

## Testing Fees

Test item	Outline	Specification	Apparatus usage fee	Consultation fee	Test preparation fee	Operator fee ※3	Operation charge※4	Remarks/Notes
EMC testing	Antenna pattern measurement. Electromagnetic compatibility (emission) test.	Dimensions of test chamber (lined with radio wave absorbers) : 6.0m x 5.2m x 5.0m	15,000 yen/day	10,000yen ※6	20,000 yen	45,000 yen/day	30,000 yen/day	Expendable costs (actual costs) are billed separately. ※1
Vibration test	Verification of mechanical strength against launch environment	Acceleration measurements are taken at 24 points (max.). Consultation is needed if extra points are required.	20,000 yen/day	30,000yen ※6	20,000 yen ※7	45,000 yen/day	30,000 yen/day	Expendable costs (actual costs) are billed separately. ※1 In case of clean booth usage※2 Test report (ISO-17025:2017)※5
Shock test	Verification of strength against shock events in launch environment (satellite separation, faring separation)	The test can be performed for satellites with max side size of up to 50 cm and max mass of up to 50 kg.	30,000 yen/day	30,000yen ※6	20,000 yen ※7	45,000 yen/day	30,000 yen/day	Expendable costs (actual costs) are billed separately. ※1 In case of clean booth usage※2
Thermal vacuum chamber (large)	Verification of satellite functionalities/ performance and thermal control in simulated space thermal environment	Internal diameter of liquid nitrogen shroud: 1.5m. Pressure : 1.0x10 <sup>-5</sup> Pa.	20,000 yen/day	30,000yen ※6	50,000 yen	45,000 yen/day	30,000 yen/day	Expendable costs (actual costs) are billed separately. ※1 In case of clean booth usage※2
Thermal vacuum chamber (small)	Verification of satellite functionalities/ performance and thermal control in simulated space thermal environment	Maximum size to be tested: 15cm x 15cm x 30 cm (Inside LN2 Shroud) Pressure : 1.0x10 <sup>-5</sup> Pa.	15,000 yen/day	30,000yen ※6	30,000 yen	45,000 yen/day	30,000 yen/day	Expendable costs (actual costs) are billed separately. ※1 In case of clean booth usage※2
Thermal cycle (large)	Verification of satellite functionalities/ performance and strength against thermal stresses	Temperature profile can be set freely from -190°C to +200°C.	15,000 yen/day	30,000yen ※6	20,000 yen ※7	15,000 yen/day	15,000 yen/day	Expendable costs (actual costs) are billed separately. ※1
Thermal cycle (small)	Verification of satellite functionalities/ performance and strength against thermal stresses	Temperature profile can be set freely from -190°C to +200°C.	15,000 yen/day	30,000yen ※6	20,000 yen ※7	15,000 yen/day	15,000 yen/day	Expendable costs (actual costs) are billed separately. ※1
Satellite attitude control measurement (ADCS)	Measurement of various items related to satellite attitude control	•Geomagnetic sensor calibration •Gyro sensor calibration •Sun sensor calibration	25,000yen/day	30,000yen ※9	50,000yen	45,000yen/day	30,000yen/day	Expendable costs (actual costs) are billed separately. ※1
Solar simulator	Solar panel characteristic measurement test using a solar simulator		15,000yen/day			15,000yen/day	15,000yen/day	Expendable costs (actual costs) are billed separately. ※1
Outgas Measurement	Measurement of outgas properties (TML,TVC,etc.)	Based on ASTM E-595	100,000 yen/test			50,000yen/material	—	Expendable costs are included in apparatus usage fee. up to 4 materials for a test. If you refuse to require irregular sample/test, to release material's information, etc., additional cost is needed (operator fee is twice). Number of samples is 3 for each material. For different number of samples, the testing fee is estimated by using the following • If the value of M(number of materials) × N(number of samples) exceed 12, apparatus usage fee is needed for each 12 in the value of M × N. • If not N=3, the value of M × N ÷ 3 rounded out to an integer multiply by operator fee. Only Kyutech operators are permitted. Time needed for delivery is approximately one month or more.
Thermo-optics properties Test	Measurement of solar absorptance and infra- red emissivity	Measurement wavelength range Solar absorptance: 0.25~2.5 μm Infrared Emissivity : 2.5~100 μm	Solar absorptance: 20,000 yen/test Infrared Emissivity: 20,000 yen/test			15,000 yen/data (Alpha and Epsilon measurements are performed twice; total price is 15,000x4+20,000+20,000 =100,000 yen per sample)	—	Expendable costs are included in apparatus usage fee. up to 6 data (or spectra) for a test. If you refuse to require irregular sample/test, to release material's information, etc., additional cost is needed (operator fee is twice). Consultation in advance is necessary. Only Kyutech operators are permitted. Time needed for delivery is approximately one month or more.
Satellite assembly room (Clean room)	Fees are charged for clean room usage		4,000 yen/day			—	—	

Testing fees are subject to change without notice.

Additional operator fee will be charged if there is any consulting during the test such as doing a test different from the test plan or changing the test method during the test

※1 : Refers to expendables such as liquid nitrogen, making of dedicated Jig, additional sensors, etc...

※2: If the test is carried out inside the clean booth, 10,000 yen (per usage) will be charged additionally.

※3: The operator fee is charged if the equipment is operated by Kyutech staff. The charge is based on 8 hours/day/person.

※4: Operation charge corresponds to consideration of assignment of results/achievements. The test results belong to the user.

※5: The test report based on ISO-17025:2017 is issued with additional charge of 20,000 yen.

※6: This fee is applied, if the contents of the test are complicated and a preliminary meeting (including e-mail and video conference) is required.

※7: This fee is applied, if we need to prepare for the test in advance.