


United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>4294</p> <p>Accredited to ISO/IEC 17025:2017</p>	QinetiQ Group plc	
	Issue No: 017 Issue date: 14 June 2021	
Environmental Test Centre MoD Shoeburyness Southend-on-Sea Essex SS3 9SR	Contact: Gareth Williams Tel: +44 (0) 1702 383402 Mob: +44 (0) 7385 026190 E-Mail: GAWILLIAMS5@qinetiq.com Website: www.qinetiq.com	
Testing performed at the above address only		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used																														
<p>Hazardous items including but not limited to:</p> <p>Ammunition Explosives and Propellants Firearms Fuses: Weapons Missile Components Missiles: Guided Missiles: Unguided Rocket Motors Weapons and Sub-assemblies Aerospace Components and Equipment</p> <p>Non-hazardous items including but not limited to:</p> <p>Aerospace Structures Casting Compressors Computers, Peripherals and other IT Equipment Electrical/Electronic Components Connectors and Products Generators: Electrical Power and Welding Hydraulic Equipment and fittings Marine Equipment Medical/Dental Equipment</p>	<p style="text-align: center;">ENVIRONMENTAL TESTS</p> <p>Environmental Testing, particularly on dangerous substances under the subdivisions of the Explosives Class 1 of the UN Dangerous Goods Classification system:</p> <p>Climatic Testing:</p> <table> <tr><td>2000 kg</td><td>HD 1.1</td></tr> <tr><td>1350 kg</td><td>HD 1.2.1</td></tr> <tr><td>2000 kg</td><td>HD 1.2.2</td></tr> <tr><td>3000 kg</td><td>HD 1.3</td></tr> <tr><td>Unlimited</td><td>HD 1.4</td></tr> </table> <p>Dynamic Testing:</p> <table> <tr><td>1000 kg</td><td>HD 1.1</td></tr> <tr><td>1000 kg</td><td>HD 1.2.1</td></tr> <tr><td>2000 kg</td><td>HD 1.2.2</td></tr> <tr><td>2000 kg</td><td>HD 1.3</td></tr> <tr><td>Unlimited</td><td>HD 1.4</td></tr> </table> <p>Radiographic Inspection:</p> <table> <tr><td>400 kg</td><td>HD 1.1</td></tr> <tr><td>250 kg</td><td>HD 1.2.1</td></tr> <tr><td>1000 kg</td><td>HD 1.2.2</td></tr> <tr><td>2000 kg</td><td>HD 1.3</td></tr> <tr><td>Unlimited</td><td>HD 1.4</td></tr> </table>	2000 kg	HD 1.1	1350 kg	HD 1.2.1	2000 kg	HD 1.2.2	3000 kg	HD 1.3	Unlimited	HD 1.4	1000 kg	HD 1.1	1000 kg	HD 1.2.1	2000 kg	HD 1.2.2	2000 kg	HD 1.3	Unlimited	HD 1.4	400 kg	HD 1.1	250 kg	HD 1.2.1	1000 kg	HD 1.2.2	2000 kg	HD 1.3	Unlimited	HD 1.4	
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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
Office Equipment: Electrical and Mechanical Radar Equipment Radio and TV Equipment Safety Equipment and Appliances Security Equipment Sonar Equipment Telecommunications Equipment	<u>Climatic: Single Parameters:</u> High Temperature: Max Temperature: + 100 °C Max Chamber Size: 2.5 m x 3.0 m x 9.0 m	DEF STAN 00-35 Iss 4, 2006: CL1 & CL2 DEF STAN 00-035 Iss 5, 2017: CL 1 & CL2 MIL STD 810 E, 1989: 501 F, 2000: 501 G, 2010: 501 AECTP 302 BS EN 60068 2007: -2-2: Bb
	Low Temperature: Min Temperature: - 60 °C Max Chamber Size: 2.5 m x 3.0 m x 9.0 m	DEF STAN 00-35 Iss 3, 1999: CL5 Iss 4, 2006: CL5 DEF STAN 00-035 Iss 5, 2017: CL5 MIL STD 810 E, 1989: 502 F, 2000: 502 G, 2010: 502 AECTP 303 BS EN 60068 1993: -2-1: Ab 2007: -2-1: Ab
	Humidity: - Steady State + 20 °C to + 80 °C Humidity Range: 10% RH to 98% RH Max Chamber Size: 2.5 m x 3.0 m x 9.0 m	DEF STAN 00-35 Iss 4, 2006: CL7 DEF STAN 00-035 Iss5, 2017: CL 7 MIL STD 810 E, 1989: 507 F, 2000: 507 G, 2010: 507 AECTP 306 BS EN 60068 2013: -2-78: Cab



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As listed above:-	<p><u>Climatic: Single Parameters:</u> (cont'd)</p> <p>Humidity: - Cyclic</p> <p>Temperature Range: + 10 °C to + 80 °C</p> <p>Humidity Range: 10% RH to 98% RH</p> <p>Max Chamber Size: 2.5 m x 3.0 m x 9.0 m</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006: CL6</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CL6</p> <p>MIL STD 810</p> <p>E, 1989: 507</p> <p>F, 2000: 507</p> <p>G, 2010: 507</p> <p>AECTP 307</p> <p>BS EN 60068 2007: -2-1: A</p>
	<p>Pressure, Low:</p> <p>Minimum pressure: 3.4 kPa (34mb)</p> <p>(equivalent altitude 23760)</p> <p>Maximum chamber size: 2.2 m x 2.2 m x 5.1 m</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006: CL21</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CL21</p> <p>MIL STD 810</p> <p>E, 1989: 500 (I & II)</p> <p>F, 2000: 500 (I & II)</p> <p>G, 2010: 500 (I & II)</p> <p>AECTP 312</p> <p>BS EN 60068 1999: -2-13 2000: -2-40</p>
	<p>Water - mist:</p> <p>Maximum Plan Area 3.0 m x 4.0 m</p>	<p>DEF STAN 00-35:</p> <p>Iss 4, 2006: CL26</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CL26</p>
	<p>Water – rain</p> <p>Maximum Plan Area: 3.0 m x 4.0 m</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006: CL27</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CL27</p> <p>AECTP Method 310 Procedure I</p>



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As listed above:-	<u>Climatic: Single Parameters:</u> (cont'd) Water - immersion only Pressure over water - maximum simulated depth 65 m Tank size: 1.2 m x 0.7 m x 0.6 m (deep)	DEF STAN 00-35 Iss 4, 2006: CL29 DEF STAN 00-035 Iss 5, 2017: CL29 MIL STD 810 E, 1989: 512 F, 2000: 512 G, 2010: 512 BS EN 60068 2001: -2-18: Rc
	Water - sealing Tank size: 0.6 m x 0.6 m x 1.2 m (long)	DEF STAN 00-35 Iss 4, 2006: CL30 DEF STAN 00-035 Iss 5, 2017: CL30 BS EN 60068 1995: -2 - 17
	Icing: Maximum chamber size: 2.0 m x 2.0 m x 4.0 m (high)	DEF STAN 00-35 Iss 4, 2006: CL10 (A) DEF STAN 00-035 Iss 5, 2017: CL10(A) MIL STD 810 E, 1989: 521 F, 2000: 521 G, 2010: 521 AECTP 311
	Salt Corrosive Atmospheres: Salt Mist Maximum Plan Area: 3.0 m x 4.0 m	DEF STAN 00-35 Iss 4, 2006: CN2 DEF STAN 00-035 Iss 5, 2017: CN2 BS EN 60068 1996: -2-52: 2018: -2-52



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As listed above:-	<p><u>Climatic: Single Parameters:</u> (cont'd)</p> <p>Contamination: Fluid</p> <p>Maximum Temperature: + 80 °C</p> <p>Maximum Conditioning Chamber Size: 1.8 x 1.8 x 2.3 m (high)</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006: CN4</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CN4</p> <p>MIL STD 810</p> <p>E, 1989: 504</p> <p>F, 2000: 504</p> <p>G, 2010: 504</p> <p>AECTP</p> <p>314</p> <p>BS EN 60068</p> <p>2000: -2-74: Xc</p> <p>2000 + A1: 2018 -2-74</p>
	<p>Contamination: Dust & Sand</p> <p>Maximum Chamber size:</p> <p>6.0 m x 1.2 m x 1.2 m (high)</p> <p>Number of delivery ducts: 2</p> <p>Duct size (each):</p> <p>0.15 m x 0.48 m (high)</p> <p>Temperature range:</p> <p>+ 25 °C to + 40 °C</p> <p>Maximum Air Velocity</p> <p>18 m/s</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006: CL25</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: CL25</p> <p>MIL STD 810</p> <p>E, 1989: 510</p> <p>F, 2000: 510</p> <p>G, 2010: 510</p> <p>AECTP</p> <p>313</p> <p>BS EN 60068</p> <p>1996: -2-68</p>



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As listed above:-	Thermal Shock: Maximum Temperature: +80°C Minimum Temperature: -60°C Maximum Chamber Sizes: Cold 2.5m x 3.0m x 9.0m	DEF STAN 00-35 Iss 4, 2006: CL14 Procedure A DEF STAN 00-035 Iss 5, 2017: CL14 Procedure A Iss 5, 2017: CL24 MIL STD 810 E, 1989: 503.3 F, 2000: 503.4 G, 2010: 503.5 AECTP 304 BS EN 60068 2009: -2-14: Na
	<u>Rapid Decompression</u> Minimum pressure: 3.4kPa (34mb) (equivalent altitude 23,760m) Maximum chamber size: 380 mm x 380 mm x 1100 mm	DEF STAN 00-35 Iss 4, 2006: CL9 (Rapid) DEF STAN 00-035 Iss 5, 2017: CL9 (Rapid) MIL STD 810 E, 1989: 500 (Proc III) F, 2000: 500 (Proc III) G, 2010: 500 AECTP 312 (Proc III)
	<u>Climatic: combined parameters:</u> Temperature/Low Pressure Temperature range: - 60 °C to + 80 °C Minimum Pressure: 3.4 kPa (34 mb) (equivalent altitude 23760 m) Maximum chamber size: 2.2m x 2.2m x 5.1m	DEF STAN 00-35 Iss 4, 2006: CL11, 12,13 DEF STAN 00-035 Iss 5, 2017: CL11,12,13 MIL STD 810 E, 1989: 500 F, 2000: 500 G, 2010: 500 AECTP 312 BS EN 60068 1999: -2-39 2000: -2-40



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<p>As listed above:-</p>	<p><u>Vibration: modes of</u> (Single or Twin Vibration Systems)</p> <p>Sinusoidal</p> <p>Random Narrow band Random-on-Random Sine-on-Random Swept Sine-on-Random Swept Random-on-Random Gunfire</p> <p>Time History Replication</p> <p>Classical Shock Pulses Bump Restrained Cargo</p> <p>Electro-Dynamic capabilities: total 7 systems</p> <p>Maximum values:</p> <p>Thrust: 160kN - Sine 160kN - Random Frequency Range: - 5 to 3000Hz Displacement: 100mm pk-pk (Shock)</p> <p>Load Support: Header 1363kg Load Bearing</p> <p>Platform. 3500kg Temperature Conditioning: - 60 °C to + 100 °C Thermal Enclosure: approximately 2m x 2m x 6m</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006 M1, M2, M3 DEF STAN 00-035 Iss 5, 2017: M1, M2, M3, M19</p> <p>MIL STD 810 E, 1989: 514, 519 F, 2000: 514.5, 519.5 G, 2010: 514.6, 519.6</p> <p>AECTP 401, 405</p> <p>BS EN 60068 1996: -2-6: Fc 2008: -2-6: Fc 2000: -2-50: Z/AFc 2000: -2-51: Z/BFc 2010: -2-53 2000: -2-57: Ff 2013: -2-57: Ff 1993: -2-59: Fe 1995: -2-64 2008: -2-64 2005: -2-80: Fi</p>



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As listed above:-	<p><u>Shock (free fall): modes of</u></p> <p>Half Sine</p> <p>Trapezoidal Terminal Peak Sawtooth</p> <p>Free fall shock capabilities:</p> <p>Systems</p> <p>Maximum values:</p> <p>Half Sine: 200 g - Load 1360 kg Table size 1.5 m x 1.5 m Trapezoidal : 100 g - Load 1360 kg - Table size 1.5 m x 1.5 m Temperature Pre-Conditioning: - 60 °C to + 60 °C</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006 M3, M6, M7 DEF STAN 00-035 Iss 5, 2017: M3, M7</p> <p>MIL STD 810 E, 1989: 516 F, 2000: 516 G, 2010: 516</p> <p>AECTP 403</p> <p>BS EN 60068 2009: -2-27 2003: -2-81</p>
	<p><u>Impact - Vertical & Horizontal</u></p> <p>Free fall: total 3 Systems</p> <p>Horizontal Impact: total 1 System</p> <p>Maximum values:</p> <p>Vertical Impact:</p> <p>Drop Height: 15m Item Mass: 2,400kg Size of Drop Plate: 2m x 3m</p> <p>Horizontal Impact:</p> <p>Item Mass: 1940kg Impact Surface: Steel Plate Plate Size: 1.5m x 3.0m</p> <p>Bounce</p> <p>Maximum Mass: 2700kg Maximum size: 3.0m x 1.75m</p> <p>Temperature Pre-Conditioning: - 60 °C to + 90 °C for All Impact - Vertical & Horizontal and Bounce</p>	<p>DEF STAN 00-35</p> <p>Iss 4, 2006 M5, M11 DEF STAN 00-035 Iss 5, 2017: M4, M5, M11</p> <p>AECTP 413 (I & II)</p> <p>BS EN 60068 1997: -2-31 2008: -2-31</p>



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As listed above:-	<p><u>Climatic / Dynamic - Combined Parameters</u></p> <p>Temperature / Vibration / Shock</p> <p>Maximum Test Parameters:</p> <p>Temperatures: - 60 °C to + 90 °C</p> <p>Thermal Enclosure: 2.0 m x 2.0 m x 6.0 m</p>	<p>DEF STAN 00-35</p> <p>Iss 5, 2006 M1</p> <p>DEF STAN 00-035</p> <p>Iss 5, 2017: M1</p> <p>MIL STD 810</p> <p>E, 1989: 514 519</p> <p>F, 2000: 514 519</p> <p>G, 2010: 514 519</p> <p>AECTP</p> <p>401, 403</p> <p>BS EN 60068</p> <p>2000: -2-50: Z/AFc</p> <p>2000: -2-51: Z/BFc</p> <p>2010: -2-53</p> <p>2008: -2-6: Fc</p> <p>2009: -2-27</p> <p>1995: -2-64</p> <p>2008: -2-64</p> <p>2005: -2-80: Fi</p>
	<p>Radiographic Inspection:</p> <p>X-Ray - Static: 320keV</p> <p>X-Ray - Mobile: 300keV</p> <p>Linear Accelerator: 6MeV</p> <p>Computer Radiography</p> <p>X-Ray - Static: 320keV</p> <p>X-Ray - Mobile: 300keV</p> <p>Linear Accelerator: 6MeV</p>	<p>Documented and agreed by the customer 'In-house' methods to suit the customers requirements</p>

END