaces (Up to 10, customer selectable)		Dual RS-232 Dual RS-422 RS-485	M-LVDS Dual I2C LVDS	
Data Rates and Frequencies (professional band)		UHF: Frequency: 399-403 MHz uplink/ downlink: up to 150 kbps maximum transmit power: 30 dBm	S-Band: Frequency: 2200-2290 MHz Downlink Data Rate: up to 15 Mbps Uplink* Data Rate: up to 15 Mbps Maximum transmit power: 30 dBm	X-Band: Frequency: 8000-8400 MHz Downlink Data Rate: up to 225 Mbps Maximum transmit power: 30 dBm
Modulation		OOK/FSK/GFSK		
On-Board Computer	**CPU core**	ARM Cortex-M7	**Payload Controller** **CPU core**	4 x ARM Cortex-A35
	Clock frequency	Up to 300 MHz	**Clock frequency**	Up to 1.2 GHz
			Operating System	Linux
Data storage	**OBC**	16 GByte eMMC, 16 MByte MRAM		Radiation resistant
	IPC	256 GByte SD card, 8GByte eMMC		
Subsystem interconnection		Rigid backplane with nano-D and micro-D connectors		Micro-D: MIL-DTL-83513, Nano-D: MIL-DTL-32139
Redundancy		Subsystem level cold redundancy		
Designed Lifetime		Up to 5 years		
Technological Readiness Level		TRL 9		
Operating temperature range		-40–+80°C		

** Expressed at 1-sigma confidence level, magnitude (RSS of angular components).

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