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BODY-WORN CAMERAS FOR CRIMINAL JUSTICE: MARKET SURVEY

Version 1.0

March 2014



**U.S. Department of Justice
Office of Justice Programs
National Institute of Justice**

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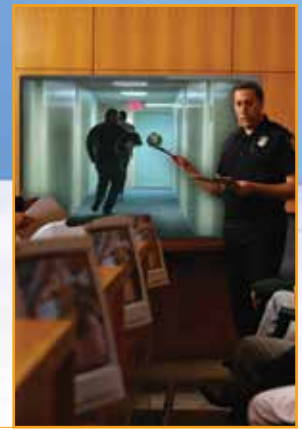
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1.0 Introduction

The use of body-worn cameras (BWCs) by criminal justice practitioners (e.g., patrol, corrections, SWAT and other tactical responders) offers potential advantages in keeping officers safe, enabling situational awareness, improving community relations and accountability, and providing evidence for trial. These products are also sometimes called officer-worn or wearable cameras. In the last couple of years, there has been a dramatic increase in the criminal justice use, public and media attention and commercial offerings of BWCs.

This market survey report aggregates and summarizes information on commercial BWCs to aid criminal justice practitioners considering planning, acquisition and implementation of the technology in their agency. In 2011, a brief market survey reference was published by the National Institute of Justice (NIJ) Sensor, Surveillance and Biometric Technologies Center of Excellence (SSBT CoE), *Body Worn Camera Information Sheet* (<http://goo.gl/rSWrcV>).^[1] The following year, a report was published that highlighted topics for agencies to consider while pursuing BWC implementation, *A Primer on Body-Worn Cameras for Law Enforcement* (<https://www.justnet.org/pdf/00-Body-Worn-Cameras-508.pdf>).^[2] This report updates product information in those earlier offerings.

1.1 About the NIJ SSBT CoE

The NIJ SSBT CoE is a center within the National Law Enforcement and Corrections Technology Center (NLECTC) System.^[3] The CoE provides scientific and technical support to NIJ's research and development (R&D) efforts. The Center also provides technology assistance, information, and support to criminal justice agencies. The CoE supports the NIJ sensor and surveillance portfolio and biometrics portfolio. The Centers of Excellence are the authoritative resource within the NLECTC System for both practitioners and developers in their technology area(s) of focus. The primary role of the CoEs is to assist in the transition of law enforcement technology from the laboratory into practice by first adopters.

1.2 BWC Information Sought

In December 2013, the SSBT CoE, through NIJ, published a notice within the *Federal Register* requesting information and comments from vendors in support of this market survey

(<https://federalregister.gov/a/2013-30246>).^[4] The following categories of information were sought for the various BWC systems contained herein. As needed, additional comments for the categories are also included here.

1. **Model Number** and **Name** of the BWC.
2. Where the BWC is **Mounted** (e.g., Head, Chest, Glasses, Helmet, Various).
 - a. Optional mounting locations require add-on accessories.
3. **Maximum Video Resolution** of the BWC (e.g., 640x480, 1080p).
4. **Recording Speed** of the BWC (e.g., 30 fps).
 - a. Recording speeds often depend on the video resolution selected.
5. **Recording Format** of the BWC (e.g., MPEG-4, MOV).
6. Whether the BWC captures **Still Photos**.
7. Whether the BWC embeds a **Time/Date Stamp** in the recorded video.
8. The **Field of View** of the BWC (e.g., 75°, 120°).
9. The **Lux Rating** of the BWC.
 - a. The minimum amount of light that produces an acceptable image. This rating is for normal camera operation and does not take into account any Night Mode.
10. Whether the BWC has a **Night Mode** and in what format (e.g., Low Light, IR Lens, etc.).
11. Whether the BWC has a **Playback Screen** for on-person video viewing.
12. The **Audio Format** of the BWC (e.g., MP2, AAC).
13. Whether the BWC contains **Video Safeguards** that limit access or editing by users.
14. Whether the BWC has a **Pre-Event Record** feature. (And, if so, the buffered time and whether the recording includes audio.)
15. Whether the BWC possesses an **Event Marking** capability.
 - a. Event marking capabilities provided by offline video management software is considered a “No” response.
16. The **Battery Type** used by the BWC and whether it is internal or removable.
17. The **Recording Life** of the BWC battery.
18. The **Standby** duration of the BWC battery.

19. The **Charge Time** of the BWC battery (use N/A for disposable batteries only).
20. The onboard memory **Storage** capacity of the BWC.
21. The **Recording Time** of the BWC under default resolution settings.
 - a. Recording time is dependent on the video resolution settings and BWC memory.
22. Whether the BWC possesses a **GPS**, and if so whether that information is embedded in recorded video.
23. The physical **Dimensions** (in inches) of the BWC (camera, control unit and/or battery).
24. The **Weight** of the BWC and all accessories worn by a user.
25. Whether the BWC has undergone **Environment Testing**, and if so, what standard did it pass.
26. Whether a **Warranty** comes standard with the BWC unit.
 - a. A range of warranty durations indicates an optional extended warranty is available.
27. Whether **Video Software** is available for video management of the BWC recordings, and if so, whether it is required to use the BWC.
28. Whether there is a default **Police Radio Interface** for the BWC.
29. Whether the BWC is **Vehicle Mountable** for dashboard applications.
 - a. Many BWCs that can be mounted in a vehicle require optional accessories; these are not included in the price.
30. The **Manufacturer Suggested Retail Price (MSRP)** for the BWC.
 - a. Does not include optional features, accessories or services plans.
31. Whether the BWC has **Wireless** capabilities to communicate with a computer or external DVR unit.
32. Any **Other** information or notes that is relevant to the BWC.

2.0 Body-Worn Camera Profiles

2.1 AXON Body

Manufacturer: **TASER International, Inc.**
<http://www.taser.com/>



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#	Characteristic	Details ^(5, 4, 7, 8)
1	Name (Model#)	AXON Body (#73002)
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 frames per second (fps)
5	Recording Format	MPEG-4 Part 2
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	137°
9	Lux Rating	<1 lux
10	Night Mode	Yes – Retina low light
11	Playback Screen	Optional – Requires free app on linked smartphone
12	Audio Format	MP3
13	Video Safeguards	Yes – Users cannot delete a video on the camera; video is marked with security hash
14	Pre-Event Record	Yes – 30 seconds, no audio
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	12 hrs
18	Standby	12 hrs
19	Charge Time	4 hrs
20	Storage	8 GB
21	Recording Time	4 – 13 hrs
22	GPS	Optional – Requires free app on linked smartphone
23	Dimensions	0.8 " x 2.6" x 3.3"
24	Weight	3.5 oz
25	Environment Testing	-4 – 122 °F, 6' drop test, IP55, MIL-STD-810 Method 506.4
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	In development
30	MSRP	\$299
31	Wireless	Yes – Video streaming to linked smartphone app
32	Other	Vendor hosted data management system available; Free online webinars and training materials

2.2 AXON Flex

Manufacturer: **TASER International, Inc.**
<http://www.taser.com/>



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#	Characteristic	Details ^(9, 10, 7, 8)
1	Name (Model#)	AXON Flex (#7300)
2	Mounting	Head, Shoulder, Glasses, Collar, Hat, Helmet
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	MPEG-4 Part 2
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	75°
9	Lux Rating	<1 lux
10	Night Mode	Yes – Retina low light
11	Playback Screen	Optional – Requires free app on linked smartphone
12	Audio Format	MP3
13	Video Safeguards	Yes – Users cannot delete a video on the camera; video is marked with security hash
14	Pre-Event Record	Yes – 30 seconds, no audio
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	12 hrs
18	Standby	12 hrs
19	Charge Time	4 hrs
20	Storage	8 GB
21	Recording Time	4 – 13 hrs
22	GPS	Optional – Requires free app on linked smartphone
23	Dimensions	3.2" x 0.80" x 0.71" (camera); 0.8" x 2.6" x 3.3" (controller)
24	Weight	0.53 oz (camera); 3.3 oz (controller)
25	Environment Testing	-4 – 122 °F, 6' drop test, IPX2, MIL-STD-810 Method 506.4
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	In development
30	MSRP	\$499
31	Wireless	Yes – Video streaming to linked smartphone app
32	Other	Vendor hosted data management system available; Free online webinars and training materials

2.3 BODYCAM

Manufacturer: **PRO-VISION Video Systems**
<http://www.bodycameras.com/>



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#	Characteristic	Details ^(11, 12)
1	Name (Model#)	BODYCAM (#BC-100)
2	Mounting	Chest, Shoulder
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	170°
9	Lux Rating	0.3 Lux
10	Night Mode	Yes – Night vision with IR illumination
11	Playback Screen	Yes
12	Audio Format	WAV
13	Video Safeguards	Yes
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	4 hrs
18	Standby	120 hrs
19	Charge Time	3 hrs
20	Storage	8 – 32 GB
21	Recording Time	3 – 18 hrs
22	GPS	No
23	Dimensions	2.5" x 2.0" x 1.0"
24	Weight	3.6 oz
25	Environment Testing	IPX5
26	Warranty	1 yr
27	Video Software	Yes, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$150
31	Wireless	No
32	Other	Wireless remote control

2.4 DutyCAM Observer I

Manufacturer: **Primal USA, LLC**
<http://www.primalusa.com/>



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#	Characteristic	Details ^(13, 14, 15, 16)
1	Name (Model#)	DutyCAM Observer 1
2	Mounting	Chest, Belt (Optional: Shoulder, Glasses, Head, Helmet)
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	H.264
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	0.1 lux
10	Night Mode	Yes – Night vision with IR illumination
11	Playback Screen	Yes
12	Audio Format	AAC, MP3
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – 3 to 15 seconds
15	Event Marking	Optional
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	8 hrs
18	Standby	24 hrs
19	Charge Time	2 hrs
20	Storage	16 – 32 GB
21	Recording Time	18 hrs
22	GPS	Yes
23	Dimensions	3.77" x 2.48" x 0.82"
24	Weight	10 oz
25	Environment Testing	IP56
26	Warranty	1 – 3 yrs
27	Video Software	Optional, Not Required
28	Police Radio Interface	Optional
29	Vehicle Mountable	No
30	MSRP	\$399 (16 GB), \$599 (32 GB)
31	Wireless	No
32	Other	Video Metadata includes Agency Name, Unique Unit and Officer IDs; Optional wireless remote; Optional head or external cameras

2.5 DutyVUE Trooper 32/64

Manufacturer: **Primal USA, LLC**
<http://www.primalusa.com/>



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#	Characteristic	Details ^(17, 18, 19, 16)
1	Name (Model#)	DutyVUE Trooper 32/64
2	Mounting	Chest, Belt (Optional: Shoulder, Glasses, Head, Helmet)
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	H.264
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	0.1 lux
10	Night Mode	Yes – Night vision with IR illumination
11	Playback Screen	Yes
12	Audio Format	AAC, MP3
13	Video Safeguards	Yes
14	Pre-Event Record	Optional
15	Event Marking	Optional
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	8 hrs
18	Standby	24 hrs
19	Charge Time	2 hrs
20	Storage	32 – 64 GB
21	Recording Time	18 hrs
22	GPS	Yes
23	Dimensions	2.25" x 2.88" x 0.75"
24	Weight	7 oz
25	Environment Testing	IP56
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	Optional
29	Vehicle Mountable	No
30	MSRP	\$499 (32 GB), \$699 (64GB)
31	Wireless	Optional
32	Other	Video Metadata includes Agency Name, Unique Unit and Officer IDs; Optional wireless remote; Optional head or external cameras

2.6 FirstVu

Manufacturer: **Digital Ally, Inc.**
<http://www.digitalallyinc.com/>



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#	Characteristic	Details ^(20, 21)
1	Name (Model#)	FirstVu
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	H.264 AVI
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	133°
9	Lux Rating	1.2 lux
10	Night Mode	Yes – Night vision with IR illumination
11	Playback Screen	Yes
12	Audio Format	MP3
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – Up to 30 seconds
15	Event Marking	Yes
16	Battery Type	Li-Ion (Rechargeable, Removable)
17	Recording Life	4 hrs
18	Standby	12 hrs
19	Charge Time	2.5 hrs
20	Storage	16 – 32 GB
21	Recording Time	16 – 32 hrs
22	GPS	No
23	Dimensions	2.7" x 4.3" x 1"
24	Weight	6.4 oz
25	Environment Testing	IP55
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$795
31	Wireless	No
32	Other	Covert mode; Customizable user/event metadata

2.7 FirstVu HD

Manufacturer: **Digital Ally, Inc.**
<http://www.digitalallyinc.com/>



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#	Characteristic	Details ^(22, 23)
1	Name (Model#)	FirstVu HD
2	Mounting	Chest, Belt, Shoulder, Head, Helmet
3	Video Resolution	1280 x 720p
4	Recording Speed	Various
5	Recording Format	H.264 AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	130°
9	Lux Rating	0.08 lux
10	Night Mode	Yes – Low Light, Automatic
11	Playback Screen	No
12	Audio Format	MP3
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – Up to 60 seconds, audio optional
15	Event Marking	Yes
16	Battery Type	Li-Ion (Rechargeable, Removable)
17	Recording Life	4.5 hrs
18	Standby	60 hrs
19	Charge Time	4 hrs
20	Storage	32 GB
21	Recording Time	25 – 54 hrs
22	GPS	No
23	Dimensions	1.13" x 1.5" x 1.0" (camera); 2.5" x 4" x 0.63" (recorder)
24	Weight	3.9 oz
25	Environment Testing	In Progress
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$995
31	Wireless	Optional – Wireless automatic recording triggers with linked in-car video system
32	Other	Covert Mode

2.8 Muvi HD Pro

Manufacturer: **Veho**
<http://www.veho-world.com>
 Distributor: **MPH Industries**
<http://www.mphindustries.com/>



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#	Characteristic	Details ^(24, 25)
1	Name (Model#)	Muvi HD Pro (#VCC-005-MUVI-HDPRO)
2	Mounting	Chest, Belt, Helmet
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	H.264 MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	170°
9	Lux Rating	1 lux
10	Night Mode	No
11	Playback Screen	Yes
12	Audio Format	AAC MP4a
13	Video Safeguards	No
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	3 hrs
18	Standby	250 hrs
19	Charge Time	3 hrs
20	Storage	8 – 32 GB
21	Recording Time	1.2 – 4.7 hrs
22	GPS	No
23	Dimensions	3.15" x 1.85" x 0.75"
24	Weight	2.86 oz
25	Environment Testing	No
26	Warranty	1 yr
27	Video Software	No
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$249.95
31	Wireless	No
32	Other	Wireless remote control

2.9 Muvi Micro Pro

Manufacturer: **Veho**
<http://www.veho-world.com>
 Distributor: **MPH Industries**
<http://www.mphindustries.com/>



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#	Characteristic	Details ^(26, 27, 28)
1	Name (Model#)	Muvi Micro Pro (#VCC-003-MUVI-PRO)
2	Mounting	Chest
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	72°
9	Lux Rating	1 lux
10	Night Mode	No
11	Playback Screen	No
12	Audio Format	Unspecified
13	Video Safeguards	No
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	1.5 hrs
18	Standby	250 hrs
19	Charge Time	2 hrs
20	Storage	4 – 16 GB
21	Recording Time	3 – 12 hrs
22	GPS	No
23	Dimensions	2.17" x 0.71" x 0.79"
24	Weight	1.76 oz
25	Environment Testing	No
26	Warranty	1 yr
27	Video Software	No
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$119.95
31	Wireless	No
32	Other	Ultra small form factor

2.10 Panasonic Wearable Camera

Manufacturer: **Panasonic System Communications
Company of North America**
<http://us.panasonic.com>



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#	Characteristic	Details ^(29, 30)
1	Name (Model#)	Panasonic Wearable Camera (#WV-TW310)
2	Mounting	Chest
3	Video Resolution	1280 x 960
4	Recording Speed	15 fps, 30 fps
5	Recording Format	H.264
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	180° (horizontal), 140° (vertical)
9	Lux Rating	1.0 lux (black & white), 1.5 lux (color)
10	Night Mode	Yes – Day/Night mode, Automatic
11	Playback Screen	No
12	Audio Format	G.726 (ADPCM) 32 kbps
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – Up to 30 seconds
15	Event Marking	Yes
16	Battery Type	Li-Ion (Rechargeable, Removable)
17	Recording Life	5 hrs
18	Standby	No standby mode
19	Charge Time	3.5 hrs
20	Storage	32 GB
21	Recording Time	8 hrs
22	GPS	No
23	Dimensions	1.8" x 2.9" x 1.6" (camera), 2.38" x 3.94" x 1.44" (battery)
24	Weight	10.9 oz
25	Environment Testing	IP65
26	Warranty	3 yrs
27	Video Software	Yes, Required
28	Police Radio Interface	No
29	Vehicle Mountable	No
30	MSRP	\$1,000
31	Wireless	No
32	Other	Tamper-proof cover; Scratch resistant camera cover; Image stabilization; Dynamic optical range to capture details in dark and light areas simultaneously

2.11 RSI-SX

Manufacturer: **Reveal Media Inc.**
<http://us.revealmedia.com/>



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#	Characteristic	Details ^(31, 32, 33, 34)
1	Name (Model#)	RS1-SX
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	AVI
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	130°
9	Lux Rating	Unspecified
10	Night Mode	No
11	Playback Screen	No
12	Audio Format	AVI
13	Video Safeguards	Yes
14	Pre-Event Record	No
15	Event Marking	Yes
16	Battery Type	Li-ion (Rechargeable, Internal)
17	Recording Life	2.5 hrs
18	Standby	12 hrs
19	Charge Time	2 hrs
20	Storage	8 – 32 GB
21	Recording Time	3.5 – 15 hrs
22	GPS	No
23	Dimensions	2.8" x 1.4" x .75"
24	Weight	3.5 oz
25	Environment Testing	IP65
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$699
31	Wireless	Yes
32	Other	No additional information provided

2.12 RS3-SX

Manufacturer: **Reveal Media Inc.**
<http://us.revealmedia.com/>



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#	Characteristic	Details ^(35, 36, 33, 34)
1	Name (Model#)	RS3-SX
2	Mounting	Chest, Belt, Shoulder
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps
5	Recording Format	MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	0.5 lux
10	Night Mode	No
11	Playback Screen	Yes
12	Audio Format	MPEG-4
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – 30 seconds
15	Event Marking	Yes
16	Battery Type	Li-ion (Rechargeable, Removable)
17	Recording Life	2.5 hrs
18	Standby	12 hrs
19	Charge Time	2 hrs
20	Storage	8 – 32 GB
21	Recording Time	3.5 – 15 hrs
22	GPS	No
23	Dimensions	3.86" x 2.36" x 0.98"
24	Weight	4.93 oz
25	Environment Testing	IP65
26	Warranty	1 yr
27	Video Software	Optional, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$899
31	Wireless	Yes
32	Other	Camera has a 60° vertical articulation and 180° turn

2.13 VidMic

Manufacturer: **Safety Innovations**
<http://www.vidmic.com>



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#	Characteristic	Details ^(37, 38, 39)
1	Name (Model#)	VidMic (#VM-SM)
2	Mounting	Chest
3	Video Resolution	320 x 240
4	Recording Speed	30 fps
5	Recording Format	AVI
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	63°
9	Lux Rating	1.5 lux
10	Night Mode	No
11	Playback Screen	No
12	Audio Format	Unspecified
13	Video Safeguards	Yes
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	4 hrs
18	Standby	6 hrs
19	Charge Time	3 hrs
20	Storage	1 GB
21	Recording Time	4 hrs
22	GPS	No
23	Dimensions	3.75" x 2.5" x 1.1"
24	Weight	6.5 oz
25	Environment Testing	IP54
26	Warranty	1 – 5 yrs
27	Video Software	Yes, Required
28	Police Radio Interface	Yes
29	Vehicle Mountable	No
30	MSRP	\$199
31	Wireless	No
32	Other	No additional information provided

2.14 VidMic VX

Manufacturer: **Safety Innovations**
<http://www.vidmic.com>



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#	Characteristic	Details ^(37, 40)
1	Name (Model#)	VidMic VX Wireless (#VM-VX-BW)
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	MPEG4
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	92°
9	Lux Rating	0.03 lux
10	Night Mode	Yes – Low Light
11	Playback Screen	Yes
12	Audio Format	Unspecified
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – 30 seconds, disable option
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	8 hrs
18	Standby	16 hrs
19	Charge Time	6 hrs
20	Storage	8 – 64 GB
21	Recording Time	16 – 128 hrs
22	GPS	No
23	Dimensions	4.3" x 2.8" x 1.8"
24	Weight	6.5 oz
25	Environment Testing	IP66
26	Warranty	1 – 5 yrs
27	Video Software	Yes, Required
28	Police Radio Interface	Yes
29	Vehicle Mountable	No
30	MSRP	\$499
31	Wireless	Yes
32	Other	Manufactured in USA

2.15 Vid Shield

Manufacturer: **Martel Electronics Sales, Inc.**
<http://www.marteldigital.com/>



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#	Characteristic	Details ^(41, 42)
1	Name (Model#)	Vid Shield (#V3)
2	Mounting	Chest, Belt, Shoulder
3	Video Resolution	1920 x 1080
4	Recording Speed	60 fps
5	Recording Format	H.264
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	Unspecified
10	Night Mode	Yes – Night vision with IR illumination
11	Playback Screen	Yes
12	Audio Format	AAC
13	Video Safeguards	Yes
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	4 hrs
18	Standby	300 hrs
19	Charge Time	4 hrs
20	Storage	32 GB
21	Recording Time	8.5 hrs
22	GPS	Optional – Requires GPS accessory
23	Dimensions	3.8" x 2.0" x 0.9"
24	Weight	3 oz
25	Environment Testing	IP67, MIL-STD 810G
26	Warranty	1 yr
27	Video Software	Yes, Not Required
28	Police Radio Interface	Optional
29	Vehicle Mountable	Yes
30	MSRP	Unspecified
31	Wireless	No
32	Other	No additional information provided

2.16 VIEVU LE3

Manufacturer: **VIEVU, LLC**
<http://www.viewu.com/>



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#	Characteristic	Details ^(43, 44)
1	Name (Model#)	VIEVU LE3
2	Mounting	Chest
3	Video Resolution	1280 x 720
4	Recording Speed	30 fps
5	Recording Format	H.264 AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	68°
9	Lux Rating	Unspecified
10	Night Mode	Yes – Low Light, Automatic
11	Playback Screen	No
12	Audio Format	ADPCM
13	Video Safeguards	Yes
14	Pre-Event Record	No
15	Event Marking	No
16	Battery Type	Li-Ion (Rechargeable, Internal)
17	Recording Life	5 hrs
18	Standby	72 hrs
19	Charge Time	3 hrs
20	Storage	16 GB
21	Recording Time	6 – 12 hrs
22	GPS	No
23	Dimensions	3" x 2.1" x 0.85"
24	Weight	2.8 oz
25	Environment Testing	10' drop test, IPX5
26	Warranty	90 days
27	Video Software	Yes, Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$899.95
31	Wireless	No
32	Other	16:9 video aspect ratio increases capture field of view, audio recording can be disabled

2.17 Wolfcom 3rd Eye

Manufacturer: **Wolfcom Enterprises**
<http://www.wolfcomusa.com/>



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#	Characteristic	Details ^(45, 46, 47)
1	Name (Model#)	Wolfcom 3rd Eye
2	Mounting	Chest, Belt Shoulder
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	H.264 MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	1 lux
10	Night Mode	Yes – Night vision with IR illuminators
11	Playback Screen	Yes
12	Audio Format	AAC2
13	Video Safeguards	Yes – Admin and user access permissions
14	Pre-Event Record	No
15	Event Marking	Yes
16	Battery Type	Li-Poly (Rechargeable, Internal)
17	Recording Life	6 hrs
18	Standby	168 hrs
19	Charge Time	4 hrs
20	Storage	32 GB
21	Recording Time	17 hrs
22	GPS	Yes
23	Dimensions	3.75" x 2.35" x 1.25"
24	Weight	5.6 oz
25	Environment Testing	6' drop test, IPX3
26	Warranty	1 yr
27	Video Software	Yes, Not Required
28	Police Radio Interface	Yes
29	Vehicle Mountable	Yes
30	MSRP	\$475
31	Wireless	No
32	Other	Badge number can be added to metadata of videos; Can be set to record video only with no audio; Can be used as a voice recorder (500 hrs); Can mark the GPS location of tossed items during a pursuit; HDMI output port; Screen capture ability; Invert recording for alternate positioning on the body

2.18 Wolfcom Vision

Manufacturer: **Wolfcom Enterprises**
<http://www.wolfcomusa.com/>



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#	Characteristic	Details ^(48, 49, 47)
1	Name (Model#)	Wolfcom Vision
2	Mounting	Chest, Belt, Shoulder (Optional: Head, Glasses, Hat)
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	MPEG4 MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	120°
9	Lux Rating	1 lux
10	Night Mode	Yes – Low light
11	Playback Screen	No
12	Audio Format	AAC
13	Video Safeguards	Yes
14	Pre-Event Record	Yes – 3 to 30 min
15	Event Marking	No
16	Battery Type	Li-Poly (Rechargeable, Internal)
17	Recording Life	2.5 hrs
18	Standby	120 hrs
19	Charge Time	3 hrs
20	Storage	32 GB
21	Recording Time	18 hrs
22	GPS	Optional – Requires GPS accessory
23	Dimensions	1.5" x 2.9" x 0.6"
24	Weight	2.5 oz
25	Environment Testing	6' drop test, IPX4
26	Warranty	1 yr
27	Video Software	Yes, Not Required
28	Police Radio Interface	No
29	Vehicle Mountable	Yes
30	MSRP	\$249.99
31	Wireless	No
32	Other	Remote view capable by 3rd party devices; Badge number can be added to metadata of videos; Can be set to record video only with no audio; Can be used as a voice recorder (500 hrs); Can mark the GPS location of tossed items during a pursuit



3.0 Other BWCs

The following additional BWC was identified by the SSBT CoE, but the vendor did not provide a submission response to the *Federal Register* notice. More information can be obtained by visiting the provided website for the camera system.

3.1 HD Video-Camera Glasses (Applied Technology Partners)

Name (Model): HD Video-Camera Glasses

Manufacturer: Applied Technology Partners

Website: <http://atpcorporate.com/cameras.html>



4.0 BWC Technical Summary Comparison

Name (Model#)	AXON Body	AXON Flex	BODY-CAM	DutyCAM Observer 1	DuyVUE Trooper 32/64	FirstVu	FirstVu HD	Muvi HD Pro	Muvi Micro Pro
Mounting	Chest, Belt	Head, Shoulder, Glasses, Collar, Hat, Helmet	Chest, Shoulder	Chest, Belt, Other	Chest, Belt, Other	Chest, Belt	Chest, Belt, Shoulder, Head, Helmet	Chest, Belt, Helmet	Chest
Video Resolution	640 x 480	640 x 480	1920 x 1080p	1920 x 1080p	1920 x 1080p	640 x 480	1280 x 720p	1920 x 1080p	640 x 480
Recording Speed	30 fps	30 fps	30 fps, 60 fps	30 fps, 60 fps	30 fps, 60 fps	30 fps	Various	30 fps, 60 fps	30 fps
Video Format	MPEG-4 pt 2	MPEG-4 Pt 2	MOV	H.264	H.264	H.264 AVI	H.264 AVI	H.264 MOV	AVI
Still Photos	No	No	Yes	Yes	Yes	Yes	No	Yes	No
Time/Date Stamp	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Field of View	137°	75°	170°	120°	120°	133°	130°	170°	72°
Lux Rating	<1 lux	<1 lux	0.3 Lux	0.1 lux	0.1 lux	1.2 lux	0.08 lux	1 lux	1 lux
Night Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Playback Screen	Optional	Optional	Yes	Yes	Yes	Yes	No	Yes	No
Audio Format	MP3	MP3	WAV	AAC, MP3	AAC, MP3	MP3	MP3	AAC MP4a	Unspecified
Video Safeguards	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Pre-Event Record	Yes	Yes	No	Yes	Optional	Yes	Yes	No	No
Event Marking	No	No	No	Optional	Optional	Yes	Yes	No	No
Battery Type	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Remove	Recharge, Remove	Recharge, Internal	Recharge, Internal
Recording Life	12 hrs	12 hrs	4 hrs	8 hrs	8 hrs	4 hrs	4.5 hrs	3 hrs	1.5 hrs
Standby	12 hrs	12 hrs	120 hrs	24 hrs	24 hrs	12 hrs	60 hrs	250 hrs	250 hrs
Charge Time	4 hrs	4 hrs	3 hrs	2 hrs	2 hrs	2.5 hrs	4 hrs	3 hrs	2 hrs
Storage	8 GB	8 GB	8 – 32 GB	16 – 32 GB	32 – 64 GB	16 – 32 GB	32 GB	8 – 32 GB	4 – 16 GB
Recording Time	4 – 13 hrs	4 – 13 hrs	3 – 18 hrs	18 hrs	18 hrs	16 – 32 hrs	25 – 54 hrs	1.2 – 4.7 hrs	3 – 12 hrs
GPS	Optional	Optional	No	Yes	Yes	No	No	No	No
Dimensions	0.8" x 2.6" x 3.3"	3.2" x 0.80" x 0.71"; 0.8" x 2.6" x 3.3"	2.5" x 2.0" x 1.0"	3.77" x 2.48" x 0.82"	2.25" x 2.88" x 0.75"	2.7" x 4.3" x 1"	1.13" x 1.5" x 1.0"; 2.5" x 4" x 0.63"	3.15" x 1.85" x 0.75"	2.17" x 0.71" x 0.79"
Weight	3.5 oz	0.53 + 3.3 oz	3.6 oz	10 oz	7 oz	6.4 oz	3.9 oz	2.86 oz	1.76 oz
Environment Testing	Drop test, IP55, Method 506.4	Drop test, IPX2, Method 506.4	IPX5	IP56	IP56	IP55	Pending	No	No
Warranty	1 yr	1 yr	1 yr	1 - 3 yrs	1 yr	1 yr	1 yr	1 yr	1 yr
Video Software	Optional, Not Required	Optional, Not Required	Yes, Not Required	Optional Not Required	Optional Not Required	Optional, Not Required	Optional, Not Required	No	No
Police Radio Interface	No	No	No	Optional	Optional	No	No	No	No
Vehicle Mountable	Pending	Pending	Yes	No	No	Yes	Yes	Yes	Yes
MSRP	\$299	\$499	\$150	\$399 – \$599	\$499 – \$699	\$795	\$995	\$249.95	\$119.95
Wireless	Yes	Yes	No	No	Optional	No	Optional	No	No
Other	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry

BWC Technical Summary Comparison (continued)

Name (Model#)	Panasonic Wearable Camera	RS1-SX	RS3-SX	VidMic	VidMic VX Wireless	Vid Shield	VIEVU LE3	Wolfcom 3rd Eye	Wolfcom Vision
Mounting	Chest	Chest, Belt	Chest, Belt, Shoulder	Chest	Chest, Belt	Chest, Belt, Shoulder	Chest	Chest, Belt Shoulder	Chest, Belt, Shoulder, Other
Video Resolution	1280 x 960	640 x 480	1920 x 1080p	320 x 240	640 x 480	1920 x 1080	1280 x 720	1920 x 1080p	1920 x 1080p
Recording Speed	15 fps, 30 fps	30 fps	30 fps	30 fps	30 fps	60 fps	30 fps	30 fps, 60 fps	30 fps, 60 fps
Video Format	H.264	AVI	MOV	AVI	MPEG4	H.264	H.264 AVI	H.264 MOV	MPEG4 MOV
Still Photos	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Time/Date Stamp	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Field of View	180°, 140° (vertical)	130°	120°	63°	92°	120°	68°	120°	120°
Lux Rating	1.0, 1.5 lux	Unspecified	0.5 lux	1.5 lux	0.03 lux	Unspecified	Unspecified	1 lux	1 lux
Night Mode	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes
Playback Screen	No	No	Yes	No	Yes	Yes	No	Yes	No
Audio Format	G.726, 32 kbs	AVI	MPEG-4	Unspecified	Unspecified	AAC	ADPCM	AAC2	AAC
Video Safeguards	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pre-Event Record	Yes	No	Yes	No	Yes	No	No	No	Yes
Event Marking	Yes	Yes	Yes	No	No	No	No	Yes	No
Battery Type	Recharge, Remove	Recharge, Internal	Recharge, Remove	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Internal	Recharge, Internal
Recording Life	5 hrs	2.5 hrs	2.5 hrs	4 hrs	8 hrs	4 hrs	5 hrs	6 hrs	2.5 hrs
Standby	N/A	12 hrs	12 hrs	6 hrs	16 hrs	300 hrs	72 hrs	168 hrs	120 hrs
Charge Time	3.5 hrs	2 hrs	2 hrs	3 hrs	6 hrs	4 hrs	3 hrs	4 hrs	3 hrs
Storage	32 GB	8 – 32 GB	8 – 32 GB	1 GB	8 – 64 GB	32 GB	16 GB	32 GB	32 GB
Recording Time	8 hrs	3.5 – 15 hrs	3.5 – 15 hrs	4 hrs	16 – 128 hrs	8.5 hrs	6 – 12 hrs	17 hrs	18 hrs
GPS	No	No	No	No	No	Optional	No	Yes	Optional
Dimensions	1.8" x 2.9" x 1.6"; 2.38" x 3.94" x 1.44"	2.8" x 1.4" x .75"	3.86" x 2.36" x 0.98"	3.75" x 2.5" x 1.1"	4.3" x 2.8" x 1.8"	3.8" x 2.0" x 0.9"	3" x 2.1" x 0.85"	3.75" x 2.35" x 1.25"	1.5" x 2.9" x 0.6"
Weight	10.9 oz	3.5 oz	4.93 oz	6.5 oz	6.5 oz	3 oz	2.8 oz	5.6 oz	2.5 oz
Environment Testing	IP65	IP65	IP65	IP54	IP66	IP67, MIL-STD 810G	Drop test, IPX5	Drop test, IPX3	Drop test, IPX4
Warranty	3 yrs	1 yr	1 yr	1 – 5 yrs	1 – 5 yrs	1 yr	90 days	1 yr	1 yr
Video Software	Yes, Required	Optional, Not Required	Optional, Not Required	Yes, Required	Yes, Required	Yes, Not Required	Yes, Required	Yes, Not Required	Yes, Not Required
Police Radio Interface	No	No	No	Yes	Yes	Optional	No	Yes	No
Vehicle Mountable	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes
MSRP	\$1,000	\$699	\$899	\$199	\$499	Unspecified	\$899.95	\$475	\$249.99
Wireless	No	Yes	Yes	No	Yes	No	No	No	No
Other	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry	See Entry

Appendix A: Acronyms, Abbreviations and References

A.1 Acronyms and Abbreviations

Acronym	Description
BWC	Body-Worn Camera
CoE	Center of Excellence
DOJ	Department of Justice
fps	frames per second
GB	Gigabytes
IR	Infrared
MSRP	Manufacturer Suggested Retail Price
NIJ	National Institute of Justice
NLECTC	National Law Enforcement and Corrections Technology Center
R&D	Research and Development
SSBT	Sensor, Surveillance, and Biometric Technologies

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