

Outline

For widely use, as a laboratory on the ground.

Multi Purpose Small payload Rack (MSPR) has 2 workspaces and a work table. They can be almost equally used as a laboratory on the ground—putting equipments freely and easily, using general interfaces of power supply, communication and videos. MSPR can be used for wide fields of space environment utilization including science and educational missions.

Work Volume (WV)

A workspace for some size of experiments. Candidates are the Aquatic Habitat experiments and the combustion experiments. Its volume is about 350L. Within its function, WV can also accommodate other equipments for science and educational missions. User's equipment can be easily and freely installed using velcros, fasteners and pins etc.

Workbench (WB)

A work table for crews maintaining user's equipment, exchanging samples and reviewing data etc. Its area is about 0.5m². WB is only work table in JEM and can be stored into the rack when it is not in use. Power for LAPTOP PC is also available.

Small Experiment Area (SEA)

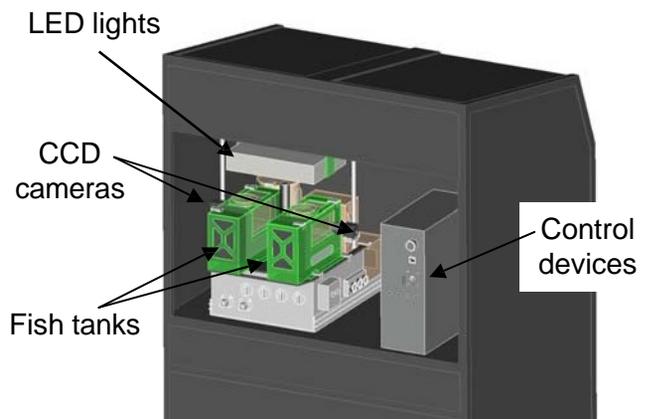
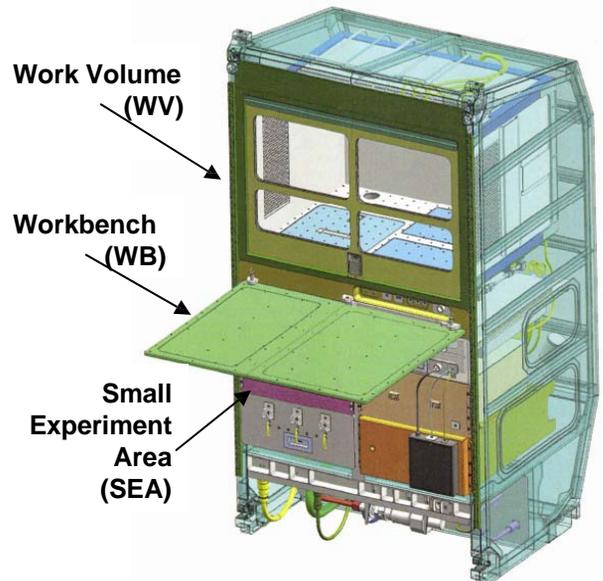
A space for small size experiment which do not need much resources such as crystallization experiments. Its volume is about 70L. Vibration isolation from WV and crew could be accommodated.

LAPTOP PC

Set up near WV. It is used for the user's software and experimental conditions, downlink of experimental data from JEM and controlling user's equipment on orbit.

Chamber for Combustion Experiments

A double enclosed chamber for the combustion and other experiments that needs enclosed and/or exhaust systems in JEM. It can be set up into WV. At the use of combustion experiments, user's equipment assembly (including combustion room, sample gases, cameras etc.) is accommodated into that vessel and enclosed.



An image of loading Aquatic Habitat (AQH)
In the Work Volume

Specifications

		Specifications
Workspaces Table	Work Volume (WV)	<p>A workspace for the experiments, such as Aquatic Habitat experiments and the combustion experiments. And also accommodate other equipments for science and educational missions within its function. Dimensions: 600mm(H) x 900mm(W) x 700mm(D)</p> <p>Functions & Properties</p> <ul style="list-style-type: none"> : N₂ gas supply and exhaust line of JEM are available. : Heat rejection, smoke detection from the user's equipment. : Cutting off the power supply at emergency. : Relieving the requirement level of noises and electric emissions from user's equipment.
	Small Experiment Area (SEA)	<p>A volume for small size experiment which do not need much resources such as crystallization experiments. Dimensions: 300mm(H) x 412mm(W) x 529mm(D)</p> <p>Functions & Properties</p> <ul style="list-style-type: none"> : Heat rejection, smoke detection of the user's equipment. : Cutting off the power supply at emergency. : Relieving the requirement level of noises and emissions from user's equipment.
	Workbench (WB)	<p>A work table for crews maintaining user's equipment, exchanging samples and reviewing data etc. Dimensions: 900mm(W) x 540mm(D)</p> <p>Functions & Properties</p> <ul style="list-style-type: none"> : Putting in storage into the rack when it is not in use. : Power for LAPTOP PC is available.
Enclosed Chamber	Chamber for Combustion Experiments	<p>A double enclosed vessel for the combustion and other experiments that needs enclosed and/or exhaust systems in JEM. User Area: 520mm(H) x 550mm(W) x 354mm(D)</p> <p>Functions & Properties</p> <ul style="list-style-type: none"> : No damage is found in the case of 100[L] gas (at normal temperature and pressure) leakage. : All functions and resources for WV are available.
User's Interfaces	Power	<p>Supplied interfaces: 28[VDC], 16[VDC], 5[VDC] Power Supply: Work Volume and Small Experiment Area・・・Total 500[W] : Workbench 100[W] (16[VDC]; for LAPTOP PC)</p>
	Videos	<p>As MSPR, one of followings is available (recorded, downlink). NTSC video x 3[ch] or High-definition television (HDTV) x 1[ch]</p>
	Communication	<p>Protocol: Ethernet, USB User's equipment ⇔ LAPTOP PC, LAPTOP PC ⇔ Users on the ground.</p>