COMPLIANCE

Keystone Compliance, LLC 131 Columbus Inner Belt New Castle, PA 16101

> Phone: 724-657-9940 Fax: 724-657-9920

> > Will-Burt Company

1608-019NB-1



ENVIRONMENTAL TEST REPORT 1608-019NB-1 Rev. N/C

TEST STANDARDS: MIL-STD-810G

For

WILL-BURT COMPANY 169 South Main St

ORRVILLE, OH 44667

On

STILETTO AL (4 METER TELESCOPING MAST)

MODEL NUMBER: N/A ; PART NUMBER: N/A ; SERIAL NUMBER: N/A

PERFORMED BY: KEYSTONE COMPLIANCE, LLC. 131 Columbus Inner Belt New Castle, PA 16101

Keystone Compliance, LLC. does hereby certify that all inspections and tests have been performed in accordance with the documents referenced herein with exceptions as noted in this report. The results in this report pertain to the specified equipment tested. This report shall not be reproduced, except in full, without the written authorization of Keystone Compliance, LLC.

Prepared By:	Coy PRICE, Technical Writer	Date:	9/20/2018
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Approved By:	JOEY SULLIVAN, Quality Mariager	Date:	9/20/2018

Testing Services

www.keystonecompliance.com



DOCUMENT HISTORY				
Revision	Issue Date	Description Of Modifications	Revised By	Approved By
N/C	9/20/2018	Initial release	N/A	R.T.



CLIENT INFORMATION			
Purchase Order	MDWX001047		
Quote Number	1608-019NB-1		
EUT Arrival Date	3/19/2018 Received in good condition		
Company Name	Will-Burt Company		
Address	169 South Main St		
City, State Zip	Orrville, OH 44667		
Contact Name	Andrew Wasson		
Phone	330-684-4031		
Email	awasson@willburt.com		

TEST FACILITY INFORMATION				
Address City, State, Zip Code Phone Fax	Test Laboratory AddressKeystone Compliance, LLC.131 Columbus Inner BeltCity, State, Zip CodePhone(724) 657-9940Fax(724) 657-9920Web Sitewww.keystonecompliance.com			
Contact Name TitleRobert Turner Environmental Lab ManagerE-Mail AddressBob@keystonecompliance.com				

TEST PROGRAM INFORMATION			
Test Personnel Tim Swartz Sr Test Technician			
Test Title & Test Dates	High Temperature – June 21, 2018 to June 29, 2018 Low Temperature – March 28, 2018 to March 30, 2018 Thermal Shock – August 13, 2018 to August 18, 2018 Solar Radiation – July 10, 2018 to July 13, 2018 Rain – July 17, 2018 Humidity – June 29, 2018 to July 9, 2018 Salt Fog – August 18, 2018 to September 4, 2018 Shock – August 21, 2018 Icing/Freezing Rain – April 2, 2018 to April 3, 2018		



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

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ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

INTRODUCTION

This report documents the results of the Environmental tests performed on the Stiletto AL (4 Meter Telescoping Mast), Model Number: N/A ; Part Number: N/A; Serial Number: N/A, submitted by Will-Burt Company

The Environmental test programs described herein were performed in accordance with the applicable requirements of MIL-STD-810G.

All test data is included in Section 3 of this document.

All tests performed at Keystone Compliance New Castle, PA Environmental test facility. All tests were performed using the test set-ups of the relevant standard for tests performed in laboratory conditions.

ACRONYMS AND ABBREVIATIONS

°C – Degrees Celsius cm – Centimeter m – Meters N/A – Not Applicable M/N – Model Number P/N – Part Number S/N – Serial Number UUT – Unit Under Testing



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

EQUIPMENT UNDER TEST(S)

EUT				
Description Manufacturer				
Stiletto AL (4 Meter Telescoping Mast)		Will-Burt Company		
Model Number	Part N	umber	Serial Number	
N/A	N/	A	N/A	





ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

SUMMARY OF TESTS PERFORMED & RESULTS

TABLE 1 TESTS PERFORMED & RESULTS

Report Paragraph	Test Description	Results
3.3	High Temperature	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to High Temperature testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
3.4	Low Temperature	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Low Temperature testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
0	Thermal Shock	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Thermal Shock testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
0	Solar Radiation	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Solar Radiation testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
3.7	Rain	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Rain testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
0	Ηυμισιτή	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to HUMIDITY testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
3.9	Salt Fog	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Salt Fog testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
3.10	Shock	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Shock testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
0	Icing/Freezing Rain	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Icing/Freezing Rain testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

SECTION 1 - TEST CONDITIONS AND EQUIPMENT

1.1 AMBIENT ENVIRONMENTAL CONDITIONS

Unless otherwise specified herein, all tests were performed at an atmospheric pressure of 28 \pm 2.5 inches of mercury absolute, a temperature of 75 \pm 15°F, and a relative humidity of 50 \pm 30%.

1.2 INSTRUMENTATION AND EQUIPMENT

Measuring and test equipment, utilized in the performance of these tests, was calibrated in accordance with ANSI/NCSL Z540-3-2006, by Keystone Compliance, LLC.. or a commercial facility, utilizing reference standards (or interim standards) whose calibrations have been certified as being traceable to the National Institute of Standards & Technology (NIST). All reference standards utilized in the above calibration system are supported by certificates, reports, or data sheets attesting to the date, accuracy, and conditions under which the results furnished were obtained. All subordinate standards, measuring and test equipment are supported by like data, when such information is essential to achieve the accuracy control required by the procedure.

Keystone Compliance, LLC.. attests that the commercial sources providing calibration services on the above referenced equipment, other than the NIST Standards are in fact capable of performing the required services to the satisfaction of Keystone Compliance, LLC.. Quality Assurance. Certifications of all calibrations performed are retained on file in the Keystone Compliance, LLC.. Quality Assurance Department, and are available for inspection upon request by customer representatives.

The test equipment utilized during this test program is listed on individual Test Equipment Sheets located in Section 3 of this document.

1.3 TOLERANCES

All test conditions were maintained within all applicable specified tolerances.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

SECTION 2 – REFERENCES

2.1 **APPLICABLE SPECIFICATIONS**

Reference	MIL-STD-810G
Specification Title	Environmental Engineering Considerations and Laboratory Tests
Calibration Information	ANSI/NCSL Z540-3-2006 Calibration Laboratories and Measuring Test Equipment - General Requirements



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

SECTION 3 – TEST LOGS, TEST EQUIPMENT, TEST DATA, & TEST PHOTOGRAPHS

3.1 TEST LOG

Test Log				
EUT:	Stiletto AL (4 Meter Telescoping Mast)	Job Number:	1608-019NB-1	
Customer:	Will-Burt Company	Model Number:	N/A	
Date:	3/28/18-9/4/18	Part Number:	N/A	
Test Engineer:	T. Swartz	Serial Number:	N/A	
Test:	Test: All Tests			
Test Specifications				
Test Spec:	MIL-STD-810G	Para./Sec.:	See Data	

			Test Log		
Date	Time	Units Tested	Description		
03/19/18			Received Units Under Testing, and preformed preliminary functional evaluation on all units.		
03/23/18			EMC Testing was completed on all Units Under Testing, and the units were brought back to the Environmental side. I again performed a pre-testing functional verification.		
		L	ow Temperature Testing (MIL-STD-810G, Method 502.5)		
03/28/18	11:25	3	Started logging thermal conditions of the testing chamber, and UUT.		
	12:05	3	Ramped Chamber to -51°C		
	12:50	3	Chamber Stabilized at -51°C		
03/29/18	09:20	3	Removed Units from Chamber and preformed a functional test while at Low Temperatures.		
	09:51	3	Placed Units back into thermal chamber		
	10:25	3	Ramped Chamber back to ambient conditions.		
03/30/18	08:47	3	Chamber, and UUT's stabilized at ambient conditions.		
			Test Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.		
		Icing /	Freezing Rain Testing (MIL-STD-810G, Method 521.3) Mast Out		
04/02/18	08:00	3	Put UUT's in testing chamber and preformed a functional checkout		
	08:22	3	Started Logging thermal conditions		
	08:24	3	Ramped Chamber to 0°C		
	09:05	3	Stabilized at 0°C		
	09:15	3	Turned on pre-cooled water spray		

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			Test Log
Date	Time	Units Tested	Description
	-	Icing / F	reezing Rain Testing (MIL-STD-810G, Method 521.3) Mast Out
04/02/18	10:20	3	Ramped chamber to -10°C
	11:25	3	1/4" of ice was produced
	15:25	3	Operated the UUT's
	15:55	3	Ramped back to ambient (23°C)
	16:00	3	Stabilized at ambient
			Test Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.
		Icing /	Freezing Rain Testing (MIL-STD-810G, Method 521.3) Mast In
	16:35	3	Started Logging thermal conditions
	16:44	3	Ramped Chamber to 0°C
	17:35	3	Stabilized at 0°C
	17:40	3	Turned on pre-cooled water spray
	18:51	3	Ramped chamber to -10°C
	19:20	3	1/4" of ice was produced
	23:15	3	Operated the UUT's
04/02/18	23:53	3	Ramped back to ambient (23°C)
04/03/18	00:30	3	Stabilized at ambient
			Test Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.
			High Temperature Storage Testing (Method 501.5)
06/21/18	09:43	3	Start High Temperature Storage Testing
06/29/18	15:46	3	Seven (7) cycles per Table 501.5-III completed.
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.

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			Test Log			
Date	Time	Units Tested	Description			
	Humidity Testing (Method 507.5)					
06/29/18	16:40	3	Start Category B1 Humidity Testing			
07/08/18	22:16	3	Humidity Testing complete. Three Induced Cycles, and Three Natural Cycles were performed per customer.			
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			
			High Temperature Operational (Method 502.5)			
07/09/18	07:49	3	Start High Temperature (Operational) Testing			
	16:44	3	High Temperature Testing complete.			
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			
			Solar Radiation Testing (Method 505.5)			
07/10/18	07:49	3	Start Solar Radiation Testing. (Three 24-hour cycles)			
07/13/18	16:44	3	Solar Radiation Testing complete.			
			Testing Complete. A post-test functional test was preformed, and there were no			
			anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			
			Blowing Rain Testing (Method 506.5)			
07/17/18	09:00	2	Start Blowing Rain Testing (Stiletto AL, Position IT)			
	11:12	2	Testing Complete			
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			

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			Test Log
Date	Time	Units Tested	Description
		-	Rain Testing (Method 506.5)
07/17/18 15:11 1 Start Rain Testing (Stiletto AL)			Start Rain Testing (Stiletto AL)
	15:37	1	Testing Complete
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.
			Thermal Shock Testing (Method 503.5)
08/13/18	09:12	3	Start Category I-B Thermal Shock Testing (High Temperature)
08/15/18	13:30	3	Thermal Shock Testing complete. Two Cycles (from High to Low) were performed on all three units.
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.
· ·		1	Thermal Shock Testing (Method 503.5)
08/15/18	15:02	3	Start Category I-B Thermal Shock Testing (Low Temperature)
08/18/18	06:26	3	Thermal Shock Testing complete. Two Cycles from (Low to High) were performed on all three units.
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.
	,		Salt Fog Testing (Method 509.5)
08/18/18	14:37	2	Start Salt Fog Testing (Stiletto AL & Position-IT)
08/20/18	14:40	2	Salt Fog Testing complete.
08/22/18	15:03		UUT's were left to dry for 48 hours, and a post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.

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	Test Log					
Date	Time	Units Tested	Description			
	-	-	Shock Testing / Bench Handling (Method 516.6)			
08/23/18	08:32	1	Start MIL-STD-810G, Procedure VI Shock (Bench Handling) Testing on Stiletto AL Mast			
	09:25	1	Bench Handling Testing complete.			
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			
			Shock Testing / Transit Drop (Method 516.6)			
08/23/18	09:41	1	Start MIL-STD-810G, Procedure IV Shock (Transit Drop) Testing on Stiletto AL			
	10:20	1	Transit Drop Testing complete.			
			Testing Complete. A post-test functional test was preformed, and there were no anomalies noted. Upon inspection of the units there were no signs of damage, or deterioration resulting from the preformed testing.			

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3.2 EQUIPMENT LIST

Equipment Log							
EUT:	Stiletto AL (4 Meter Telescoping Mast)	Job Number:	1608-019NB-1				
Customer:	Will-Burt Company	Model Number:	N/A				
Date:	3/28/18 - 9/4/18	Part Number:	N/A				
Test Engineer:	T. Swartz	Serial Number:	N/A				
Test:	All Tests						
Test Specifications	Test Specifications						
Test Spec:	MIL-STD-810G	Para./Sec.:	See Data				

		Test Equipment			
Asset No.	Description	Manufacturer	Model	Serial No.	Cal. Due
EC043	Infrared Thermometer	Fluke	561	None	REF
NA002	Hydra Series 2	Fluke	2620A	6234500	6/21/2019
NA005	Hydra Series III	Fluke	2638A	33600003	2/5/2019
NA009	Hydra Series II	Fluke	2620A	9188006	5/31/2019
NC003	Chamber, Salt Fog	Singleton Corp.	24	24362	UWCE
NC004	Chamber	Espec	EWPT287- 5JW	302510	1/30/2019
NC012	Chamber, Temperature & Humidity	Espec	EWPX1069- 12CWL	3512362	1/30/2019
NC018	Immersion Tank	Keystone Compliance	None	None	UWCE
NC023	Temperature & Humidity Chamber	CSZ Manufacturing	WMTH-250- 6-6-s/wc	00- wm13552	4/3/2019
NG002	Rain Gauge	Garden Treasures	0083230	None	IPU
NG003	Rain Gauge	Garden Treasures	0083230	None	IPU
NG011	Wind and Rain Generator	Buffalo Turbine	CKB4	19038	UWCE
NG015	Nozzle	Epiphany Labs	None	12.5	IPU
NG017	Graduated Cylinders	Thermo Scientific Nalgene	3662	None	IPU
NG018	Graduated Cylinders	Thermo Scientific Nalgene	3662	None	IPU
NG019	Graduated Cylinders	Thermo Scientific Nalgene	3662	None	IPU
UWCE: Used	With Calibrated Equipment	REF: Reference Only	y IPU: Inspe	ct Prior to Use	

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		Test Equipment			
Asset No.	Description	Manufacturer	Model	Serial No.	Cal. Due
NG021	Hydrometer	Fisher Scientific	11-542A	C78391	CBU
NG032	Valor 1000 Industrial Scale	Ohaus	V11P6	30922228	6/5/2019
NG039	Rain Gauge	Taylor	2700N	None	IPU
NG055	Protractor	Craftsman	39840	None	Reference Only
NG059	Temperature Chamber Extension	Keystone	None	None	UWCE
NG060	Solar Radiation Fixture	Keystone	None	None	UWCE
NG067	Pressure Gauge 0-3000	Ashcroft	25w1005ph 02l xc4	e300680	3/20/2019
NG088	Floor Scale and Display	DigiWeigh	DWP- 55007/IN202	007012	6/5/2019
NG091	Graduated Cylinder	Kimble	None	None	UWCE
NG101	Tape Measure	Starrett	TX1-26ME	17413606	11/27/2018
NG103	Stop Watch	Control Company	1051	170849524	12/5/2019
NG108	Thermometer	Control Company	4371	170772501	11/3/2019
NM001	Pyranometer	Kipp & Zonen	CMP 3	115883	5/29/2019
NM003	Flow Meter (3-30GPM)	Omega	FP2006-R	None	REF
NM005	Anemometer (Wind Gauge)	Nielson-Kellerman	Kestrel 4000	649683	6/13/2019
NM006	PH Meter	Omega	PHH222	57608	CBU
NM007	Buffer Solution Kit, PH Meter	Inorganic Ventures	Phblue- 10/Phred- 4/Phyellow-7	None	REF
NM021	Salinity/Conduction Meter	Hach	9532700	1404270010 10	CBU
NM034	Temperature / Humidity Meter	Control Company	4096	170594613	9/29/2018
NP016	Pressure Gauge	SSI Technologies	MG1-30-A- 9V-R	1410150228	6/14/2019
NS005	Hydra Logger Monitoring Software	Fluke	Version 3.0	None	UWCE
NS007	Espec Monitoring System	Espec	ERC-1005	v1.21	UWCE

UWCE: Used With Calibrated Equipment

REF: Reference Only

IPU: Inspect Prior to Use

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	Test Equipment				
Asset No.	Description	Manufacturer	Model	Serial No.	Cal. Due
NT005	Immersion Tank	Unknown	None	None	UWCE
NZ000	Salt	Morton	Batch# SS15286023	None	UWCE
NZ007	Conductivity Solution	Inorganic Ventures	(catalog:con14 13-25)	Lot m2- cond654974	9/18/2018
NZ008	NAOH (+)	Inorganic Ventures	0.1 M-NAOH	Lot m2- wcs661749	9/26/2021
NZ009	HCL (-)	Inorganic Ventures	1.0M-HCL	Lot k2- wcs03002	2/26/2020
OA011	Desktop Computer	Keystone	None	None	UWCE
OA013	Dell Latitude Laptop	Dell	D620	2496441301 3	UWCE
OA017	Dell Latitude Laptop	Dell	D620	34450866145	UWCE

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3.3 HIGH TEMPERATURE TEST

- a) The High Temperature test requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The High Temperature test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The High Temperature test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the High Temperature test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.3.1 of this document.
- e) The High Temperature test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.3.2 of this document.

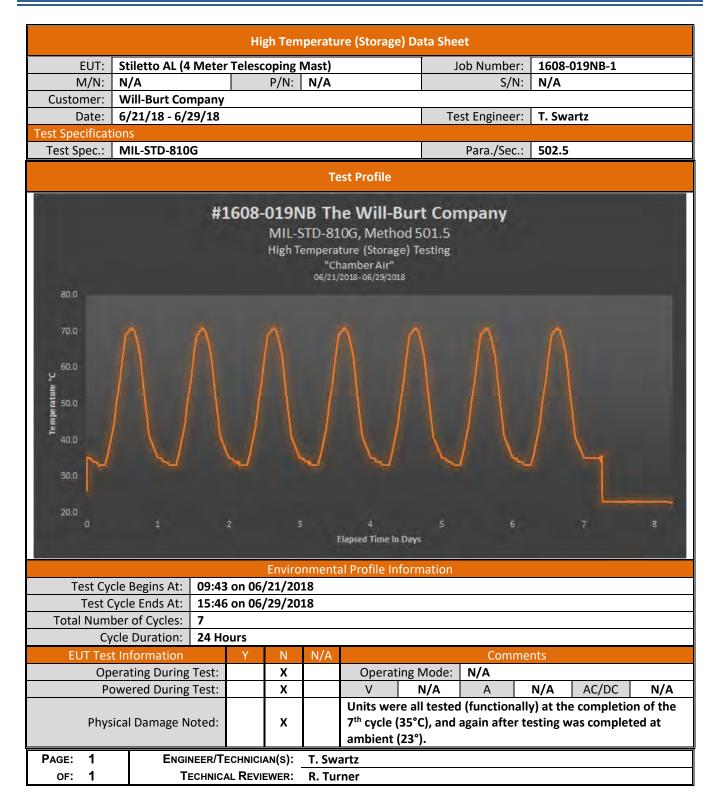


ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.3.1 **HIGH TEMPERATURE TEST DATA**









ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.3.2 HIGH TEMPERATURE TEST PHOTOGRAPHS



High Temperature		
MIL-STD-810G		
Operating Test Setup		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	



High Temperature		
MIL-STD-810G		
Response Location		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	

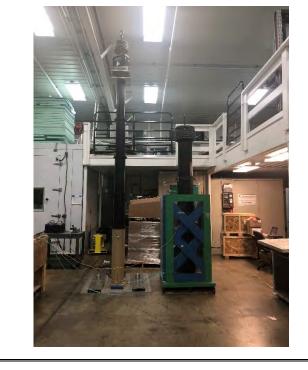
CONTROLLED DATA





High Temperature		
MIL-STD-810G		
Post Test (Pre-Functional Check)		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt	t Company	
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	

High Temperature		
MIL-STD-810G		
Post Operating Functional Verification		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	





MIL-STD-810G

Verification

Date:

Stiletto AL (4 Meter

Telescoping Mast)

N/A

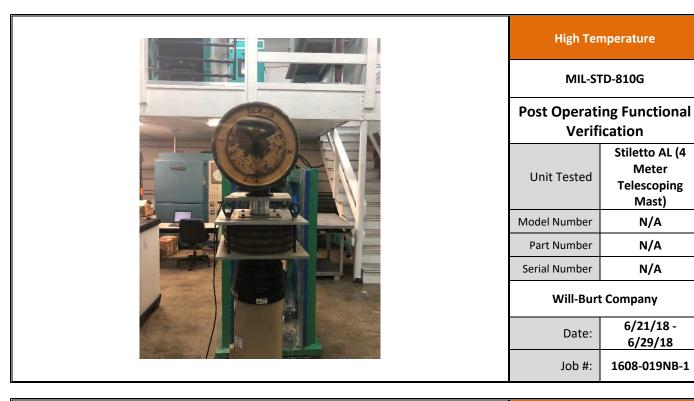
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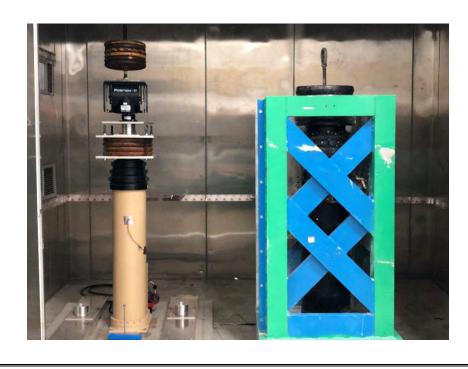
6/21/18 -

6/29/18

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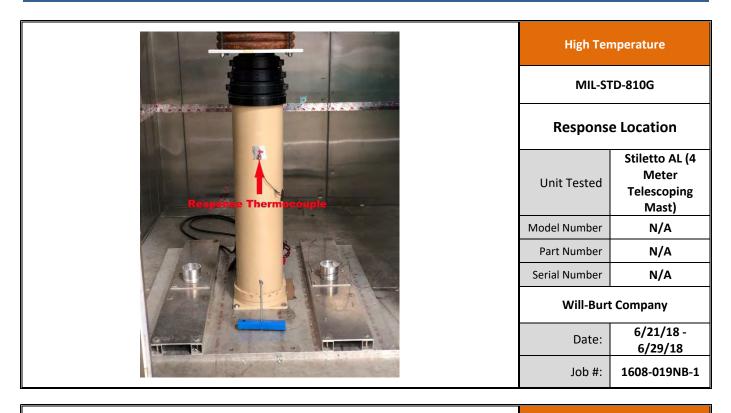




High Temperature		
MIL-STD-810G		
Storage Test Setup		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	

CONTROLLED DATA







High Temperature		
MIL-STD-810G		
Post Storage Functional Verification		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	6/21/18 - 6/29/18	
Job #:	1608-019NB-1	



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

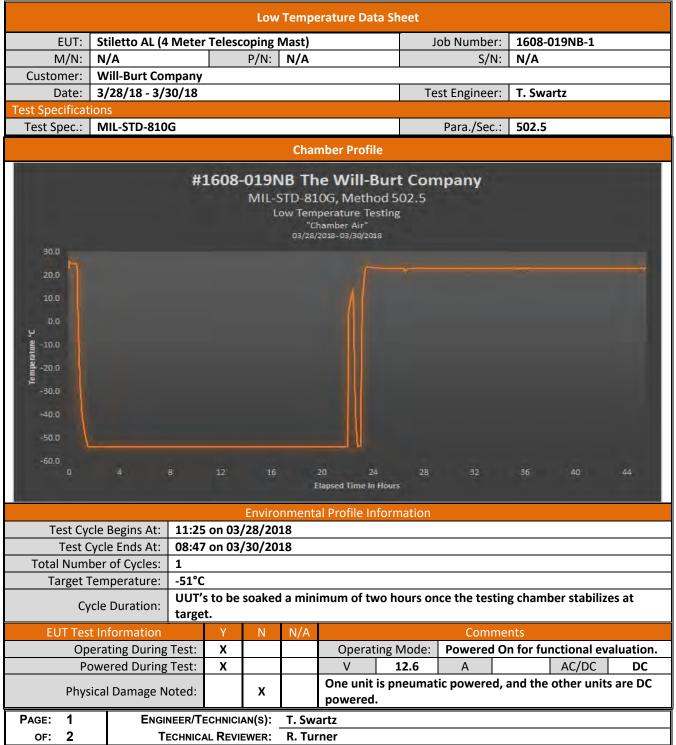
3.4 LOW TEMPERATURE TEST

- a) The Low Temperature requirement for the Stiletto AL (4 Meter Telescoping Mast) is specified in MIL-STD-810G.
- b) The Low Temperature test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Low Temperature test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Low Temperature test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.4.1 of this document.
- e) The Low Temperature test photograph for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.4.2 of this document.

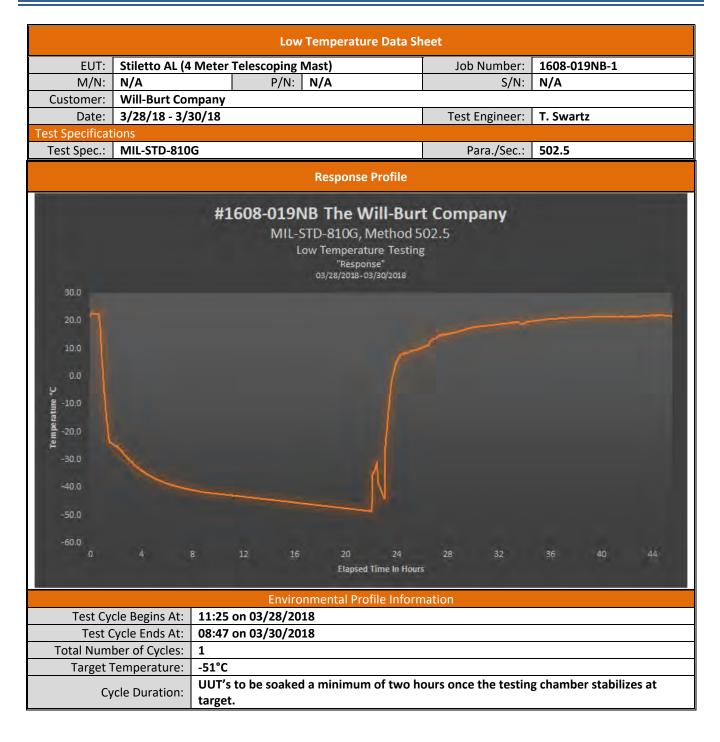


ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.4.1 LOW TEMPERATURE TEST DATA







PAGE: 2	ENGINEER/TECHNICIAN(S):	T. Swartz
OF: 2	TECHNICAL REVIEWER:	R. Turner



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.4.2 LOW TEMPERATURE TEST PHOTOGRAPHS



	Low Temperature MIL-STD-810G		
	Test Setup		
	Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
	Model Number	N/A	
	Part Number	N/A	
	Serial Number	N/A	
	Will-Burt Company		
	Date:	3/28/18 - 3/30/18	
	Job #:	1608-019NB-1	

Low Temperature		
MIL-STD-810G		
Response Location		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	3/28/18 - 3/30/18	
Job #:	1608-019NB-1	



CONTROLLED DATA



Low Ten	nperature
MIL-STD-810G	
Post Test Functional Verification	
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Bur	t Company
Date:	3/28/18 - 3/30/18
Job #:	1608-019NB-1



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.5 THERMAL SHOCK TEST

- a) The Thermal Shock requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Thermal Shock Test Log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Thermal Shock test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Thermal Shock test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.5.1 of this document.
- e) The Thermal Shock test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.5.2 of this document.

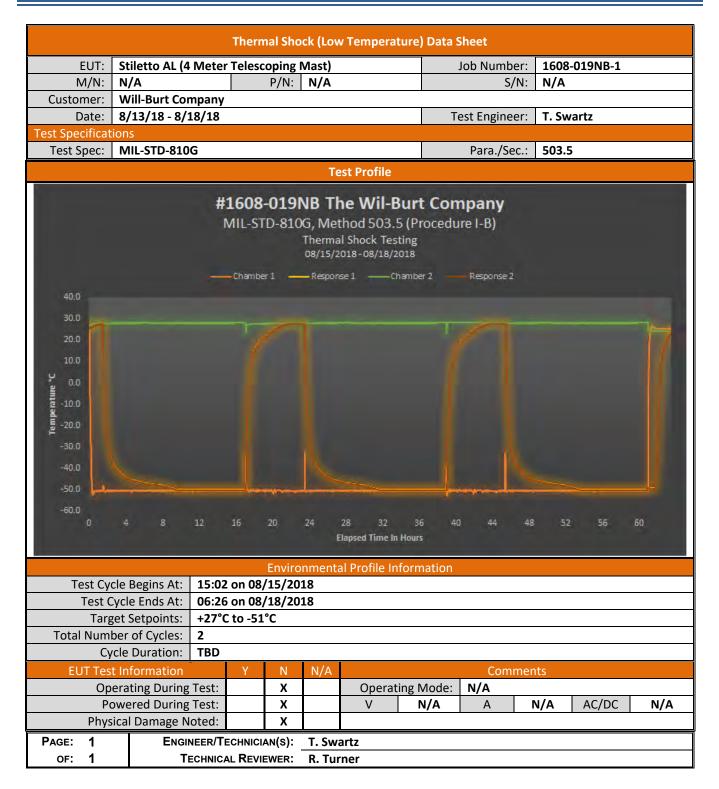


ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.5.1 THERMAL SHOCK TEST DATA









ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

THERMAL SHOCK TEST PHOTOGRAPHS 3.5.2



Thermal Shock		
MIL-ST	MIL-STD-810G	
Test Setup Chamber 1		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt	Will-Burt Company	
Date:	8/13/18 - 8/18/18	
Job #:	1608-019NB-1	

and the second	

Thermal Shock		
MIL-STD-810G		
Test Setup Chamber 2		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	8/13/18 - 8/18/18	
Job #:	1608-019NB-1	

CONTROLLED DATA



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

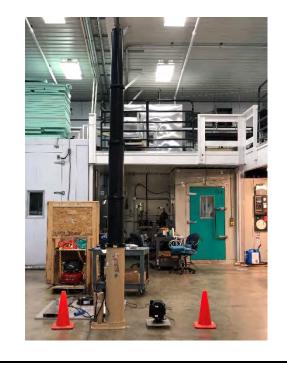


Thermal Shock

MIL-STD-810G		
Response Location		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	8/13/18 - 8/18/18	
Job #:	1608-019NB-1	

Thermal Shock

MIL-STD-810G		
Post Test Functional Verification		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	8/13/18 - 8/18/18	
Job #:	1608-019NB-1	





ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

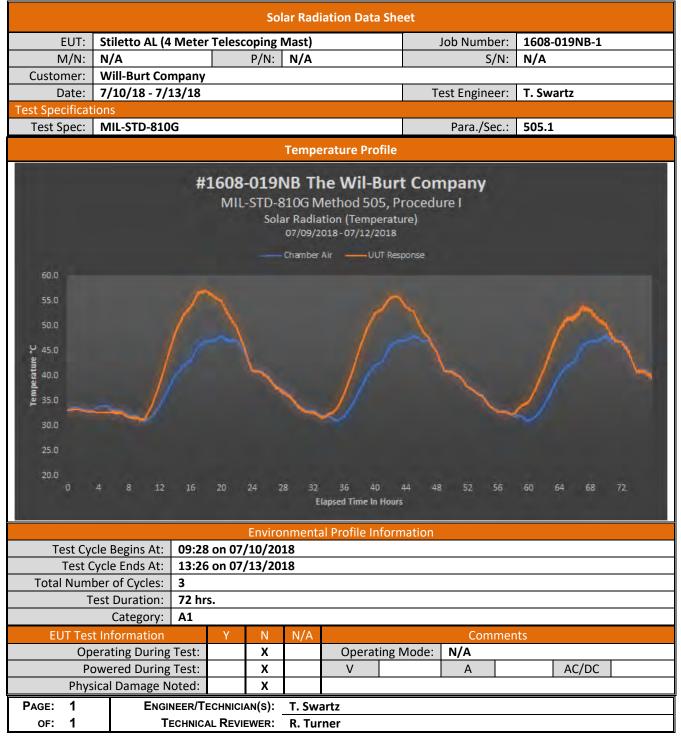
3.6 SOLAR RADIATION TEST

- a) The Solar Radiation requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Solar Radiation Test Log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Solar Radiation test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Solar Radiation test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.6.1 of this document.
- e) The Solar Radiation test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.6.2 of this document.

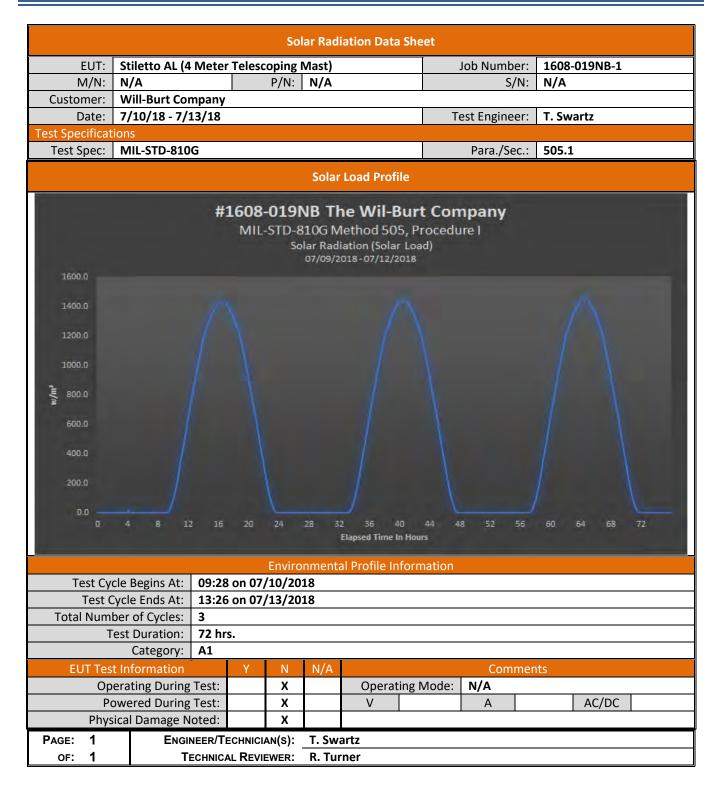


ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.6.1 SOLAR RADIATION TEST DATA









ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.6.2 SOLAR RADIATION TEST PHOTOGRAPHS



	Solar Radiation MIL-STD-810G								
	Test Setup								
	Unit Tested	Stiletto AL (4 Meter Telescoping Mast)							
	Model Number	N/A							
	Part Number	N/A							
	Serial Number	N/A							
	Will-Burt Company								
	Date:	7/10/18 - 7/13/18							
	Job #:	1608-019NB-1							



Solar Radiation						
MIL-ST	rd-810G					
Post Test Pre-Inspection						
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)					
Model Number	N/A					
Part Number	N/A					
Serial Number	N/A					
Will-Burt	t Company					
Date:	7/10/18 - 7/13/18					
Job #:	1608-019NB-1					

CONTROLLED DATA



Solar R	adiation
MIL-ST	rD-810G
	Functional ication
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Bur	Company
Date:	7/10/18 - 7/13/18
Job #:	1608-019NB-1



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.7 RAIN TEST

- a) The Rain requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Rain Test Log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Rain test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Rain test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.7.1 of this document.
- e) The Rain test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.7.2 of this document.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.7.1 RAIN TEST DATA

Rain Data Sheet									
EUT:	Stiletto AL (4 Meter Te	elescoping Ma	Job Number:	1608-019NB-1					
M/N:	N/A	P/N:	N/A	S/N:	N/A				
Customer:	Will-Burt Company								
Date:	7/17/18		Test Engineer:	T. Swartz					
Test Specifications									
Test Spec:	MIL-STD-810G		Para./Sec.:	506.5					

Test Data

			1	Typical	Testing Set-Up				
Stream Size (inche	s): 5/8		LINIO	miento	al Profile Informatio	1			
Pressure (p									
Sides Test									
Durati		nutes							
EUT Test Informat		Y	Ν	N/A		Com	ments		
Operating Du			Operating Mode						
Powered Du			V N/A	А	N/A	AC/DC	N/A		
	Physical Damage Noted:						•		
Water Ingress Noted: X									
PAGE: 1 ENGINEER/TECHNICIAN(S): T. Swartz									
OF: 1	Traini		VIEWER:	РТ	urner				



-

Blowing Rain Data Sheet								
EUT:	Stiletto AL (4 Meter Te	lescoping Ma	Job Number:	1608-019NB-1				
M/N:	N/A	P/N:	N/A	S/N:	N/A			
Customer:	Will-Burt Company							
Date:	7/17/18		Test Engineer:	T. Swartz				
Test Specifications								
Test Spec:	MIL-STD-810G			Para./Sec.:	506.5			
Test Data								

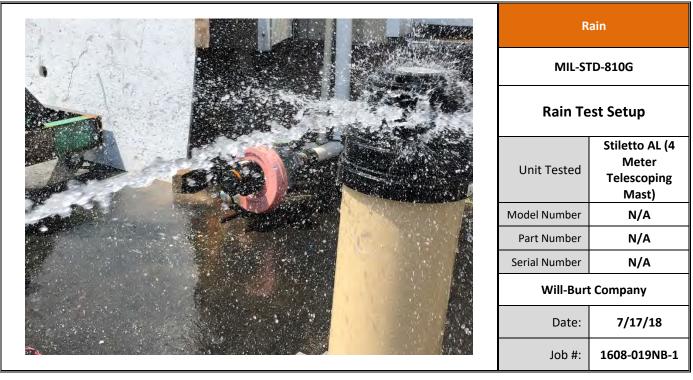
				est Data					
			Typical	Testing Se	t-Up				
Rain Flow(kPa): 5" pe	r Hour			al Profile In					
Wind Speed:(mph): 40									
Sides Tested: 4									
Duration: 30 mi	inutes								
EUT Test Information	Y	Ν	N/A				ments		
Operating During Test:	Operating During Test: X Operating Mode: Unit was operated for t minutes of each side te				10				
Powered During Test:	Х			V	N/A	А	N/A	AC/DC	N/A
Physical Damage Noted:		Х							
Water Ingress Noted:		Х							

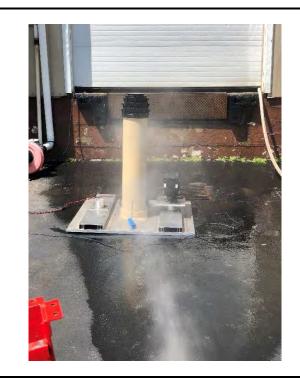
PAGE:	1	ENGINEER/TECHNICIAN(S):	T. Swartz
OF:	1	TECHNICAL REVIEWER:	R. Turner



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

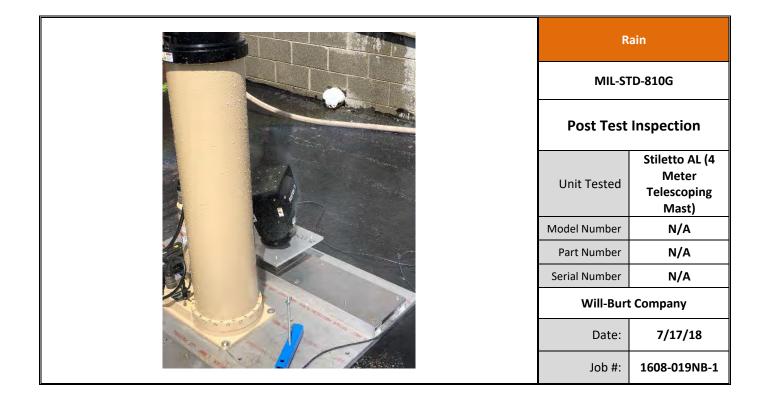
3.7.2 RAIN TEST PHOTOGRAPHS





Rain					
MIL-ST	rd-810G				
Blowing Rain Test Setup					
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)				
Model Number	N/A				
Part Number	N/A				
Serial Number	N/A				
Will-Burt Company					
Date:	7/17/18				
Job #:	1608-019NB-1				







ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.8 HUMIDITY TEST

- a) The HUMIDITY requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The HUMIDITY test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The HUMIDITY test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the HUMIDITY test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.8.1 of this document.
- e) The HUMIDITY test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.8.2 of this document.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.8.1 HUMIDITY TEST DATA

HUMIDITY Data Sheet									
EUT:	Stiletto AL (4 Meter Te	elescoping Ma	Job Number:	1608-019NB-1					
M/N:	N/A	P/N:	N/A	S/N:	N/A				
Customer:	Will-Burt Company								
Date:	6/29/18 - 7/9/18			Test Engineer:	T. Swartz				
Test Specifications									
Test Spec:	MIL-STD-810G			Para./Sec.:	507.5				

Test Data

			Те	st Profile					
110.0	#1		IIL-STI Humidi	D-810G, 5 ty Testing (1018 - 07/08/20	07.5 ^{B1)}	npany			
100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 0 1	2	3		4 Elapsed Time I	5 n Days	5	7	8	9
		Enviror	nmenta	al Profile In	formation				
Test Cycle Begins At:		on 06/29/201							
Test Cycle Ends At: Total Number of Cycles:		on 07/08/201 cles Induced			l) nor choi				
Cycle Duration:	24		/ 3 CYC	Lies Matura	ii) per spec.				
EUT Test Information		Y N	N/A			Com	ments		
Operating During	g Test:	Х		Operat	ing Mode:	N/A			
Powered During		Х		V	N/A	A	N/A	AC/DC	N/A
Physical Damage N	loted:	Х		Units we	re all tested	l (functior	nally) follo	wing testing	•
PAGE: 1 EN		ECHNICIAN(S):		wartz					
OF: 1	TECHNIC	AL REVIEWER:	R. Tı	urner					



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.8.2 HUMIDITY TEST PHOTOGRAPHS



Hur	ЛIDITY
MIL-ST	rd-810G
Post	t Test
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Burt	Company
Date:	6/29/18 - 7/9/18
Job #:	1608-019NB-1



-

Нимідіту		
MIL-STD-810G		
Post Functional Verification		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt	t Company	
Date:	6/29/18 - 7/9/18	
Job #:	1608-019NB-1	



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.9 SALT FOG TEST

- a) The Salt Fog requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Salt Fog test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Salt Fog test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Salt Fog test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.9.1 of this document.
- e) The Salt Fog test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.9.2 of this document.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

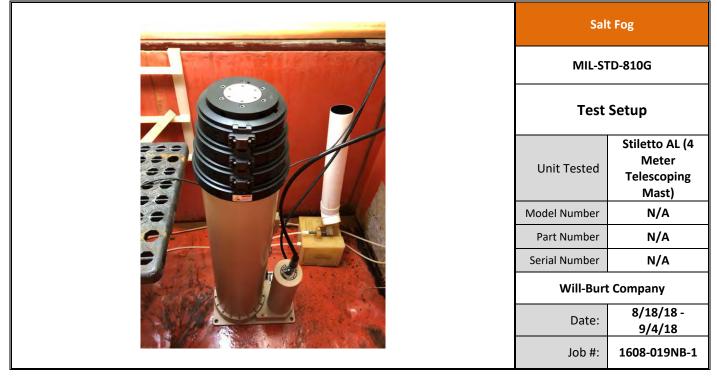
3.9.1 SALT FOG TEST DATA

J.J. T GAL	Salt Fog Data Sheet								
EUT:	: Stiletto AL (4 Meter Telescoping Mast)						Job Number:	1608-019NB-	-1
M/N:	N/A		P/N		4		S/N:	N/A	
Customer:	Will-Burt Comp	any		·				· ·	
Date:	8/18/18 - 9/4/2	-					Test Engineer:	T. Swartz	
Test Specificat									
Test Spec:	MIL-STD-810G						Para./Sec.:	509.5	
			Enviro	nmenta	al Profile In	formation			
38.0 36.0 34.0 32.0 30.0 28.0 26.0 24.0 22.0 20.0 0	36.0 34.0 32.0 38.0 26.0 24.0 22.0 20.0						48		
	Cycle Begins At:	14:37 on							
	t Cycle Ends At:	17:04 on	08/20/2	2018					
	Samples Tested:	2							
	mber of Cycles:	1							
	Spray Duration:	48:00:00							
Post Spray D	Orying Duration:	48:00:00 5%							
	Salt Solution:								
Specific	Temperature: Gravity (g/cm ³):	35°C 1.030g/cr	m ³						
Specific (pH Level:	6.8	11						
Fallout Rate (Per Hour): 1.69ml/hr									
i anout r	Air Pressure:	16.75 psi							
ELIT Tor	st Information	10.75 psi	Ν	N/A			Comments		
	erating During T		X	-N/A	Operat	ing Mode:	Non-Operating		
	Powered During Te		X		V	N/A	A N/	-	N/A
-	owered During I	C3L.			-	IN/A			in/A
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PAGE: 1 OF: 1		NEER/TECHN ECHNICAL RI		-	wartz Turner				



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.9.2 SALT FOG TEST PHOTOGRAPHS





CONTROLLED DATA



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY



1	Lak	D	K
1º		X	

Salt Fog					
MIL-ST	rD-810G				
	Functional ication				
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)				
Model Number	N/A				
Part Number	N/A				
Serial Number	N/A				
Will-Burt Company					
Date:	8/18/18 - 9/4/18				
Job #:	1608-019NB-1				

CONTROLLED DATA



Sal	t Fog
MIL-ST	rD-810G
Post Test Functional Verification	
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Bur	t Company
Date:	8/18/18 - 9/4/18
Job #:	1608-019NB-1



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.10 SHOCK TEST

- a) The Shock requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Shock test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Shock test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Shock test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.10.1 of this document.
- e) The Shock test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.10.2 of this document.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.10.1 SHOCK TEST DATA

	Shock (Bench Handling) Data Sheet							
EUT:	Stiletto AL (4 Meter Te	elescoping Mast)	Job Number:	1608-019NB-1				
M/N:	N/A	P/N: N/A	S/N:	N/A				
Customer:	Customer: Will-Burt Company							
Date:	8/21/18		Test Engineer:	T. Swartz				
Test Specifica	Test Specifications							
Test Spec:	MIL-STD-810G		Para./Sec.:	516.6				

Test Data

Test Profile				
Brief description	Definition			
Bench Handling	Following a functional and physical checkout, configure the item as it would be for servicing. Generally, the test item will be non-operational during the test. Using one edge as a pivot, lift the opposite edge of the chassis until the lifted edge has been raised 100mm (4in) above the horizontal bench top. Let the chassis drop back freely to the horizontal bench top. Repeat using other practical edges of the same horizontal face as pivot points, for a total of four drops. Repeat the above steps on all practical faces, and then do a visual inspection.			

Test Profile					
Packaged-Pro	oduct Weight	Drop Height		Impact Velocity	
			Free Fall		🗆 Horizontal
⊠ lb.	🗆 kg	igtimes in	🗆 mm	□ ft./s	□ m/s
232		4"		N/A	

	Test Sequence					
Face	Face Down on Bench	Specific Face, Edge or Corner	Completed			
1	Bottom Front Edge	Front Face				
2	Bottom Back Edge	Back Face	\boxtimes			
3	Bottom Left Edge	Left Face	\boxtimes			
4	Bottom Right Edge	Right Face				

PAGE:	1	ENGINEER/TECHNICIAN(S):	T. Swartz
OF:	1	TECHNICAL REVIEWER:	R. Turner



	Shock (Transit Drop) Data Sheet						
EUT:	Stiletto AL (4 Meter Telescoping Mast)			Job Number:	1608-019NB-1		
M/N:	N/A P/N: N/A			S/N:	N/A		
Customer:	Will-Burt Company						
Date:	8/21/18			Test Engineer:	T. Swartz		
Test Specifica	Test Specifications						
Test Spec:	MIL-STD-810G			Para./Sec.:	516.6		
	Test Data						

Test Profile					
Brief description	Definition				
Transit Drop/ Shock	Drop test is performed in all required orientations where dropping the product either outside or in its transit case is practical.				

Test Profile					
Packaged-Product Weight Drop Height Impact Velocity					
⊠ lb	□ kg	Free Fall		🗆 Incline	🛛 Horizontal
ai A		⊠ in 🛛 mm		⊠ ft/s	🗆 m/s
232		24"			

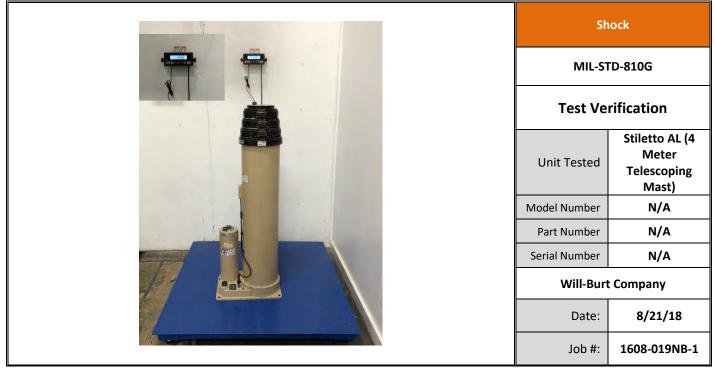
Test Sequence				
Number	Orientation	Specific Face, Edge or Corner	Completed	
1	Face	Front Face	\boxtimes	
2	Face	Back Face	\boxtimes	
3	Face	Left Face	\boxtimes	
4	Face	Right Face	\boxtimes	
5	Edge	Top Side Edge	\boxtimes	
6	Edge	Bottom Side Edge	\boxtimes	
7	Edge	Right Side Edge	\boxtimes	
8	Edge	Left Side Edge	\boxtimes	

PAGE:	1	ENGINEER/TECHNICIAN(S):	T. Swartz
OF:	1	TECHNICAL REVIEWER:	R. Turner



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.10.2 SHOCK TEST PHOTOGRAPHS





Shock				
MIL-STD-810G				
Bench Handling Verification				
Unit Tested Unit Tested Telescoping Mast)				
Model Number	N/A			
Part Number	N/A			
Serial Number	N/A			
Will-Burt Company				
Date: 8/21/18				
Job #: 1608-019NB-1				

CONTROLLED DATA





Shock				
MIL-STD-810G				
Post Bench Handling				
Unit Tested Stiletto AL (4 Meter Telescoping Mast)				
Model Number	N/A			
Part Number	N/A			
Serial Number	N/A			
Will-Burt Company				
Date:	8/21/18			
Job #: 1608-019NB-1				

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Shock				
MIL-STD-810G				
Post Bench Handling Functional Verification				
Unit Tested Stiletto AL (4 Meter Telescoping Mast)				
Model Number	N/A			
Part Number	N/A			
Serial Number	N/A			
Will-Burt Company				
Date: 8/21/18				
Job #:	1608-019NB-1			



		ock D-810G
		o Verification
	Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
	Model Number	N/A
	Part Number	N/A
and the second s	Serial Number	N/A
	Will-Burt	Company
	Date:	8/21/18
	Job #:	1608-019NB-1
	Sh	ock
	MIL-ST	D-810G

MIL-STD-810G		
Transit Dro	o Verification	
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt	t Company	
Date:	8/21/18	
Job #:	1608-019NB-1	



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY



Shock				
MIL-STD-810G				
Post Transit Drop				
Unit Tested Unit Tested Meter Telescoping Mast)				
Model Number	N/A			
Part Number	N/A			
Serial Number	N/A			
Will-Burt Company				
Date: 8/21/18				
Job #: 1608-019NB-1				

Sh	nock
MIL-ST	TD-810G
	ansit Drop Verification
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Bur	t Company
Date:	8/21/18
Job #:	1608-019NB-1

CONTROLLED DATA



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.11 ICING/FREEZING RAIN TEST

- a) The Icing/Freezing Rain requirements for the Stiletto AL (4 Meter Telescoping Mast) are specified in MIL-STD-810G.
- b) The Icing/Freezing Rain test log for the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.1 of this document.
- c) The Icing/Freezing Rain test equipment used to test the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.2 of this document.
- d) All recorded test data for the Icing/Freezing Rain test on the Stiletto AL (4 Meter Telescoping Mast) is located in Paragraph 3.11.1 of this document.
- e) The Icing/Freezing Rain test photographs for the Stiletto AL (4 Meter Telescoping Mast) are located in Paragraph 3.11.2 of this document.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.11.1 ICING/FREEZING RAIN TEST DATA

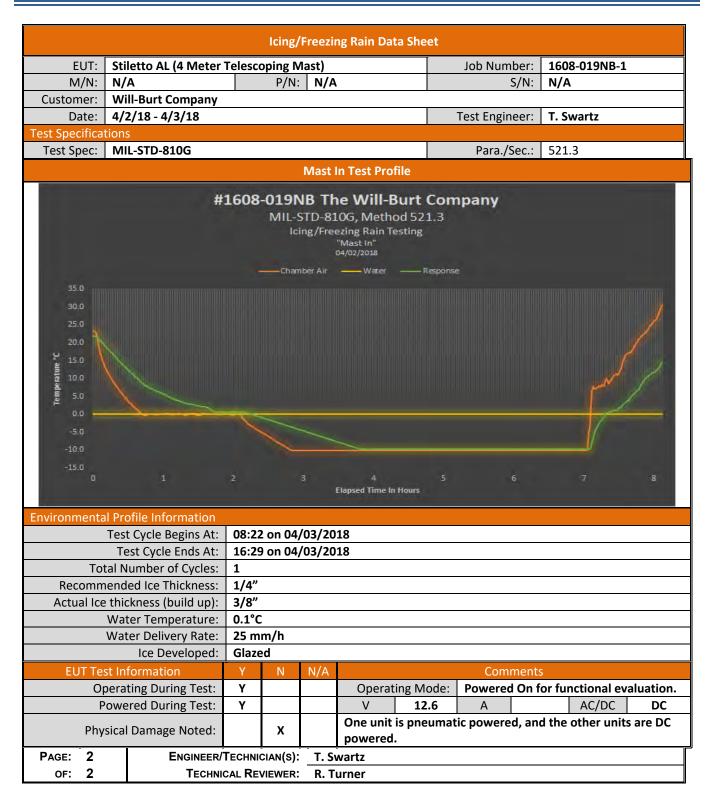
Icing/Freezing Rain Data Sheet						
EUT:	: Stiletto AL (4 Meter Telescoping Mast) Job Number: 1608-019NB-1					
M/N:	N/A P/N: N/A				S/N:	N/A
Customer:	Customer: Will-Burt Company					
Date:	4/2/18 - 4/3/18				Test Engineer:	T. Swartz
Test Specifications						
Test Spec:	MIL-STD-810G				Para./Sec.:	521.3

Test Data

Mast Extended Test Profile		
#1	LGO8-019NB The Will-Burt Company MIL-STD-810G, Method 521.3 Icing / Freezing Rain Testing "Mast Out" 04/02/2018-04/03/2018	
	Chamber Air — Water — Response	
35.0 30.0 25.0 20.0 15.0 10.0 5.0 -10.0 -15.0 0 1	2 3 4 5 6 7 Elapsed Time In Hours	
Environmental Profile Information		
Test Cycle Begins At:	16:35 on 04/02/2018	
Test Cycle Ends At:	00:30 on 04/03/2018	
Total Number of Cycles:	1	
Recommended Ice Thickness:		
Actual Ice thickness (build up):	7/16"	
Water Temperature:	0.1°C	
Water Delivery Rate:	25 mm/h	
Ice Developed:	Glazed	

PAGE: 1	Engineer/Technician(s):	T. Swartz
OF: 2	TECHNICAL REVIEWER:	R. Turner







ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

3.11.2 ICING/FREEZING RAIN TEST PHOTOGRAPHS



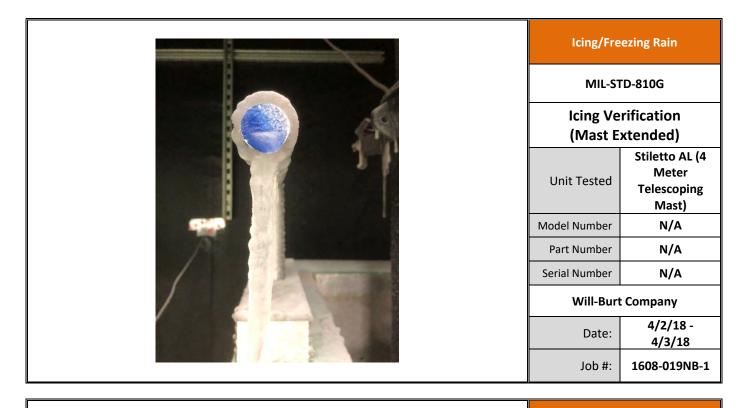
Icing/Freezing Rain	
MIL-STD-810G	
Test Setup (Mast Extended)	
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Burt Company	
Date:	4/2/18 - 4/3/18
Job #:	1608-019NB-1

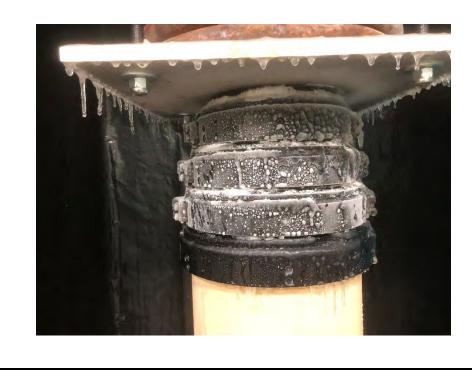
Icing/Freezing Rain	
MIL-STD-810G	
Verification Location (Mast Extended)	
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Burt Company	
Date:	4/2/18 - 4/3/18
Job #:	1608-019NB-1





ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

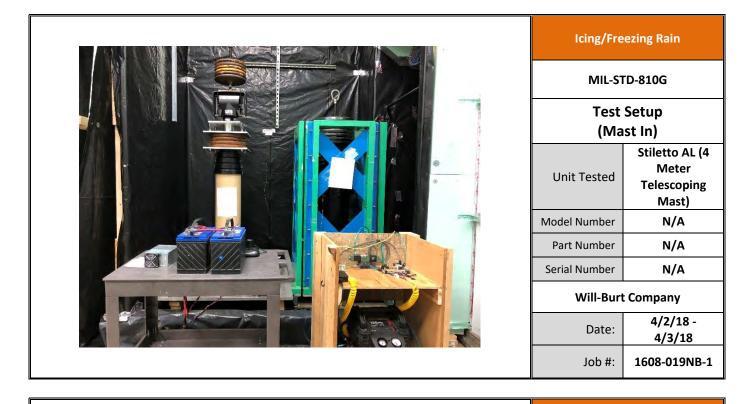


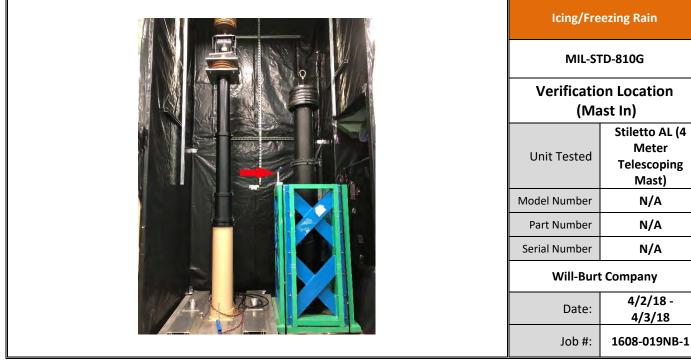


Icing/Freezing Rain		
MIL-STD-810G		
Post Test Functional		
Verification		
(Mast Extended)		
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)	
Model Number	N/A	
Part Number	N/A	
Serial Number	N/A	
Will-Burt Company		
Date:	4/2/18 - 4/3/18	
Job #:	1608-019NB-1	

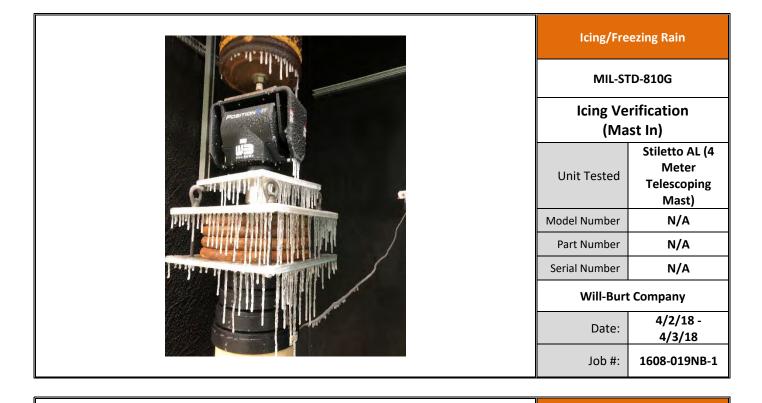
CONTROLLED DATA













icing/rieezing kain	
MII STD 910G	

WIL-STD-810G	
Post Test Functional	
Verification	
(IVIa	ist In)
Unit Tested	Stiletto AL (4 Meter Telescoping Mast)
Model Number	N/A
Part Number	N/A
Serial Number	N/A
Will-Burt Company	
Date:	4/2/18 - 4/3/18
Job #:	1608-019NB-1



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

SECTION 4 – CONCLUSION

 a) The Stiletto AL (4 Meter Telescoping Mast), Model Number: N/A; Part Number: N/A; Serial Number: N/A, was subjected to the following Environmental Tests in accordance with MIL-STD-810G and the specifications as shown in Table 2:

TABLE 2 TESTS PERFORMED & RESULTS

Test Description	Results
High Temperature	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to High Temperature testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Low Temperature	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Low Temperature testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Thermal Shock	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Thermal Shock testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Solar Radiation	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Solar Radiation testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Rain	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Rain testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Ηυμιστή	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to HUMIDITY testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Salt Fog	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Salt Fog testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Shock	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Shock testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.
Icing/Freezing Rain	No obvious signs of damage to Stiletto AL (4 Meter Telescoping Mast), due to Icing/Freezing Rain testing conditions. Stiletto AL (4 Meter Telescoping Mast) met the criteria of the specification.

b) The Stiletto AL (4 Meter Telescoping Mast) was returned to Will-Burt Company after completion of the Environmental Test.



ENVIRONMENTAL TEST REPORT FOR WILL-BURT COMPANY

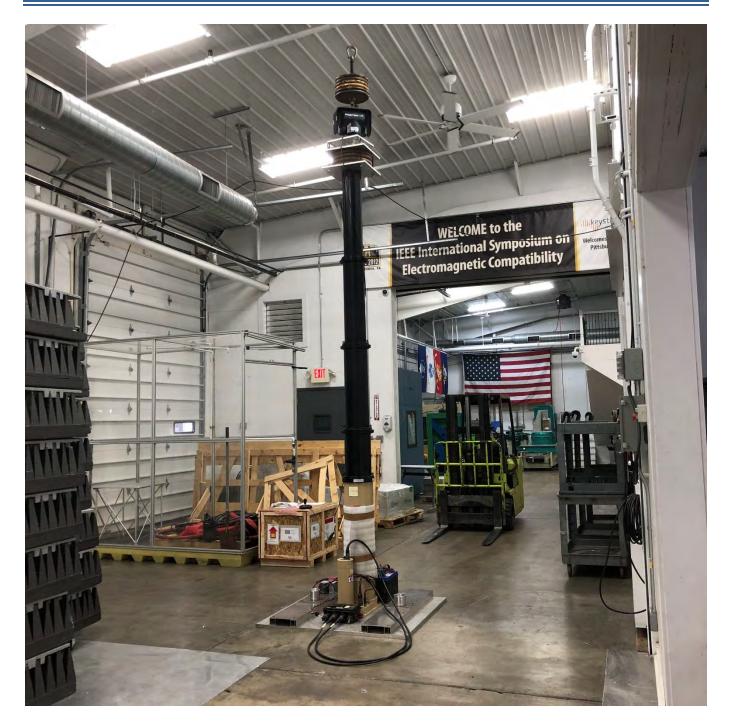
APPENDIX A

PRE-TEST FUNCTIONAL VERIFICATION PHOTO



INTERVIEW ON PLIANCE 131 Columbus Inner Belt • New Castle • PA 16101 Ph.: 724-657-9940 • Fax: 724-657-9920 www.keystonecompliance.com

> REPORT NO.: 1608-019NB-1 REVISION: N/C



COMPLIANCE

Keystone Compliance, LLC 131 Columbus Inner Belt New Castle, PA 16101

> Phone: 724-657-9940 Fax: 724-657-9920

The Will-Burt Company

1608-019NB



ENVIRONMENTAL TEST REPORT 1608-019NB REV. A

TEST STANDARDS: MIL-STD-810G

For

THE WILL-BURT COMPANY 169 South Main Street

ORRVILLE, OH 44667

On

STILETTO AL, PNEUMATIC MAST WITH REMOTE LOCKING SYSTEM, POSITIONIT

PERFORMED BY: KEYSTONE COMPLIANCE, LLC.

131 Columbus Inner Belt New Castle, PA 16101

accordance wit	pliance, LLC. does hereby certify that all inspections an th the documents referenced herein with exceptions as rertain to the specified equipment tested. This report sha e written authorization of Keystone Compliance, LLC.	noted in	this report. The results
Prepared By:	ANTONIETTA HALLOWICH, Technical Writer	Date:	10/1/2018
Approved By:	ROBERT TURNER, Environmental Lab Manager	Date:	10/1/2018
Approved By:	JOEY SULLIVAN, Quality Manager	Date:	10/1/2018
Testing Services		ww	w.keystonecompliance.com



		DOCUMENT HISTORY		
Revision	Issue Date	Description Of Modifications	Revised By	Approved By
N/C	9/20/2018	Initial release	N/A	R.T.
Α	10/1/2018	Revised Product Description	СР	RT



REPORT NO.: 1608-019NB

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	CLIENT INFORMATION
Purchase Order	MDWX001047
Quote Number	1608-019NB
Company Name	The Will-Burt Company
Address	169 South Main Street
City, State Zip	Orrville, OH 44667
Contact Name	Andrew Wasson
Phone	330-684-4031
Email	AWasson@willburt.com

	LABORATORY INFORMATION	
Contact Name	Robert Turner	
Title	Environmental Lab Manager	
E-Mail Address	bob@keystonecompliance.com	

TEST PROGRAM INFORMATION			
Test Facility	E-Labs		
Test Title & Test Dates	Altitude, Vibration, Shock, Sand and Dust May 2, 2018 to June 1, 2018		



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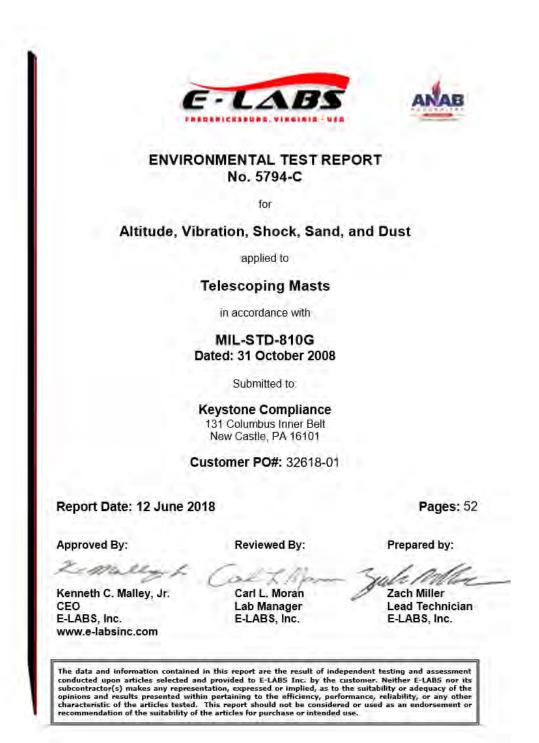
ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

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3.1.1 E-LABS REPORT





ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

)ATE: 3 June 2018		nvironmental Test Report Vibration, Shock, Sand, and Dust Telescoping Masts Keystone Compliance	Altitud	TITLE:	1.1	E-LA
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Environmental Test Report Telescoping Masts Keystone Compliance

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			13 June 2
	EXECUTIVE	SUMMARY	
on Telescop	proprated performed Altit ing Masts for Keystone n as Equipment Under To 1.	Compliance. The	Telescoping Masts
ne testing th	performed from 2 May 2 nat was performed is liste e control of E-LABS Labo	d in Table ES-2. All	testing was perform
A summary	of results of testing are p il in <i>Section</i> 5.2.	presented in Table E	ES-3: Test Summar
in more dete	in in deciron 3.2.		
	Table ES-1: Eq	uipment Under Te	ant
	Tuble Lo II Le		esi
EUT Number	EUT Description	Part Number	Serial Number
	2. Bancink	A state and a	Same and a
Number	EUT Description	Part Number	Serial Number



ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



REPORT No. 5794-C 13 June 2018

Test Applied	Procedure
Altitude	MIL-STD-810G Method 500.6 Procedure I and II
Dust	MIL-STD-810G Method 510.6 Procedure I
Sand	MIL-STD-810G Method 510.6 Procedure II
Vibration	MIL-STD-810G Method 514.6 Procedure I Category 20
Shock	MIL-STD-810G Method 516.6 Procedure I

Table ES-2: Tests Applied to Equipment Under Test

Table ES-3	: Test Summary

Test Number	Date	Test	EUT	Results
1	2May18	Vibration and Shock	1&2	No Anomalies
2	8May18	Altitude	1-3	No Anomalies
3	14May18	Sand	1-3	No Anomalies
4	25May18	Dust	1-3	No Anomalies
	ZJIVIAYTO	Dust	1-5	NU AIIOMalie

ENVIRONMENTAL TEST REPORT Telescoping Masts Keystone Compliance

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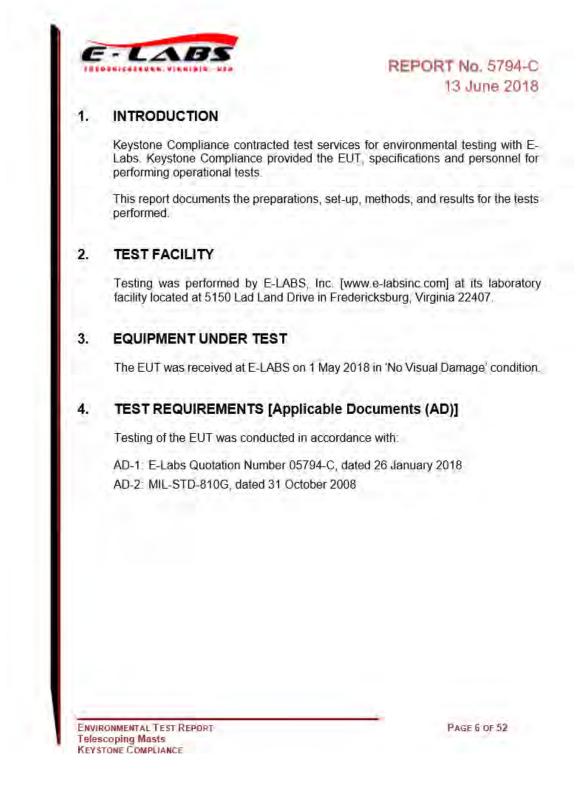
ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

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	EXECUTIVE SUMMARY	
	TEST SUMMARY	
	TABLE OF CONTENTS	
1.	INTRODUCTION	
2.	TEST FACILITY	
3.	EQUIPMENT UNDER TEST	
4,	TEST REQUIREMENTS	
5.	5.2 Description of Testing5.2.1 Vibration	3 3 3 3 4
6.	ACCEPTANCE CRITERIA	
7	TEST RESULTS	
8.	TEST MODIFICATIONS	
9.	TEST ITEM DISPOSITION	
10.	PERSONNEL	
11.	REPORT DISTRIBUTION	

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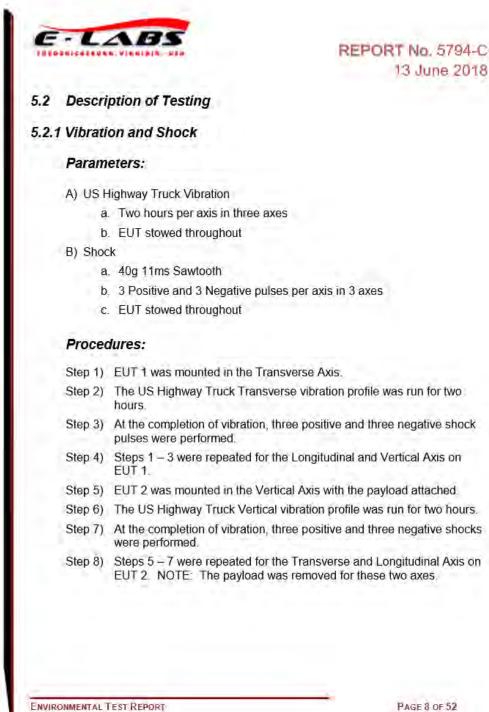
				REP	ORT No. 5 13 June	
5.	TESTING					
5.1	Preparatio	on				
	All equipme traceability t	nt used for the Natio See Table 5	accuracy and da nal Institute of S 1-1 for a list of	detailed above in 1 ata recording was c standards and Tech equipment used an	alibrated with nology reference d calibration da	
li	nstrument	Model No.	Serial No.	ment and Calibra Manufacturer	Calibration Date	Calibrati Due Da
			Vibratio	n and Shock		
ji i i	Vibration Controller	E1421B	US36002619	M+P International	9/4/17	9/4/18
Sigr	nal Conditioner	483B07	428	PCB	5/25/17	5/25/18
Ac	celerometer	353B04	144268	PCB	10/20/17	10/20/1
Ac	celerometer	353B04	144267	PCB	11/15/17	11/15/1
Ac	celerometer	353B04	LW154836	PCB	8/8/17	8/8/18
			А	ltitude		
Pre	essure Gauge	DPI104	3824873	Druck	11/6/17	11/6/18
E)ata Logger	2625	6208300	Fluke	7/4/17	7/4/18
			Sand	and Dust		
D)ata Logger	2635A	6543601	Fluke	8/2/17	8/2/18
Pa	rticle Counter	CEL-712	4139439	Casella	11/29/17	11/29/18
Hu	midity Probe	HM141	X3340066	Vaisala	12/28/17	12/28/18
	Scale	T51P	B231164740	Ohaus	1/21/18	1/21/19
	nemometer	471B-1	00AW7X	Dwyer	11/13/17	11/13/18

ENVIRONMENTAL TEST REPORT Telescoping Masts KEYSTONE COMPLIANCE PAGE 7 DF 52



13 June 2018

ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



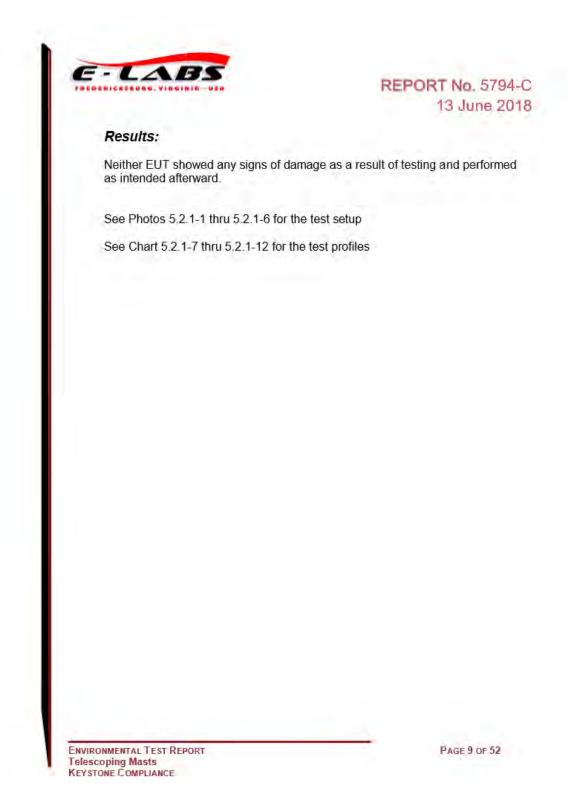
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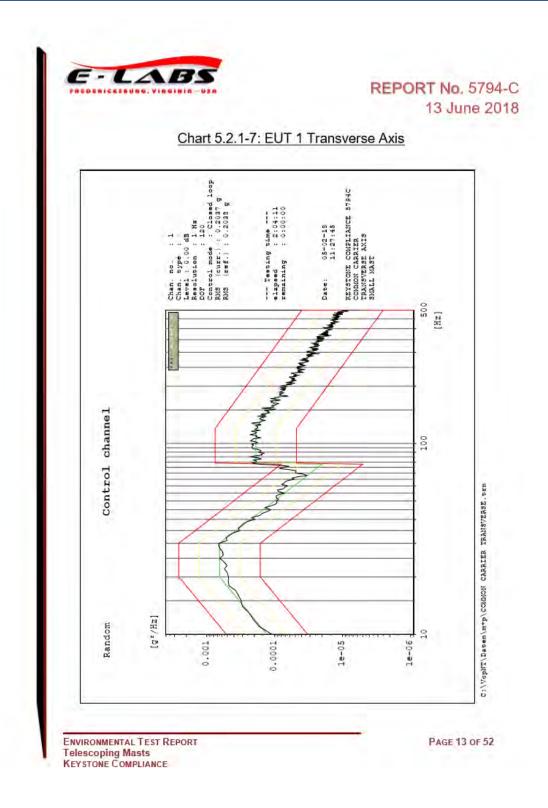


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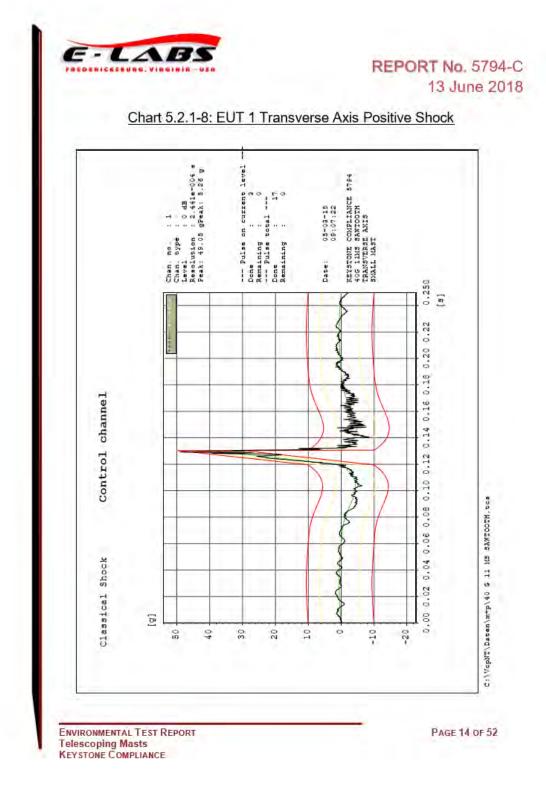
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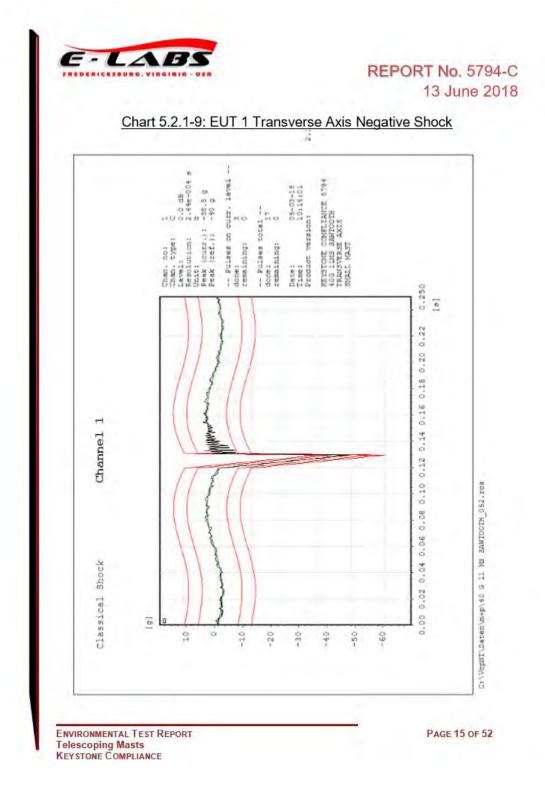
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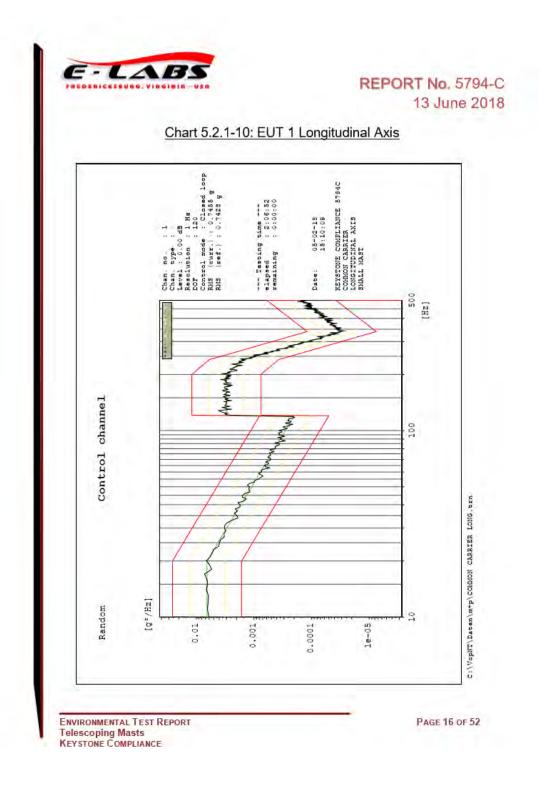
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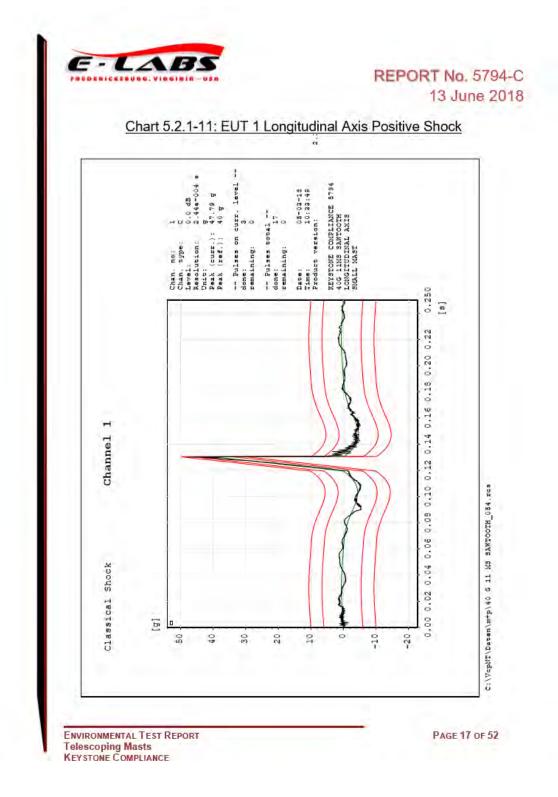
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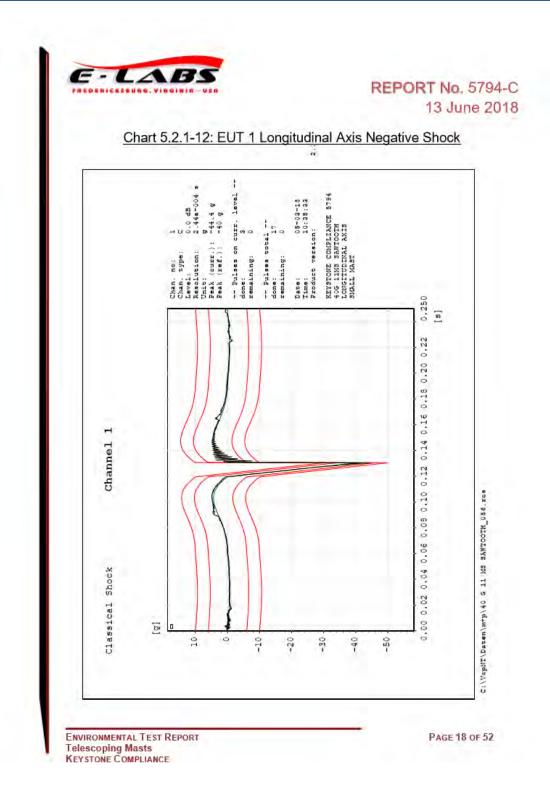
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ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





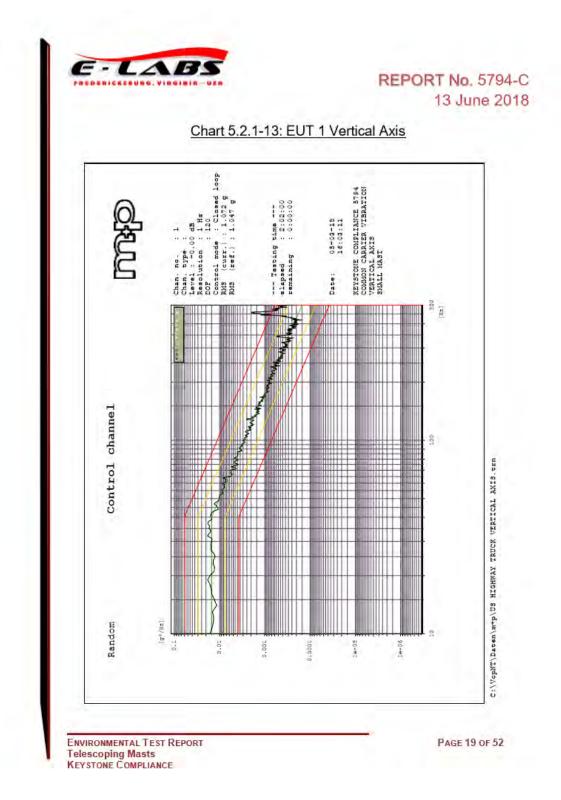
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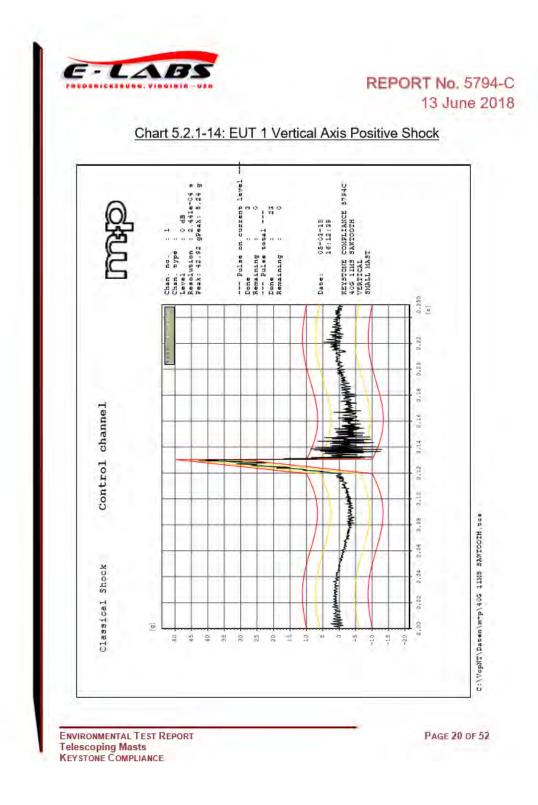
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ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



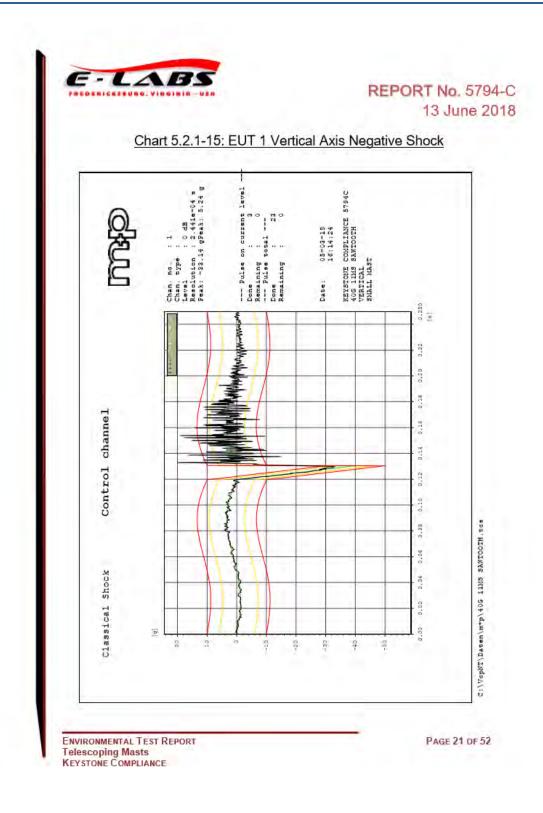


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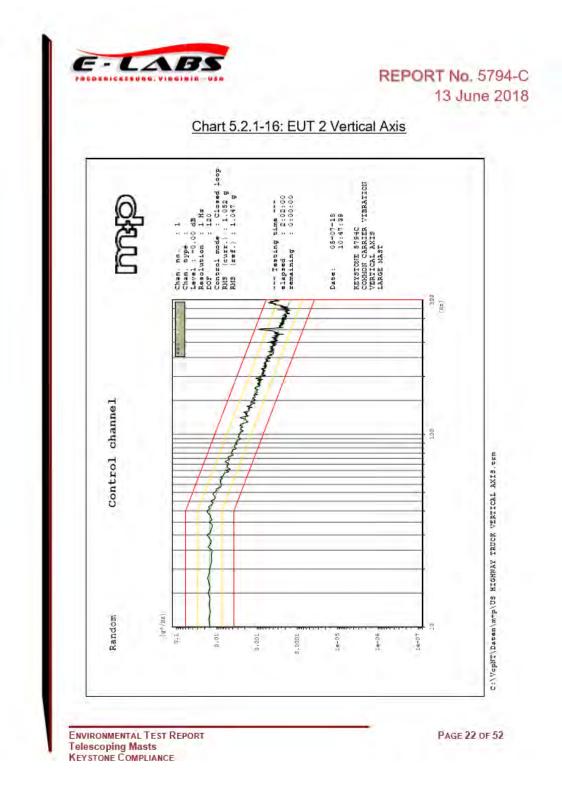
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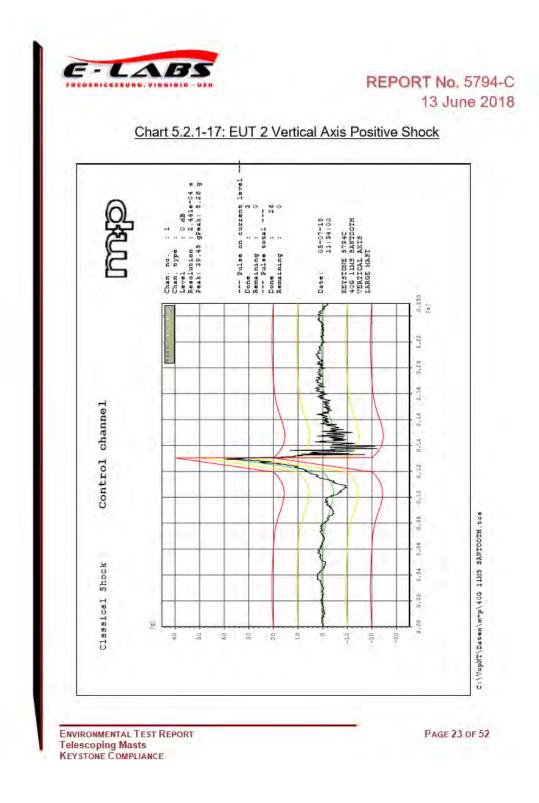
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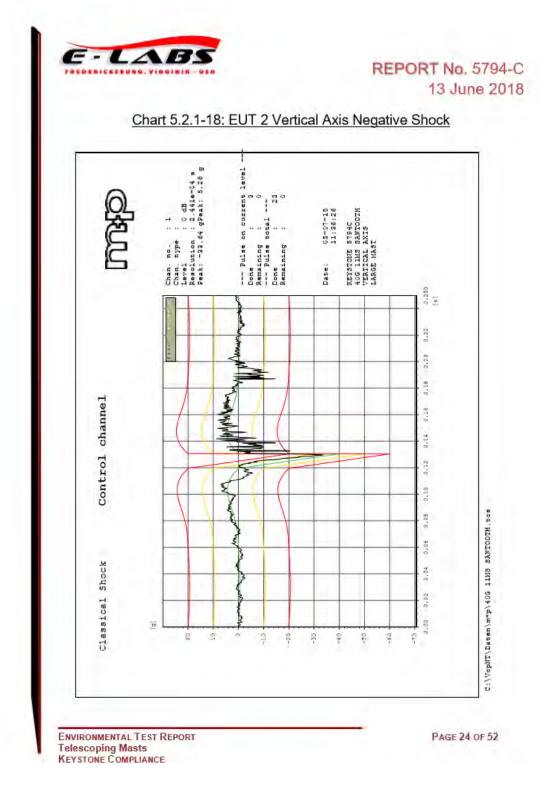
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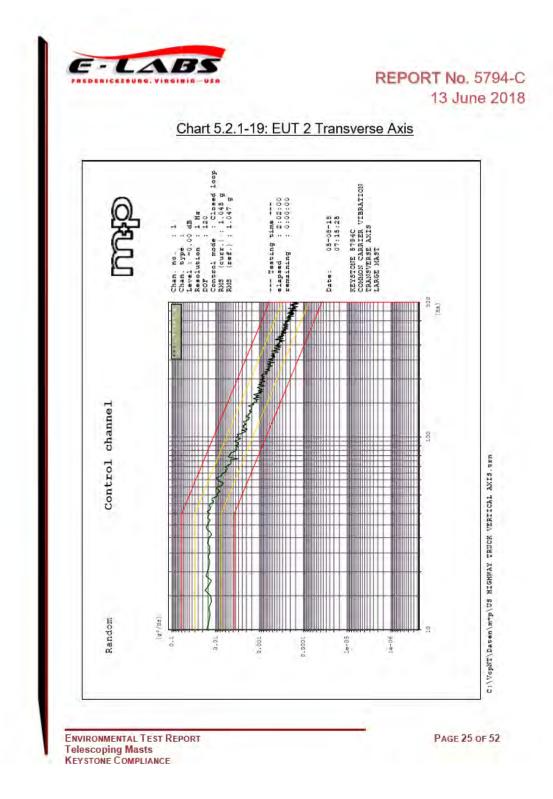
ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





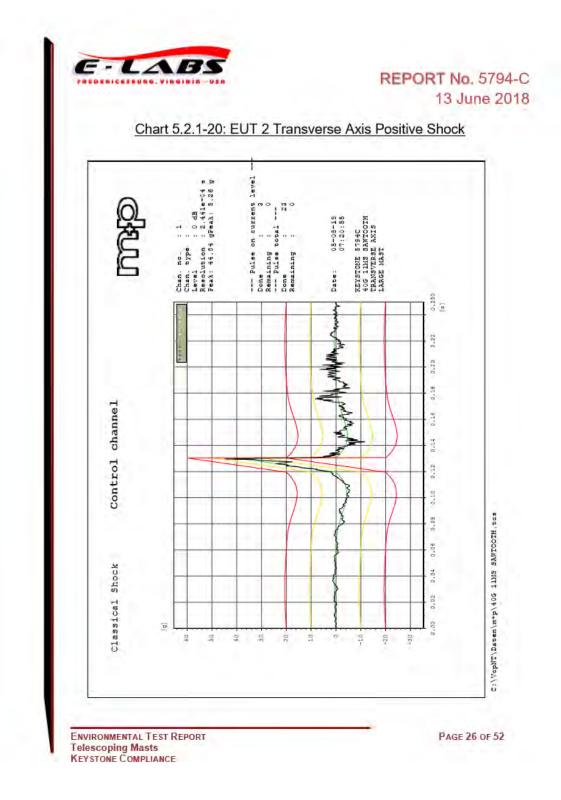
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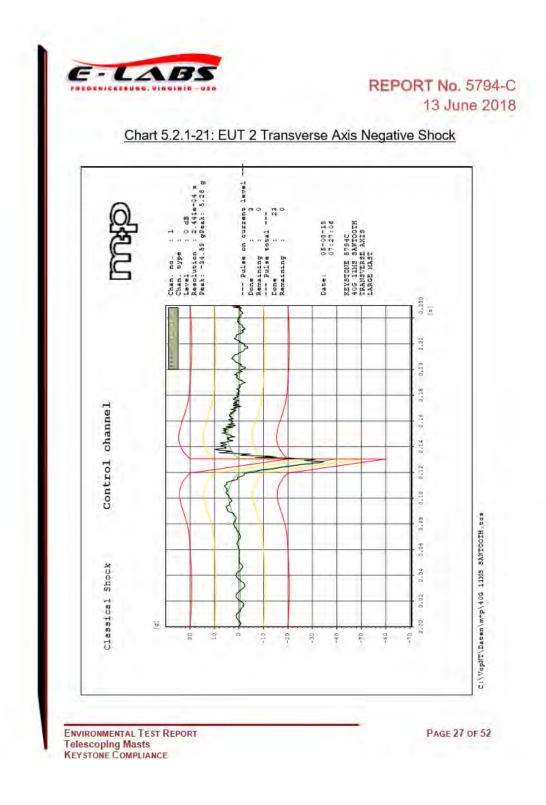


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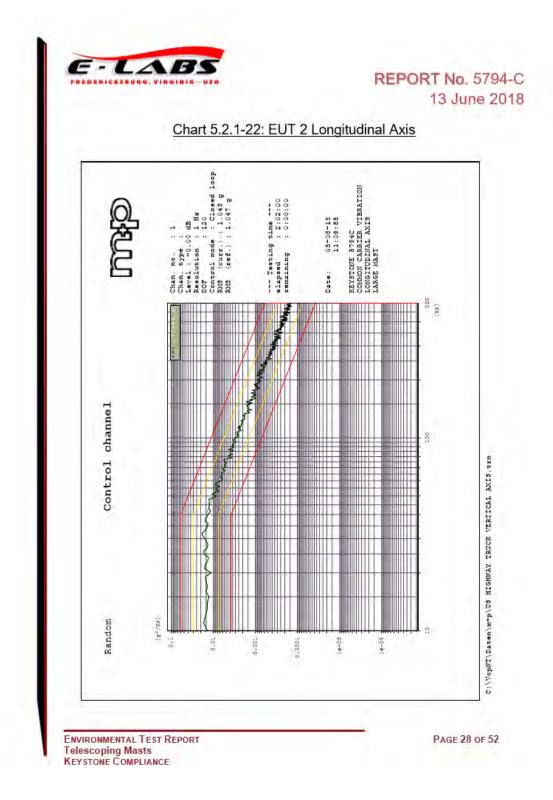
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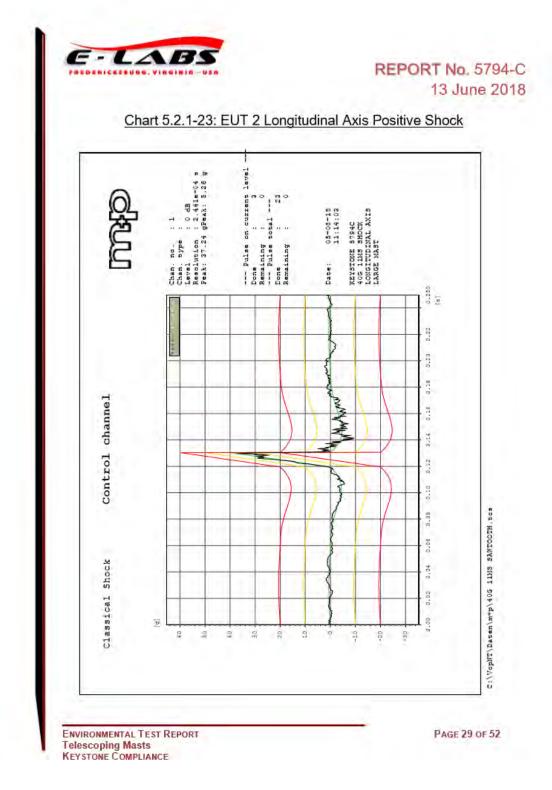
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ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





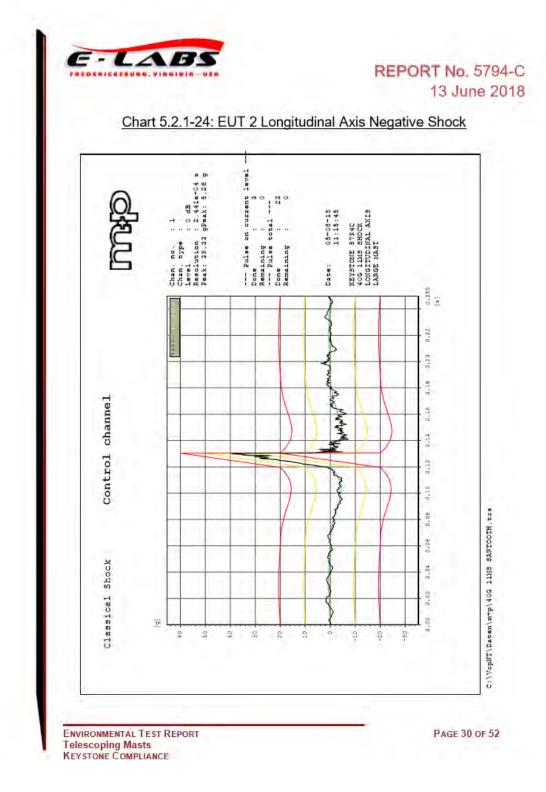
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ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

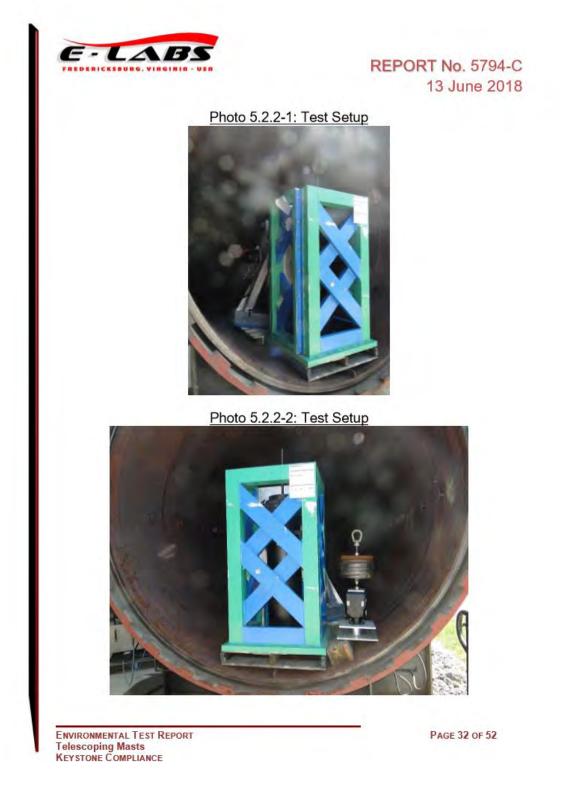
18101			REPORT No. 5794-0 13 June 2018
5.2.2	Altitud	e	
	Param	eters:	
	A) 15,000 feet		
	B) Ambient temperature		
	C) One hour duration		
		ge and Operating configuration	
	Proced	lures:	
	Step 1)	All three units were placed in an altitud configuration.	e chamber in their operational
	Step 2)	The chamber pressure was adjusted to	simulated 15,000 feet.
	Step 3)	This pressure was held for one hour	
	Step 4)	The chamber pressure was adjusted to	site ambient conditions.
	Step 5)	All three units were placed in their store	age configuration.
	Step 6)	Steps 2-4 were repeated.	
	Result	s:	
		age was observed as a result of testing. I after the test	All three units operated as
	See Pho	tos 5.2.2-1 thru 5.2.2-2 for test pictures	
	See Charts 5.2.2-3 thru 5.2.2-4 for test profiles		
The second second second	NUMBER OF ALL 7	EST REPORT	PAGE 31 OF 52

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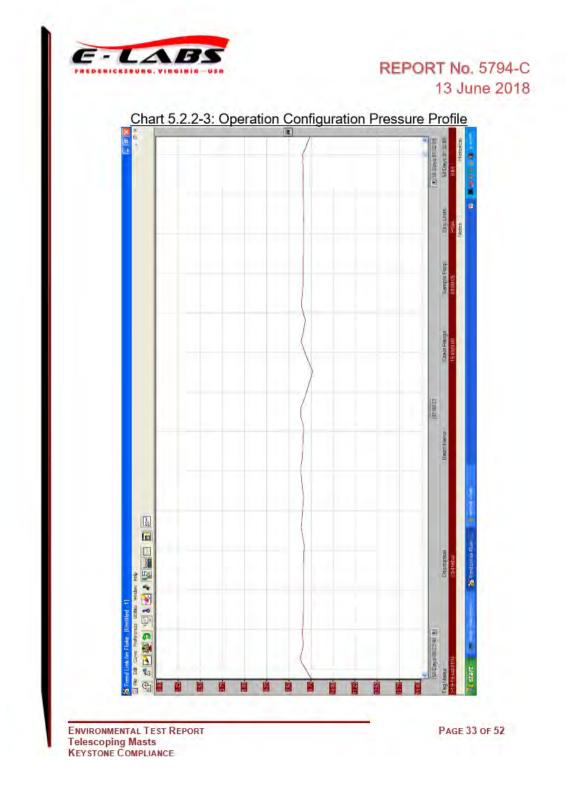


ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



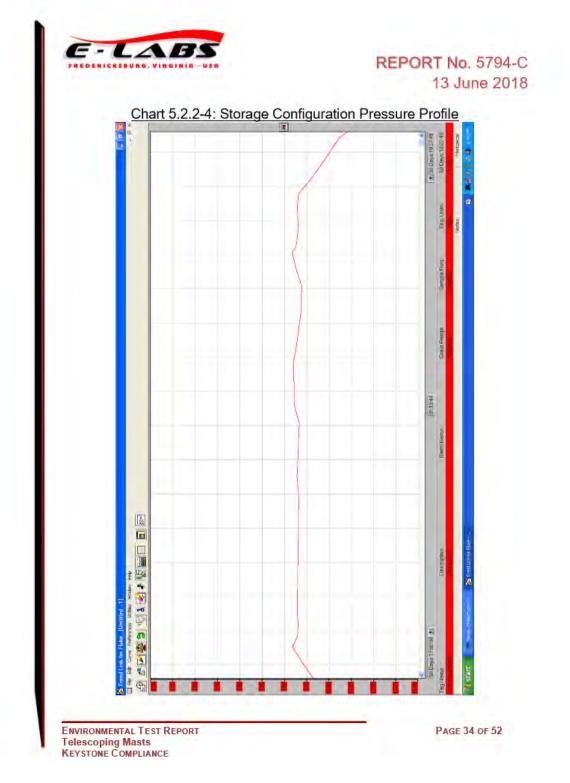


ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

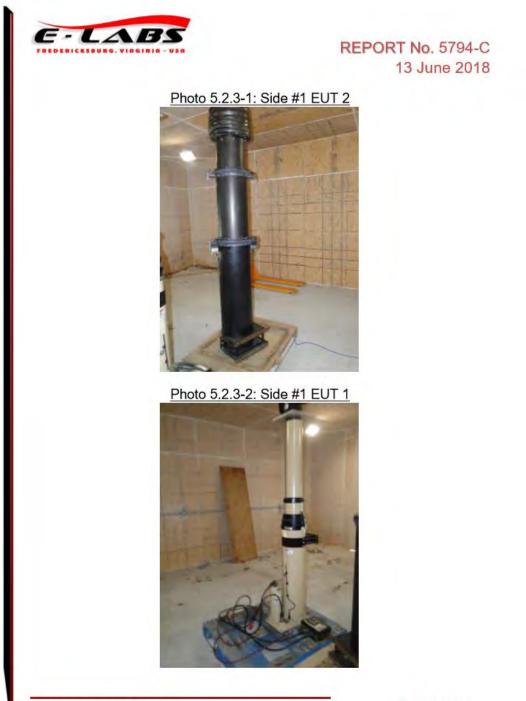
	6. VIE 61918 - MPA	REPORT No. 5794-0 13 June 2010
5.2.3 Sand		
Param	eters:	
A) 60°C		
	/m ³ concentration	
	/s air velocity	
D) 90 m	inutes per side on four sides	
E) All m	asts extended as much as cham	ber allowed
Proced	dures:	
Step 1)	All units were placed in the cha	mber for Side #1.
Step 2)	The chamber temperature was and the sand feed was initiated	adjusted to 60°C with 29 m/s air velocit to achieve 2.2 g/m ³ .
Step 3)	Side #1 was exposed to these	conditions for 90 minutes.
Step 4)	Steps 1 – 3 were repeated until	all four sides had been exposed.
Result	s:	
	T showed no signs of damage as ded afterward.	a result of testing and all units operated
Car Dha	otos 5.2.3-1 thru 5.2.3-8 for test p	pictures
See Pho		

ENVIRONMENTAL TEST REPORT Telescoping Masts KEYSTONE COMPLIANCE

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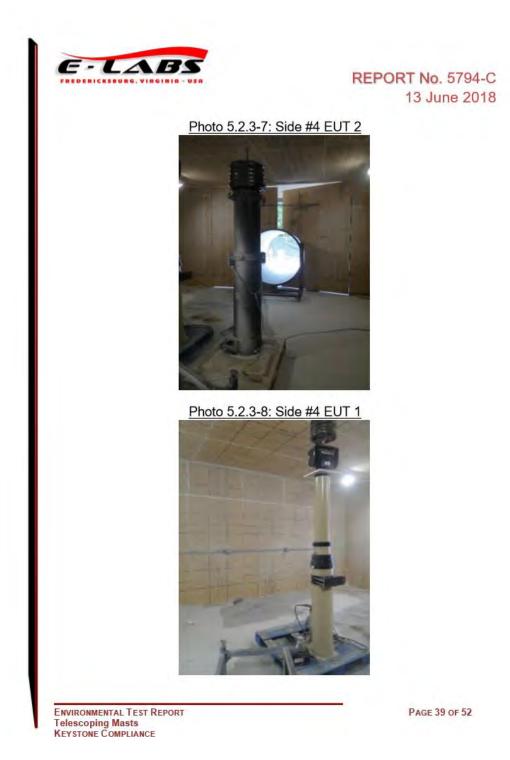
ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



ENVIRONMENTAL TEST REPORT Telescoping Masts KEYSTONE COMPLIANCE

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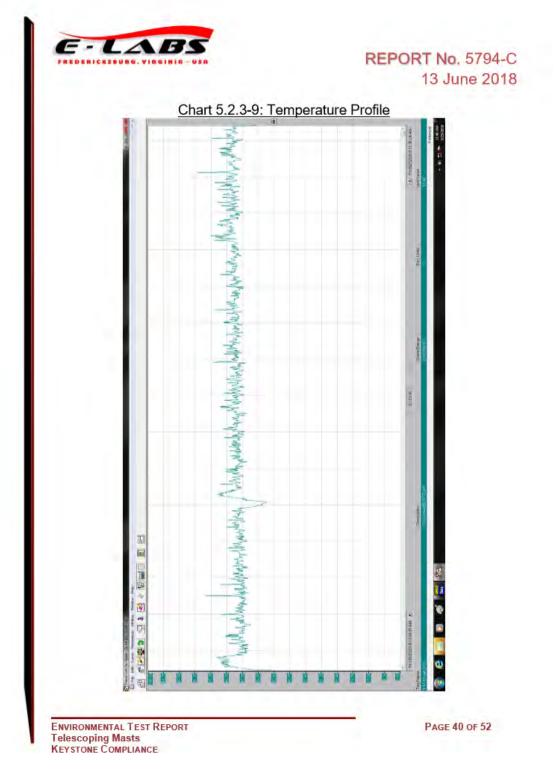




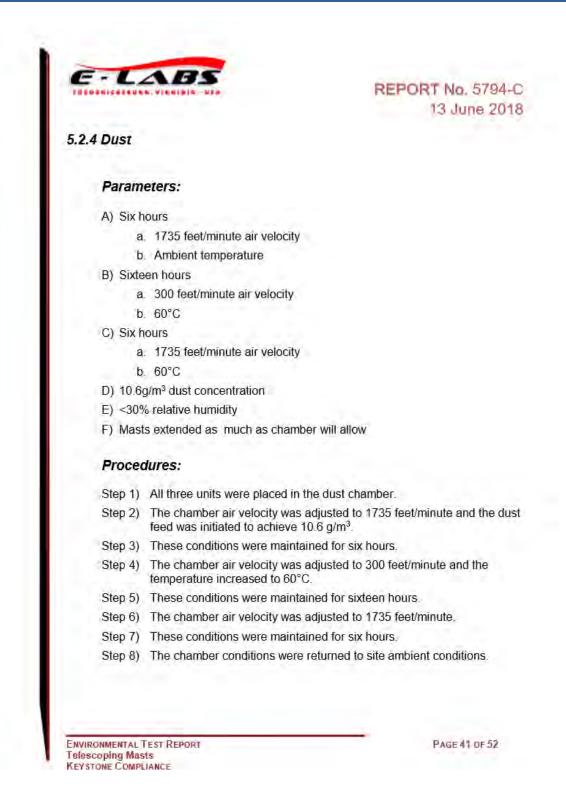
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REPORT NO.: 1608-019NB REVISION: A

ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY









ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

	REPORT No. 5794-0
	13 June 2018
Results:	
The EUT showed no signs of damage intended afterwards.	as a result of testing and operated as
See Photos 5.2.4-1 thru 5.2.4-4 for tes	st pictures
See Charts 5.2.4-5 thru 5.2.4-11 for te	est profiles



ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY





ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



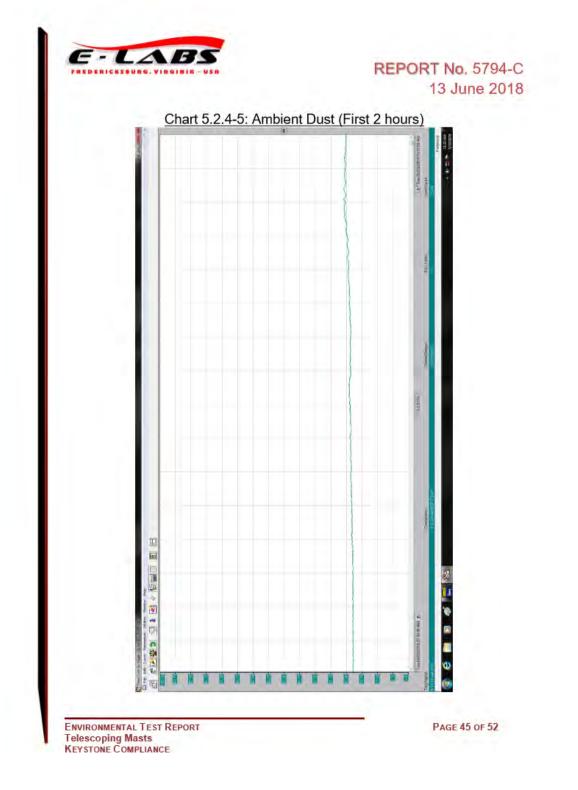
ENVIRONMENTAL TEST REPORT Telescoping Masts KEYSTONE COMPLIANCE

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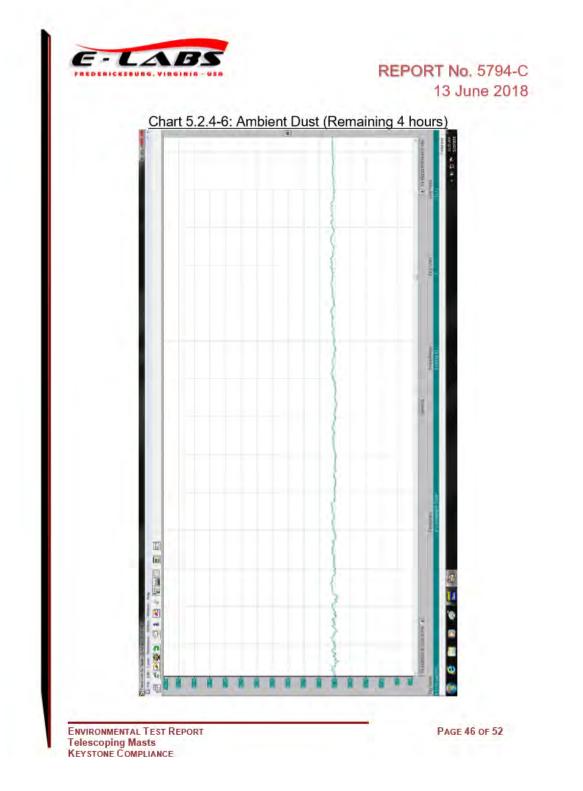
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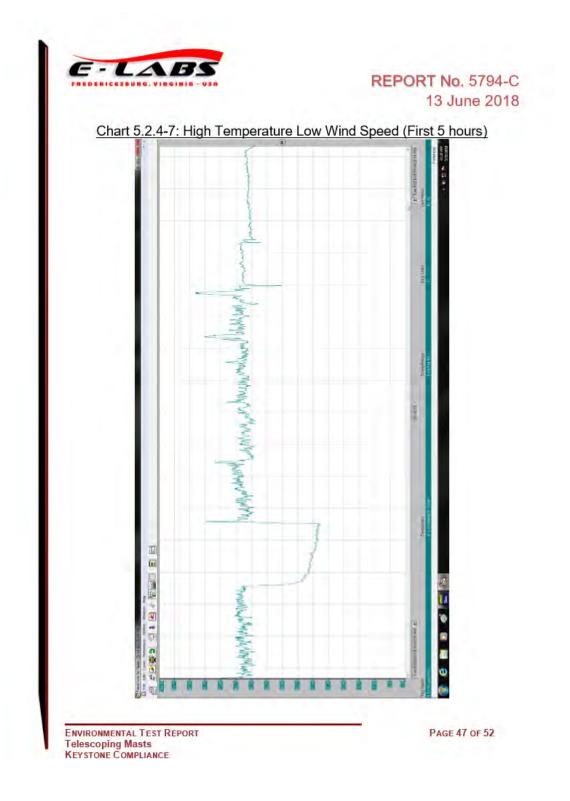


ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY

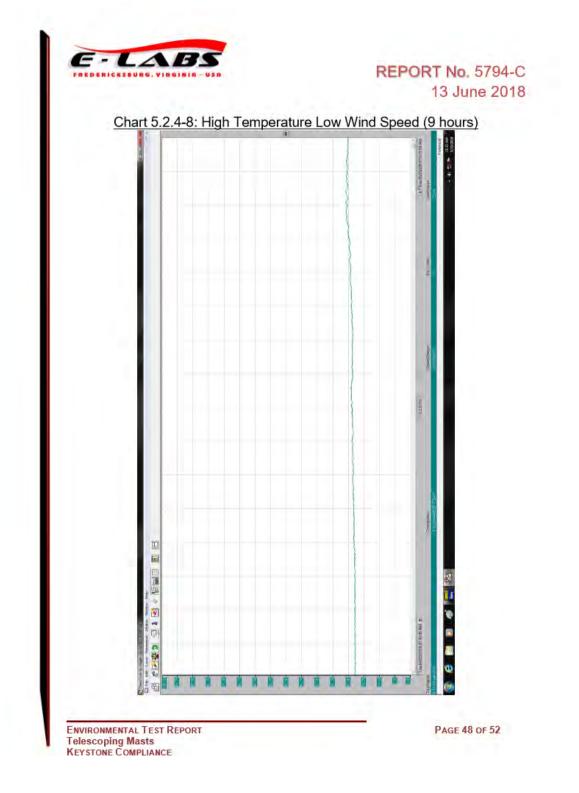








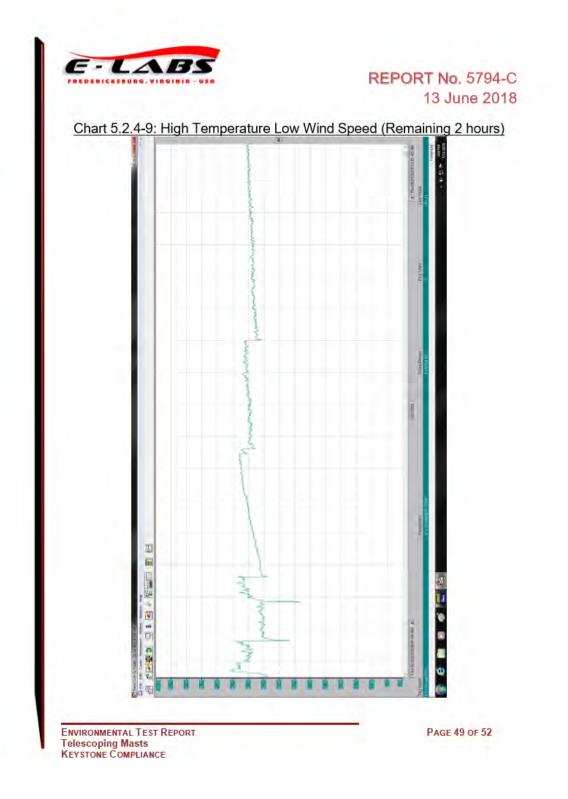




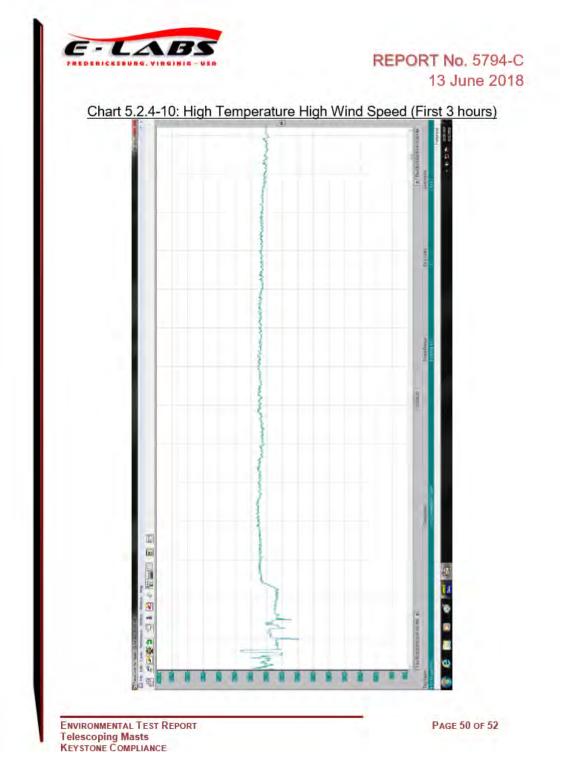


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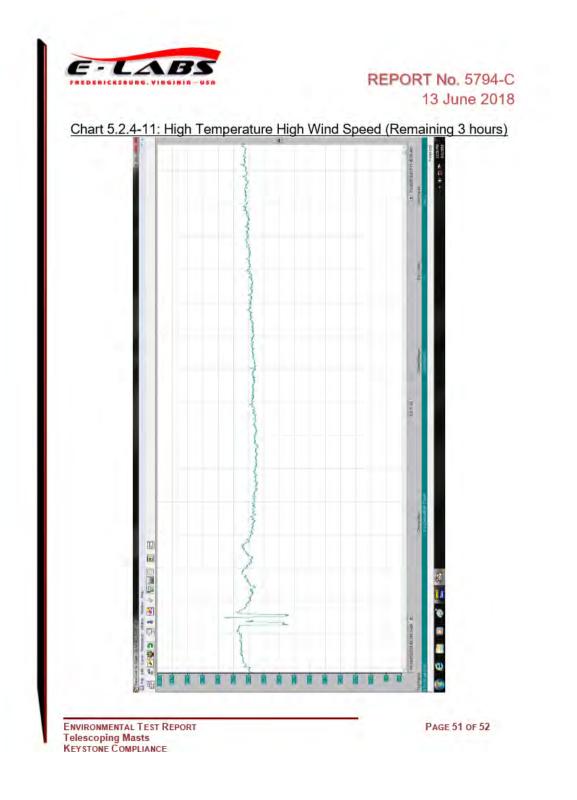
REPORT NO.: 1608-019NB REVISION: A









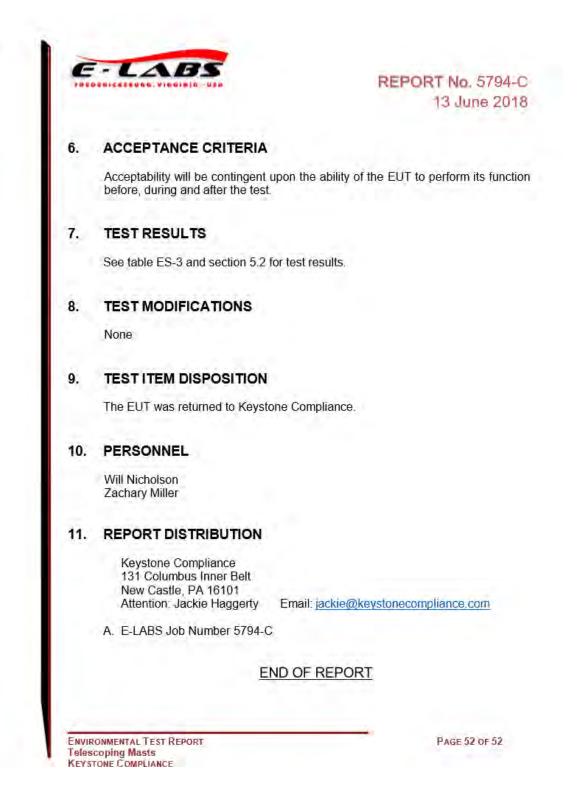




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ENVIRONMENTAL TEST REPORT FOR THE WILL-BURT COMPANY



CONTROLLED DATA

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