

2012-2020

Non-Lethal Weapons: Technologies & Global Market.

Competitive Landscape, Vendors, Products & Prices



Table of Contents

1	Scope and Methodology	9
1.1	Introduction	9
1.2	Scope.....	11
1.3	Research Methods.....	11
1.4	Assumptions	12
2	Non-lethal Products	13
2.1	Blunt Impact NLW-Kinetic Munitions.....	13
2.3	Diverse Non-Lethal Weapons	14
2.3.1	Background - Weapons that Halt or Disperse People	14
2.3.2	Electro-shock Stun Weapons (Taser).....	16
2.3.3	Stun Grenades	17
2.3.4	Laser Scatters and Dazzlers.....	17
2.3.5	DF/HF Lasers	17
2.3.6	Foams	18
2.3.7	Water Cannons.....	18
2.3.8	High Intensity Directed Acoustics (HIDA)	19
2.3.9	Tear Gas and Pepper Spray.....	19
2.3.10	Stink Bombs	21
2.3.11	Calmatives.....	21
2.3.12	Acoustic Hailing Devices	21
2.3.13	Optical Distracters	23
2.3.14	Active Denial System.....	24
2.3.15	Nets	24
2.3.16	Chatsatsit (Gravel Thrower).....	25
2.3.17	MAUL (Multi-shot Accessory Under-barrel Launcher)	25
2.3.18	Firestorm Grenade Launcher.....	25
2.4	Anti-Vehicle Non-Lethal Weapons	26
2.4.1	Caltrops	26
2.4.2	Stinger Spike Strips	26
2.4.3	Nets	26
2.4.4	Barriers.....	26
2.4.5	Slippery Foams.....	26
3	Leading NLW Vendors	27
3.1	Aardvark Tactical, Inc.	27
3.2	Able 2 Products Company	28
3.3	Alliant Techsystems	28
3.4	AMTEC	29
3.5	BAE Systems plc	30
3.6	Bazalt.....	31
3.7	Boeing.....	31
3.8	Centech	33
3.9	Chemring Defense	34

3.10	Combined Tactical Systems, Inc.....	34
3.11	Defense Technology Corp.	35
3.12	Fiocchi	35
3.13	FN Herstal.....	36
3.14	Goodrich Corporation.....	37
3.15	Heckler and Koch.....	38
3.16	General Dynamics Corporation.....	39
3.17	ISPRA	40
3.18	JAYCOR	41
3.19	Kratos Defense & Security Solutions, Inc.	42
3.20	L-3 Communications	44
3.21	Lamperd Less Lethal Inc.....	45
3.22	LE Systems, Inc.	46
3.23	LRAD Corporation.....	47
3.24	Mace Security International, Inc.....	48
3.25	Megaray	49
3.26	Metal Storm Limited	50
3.27	Mikor	51
3.28	MK Ballistic Systems.....	52
3.29	Mossberg	52
3.30	Non-lethal Technologies, Inc.	53
3.31	Penn Arms, Inc.	53
3.32	PepperBall Technologies	54
3.33	Policske Strojirny	55
3.34	PW Defense	55
3.35	Raytheon	56
3.36	Remington Arms Company	57
3.37	Royal Ordnance	58
3.38	SEA Technology	58
3.39	Security Devices International Inc.....	59
3.40	SNPE	60
3.41	Taser International.....	61
3.42	TFM	62
3.43	Universal Propulsion	62
3.44	Verney Carron.....	63
3.45	ZARC International, Inc.....	63
4	F.Y.2011 Less-lethal Weapons Contracts.....	64
5	Less-lethal Products: Prices & Description	68
5.1	Expandable Baton.....	68
5.2	Wooden Baton	68
5.3	Portable Bullhorn	69
5.4	Ground-Mounted Bullhorn.....	69
5.5	Individual Voice Amplification System (M7)	69
5.6	High-Intensity Light	70
5.7	Individual High-Intensity Light	70

5.8	Individual High-Intensity Light Accessory Kit	70
5.9	Disposable Restraint System	71
5.10	Individual Riot Control Agent Dispenser	71
5.11	Inert Individual Riot Control Agent Dispenser	72
5.12	Midsized Riot Control Agent Dispensers.....	72
5.13	High Volume Output High-Capacity Oleoresin Capsicum (OC) Dispenser	73
5.14	Squad Riot Control Agent Dispenser	73
5.15	Refill Unit Riot Control Agent (Live)	74
5.16	12-Gauge Shotgun With High-Intensity Light Kit.....	74
5.17	12-Gauge Gunstock Carrier (6 Round)	74
5.18	12-Gauge Launching Cup.....	75
5.19	Caltrops	75
5.20	Roadside Spike Strip	75
5.21	Riot Training Suit With Accessories	76
5.22	Riot Training Bag	76
5.23	12-Gauge Dummy Round	76
5.24	12-Gauge Point Round	77
5.25	12-Gauge Area Round	77
5.26	12-Gauge Diversionary/Flash-Bang Round	77
5.27	12-Gauge Launching Cup Cartridge	78
5.28	12-Gauge Beanbag Round	78
5.29	40 mm Area Round.....	78
5.30	40 mm Foam Rubber Baton Round	79
5.31	40 mm Sponge Point Grenade	79
5.32	5.56 Point Round	79
5.33	5.56 Area Round.....	80
5.34	Diversionary/Flash-Bang Stun Hand Grenade	80
5.35	Rubber Ball Hand Grenade.....	80
5.36	Inert Rubber Ball Hand Grenade.....	81
5.37	Light Vehicle Obscurant Smoke System (LVOSS).....	81
5.38	66 mm LVOSS Canister (Rubber Ball).....	81
5.39	66 mm LVOSS Canister (Diversionary/Flash-Bang)	82
5.40	66 mm Riot Control Grenade (L96A1)	82
5.41	66 mm Riot Control Training Grenade (L97A1)	82
5.42	Modular Crowd Control Munition.....	83
5.43	Portable Vehicle-Arresting Barrier (PVAB).....	83
5.44	Dissuader Laser Illuminator	83
5.45	12-Gauge Rubber-Fin Stabilized Projectile Round	84
5.46	12-Gauge Rubber Stingball Round	84
5.47	Running Gear Entanglement System.....	84
5.48	Copper Solid Sabot Slugs.....	85
5.49	12-Gauge Peacekeeper.....	85
5.50	ARWEN® 37 mm Weapon System.....	85
5.51	SAGE SL-6® 37 mm Weapon System.....	86
5.52	SAGE SL-1® 37 mm Weapon System.....	86

5.53	M-26 Advanced Taser	86
5.54	40 mm Rifled Barrel Launcher With Mounted Holographic Site	87
5.55	Pyrotechnic Grenade No. 2, CS.....	87
5.56	Pyrotechnic Grenade No. 3, CS.....	87
5.57	Pyrotechnic Grenade, Triple Charger	88
5.58	37 mm Scat Shell, CS.....	88
5.59	37 mm Impact Munition, Stinger	88
5.60	37 mm Impact Munition (Kinetic), Foam Baton	89
5.61	12-Gauge Impact Munition, Beanbag, Super Sock™	89
5.62	Aerosol Disburser MK-46™, OC	89
5.63	Aerosol Disburser, ProtectoJet 5™, OC/CS	90
5.64	Aerosol Disburser, OC/CS, MK-9.....	90
5.65	MK-4 Handheld OC Dispenser.....	91
5.66	T-16 OC Nonpyrotechnic Expulsion Grenade	91
5.67	No. 15 OC/CS Rubber Ball Munition.....	91
5.68	PepperBall™	92
5.69	No. 15 Stinger™ Grenade	92
5.70	No. 20 37 mm Fired Foam Batons	92
5.71	37 mm Beanbag Round	92
5.72	Wooden Riot Baton.....	93
5.73	Hot PAVA Powder Projectiles PC3-R375-8	93
5.74	Hot PAVA Powder Projectiles PC3-R375-1	93
5.75	Hot PAVA Powder Projectiles PC3-R375-2	93
5.76	Hot PAVA Powder Projectiles PC3-R375-4	93
5.77	Paintballs Clear 8000/CASE .43C 2000CL43	94
5.78	Other Products.....	94
6	US DOD NLW Vendors-Products	95
7	Review of Less-lethal Weapons	98
7.1	Non-Lethal Weapons Classification	98
7.2	Lethal Weapons Having Non-lethal Capability	99
7.3	Non-Lethal and Lethal Effects of NLW	100
7.4	Medical Effects of NLW.....	101
7.5	Non-Lethal Weapons Characteristics.....	102
7.5.1	NLW Effectiveness Vs. Lethality, Tradeoff.....	102
7.5.2	NLW Range consideration.....	102
7.5.3	Repeatable Effects	103
7.5.4	NLW Selectivity	103
7.5.5	Standoff NLW	104
7.6	Non-Lethal Weapons Usage	105
7.6.1	NLW: Pros and Cons.....	105
7.6.1.1	Strategic Benefits of NLW	105
7.6.1.2	Operational Benefits.....	106
7.6.1.3	Tactical Benefits.....	106
7.6.1.4	Advantages of Non-Lethal Weapons Against Insurgents	106

7.6.1.5	NLW: Legal Considerations	108
7.6.1.6	NLWs May Expand the Spectrum for Force Employment	109
7.6.1.7	Improper Use of NLW	109
7.6.1.8	Other constraints	109
7.6.1.9	Drawbacks of NLW Use Against Terrorists	110
7.6.2	NLW Strategies	111
7.6.2.1	Law Enforcement	111
7.6.2.2	Low Intensity Conflicts	111
7.6.2.3	Peacekeeping Operations	112
7.6.2.4	Emerging Conflicts	112
7.6.2.5	Use of NLW in Major Violent Conflicts	114
7.6.2.6	Battlefield Application of NLW	116
7.6.3	Operational Scenarios	118
7.6.3.1	Rescue Operations at a Critical Site in Urban Terrain	118
7.6.3.2	Threat of WMD in Urban Terrain	118
7.6.3.3	Protection of Key Installations	119
7.6.3.4	Crowd Control at a Food Aid Distribution Point	119
7.6.3.5	Protection and Evacuation of a Minority	119
7.6.3.6	Asymmetric Threat	119
8	Abbreviations	120

List of Tables

Table 1 - Comparative Effects of Non-Lethal Kinetic Munitions	13
Table 2 - Main Chemical Irritant Riot Control Gases	20
Table 3 - DOD Less lethal Weapons, Vendors-Products	95
Table 4 - Lethal Weapons Having Non-lethal Capability	99
Table 5 - Advantages of Non-Lethal Weapons Against Insurgents	107
Table 6 - Drawbacks of Non-Lethal Weapons Against Terrorists	110

List of Figures

Figure 1 - Clinical Effects of NLW	9
Figure 2 - Direct Energy Lethal and Non-Lethal Effects	100
Figure 3 - Lethal and Non-Lethal Effects Spectrum	100
Figure 4 - Spectrum of Medical Effects for Less-lethal Weapons	101
Figure 5 - Medical Effects of NLW	101