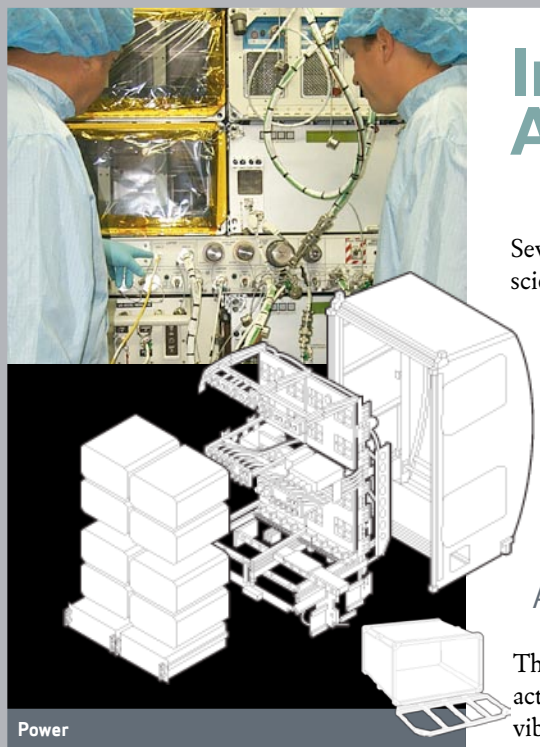


Internal Research Accommodations

Several research facilities are in place aboard the Station to support science investigations.

Standard Payload Racks

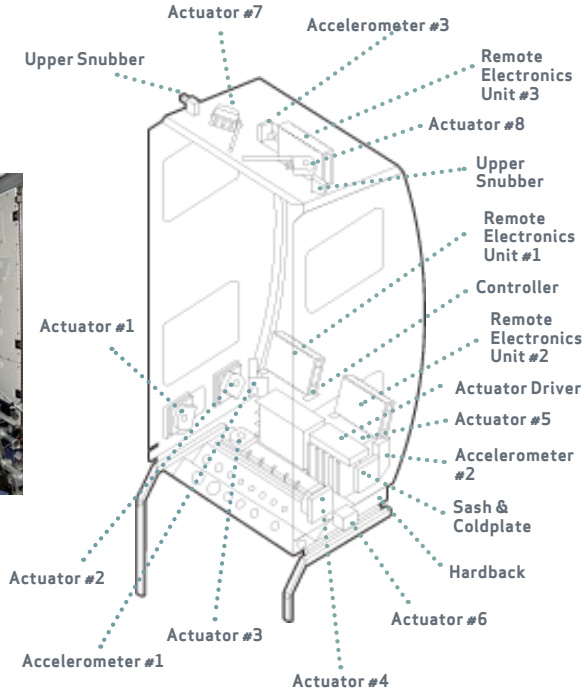
Research payloads within the U.S., European, and Japanese laboratories typically are housed in a standard rack, such as the International Standard Payload Rack (ISPR). Smaller payloads may fit in a Shuttle middeck locker equivalent and be carried in a rack framework.

Power	
3, 6, or 12 kW, 114.5–126 voltage, direct current (VDC)	
Data	
Low rate	MIL-STD-1553 bus 1 Mbps
High rate	100 Mbps
Ethernet	10 Mbps
Video	NTSC
Gases	
Nitrogen	Flow = 0.1 kg/min minimum 517–827 kPa, nominal 1,379 kPa, maximum
Argon, carbon dioxide, helium	517–768 kPa, nominal 1,379 kPa, maximum
Cooling Loops	
Moderate temperature	16.1 °C–18.3 °C
Flow rate	0–45.36 kg/h
Low temperature	3.3 °C–5.6 °C
Flow rate	233 kg/h
Vacuum	
Venting	10–3 torr in less than 2 h for single payload of 100 L
Vacuum resource	10–3 torr

Active Rack Isolation System (ARIS)

The ARIS is designed to isolate payload racks from vibration. The ARIS is an active electromechanical damping system attached to a standard rack that senses the vibratory environment with accelerometers and then damps it by introducing a compensating force.

Crew installs a rack in the U.S. Lab in orbit.



Research Rack Locations

INTERNATIONAL PRESSURIZED SITES	STATION-WIDE	U.S. SHARED
U.S. Laboratory	13	13
Japanese Experiment Module	11	5
European Columbus Research Laboratory	10	5
Total	34	23

Installation of a rack in the U.S. Lab prior to launch.