

**QUANTA
LABORATORIES**

3199 De La Cruz Boulevard • Santa Clara, CA 95054-2483
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E-MAIL: test@quantalabs.com

Certificate of Conformance

This is to certify that the results from the test(s) requested by

ALPAHA NOVATECH are on file under

Quanta Laboratories Job No. QL-08-916 and conform

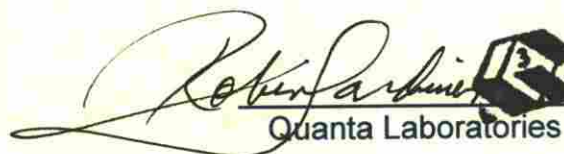

to the specification(s) stated in P.O. No. 20081003A04

These results apply to the following equipment and are available for review upon request.

Model No: HEAT SINK SAMPLE (9 units)

S/N: N/A

*** VIBRATION AND SHOCK TESTS***

  10/8/08
Quanta Laboratories Date

EQUIPMENT LIST FOR SHOCK/DROP TEST



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CLIENT:	ALPHA NOVATECH			P.O.:	20081003A04	
				JOB NO.	QL-08- 916	
MFGR	DESCRIPTION	RANGE	EQUIP. USED	ASSET NO.	SERIAL NO.	CALIBRATION DUE DATE
AVCO	SM105-8 SHOCK TESTER	3000 G MAX		QL-050	1978	
MTS	SHOCK TABLE MODEL # 846.240	70" DROP MAX DV=8 m/sec	X	QL-009		TIME OF TEST
LAB	DROP TESTER MODEL: 2D-500	24" TO 68"		QL-169		
LANSMONT CORPORATION ECON	TEST PARTNER SOFTWARE VER. 2 T-05H	3000 G MAX		QL-0479		
				QL-0494		
			X	QL-0332	128992257	07/17/2009
	3031A ACCELEROMETER	F.S. 500 g's SENS. 10 mV/g		QL-		
				QL-		
				QL-		
	3013A ACCELEROMETER TRI-AXIAL	F.S. 500 g's SENS. 10 mV/g		QL-		
				QL-		
				QL-		
	3151A ACCELEROMETER TRI-AXIAL	F.S. 200 g's SENS. 50 mV/g		QL-		
				QL-		
				QL-		
	3132A ACCELEROMETER	F.S. 50 g's SENS.100 mV/g		QL-		
DYTRAN				QL-		
				QL-		
	3141A ACCELEROMETER	F.S. 50 g's SENS. 100 mV/g	X	QL-	117	03/04/09
				QL-		
				QL-		
	3200A5T ACCELEROMETER	F.S. 5000 g's SENS. 1 mV/g		QL-		
				QL-		
				QL-		
	3200B5T ACCELEROMETER	F.S. 500 g's SENS. 10 mV/g		QL-		
				QL-		
				QL-		

SHOCK TEST DATA



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CLIENT: ALPHA NOVATECH				P.O. NO: 20081003A04		
SPECIMEN: HEAT SINK SAMPLES (9 UNITS)				JOB NO: QL-08-916		
SPECIFICATION:			WAVE FORM: TRAPEZOIDAL		PAGE 1 OF 1	
DATE	S/N	AXIS	LEVEL (G)	DURATION(MS)	NO. OF SHOCKS	REMARKS
09-30-2008	N/A	+X	TRAPEZOIDAL SHOCK TEST: 40G, 18MS. 3 SHOCKS/DIRECTION		3	TEST COMPLETED TO SPECIFICATION REQUIREMENTS.
		- X			3	
		+Y			3	
		- Y			3	
		+Z			3	
		- Z			3	
 DEFINITION OF AXES		TEST CONDUCTOR: <i>Justin Jung</i>			DATE: 09-30-2008	
		TEST ENGINEER: <i>ym G. Sam</i>			DATE: 09-30-2008	
		WITNESS:			DATE:	
		Q. A. ENGINEER: <i>[Signature]</i>			DATE: 09-30-2008	

ALPHA NOVATECH
NON-OPERATIONAL TRAPEZOIDAL
SHOCK TEST



+X



+Y



+Z



-X



-Y



-Z

SINE SWEEP VIBRATION TEST DATA



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CLIENT: ALPHA NOVATECH	P.O. NO: 20081003A04
MODEL: HEAT SINK SAMPLE (9 units)	JOB NO: QL-08-916
SPECIFICATION: ALPHA NOVATECH'S SPEC.	PAGE 1 OF 1

DATE	S/N	AXIS	FREQUENCIES & LEVELS	REMARKS
09/24/2008	N/A	X	SINE SWEEP TEST: 5-500Hz @ 2G Sweep Rate: 1 Oct/Min Duration: 13 minutes/axis Dwell: 205Hz@ 2G Duration: 10 Min Dwell: 259Hz@ 2G Duration: 10 Min	NON-OPERATIONAL TEST THE TEST COMPLETED TO THE SPECIFICATION REQUIREMENT.
		Y	SINE SWEEP TEST: 5-500Hz @ 2G Sweep Rate: 1 Oct/Min Duration: 13 minutes/axis	
		Z	SINE SWEEP TEST: 5-500Hz @ 2G Sweep Rate: 1 Oct/Min Duration: 13 minutes/axis	

<p>DEFINITION OF AXES</p>	TEST CONDUCTOR: <i>Hwayne Jung</i>	DATE: 09/24/2008
	TEST ENGINEER: <i>yu G. Sim</i>	DATE: 09/24/2008
	WITNESS:	DATE:
	Q. A. ENGINEER: <i>Robert Anderson</i>	DATE: 09/24/2008

RANDOM VIBRATION TEST DATA



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CLIENT: ALPHA NOVATECH	P.O. NO: 20081003A04
SPECIMEN: HEAT SINK SAMPLE (9 units)	JOB NO: QL-08-916
SPECIFICATION: ALPHA NOVATECH 'S SPEC.	PAGE 1 OF 1

DATE	S/N	AXIS	FREQUENCIES & LEVELS	REMARKS
09-24-2008	N/A	X	RANDOM VIBRATION TEST: 5-500 HZ@1.12GRMS Overall: 1.12G rms At full level 30 Min. per axis	NON-OPERATIONAL TEST THE TEST COMPLETED TO THE SPECIFICATION REQUIREMENT
		Y		
		Z		

 DEFINITION OF AXES	TEST CONDUCTOR: <i>Hungre Jung</i>	DATE: 09-24-2008
	TEST ENGINEER: <i>Yu G. Sun</i>	DATE: 09-24-2008
	WITNESS:	DATE:
	Q. A. ENGINEER: <i>John Lardner</i>	DATE: 09-24-2008

EQUIPMENT LIST FOR VIBRATION TEST



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CLIENT	ALPHA NOVATECH	JOB NO.	QL-08-916			
		P.O. NO.	20081003A04			
MFR	DESCRIPTION	RANGE	EQUIP. USED	ASSET NO.	SERIAL NO.	CALIBRATION DUE DATE
DACTRON	DSP	0.1Hz - 3 KHz RES. 0.1dB		QL-0665	5542452	
				QL-0650	8204911	
			X	QL-0659	6313890	01/11/09
			X	QL-0655	7385467	05/08/09
				SEISMIC QL-0517 QL-0518	8177263 6904178	
LING ELECTRONICS	5/6-1 AMPLIFIER A-175 SHAKER (SILVER)	5Hz - 3 KHz		QL-0016	1672	TIME OF TEST
	5/6-5 AMPLIFIER(AGREE)			QL-0015	67	
	20/35 AMPLIFIER B-300 SHAKER (GREEN)			QL-0511	241	
	35/70 AMPLIFIER			QL-0151	30	
	60/100 AMPLIFIER B335 SHAKER (GOLD)		X	QL-0013	80	
	DMA-48 SOLID STATE AMPLIFIER			QL-0150	34	
	8024-SOLID STATE AMP #2 B335 SHAKER (BLUE)			QL-0014	22	
	B-300 SHAKER (BLUE)			QL-0135	153	
	B-300 SHAKER (AGREE)			QL-0504	46	
	B335 SHAKER (RED)			QL-0510	12	
	B335 SHAKER (GREEN)			QL-0509	92	
				X	QL-0512	
			QL-0216	43		
			QL-0256	03		
			QL-0253	91		
MTS	2456 HYDR. SHAKER 406 CONTROL UNIT 436 CONTROL UNIT	1 Hz - 500 Hz 6" MAX DIS		QL-0003	160	
				QL-0006	863	
				QL-0007	3964	
TEAM CORP	SYSTEM 7269 HYDR. SHAKER	13" MAX DIS		QL-0522	533	
DYTRAN	ACCELEROMETER 3141A	F.S. 50 g's SENS. 100 mV/G	X	QL- 0240	238	03/05/09
	ACCELEROMETER 3055A2		X	QL-0274	1844	02/12/09
	ACCELEROMETER 3132A		X	QL-0701	457	01/16/09
	ACCELEROMETER 3030A4	F.S. 500 g's SENS. 10 mV/G		QL-		
	ACCELEROMETER 3141A			QL-		
	ACCELEROMETER 3031AG			QL-		
	ACCELEROMETER 3101B			QL-		
	ACCELEROMETER 3093M3 (TRIAxIAL ACC)	F.S. 200 g's SENS. 50 mV/G		QL-		
ACCELEROMETER	F.S. 200 g's SENS. 50 mV/G		QL-			
			QL-			
ENDEVCO	ACCELEROMETER 7254-10	F.S. 500 g's SENS. 10 mV/G		QL-0409		
				QL-		
PCB	ACCELEROMETER			QL-		
				QL-		

ALPHA NOVATECH
NON-OPERATIONAL TRAPEZOIDAL
SHOCK TEST



X



Y



SENSORS