Annex to ISO/IEC 17025 declaration of accreditation
for registration number: **L 412**

of **ESA/ESTEC**
Mechanical Engineering Department
Noordwijk

This annex is valid from: **17-08-2012** to **01-10-2015** Replaces annex dated: **28-09-2011**

No.	Material or product	Type of activity	Internal reference number
		Flexible Scope*	
		Mechanical Systems Laboratory	
1	Materials and equipment used for satellite and spacecraft constructions	Thermal testing for development, qualification and flight models i.e. testing of thermal vacuum, balance and temperature cycling at ambient pressure Ranges: - Temperature: -185 – 80 ºC / 150 ºC with infrared lamps - Voltage: 2 mV – 60 V - Pressure: 1E-5 mbar / 1 bar for ambient temperature	TEC-MTV-MSL/C001 in house method
2	Isolating materials (multilayer insulation) used for satellite and spacecraft thermal control	Thermal testing for development, qualification and flight models i.e. measurement of thermal conductance (heat transfer coefficient) Ranges: - Temperature: -185 – 100 ºC - Voltage: 2 mV – 60 V - Pressure: 1E-6 mbar	TEC-MTV-MSL/C003 in house method
3	Materials and equipment used for satellite and spacecraft construction	Measurement of residual gasses on composition using mass spectrometry Ranges: - Composition: 0 – 200 Amu	TEC-MTV-MSL/C004 in house method

This annex has been approved by:

Ir. J.C. van der Poel
Chief Executive

*As part of the description of these activities, the laboratory may, following validation, amend already accredited testing methods, either to improve them or at the request of the client.

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No.	Material or product	Type of activity	Internal reference number
4	Materials and equipment used for satellite and spacecraft construction	Vibration testing for development, qualification and flight models i.e. testing of Sinusiodal vibration and random vibration using active accelerometers Ranges: Sinusiodal: 5Hz to 2 kHz Random: 20 Hz to 2 kHz	TEC-MTV-MSL/C006 in house method
5	Composites and materials used in spacecraft design	Measurement of the coefficient of thermal expansion using CTE1000 Range: -120 - +60 ºC	TEC-MTV-MSL/C005 in house method
		ESA Propulsion Laboratory	
6	Thruster	Thrust measurement: - Direct measurement - Indirect measurement by electrical parameters Physical quantities: - Force: 1 µN – 500 mN - Current: 1µA – 5 A - Voltage: 1 V – 10 kV	TEC-MP-EPL/P003 in house method
7	Thruster Neutralizer/Cathode (for EP only)	Mass Flow measurement: - Direct measurement - Indirect measurement by electrical parameters Physical quantities: - Mass Flow: 1 µg/s – 300 mg/s - Mass: 0,1 mg – 500 g - Current: 1µA – 5 A	TEC-MP-EPL/P005 in house method

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No.	Material or product	Type of activity	Internal reference number
8	Propulsion System (includes thruster, and for EP neutralizer and power control unit) Thruster Thruster Components, as Neutralizer or Power Control Unit (for EP)	Electrical Power related measurement: - Direct measurement of current and voltage Physical quantities: - Power: 1 mW – 2 kW - Current: 1µA – 5 A - Voltage: 1 V – 10 kV	TEC-MP-EPL/P004 in house method
		Optics Laboratory	
9	Optical elements e.g. made from glass, ceramics or composites used for satellite and spacecraft instruments	Measurement of surface shape and /or transmitted wavefront error: Ranges: - Peak to valley (PV) of 6328.0 to 31.6 nm, - Root mean square (RMS) of 632.8 to 12.7 nm, Remarks: - Wavelength of operation is 632.8nm (HeNe Gas Laser, CW) - Interferometer used is a Fizeau configuration with full aperture capability of up to 100 mm	TEC-MMO-OPL/P001 in house method
10	Solar simulator optical output beam flux per unit area	Measurement of absolute Irradiance (E) Range: 700 to 1400 W/m^2 Remark: Optical wavelength bandwidth: 200 – 2500 nm	TEC-MMO-OPL/P003 in house method