

Grant 2002-DT-CX-K001
 ID No. 065595
 MJO 118

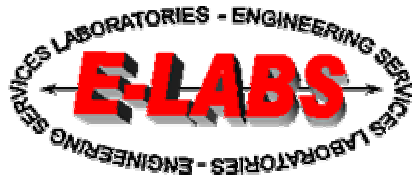
Noise Flash Diversionary Device (NFDD) ALS 09



DESCRIPTION:		
Tactical Device	Vents axially from both ends	Pull Ring Safety
Reloadable	4 vents on top, 1 port on bottom	Avg. Assembly Wt:
Steel Case	Ports: 0.49" dia. top; 1.0" dia. bottom	Pre Test: 21.58 oz
2.0" dia. x 5.57" L	Reloads are serial numbered	Post Test: 20.16 oz

PACKAGING:			
6.5" H	7" W	17" L	8.1 lbs
Cardboard box			
10 reloads / 4 bodies per box			
Paper wrapped units			





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Weapon Name: FUSE, DIVERSIONARY DEVICE, RELOAD (Stock # ALS09) to be used with DIVERSIONARY DEVICE, BODY, STEEL (Stock # ALS4140) or DIVERSIONARY DEVICE, BODY, ALUMINUM (Stock # ALS6061)

Description: The FUSE, DIVERSIONARY DEVICE, RELOAD is an M201 A1 one second delay fuse with a highly refined flash powder, producing a brilliant disorientation flash. This mixture is extremely pure and is rated at a 35% power factor of TNT by weight. The body of this device is totally water resistant because of its high tensile strength, .030 inch thick plastic body.

History/Background: This device was developed as a diversionary device for use in a variety of applications. The FUSE, RELOAD must be used in conjunction with the ALS4140 or ALS6061 DIVERSIONARY DEVICE, BODIES.

Status: Currently Available

Potential Targets/Applications: Prison/Civil Rioters/Tactical Entries

Primary Users: Law Enforcement, Military

Incapacitation Mechanism/Technology: The FUSE, DIVERSIONARY DEVICE RELOAD is an approximately one second delay device which produces a brilliant flash and a thunderous report of approximately 174 dB at 5 feet. It will normally cause disorientation for 1 to 3 seconds.

Physical Data: FUSE RELOAD (1.5 inches in diameter and 4 inches in height) BODY, STEEL (2 inches in diameter and 4.5 inches in height) BODY, ALUMINUM (2 inches in diameter and 4.5 inches in height)

Performance Characteristics: When detonated, the explosive produces a brilliant flash and a thunderous report of approximately 174 dB at 5 feet.

Delivery Means: Hand thrown

Operational Strengths: No additional equipment needed.

Operational Limitations: Devices thrown within 5 feet of individuals may produce significant trauma to individual's hearing or damage to the eyes if dispersion ports are oriented directly in the line with the eyes or ears. Heart attacks may be induced in individual's with pre-existing conditions. These devices should not be used in areas with high fire potential.

Documentation Requirements: It is recommended that officers training records be annotated to indicate proper training of less lethal blunt impact munitions use has been accomplished.

System Developer: ALS Technologies, Inc.
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E-mail: alstech@mtnhome.com Website: www.ozarkmnts.com/less-lethal

ALS 09																				
TEST	PART S/N	GROSS WEIGHT		IGNITION DELAY	BURN	6 FEET				RADIANT FLUX	9 FEET				RADIANT FLUX	12 FEET				
		PRE-TEST*	POST TEST			PEAK		PEAK			PEAK		PEAK							
		oz	oz	sec.	sec.	ACOUSTIC NOISE	ILLUMINANCE	ACOUSTIC NOISE	ILLUMINANCE	ACOUSTIC NOISE	ILLUMINANCE	ACOUSTIC NOISE	ILLUMINANCE	ACOUSTIC NOISE	ILLUMINANCE					
		psi	db	LUX	ft-candle	J	psi	db	LUX	ft-candle	J	psi	db	LUX	ft-candle	J				
1	09L034	2.57	1.75	1.66	0.0030	0.59	166	27482144	2553091	0.6	0.48	164	12069839	1121288	0.3	0.31	161	5683789	528024	0.1
2	09L035	2.57	1.80	1.62	0.0028	0.70	168	19592880	1820179	0.4	0.49	164	7934343	737100	0.2	0.32	161	3408033	316606	0.1
3	09L036	2.57	1.75	1.57	0.0028	0.83	169	27483442	2553212	0.5	0.62	167	12239497	1137049	0.2	0.44	164	5516181	512453	0.1
4	09L037	2.57	1.75	1.67	0.0030	0.40	163	13692852	1272066	0.4	0.29	160	5022099	466553	0.1	0.23	158	2214491	205726	0.1
5	09L038	2.57	1.75	1.30	0.0020	1.00	171	12853923	1194129	0.2	0.51	165	4949360	459795	0.1	0.31	161	1876679	174343	0.0
6	09L029	2.57	1.75	1.31	0.0029	0.55	166	29169154	2709814	0.7	0.43	163	12900299	1198438	0.3	0.27	159	5726340	531977	0.1
7	09L030	2.57	1.75	1.35	0.0026	0.50	165	24811614	2304999	0.4	0.30	160	10863115	1009183	0.2	0.25	159	4725472	438996	0.1
8	09L031	2.63	1.80	1.69	0.0027	0.80	169	28490457	2646763	0.5	0.60	166	12597935	1170348	0.2	0.36	162	5463590	507568	0.1
9	09L032	2.57	1.75	1.34	0.0029	0.58	166	33765198	3136787	0.7	0.38	162	17007725	1580018	0.3	0.26	159	8349880	775704	0.2
10	09L033	2.57	1.75	1.58	0.0027	0.88	170	23265234	2161340	0.6	0.52	165	10472781	972921	0.2	0.27	160	3752061	348566	0.1
11	09L052	2.57	1.75	1.64	0.0043	0.32	161	12780979	1187353	0.5	0.24	158	5131789	476743	0.2	0.17	156	1874152	174109	0.1
12	09L049	2.63	1.80	1.60	0.0021	0.65	167	12210401	1134346	0.2	0.46	164	4486354	416782	0.1	0.30	160	1717745	159579	0.0
13	09L050	2.57	1.75	1.54	0.0019	0.72	168	17096856	1588298	0.2	0.54	165	6996720	649995	0.1	0.40	163	2608582	242337	0.0
14	09L051	2.57	1.75	1.60	0.0025	0.61	166	15738164	1462075	0.3	0.37	162	6390831	593708	0.1	0.29	160	2186966	203169	0.0
15	09L053	2.57	1.75	1.27	0.0021	0.52	165	25426451	2362117	0.4	0.39	163	11530269	1071162	0.2	0.27	159	4545297	422258	0.1
16	09L054	2.57	1.75	1.67	0.0023	1.19	172	19844292	1843535	0.4	0.55	166	8501984	789834	0.1	0.39	163	3413019	317069	0.1
17	09L055	2.57	1.75	1.51	0.0019	0.83	169	14342932	1332458	0.2	0.54	165	5427733	504236	0.1	0.38	162	2120647	197008	0.0
18	09L056	2.57	1.75	1.50	0.0031	0.32	161	12454027	1156979	0.3	0.22	157	4615168	428749	0.1	0.14	154	1835358	170505	0.0
20	09L058	2.57	1.75	1.61	0.0020	0.57	166	9481201	880804	0.2	0.36	162	3018109	280382	0.0	0.27	159	1212325	112625	0.0

Min	2.57	1.75	1.27	0.0019	0.32	161	9481201	880804	0.2	0.22	157	3018109	280382	0.0	0.14	154	1212325	112625	0.0
Max	2.63	1.80	1.69	0.0043	1.19	172	33765198	3136787	0.7	0.62	167	17007725	1580018	0.3	0.44	164	8349880	775704	0.2
Range	0.06	0.05	0.41	0.0024	0.88	11	24283997	2255983	0.6	0.40	9	13989616	1299635	0.3	0.30	10	7137555	663079	0.1
Std. Dev	0.0	0.0	0.1	0.0	0.2	3.1	7268255	675221	0.2	0.1	2.6	3856222	358243	0.1	0.1	2.4	1918002	178182	0.0
Average	2.58	1.76	1.53	0.0026	0.66	167	19999063	1857913	0.4	0.44	163	8534524	792857	0.2	0.30	160	3591085	333612	0.1

19	09L057	2.57	MIS-FIRE	DEMIL
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NOTE: Body changed out every 5 tests
Bodies very hot to touch

FRAGMENTATION:

TEST	PART S/N	PRE TEST* oz	POST TEST oz	IMPACTS	
				hits	perforations
21	09L039	2.55	1.75	0	0
22	09L042	2.55	1.75	0	0
23	09L044	2.60	1.70	0	0

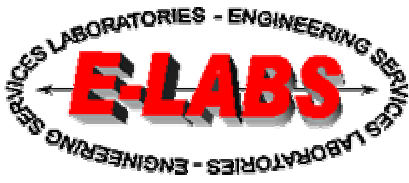
Std. Dev	0.0	0.0	0.0	0.0
Average	2.57	1.73	0.00	0.00



Functioned devices showing ports



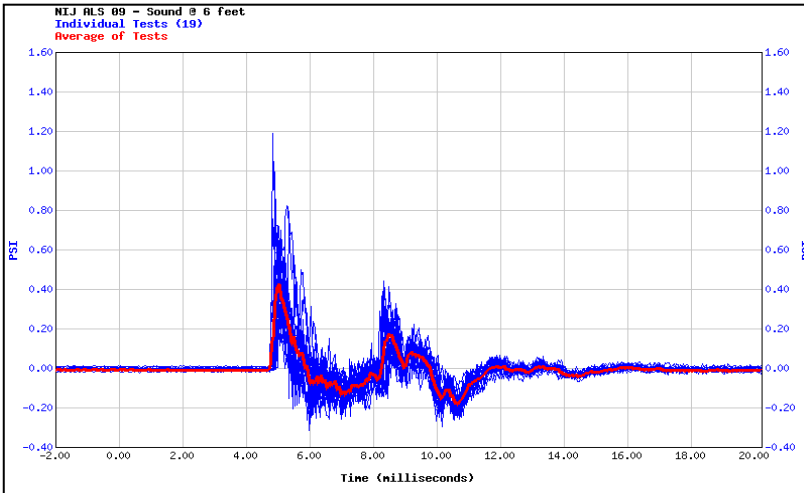
Fragmentation Test



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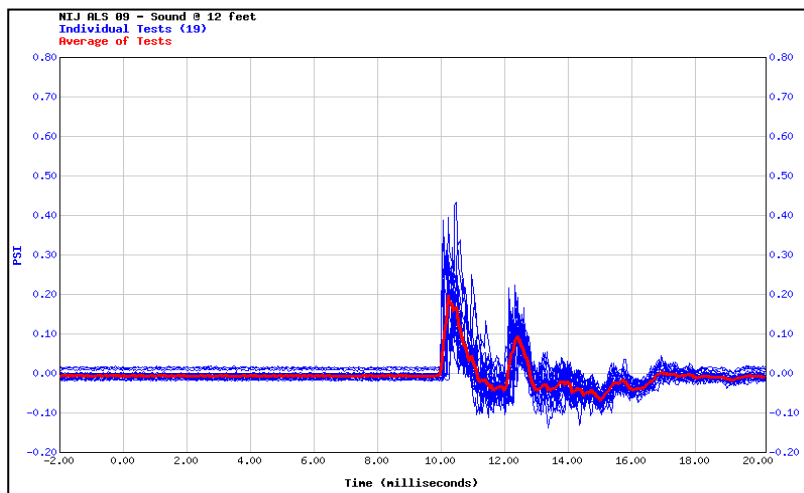
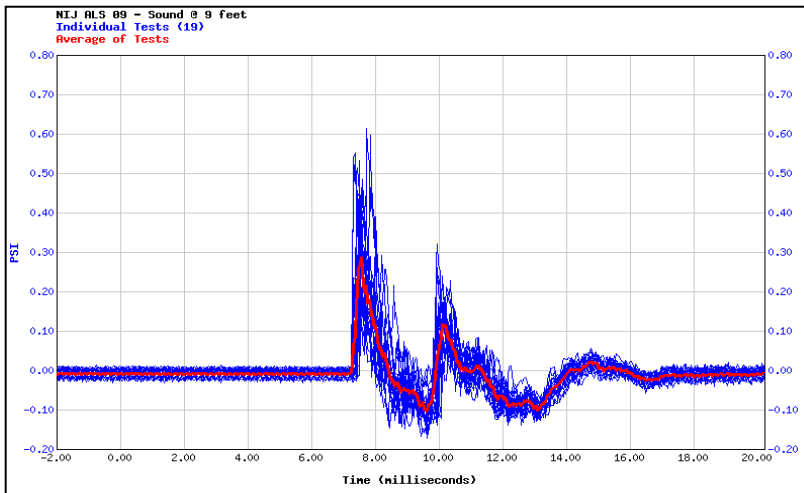
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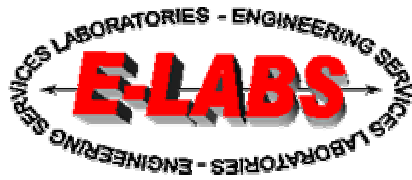
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**PRESSURE MEASUREMENTS
(psi)**

*Secondary Peaks are Reflections
and not Included in Data Analysis*





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COLLATERAL EFFECTS:

ITEM	FIRE START		PROPULSION	DISRUPTION OF ELEMENTS
Pillow	No Fire	Pillow Destroyed	< 12 in	No
Cushion	No Fire	Minor Damage	< 12 in	No
Objects	No Fire	No Damage	Rolled ≈12 in	Yes



PILLOW TEST



CUSHION TEST



OBJECTS TEST

