

	PSI 1	PSI 2	PSI 3	PSI 5	PSI 6	PSI 7	PSI 9
Chamber parameters	<i>LEO (Low Earth Orbit)</i>	<i>Solar System</i>	<i>Deep Space 1</i>	<i>PlanE (Planetary Environment)</i>	<i>Deep Space 2</i>	<i>MaSimKa (Mars Simulations Kammer)</i>	<i>Deep Space 3 Long Duration</i>
main chamber inner size D x H [m]	0.50 x 0.50	0.80 x 0.49	0.30 x 0.35	0.20 x 0.30	0.20 x 0.30	0.25 x 0.35	0.25 x 0.30
usable inner size D x H [m] L x W x H [m]	0.50 x 0.35	0.46 x 0.26 x 0.15	0.30 x 0.25 x 0.05	0.16 x 0.28	0.14 x 0.28	0.22 x 0.26	0.20 x 0.20
		2 stacked cold plates	4 stacked cold plates	1 cold plate			
irradiation windows material D x t [m] L x W x t [m]	vertical window Herasil 0.47 x 0.10	top lid window Herasil 0.45 x 0.26 x 0.03	top lid window Suprasil 0.35 x 0.02	top lid window Suprasil DN63 0.17 x 0.01	top lid window Suprasil DN63 0.17 x 0.01	top lid window Spectrosil 2000 0.09 x 0.01	top lid window quartz 0.08 x 0.01
		lateral inspection windows 0.17 x 0.01 0.14 x 0.01			lateral inspection windows 0.13 x 0.01 0.04 x 0.01		
D x H [m]							
optional interface ports D [m]	CF-F: 4 x DN40 4 x DN63 1 x DN160	CF-F: 5 x DN40 1 x DN63 2 x DN100 1 x DN160	CF-F: 5 x DN40 3 x DN63 ISO-KF: 2 x DN40	CF-F: 3 x DN63	CF-F: 1 x DN40 1 x DN63	CF-F: 4 x DN40 3 x DN63 1 x DN160	CF-F: 7 x DN40 5 x DN63 1 x DN160
special features	mass spectrometer Prisma™ 80	2 windows 1 x DN63 1 x DN160	—	—	sample wheel with 6 - 8 slots	water injection system rF [%] 0.3 – 99.7 at 200 – 1200 Pa humidity sensor	2 windows 1 x DN40 1 x DN100
electrical connectors interfaces	—	16 channel high speed DAQ 360 ksamples/s	—	—	—	16 channel high speed DAQ 360 ksamples/s	—

Operational parameters	PSI 1	PSI 2	PSI 3	PSI 5	PSI 6	PSI 7	PSI 9
	LEO (Low Earth Orbit)	Solar System	Deep Space 1	PlanE (Planetary Environment)	Deep Space 2	MaSimKa (Mars Simulations Kammer)	Deep Space 3 Long Duration
final pressure [Pa]	5 x 10 ⁻⁵	5 x 10 ⁻⁵	1 x 10 ⁻¹⁰	1 x 10 ⁻⁷	1 x 10 ⁻¹⁰	1 x 10 ⁻⁷	1 x 10 ⁻¹⁰
pumping units	rotary vane pump Duo35A + HIPace 700	rotary vane pump Duo35A + TMU261P	IGP	rotary vane pump Duo20 + TMU261P	rotary vane pump Duo20 + TMU261P IGP	rotary vane pump Duo20 + TMU261P	IGP
gas mixing capability	Argon, Nitrogen, Helium, customised gas mixtures	Argon, Nitrogen, Helium, customised gas mixtures	—	Argon, Nitrogen, Helium, customised gas mixtures	Argon, Nitrogen, Helium, customised gas mixtures	Argon, Nitrogen, Helium, customised gas mixtures	—
temperature range stability [K]	248 – 353 +/- 0.1	233 – 323 +/- 0.1	233 – 323 +/- 0.1	243 – 323 +/- 0.1	—	248 – 353 +/- 0.1	—
device	shroud cold plate	2 stacked cold plates	4 stacked cold plates	1 cold plate		cold plate	
irradiation source	1000 W, 2000 W polychromatic metal halogenide	1000 W, 2000 W polychromatic metal halogenide	1000 W, 2000 W polychromatic metal halogenide	254 nm Hg low pressure	254 nm Hg low pressure	400 W polychromatic metal halogenide	254 nm Hg low pressure
		8 x D200 inserted deuterium	254 nm Hg low pressure	D200 inserted deuterium	D200 inserted deuterium	254 nm Hg low pressure	
spectral analysis	Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	X-ray 150 kW Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	Bentham DMC150, measurement range 200 - 600 nm, smallest measuring step 0.5 nm	—

Operational parameters	PSI 1 <i>LEO (Low Earth Orbit)</i>	PSI 2 <i>Solar System</i>	PSI 3 <i>Deep Space 1</i>	PSI 5 <i>PlanE (Planetary Environment)</i>	PSI 6 <i>Deep Space 2</i>	PSI 7 <i>MaSimKa (Mars Simulations Kammer)</i>	PSI 9 <i>Deep Space 3 Long Duration</i>
pressure sensors	TPG 262 Full Range Gauge	TPG 262 Full Range Gauge	400 L/s Noble Vaclon PCU $1.3 \times 10^{-7} - 1 \times 10^{-3}$ Pa	TPG 262 Full Range Gauge	TPG 262 Full Range Gauge min. 1×10^{-10} Pa	MKS PR4000 Baratron® MKS Type 626 0.1 - 1200 Pa	400 L/s Noble Vaclon PCU $1.3 \times 10^{-7} - 1 \times 10^{-3}$ Pa
leak test	Leybold Heraeus Ultratest M2 pressure range $10^1 - 10^{-4}$ Pa; Helium	Leybold Heraeus Ultratest M2 pressure range $10^1 - 10^{-4}$ Pa; Helium	—	Leybold Heraeus Ultratest M2 pressure range $10^1 - 10^{-4}$ Pa; Helium	Leybold Heraeus Ultratest M2 pressure range $10^1 - 10^{-4}$ Pa; Helium	Leybold Heraeus Ultratest M2 pressure range $10^1 - 10^{-4}$ Pa; Helium	—
temperature sensors	—	4 x PT100 RTD	—	1 x PT100	—	5 x PT100 + NiDaqPad6015	—
temperature control	LAUDA RP 1290 C (183 – 473 K)	LAUDA RP 1290 C (183 – 473 K)	LAUDA RP 1290 C (183 – 473 K)	LAUDA RP 855 (218 – 473 K)	—	LAUDA RKP 20 (233 – 473 K)	—
expertise	MATROSHKA preflight tests, BioDiv	EURECA ERA EXPOSE-E, -R, -R2 BIOPAN MARSTOX 1, 2 preflight tests, mission ground reference tests	EURECA BIOSTACK EXPOSE-E, -R mission ground reference tests	Mars 500 MICHAm Planetary Protection resistance experi- ments MiDiv, BioDiv	EXPOSE-R2 preflight tests, MiDiv, BioDiv		EURECA BIOSTACK