



SPACECRAFT BUSES,  
SYSTEMS & SOLUTIONS

# ENVIRONMENTAL TEST CAPABILITIES



**Our environmental testing services are now available externally to help build confidence in your mission.**

Blue Canyon Technologies' spacecraft bus platforms and components are flight proven, high-performing and reliable. Part of this successful heritage is a result of our dedication to testing like we fly.

As part of our standard suite of testing, Blue Canyon performs thermal vacuum testing to simulate space environments, including extreme temperature, vibration and vacuum conditions. In addition, our vibration testing equipment assess the impact that mechanical stresses and vibrations have on a variety of materials, helping to identify structural weaknesses and ensure durability. Blue Canyon currently has 12 TVAC chambers, 25 thermal chambers and two vibration tables across its Colorado facilities. While TVAC and vibe testing is common throughout the industry, Blue Canyon's one-of-a-kind shock testing machine tests high-G shock events across all three axes, verifying the resilience and functionality of space-bound technology.

**TVAC TESTING**

	<b>EXTRA LARGE</b>	<b>LARGE</b>	<b>MEDIUM</b>	<b>SMALL</b>
<b>PRESSURE RANGE</b>	1E-6 Torr using Cryo Pump	1E-6 Torr using Cryo Pump	1E-6 Torr using Cryo Pump	1E-5 Torr using Turbo Pump
<b>TEMPERATURE</b>	-190°C to +125°C	-65°C to +65°C	-65°C to +65°C	-65°C to +65°C
<b>PLATEN SIZE</b>	36"x60" 1/4-20 thread 2.5"x2.5" grid pattern	32"x38" 1/4-20 thread 2.5"x2.5" grid pattern	47.5"x23.5" 1/4-20 thread 2.5"x2.5" grid pattern	21"x21" 1/4-20 thread 1"x1" grid pattern
<b>SHROUD</b>	80" Diameter 60" Long	67" Diameter 40" Long	46"W x 25.5"H x 36" L	24"W x 24"H x 24" L
<b>FEEDTHROUGHS</b>	ASA1000 plates, 25DSUB & 50DSUB connectors, RF connections available on 2.75" CF flanges	ASA800 plates, 25DSUB & 50DSUB connectors, RF connections available on 2.75" CF flanges	4.5" & 4.625" CF plates, 25DSUB, 50DSUB & 72DSUB connectors, RF connections available on 2.75" CF flanges	25DSUB & 50DSUB connectors, RF connections

**THERMAL CHAMBERS**

	<b>WALK-IN</b>	<b>LARGE</b>	<b>MEDIUM</b>	<b>SMALL</b>
<b>RAMP RATES</b>	50°C/min cooling 7°C/min heating	1.5°C/min cooling 4°C/min heating	15°C/min cooling 15°C/min heating	3°C/min cooling 5°C/min heating
<b>TEMPERATURE</b>	-70°C to +185°C	-73°C to +175°C	-73°C to +180°C	-73°C to +175°C
<b>INTERIOR</b>	54"W x 81"H x 60"L	48"W x 48"H x 48"L	19.6"W x 23.6"H x 15"L, 30"W x 30"H x 30"L or 40"W x 32"H x 36.5"L	16"W x 12"H x 14"L or 19.6"W x 12"H x 11"L
<b>ATMOSPHERE</b>	Nitrogen purged	Nitrogen or dry air purged	Nitrogen or dry air purged	Nitrogen or dry air purged
<b>FEEDTHROUGHS</b>	4" - 6" ports	4" - 6" ports	4" ports	2" ports

**VIBRATION TABLE**

	<b>LARGE</b>	<b>MEDIUM</b>
<b>FORCE RATING</b>	18,000 lbf sine 18,000 lbf random	8,000 lbf sine 8,000 lbf random
<b>AUTOMATIC LOAD SUPPORT</b>	2,500 lbs	1,360 lbs
<b>MAX FREE AMPLITUDE</b>	85 g	95 g
<b>STROKE</b>	3"	2"
<b>MAX VELOCITY</b>	80 in/sec	75 in/sec
<b>MOUNTING</b>	36" x 36" with 3/8"-24 threads on a 4" grid pattern	28" x 28" with 3/8"-24 threads on a 4" grid pattern

**SHOCK TESTING**

<b>BCT 9000</b>	
<b>MOUNTING PLATE</b>	44" x 20" with 3/8" - 16 threads on 4" x 4" grid pattern
<b>ADAPTER PLATE</b>	12" x 12" with 2" x 2" grid pattern

Note: This data is for information only and subject to change. Please contact Blue Canyon Technologies for current design data.



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