

NON-COMPETITIVE REVIEW SUMMARY

Action: Request to Purchase Body Worn Cameras for the Miami-Dade Police Department

Requisition No.: RQPD1400019

Committee/Committee Date: N/A

* DPM internal Processing due date:

Projected BCC Date: *(If applicable)*

Purpose of the Acquisition:

To establish a non-competitive contract with Taser International Inc. for the Miami-Dade Police Department (MDPD) to purchase, implement, and maintain body worn cameras and the associated video management infrastructure to support the videos captured by MDPD officers.

Recommended Action: Solicit Competitive Request for Proposals

Contract Term: Initial Term – 5 Years

Contract Amount: \$2,531,879

Background:

On August 20, 2014, the Miami-Dade Police Department (MDPD) submitted a Justification/Input Document requesting to waive the competitive bid/proposal process for the purchase of body worn Cameras for MDPD Police Officers. This request is for the initial purchase of 500 body worn cameras, implementation services, establish a video management system to support the video captured while in the field by MDPD officers. This initial request of 500 cameras however is anticipated to increase up to 1000 by the second year of the Agreement.

As part of the market research performed by MDPD, officers were tasked from various specialties within MDPD to conduct a 30-day field test of three different body worn cameras. The three systems tested by MDPD included: the Taser Axon Flex camera, Panasonic WVTW-310 wearable camera, and the Digital Ally First Vu HD camera. Each of the MDPD officers conducting the field tests were provided with an evaluation form which consisted of 13 categories with a number rating from 1 (worst) to 5 (best). After the field tests concluded and the results of the evaluations were compiled, the preferred system was the Taser Axon Flex system provided by Taser International Inc.

Some of the advantages cited by MDPD for the Taser Axon Flex system included:

- Numerous mounting options for the camera,
- Ease of operation when downloading the videos,
- Ease of operation of their case management system, and the technical support provided by the Taser support team.
- Extended warranty and coverage for devices to be upgraded, at no additional cost.

Some of the disadvantages cited for the other two systems included:

- Cameras evaluated were too bulky,
- Mounting options were limited to two positions,
- Downloading process for the videos was cumbersome, and they failed to provide turnkey case management system that was cloud based.

MDPD wishes to proceed with establishing a term Agreement with Taser International Inc. for the Taser Axon Flex system as it was the only product that did not alter captured video. It was stated within the justification that this was a critical component of their selection process of this vendor because when any criminal or civil case involving police officers outfitted with a video camera recording system goes to trial, there is a chance the jury will second guess the officer's decision based on information in the video that the officer could never have been able to observe. *For example, if the camera has the ability to enhance night vision capability, MDPD feels that it may lead the jury to a different conclusion than the officer's reality.* It is the opinion of MDPD that this could lead to wrong findings by the jury or judge involved in the criminal or civil proceedings, which could be harmful to the criminal justice system.

Another feature that MDPD mentioned for their interest in Taser International Inc.'s product is that the camera can be mounted on an officer's glasses; therefore, the recorded video only captures video from the officer's point of view. When MDPD compared this mounting option to a chest or shoulder mounted camera, they found that when an officer draws their firearm, the chest/shoulder mounted cameras view would be obstructed by the arms. Finally, MDPD found that Taser International Inc. was the only vendor able to provide a cloud-based case management system, named EVIDENCE.COM. This software will allow MDPD officers to upload and store videos captured by the body worn cameras to an off-site storage system, manage, and share evidence with County, State, and Federal partners.

Market Research:

Upon receipt of the information supplied by MDPD, independent market research was conducted for body worn cameras and associated video management systems. Market research was conducted via the internet and through contacting specific vendors via phone identified within this industry. Market research confirmed that there is a very large and competitive market in place with mature products that can meet or exceed the needs expressed by MDPD based on their field test and associated findings. The method of how these devices were selected to be field tested could not be confirmed as no specifications or minimum requirements were submitted to the vendors prior to the field tests being conducted. Additionally, it was confirmed that these field tests and the infrastructure required to support them has not been reviewed or endorsed by the Information Technology Department (ITD).

One specific market survey was conducted by the U.S. Department of Justice Office of Justice Programs National Institute of Justice on March 2014 (Please refer to Attachment 1 included within this summary). This market survey aggregated a list of eleven different body worn camera providers and listed them in a comparison chart.

Some of the categories of comparison include; Model Number/Name, Mounting Options, Video Resolution, Video Safeguards, Battery life, Video Software, etc. After reviewing the survey and associated documentation, it was found that there are at least five different vendors who offer mounting options comparable to the Taser AXON Flex product MDPD has requested.

During the field tests, MDPD expressed their desire to have various camera mounting options, ideally one that can be mounted on an Officer's glasses. It was found that the following vendors, in addition to Taser International, can provide this mounting feature as well as helmet, hat, and head mounts: Primal USA, LLC, Digital Ally, Inc., Wolfcom Enterprises, and Taser International, Inc. (Please refer to Attachment 1, 4, and 5 included within this summary). Additionally, all but three cameras listed included video safeguards to prevent tampering (Attachment 1).

Market research also revealed that there are various options for pertaining to the video management system and associated data storage. Most vendors offer various types of applications that work with the body worn cameras and are used for uploading and managing all the digital evidence recorded by the Officers. Many applications can be installed as standalone/workgroup type software, enterprise network software, or cloud-based software. Based on the desire to obtain a cloud based data storage and video management system, the following vendors were identified in addition to Taser International Inc.: Primal USA, LLC, Digital Ally, Inc., Reveal Media, Inc. Although most cloud based solutions are secure, any cloud based system can be susceptible to hacking. Due to the nature of the body worn cameras and associated video management system it is strongly encouraged that all possible methodologies be considered to reduce risk and the potential of lost video/data.

Recommendation:

Based on the market research findings, it is recommended that Miami-Dade County proceed with a full and open competitive Request for Proposals process to evaluate all offers and establish a long term agreement based on the best available technology, infrastructure design, and cost. The market analysis revealed that there is a large market for these types of products with an abundance of features, mounting options, and data management options to choose from. Although MDPD conducted a field test of three products, there are a variety of other vendors in the market who were not considered.

It is recommended that MDPD construct a set of minimum requirements and a scope of services document that will allow full and open competition. Additionally, it is recommended that MDPD work closely with the Information Technology Department (ITD) to determine which type of data management system will be best suited for an MDPD's current and future needs. The current lack of technical and operational standards makes it impossible to select the proper system that is capable of meeting the various needs of MDPD and the associated legislative requirements for data retention. This information must be clearly depicted within the scope of services that is to be developed to ensure all vendors have the ability to assess the requirements and propose value added engineering services as part of their approach and methodology.

Evaluating the IT infrastructure that is currently in place is an essential prerequisite to implementing a body-worn camera system (Please refer to Attachment 7

included in this summary). MDPD should work with ITD to determine if there are economies of scale in place to leverage existing infrastructure that can handle the anticipated load. This may lead to reduced cost and allow for in house management. Alternatively, if a cloud-based system is in fact better suited to handle the anticipated load that this new system will bring, then we need to establish standard for record retention, video retrieval, etc.

In closing, the utilization of a full and open competitive Request For Proposals process will allow the County to evaluate the various vendor body worn cameras and associated video management systems in a fair, competitive, and open manner allowing Miami-Dade County to enter into a best value contract with the selected Proposer that will not only meet the current needs, but be flexible and scalable to meet future needs and provide continuity of services.

Supporting Attachments:

Please refer to the below attachments supporting the market research and recommendations provided within this summary:

- Attachment 1: US Department of Justice Office of Justice Programs National Institute of Justice, Body-Worn Cameras for Criminal Justice: Market Survey, March 2014.
- Attachment 2: US Department of Justice Office of Justice Programs National Institute of Justice, A Primer on Body-Worn Cameras for Criminal Justice: September 2012.
- Attachment 3: US Department of Homeland Security, System Assessment and Validation for Emergency Responders, Wearable Camera Systems Summary.
- Attachment 4: Wolfcom Vision Police Body Worn Camera System, website screenshots demonstrating specifications, mounting options, and features.
- Attachment 5: Primal USA Body Worn Video Cameras, website screenshots demonstrating video glasses mounting options.
- Attachment 6: Police Body Worn Video Management: Cloud-Hosted Storage vs. On-Site Storage
- Attachment 7: The Body Worn Video Steering Group guide to implementing a large scale Body Worn Video program.

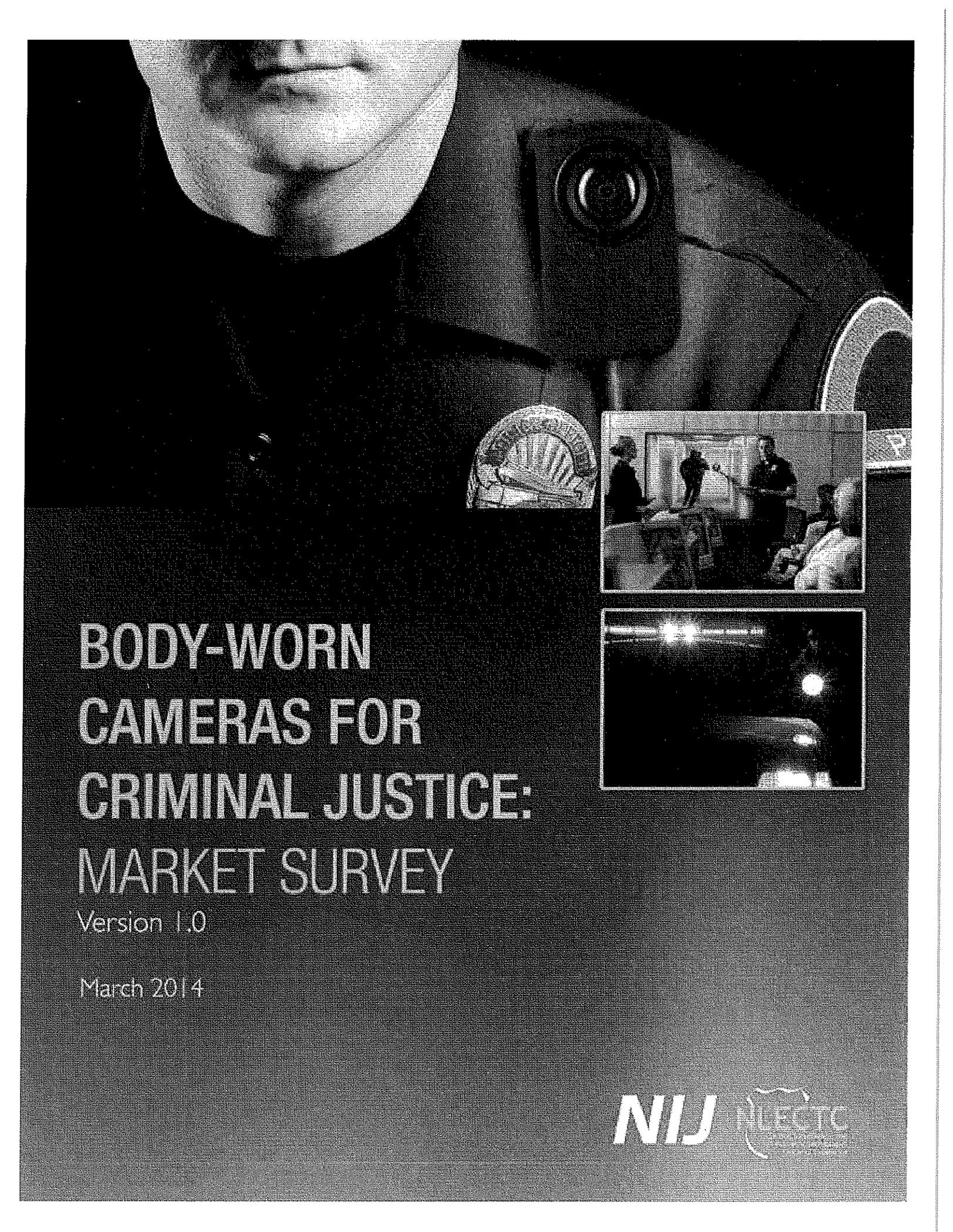


Agent/Officer

8/26/14
Date

Attachment 1:

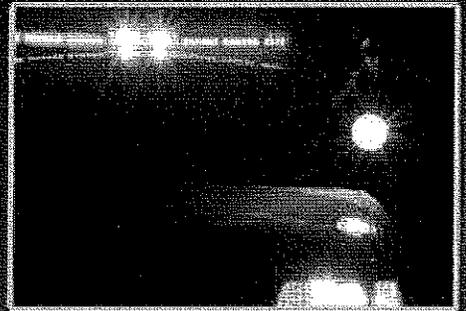
US Department of Justice Office of
Justice Programs National Institute of
Justice, Body-Worn Cameras for
Criminal Justice: Market Survey, March
2014.



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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Biometric Technologies (SSBT)
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BODY-WORN CAMERAS FOR CRIMINAL JUSTICE: MARKET SURVEY

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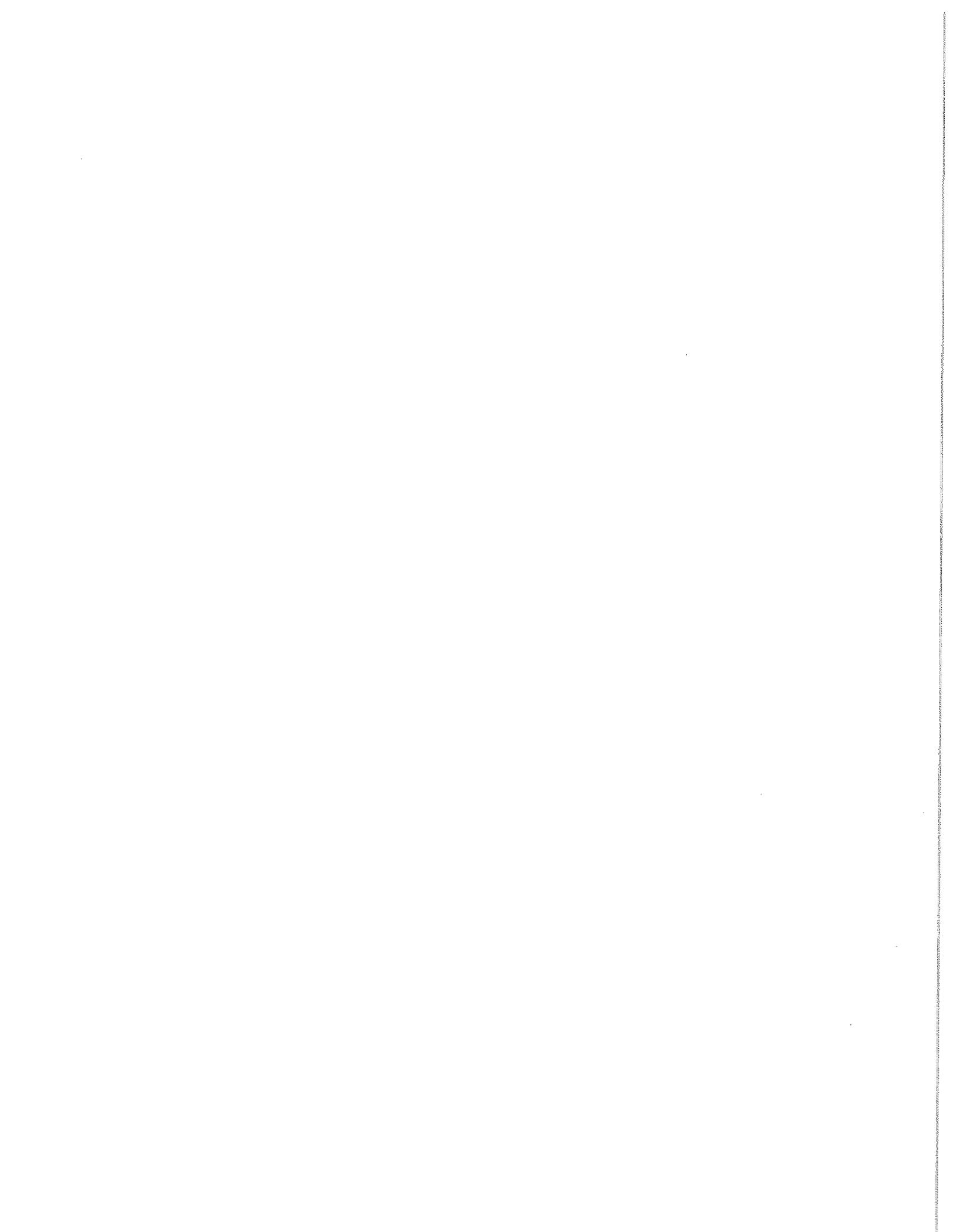
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DISCLAIMERS

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All legal aspects regarding expectation of privacy issues, probable cause, warrants and any other operational law enforcement procedures should be researched by agencies and their officers in accordance with local, state and federal laws prior to the implementation of technology described herein.



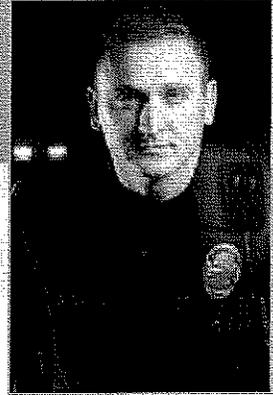


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1.0 Introduction

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.

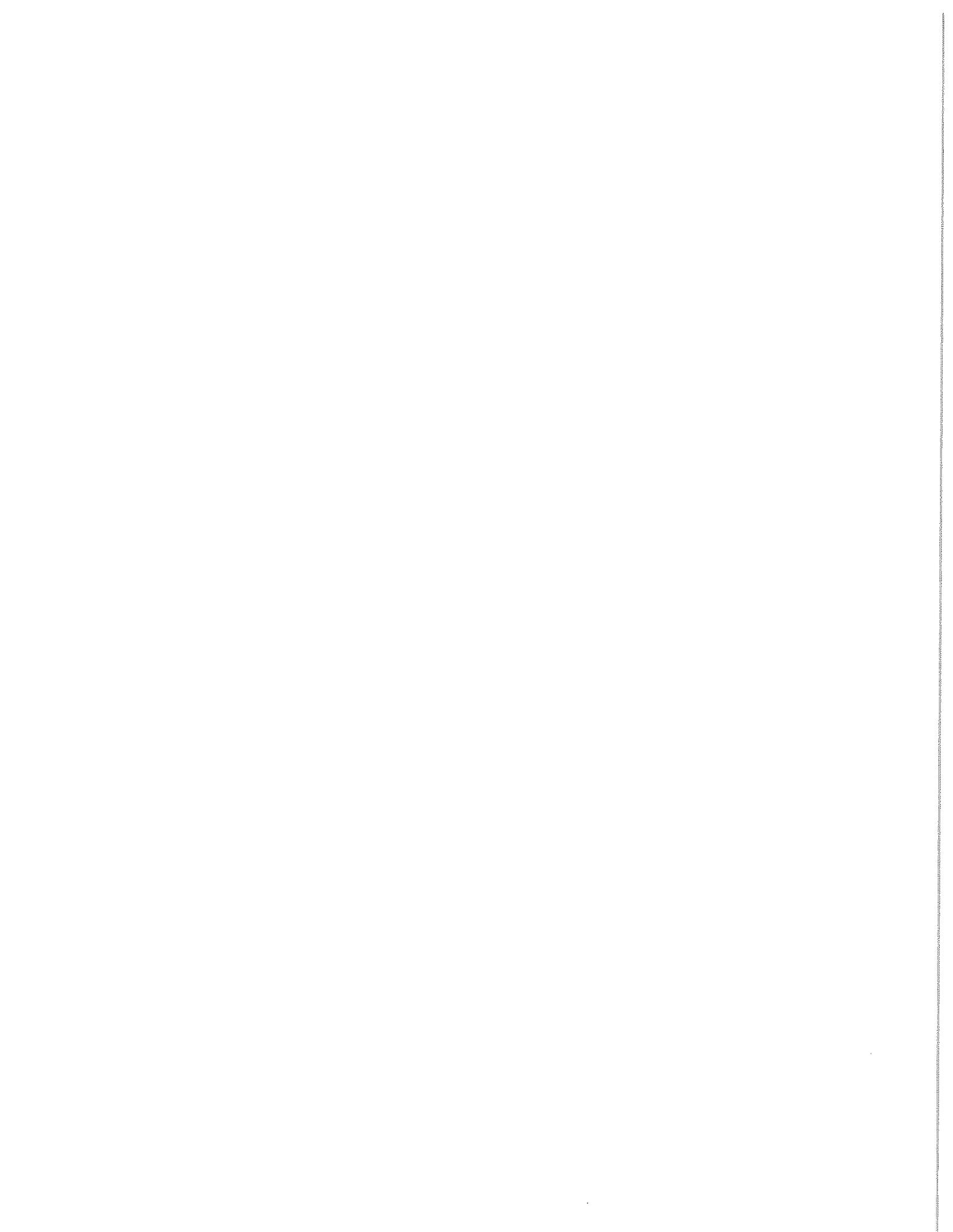
1.2 BWC Information Sought

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>).¹⁴ 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, 6, 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, 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	\$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/>

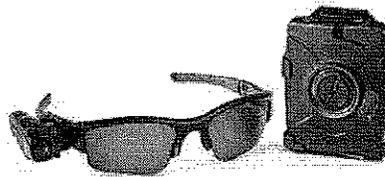


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#	Characteristic	Details ^(9, 10, 7, 8)
1	Name (Model#)	AXON Flex (#7300)
2	Mounting	Head, Shoulder, Glasses, Collar, Hat, Helmet
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	MPEG-4 Part 2
6	Still Photos	No
7	Time/Date Stamp	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	\$399
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 1

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



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#	Characteristic	Details (19, 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, 19, 46)
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/>

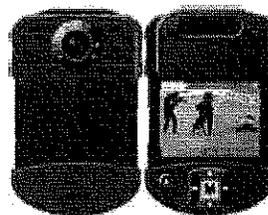


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#	Characteristic	Details ^(90, 21)
1	Name (Model#)	FirstVu
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	H.264 AVI
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	133°
9	Lux Rating	1.2 lux
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/>

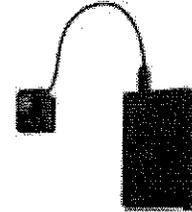


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#	Characteristic	Details ^(22, 23)
1	Name (Model#)	FirstVu HD
2	Mounting	Chest, Belt, Shoulder, Head, Helmet
3	Video Resolution	1280 x 720p
4	Recording Speed	Various
5	Recording Format	H.264 AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	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/>

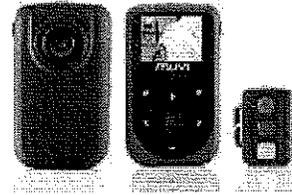


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#	Characteristic	Details (64, 49)
1	Name (Model#)	Muvi HD Pro (#VCC-005-MUVI-HDPRO)
2	Mounting	Chest, Belt, Helmet
3	Video Resolution	1920 x 1080p
4	Recording Speed	30 fps, 60 fps
5	Recording Format	H.264 MOV
6	Still Photos	Yes
7	Time/Date Stamp	Yes
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/>

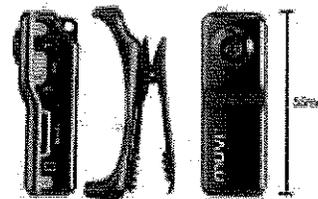


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#	Characteristic	Details (66, 27, 28)
1	Name (Model#)	Muvi Micro Pro (#VCC-003-MUVI-PRO)
2	Mounting	Chest
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	72°
9	Lux 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 ⁽²⁾ (3)
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 (01, 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, 39, 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>

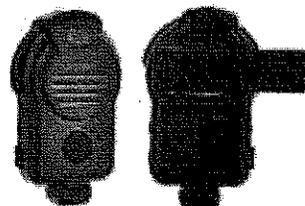


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#	Characteristic	Details (17, 18, 19)
1	Name (Model#)	VidMic (#VM-SM)
2	Mounting	Chest
3	Video Resolution	320 x 240
4	Recording Speed	30 fps
5	Recording Format	AVI
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	63°
9	Lux Rating	1.5 lux
10	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	\$300
31	Wireless	No
32	Other	No additional information provided

2.14 VidMic VX

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

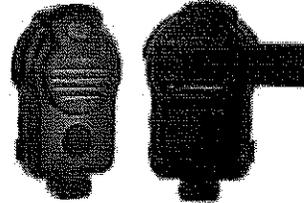


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#	Characteristic	Details (37, 40)
1	Name (Model#)	VidMic VX Wireless (#VM-VX-BW)
2	Mounting	Chest, Belt
3	Video Resolution	640 x 480
4	Recording Speed	30 fps
5	Recording Format	MPEG4
6	Still Photos	Yes
7	Time/Date Stamp	Yes
8	Field of View	92°
9	Lux Rating	0.6 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	\$600
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 ^{(1), (2)}
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/>

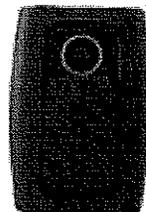


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#	Characteristic	Details ⁽⁴⁾ ₍₄₎
1	Name (Model#)	VIEVU LE3
2	Mounting	Chest
3	Video Resolution	1280 x 720
4	Recording Speed	30 fps
5	Recording Format	H.264 AVI
6	Still Photos	No
7	Time/Date Stamp	Yes
8	Field of View	68°
9	Lux Rating	Unspecified
10	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	3.4 oz
25	Environment Testing	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

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	\$475.00
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

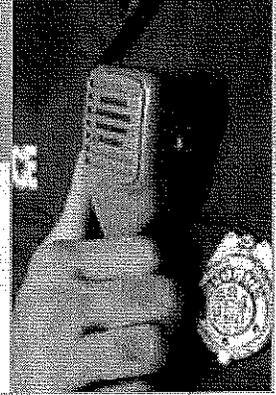
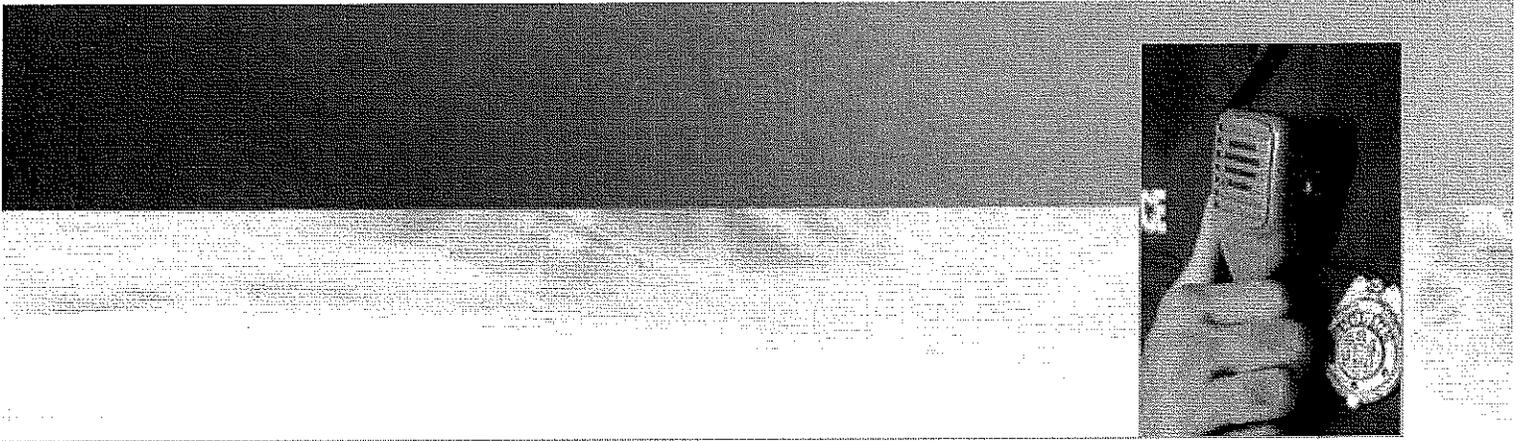
2.18 Wolfcom Vision

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



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#	Characteristic	Details <small>(45, 49, 51)</small>
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

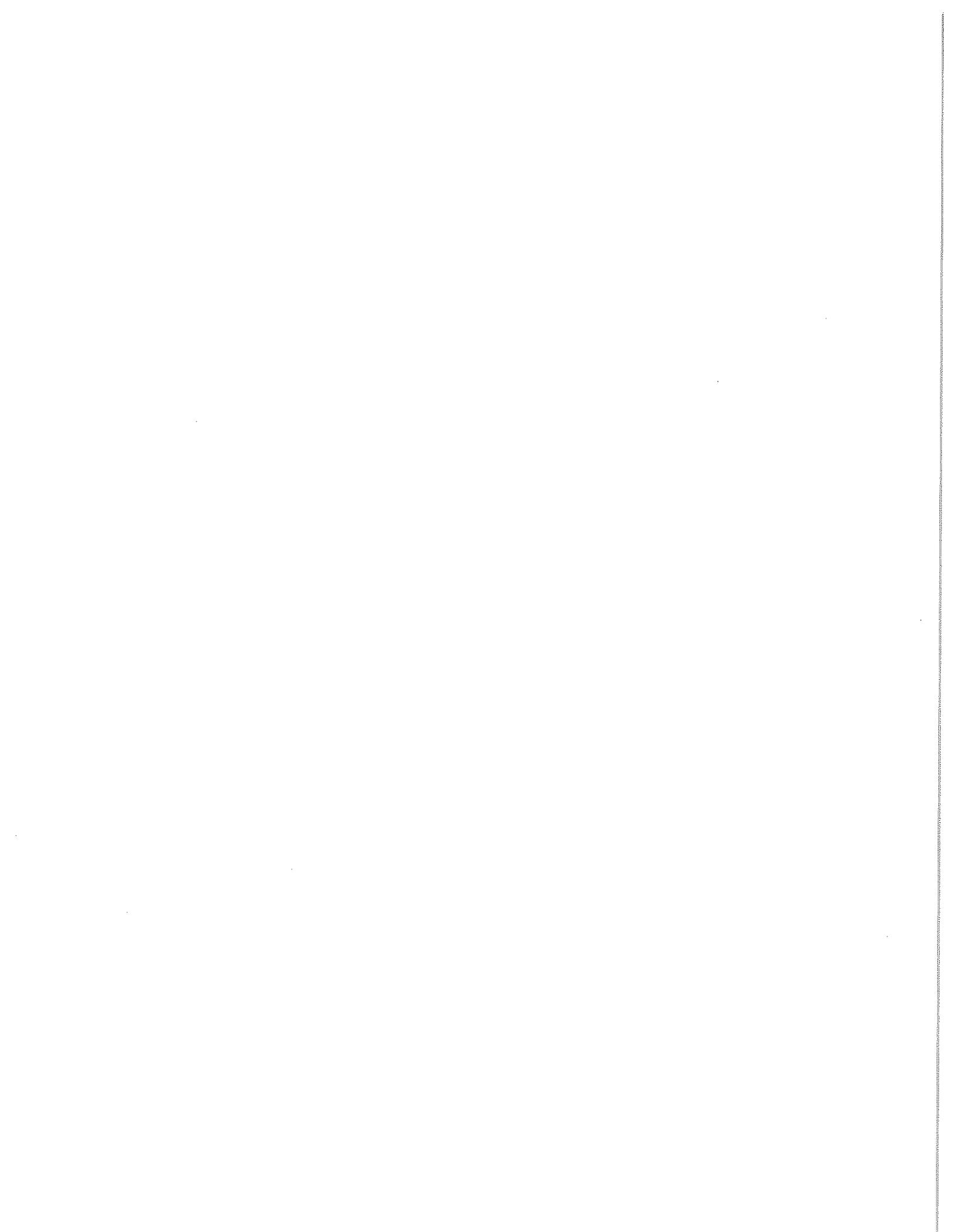
The following additional BWC was identified by the SSBT CoE, but the vendor did not provide a submission response to the *Federal Register* notice. More information can be obtained by visiting the provided website for the camera system.

20.1 HD Video-Camera Glasses (Applied Technology Solutions)

Name (Model): HD Video-Camera Glasses

Manufacturer: Applied Technology Solutions

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





4.0 BWC Technical Summary Comparison

Name (Model#)	AXON Body	AXON Flex	BODY-CAM	DutyCAM Observer 1	DutyVUE Trooper 32/44	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, IPX2, 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	\$399	\$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	0.6 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 1.6"	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	3.4 oz	5.6 oz	2.5 oz
Environment Testing	IP65	IP65	IP65	IP54	IP66	IP67, MIL-STD 810G	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	\$300	\$600	Unspecified	\$899.95	\$475.00	\$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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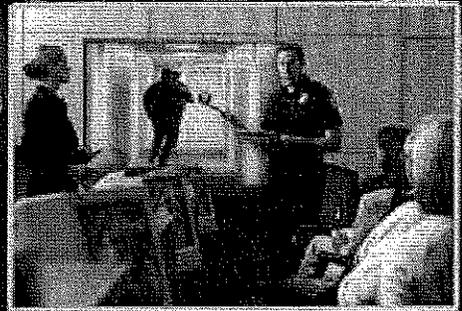
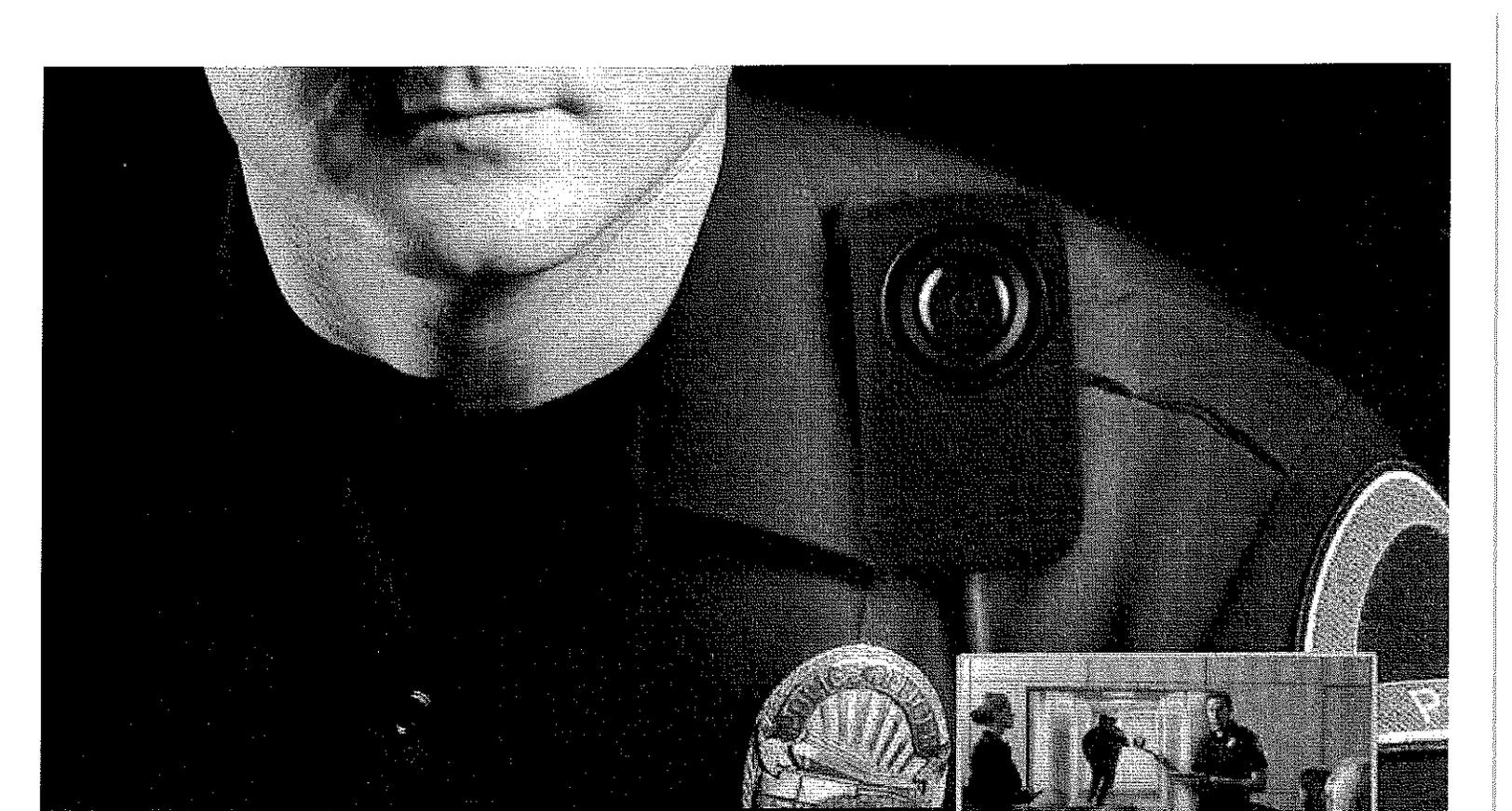
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Attachment 2:
US Department of Justice Office of
Justice Programs National Institute of
Justice, A Primer on Body-Worn
Cameras for Criminal Justice:
September 2012.



A Primer on

BODY-WORN CAMERAS FOR LAW ENFORCEMENT

September 2012

NIJ





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

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Biometric Technologies (SSBT)
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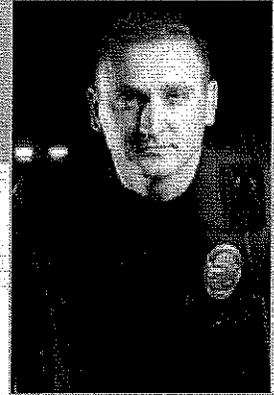
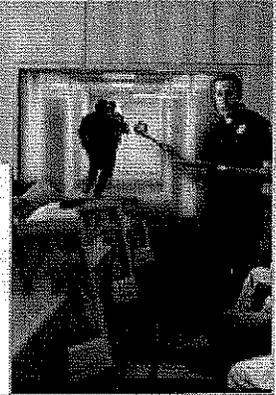


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1.0 Introduction

The field deployment of body-worn camera systems (BWCs) by law enforcement practitioners (e.g., patrol, corrections, SWAT and other tactical responders) offers significant advantages in keeping officers safe, enabling situational awareness and providing evidence for trial. A major issue with the use of BWCs is a lack of technical standards and operational standards for protocols and procedures. Without such standards in place, law enforcement practitioners lack adequate information to select the proper system that meets their requirements. The interoperability between systems and associated software also requires a set of standards. Further, such standards are instrumental in ensuring that evidence gathered from BWCs meets courtroom standards.

To mitigate the lack of procedural or technical standards, the National Institute of Justice (NIJ) Sensor, Surveillance, and Biometric Technologies (SSBT) Center of Excellence (CoE) has prepared a primer to aid in the use of BWCs in law enforcement. This report provides an introduction to BWCs and highlights issues and factors that law enforcement organizations should consider prior to and during implementation. Specific questions addressed include:

- Why use BWCs?
- What are the types of BWCs?
- What are the implementation issues that can be expected with BWCs?

Please reference the Market Survey for an overview of various BWCs currently available, including technical specifics and capabilities (see Appendix A).

For information on agencies currently using BWCs, including example policy and procedure documents, please contact the SSBT CoE at ssbtcoe@mantech.com.

In addition, the U.S. Department of Homeland Security (DHS) System Assessment and Validation for Emergency Responders (SAVER) program has recently concluded an assessment project on Wearable Camera Systems (i.e., BWCs). A detailed Market Survey Report and an Assessment Report involving comparative evaluation of different systems in operational scenarios can be obtained by visiting the Responder Knowledge Base at <https://www.rkb.us/> (SAVER, August 2012).

I.1 About NIJ SSBT CoE

The NIJ SSBT CoE is a center within the National Law Enforcement and Corrections Technology Center (NLECTC) System. 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 Center supports the NIJ Sensor and Surveillance portfolio and the 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 Centers of Excellence is to assist in the transition of law enforcement technology from the laboratory into practice by first adopters.





2.0 Why Use Body-Worn Cameras?

Agencies considering the implementation of BWCs can benefit from their use in many areas, but only if implemented correctly. Within this section, we highlight some aspects of why an agency would choose to use BWCs, including judicial process, officer safety, professionalism and use cases.

Judicial Process: The International Association of Chiefs of Police (IACP) has performed studies on camera usage with respect to in-car camera systems. Much of this information can be extrapolated to BWCs. The study measured the impact cameras have had on the judicial process. Done as a collaborative effort with the National District Attorneys Association (NDAA) and the American Prosecutors Research Institute (APRI), the study found that of the prosecutors surveyed, an overwhelming number (91 percent) have used video evidence in court that was captured from an in-car camera. They reported that the presence of video evidence enhances their ability to obtain convictions and increases the number of guilty pleas prior to going to trial. The majority of the prosecutors (58 percent) reported a reduction in the time they actually spent in court, although when video evidence was used, 41 percent of prosecutors reported an increase in their case preparation time (IACP, 2004).

Safety: Officers are frequently assaulted and involved in traffic accidents while on duty. Representative assaults can be seen in a multitude of police shows where video cameras are used. The use of a camera system, whether in-car or body-worn, can deter violence or other negative behavior and help to convict a person who would choose to attack an officer. It may also reveal other information that might not normally be recorded by officers.

Professionalism: The use of cameras has been said to help improve the accountability of police officers as well as reduce the number of complaints of police misconduct. There are numbers of reports where cameras have cleared officers of “wrongdoing” once the video evidence was reviewed, as opposed to only 5 percent of complaint cases being sustained (as studied using in-car camera as the representative system) (IACP, 2004).

Use Cases: There are various types of interactions that officers perform on a daily basis. Generally a person’s first thought is that of a traffic stop. Many of these patrol cars have in-car systems that have been in use for years. These in-car systems are hailed by most of

the officers who use them, but what about the other types of officer interactions performed daily?

The following is a sample list of officer interactions. Obviously, there are many more executed on a daily basis where BWCs could support officers:

- Service calls.
- Primary response (patrol in vehicle).
- Self-initiated public contacts/foot patrol.
- Bicycle/motorcycle patrol.
- Emergency response/first responders.
- Searches (vehicle or site).
- SWAT.
- Corrections.



3.0 What Are the Types of Body-Worn Cameras?

BWCs can be a police officer's small but important technological partner. BWCs are mobile audio and video capture devices that allow officers to record what they see and hear. Devices can be attached to various body areas, including the head, by helmet, glasses or other means, or to the body by pocket, badge or other means of attachment (such as in-car on the dash). They have the capability to record officer interactions that previously could only be captured by in-car or interrogation room camera systems.

There are many specification issues to consider before purchasing a camera system. The system requirements and trade-offs will be dependent on the intended use, budget, unit cost, interoperability, operating environment, etc. A single set of BWC technical requirements does not exist, but is of interest to a wide range of law enforcement agencies. Specifications to consider include:

- Battery life.
- Video quality.
- Recording limits.
- Night recording.
- Camera focal width (need wide point-of-view, or POV).
- Audio recording.
- Camera placement.
- Radio integration capability.

Each of the previously mentioned capabilities can vary greatly depending of the cost and use of the device; however, even expensive BWCs are still a fraction of the cost of in-car systems.

A reasonable set of recommendations for product selection was reported in the DHS SAVER Wearable Camera Systems Focus Group Report (SAVER, 2011). It is reproduced here with permission for reference.

DHS SAVER Focus Group BWC Recommendations	
Product Selection Criteria	Description
VGA Resolution	The resolution should be at least 640 x 480 pixels.
Frame Rate	The frame rate should be at least 25 frames per second.
Battery Runtime	The camera should be able to record continuously for at least 3 hours on a fully charged battery.
Data Storage	The camera's onboard storage, at the lowest video quality settings, should permit at least 3 hours of recording.
Low-light Recording	The camera should have a low lux rating and/or an IR illuminator for recording targets in low-light.
Warranty	System purchase should include, at a minimum, a 1-year warranty.

Units can be mounted in several areas to include around the ear or head, on a helmet or hat, on the lapel, pocket, badge or in many other places. Mounting is a serious item to consider as lapel/chest mounted cameras are always body-facing units, whereas head-mounted units have a view of exactly what the officer is seeing. Considerations on replacing in-car units with BWC units would have to include the mounting of the BWC as a chest-placed unit that would not likely capture the needed data.

Standard cameras are likely to have image quality issues (e.g., fuzzy pictures and poor quality at night) as compared to more high-end cameras due to technical compromises to manage costs. There can also be quality issues with stability. For example, when an officer is running or fighting, the video may be shaky and the camera may not be secure; this again links back to placement of the camera on the officer being extremely important. Some feel that head camera placement allows the head to act as a natural gyroscope to reduce some motion issues seen with cameras. Many vendor websites host sample capture video from systems for potential users to sample.



4.0 What are the Implementation Issues?

There are various issues that need to be considered before investing in a BWC to include federal, state and local privacy issues; policy and procedures; the actual camera system; and proper training.

4.1 When Can I Record?

Federal law blocks the warrantless capturing of photo or video images of people where they have an expectation of privacy, and most states have similar laws. When using BWCs, considerations on whether or not audio recording is allowed during video recording will require specific research prior to purchases or even piloting devices.

The Reporters Committee for Freedom of the Press has published reference information on state consent categories with respect to recordings (RCFP, 2008). For reference, that material is included below.

States that allow single party consent recording of audio (oral) communications			
Arkansas	Louisiana	New York	Tennessee
Colorado	Maine	North Carolina	Texas
Georgia	Minnesota	North Dakota	Utah
Hawaii	Mississippi	Ohio	Vermont
Idaho	Missouri	Oklahoma	Virginia
Indiana	Nebraska	Oregon	West Virginia
Iowa	Nevada	Rhode Island	Wisconsin
Kansas	New Jersey	South Carolina	Wyoming

States that require all parties to consent to recording of audio (oral) communications			
California	Florida	Massachusetts	New Hampshire
Connecticut	Illinois	Michigan	Pennsylvania
Delaware	Maryland	Montana	Washington

NOTE: All legal aspects regarding privacy rights should be researched prior to investing in a camera system. SSBT CoE has not verified the accuracy of the state consent information prepared by RCFP. They are provided here as a starting point and an example to illustrate potential differences between states.

4.2 When to Consider Use

There are various times when the addition of BWCs would make more sense than others. One such example is when an agency is considering augmenting an existing in-car video system. Although current in-car systems record audio of all events, they are extremely limited in their recording of front forward video from the dash of a car. BWCs in this instance can give a full picture of the stop from beginning to end with audio and video. Another opportunity is when existing in-car systems are in need of replacement. Agencies in these cases would have officers already accustomed to using the systems and thus it would be easier to modify their current operations. Depending on the type of unit procured, there would be different considerations. Head-mounted units would not require any in-car additions; however, other chest-mounted BWC systems allow for the device to be removed and mounted on the dash temporarily while driving. Lastly, BWC systems should be considered when funding is limited. In-car systems are several times more expensive than BWCs. That factor could, in itself, lead an agency to deploy BWCs.

4.3 Policies and Procedures

If cameras are to be used, policies and procedures will have to be put in place, or expanded on, to address several legal issues. These issues extend beyond the more obvious privacy and civil liberties protections toward which agencies must be sensitive. For example, a policy would have to address when a camera should be used and when it should be turned on or not turned on to ensure fair treatment of all citizens. Parameters would need to be set for voluntary, compulsory and prohibited use of the camera. Camera video may also be considered a public

record item and a procedure would need to be created for public assessment and information requests. This policy should be in place before any testing or deployment.

The bridge between policy and training lies in the camera's capabilities. Cheaper cameras will require more officer interaction for off-loading data. Cheaper units will also offer more areas for error in use during data capture or during the data extraction. The amount of time required to extract and maintain data versus the cost of a unit should be strongly considered prior to purchase.

4.4 Training

Proper training on policies and equipment is a must. Agencies should ensure that a thorough logistics plan is in place prior to implementation. Training should not only be for use of the BWCs but also for the officer's perceptions of the camera. Officers should understand the primary purpose of cameras is for evidence collection and officer safety. Officers will need to understand that monitoring officer performance and improving public relations also come with the camera use.

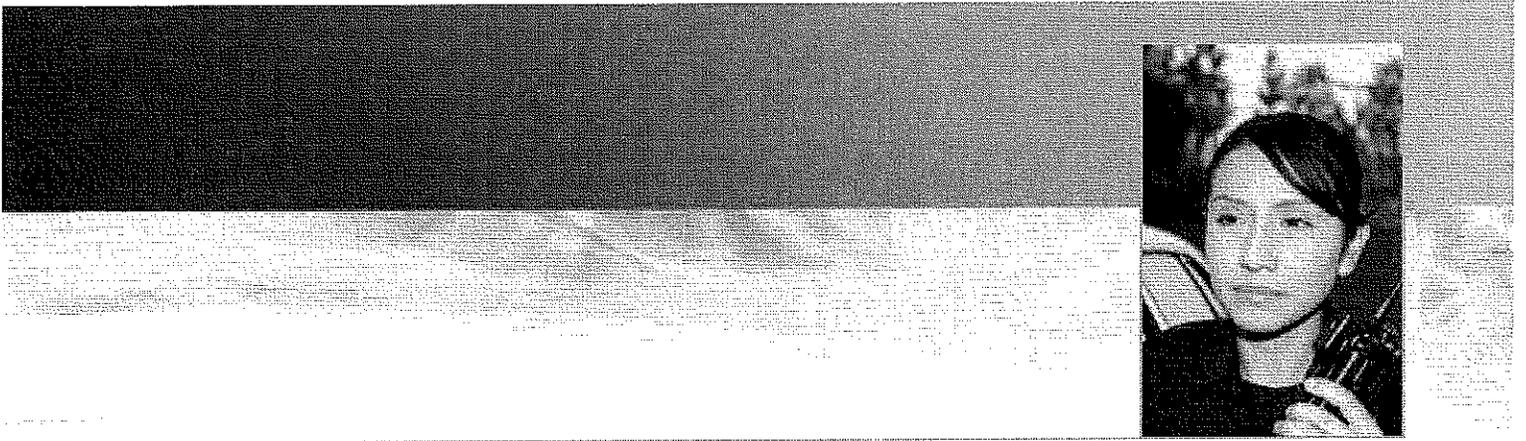
One of the most challenging issues an agency may face is officer acceptance. If officers feel that the video cameras are being used as a tool to monitor officer behavior, as several officers felt in the IACP study, they may be resistant to using the cameras (IACP, 2004).

4.5 Data Storage and Management

This leads to one of the more important items for an agency to consider before purchasing BWC units: data storage and retention. Storage issues, such as how long and who has access to the recordings, must also be considered. Furthermore, states have different laws on how long recordings must be stored based on the type of content and how or whether it is used in court. This is one of the most important things for an agency to consider as this can have a significant cost to a department. Not only must the data be protected and backed up regularly, but it must be accessible to all parties involved. Some data needs to be retained forever; other data can be deleted quickly. Crime recordings must be managed by law and through policies. Even video of standard officer interaction may be retained for a default period of time to cover potential performance complaints. Policies should control the period of time this data is maintained. As recordings become more or less important to your agency, adjustments need to be made. The length of storage time can cost numerous man-hours in addition to the actual cost of the storage device. There are services available that provide end-to-end data management of the exact items mentioned above.

Once recordings are made, agencies will have to consider all aspects of storage and handling, including chain-of-custody issues. As mentioned, many BWC units can allow for manipulation of video data by anyone in contact with the device. One of the disadvantages of these BWCs is that the officers may be responsible for uploading video to the agency systems themselves, as opposed to an automated or third-party process. As a result, ensuring that this is done properly becomes an important training issue. More expensive BWCs often have various safeguards to control data handling and thus assist in chain-of-custody control. They can require a party other than the officer to upload the data. These measures can often support chain-of-custody issues.

Once an audio/video recording is admitted as evidence in a court of law, the question of admissibility can be linked to whether an officer can authenticate the audio/video recording as a true and accurate depiction of the events. The defense, in order to prevent incriminating evidence from being presented at trial, may challenge the recording's admissibility based on the chain of custody. The best policy, as with any physical evidence, is to always guard the integrity of the evidence, and ensure policies and procedures maintaining a strict chain-of-custody are followed (IACP, 2004). This would include being sure that recordings include information necessary to be admissible in court. Specifically, time and date stamp/identifiers must be imprinted on the media, either in the video images directly or in the underlying metadata information of the data files. This can be done by using a GPS, if available, or other functions of a camera unit.



5.0 Closing

The use of in-car cameras has proven to be highly beneficial; any agency with high instances of citizen contact and self-initiated calls should strongly consider BWCs to be standard equipment for officers in these units. BWCs have also been a great benefit in resolving complaints and allegations against officers. As in-car cameras are used throughout the country for traffic-related incidents and the video has been proven to hold up in court, BWC video is sure to follow suit.

Agencies should look to neighboring departments for information and prior usage before venturing and deploying on their own. Utilizing a department that has already proceeded and has lessons learned can save a multitude of time and money.

Having policies, procedures, training and feedback mechanisms in place and used prior to even a pilot deployment is exceedingly important. If an agency considers all aspects of deployment, the project will be effective, efficient, and maintain the agency's and officer's integrity.



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In addition to the above published documents, the SSBT CoE gathered information on law enforcement use of BWCs at various events through exhibit booth interactions and outreach. Events included:

- NIJ Sensors Technology Working Group Meeting (April 19-20, 2011; Arlington, Va.)
- The Critical Incident Preparedness Conference (Aug. 30-Sept. 1, 2011; National Harbor, Md.)
- NIJ Technology Institute for Law Enforcement (Fall 2011 and Summer 2012; Annapolis, Md.)
- Biometric Consortium Conference (Sept. 27-29, 2011; Tampa, Fla.)
- NIJ Technology Institute for Rural Law Enforcement (Dec. 5-8, 2011; Annapolis, Md.)

Additional supplemental references related to the use of BWCs in law enforcement include:

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A Appendix- Body-Worn Camera Market

Market Survey of Body Worn Cameras

NIJ SSBTCoE

Potential reasons an agency would consider implementation or expansion to Body Worn Cameras include:

- Less cost compared with in-car units
- Officer's safety/violence against officers
- False accusation protection
- Audio/video of consent to search
- Video collection of evidence for trial/juries
- Professionalism/Perception
- Training as related to the camera use
- Use in all agency units (Traffic, Bike, Patrol, etc)

Model	TASER AXON Flex® www.taser.com	VIEVU PVR-LE2® www.vievu.com	StalkerVUE www.stalkerradar.com/ law_vue.html	Scorpion Micro DV	FirstVu www.digitalalyinc.com/ body-camera.html	Wolfcom 3rd Eye www.wolfcomusa.com	MiVoView-HD-Series www.mphindustries.com
Placement/Format	Various	Chest	Chest	Various	Chest	Chest	Various
Max Video Resolution	640x480	640x480	1280x720	640x480	640x480	1920x1080	1080p
Recording Speed	30 fps	30 fps	**	30 fps	30 fps	30 fps	**
Recording Format	MPEG-4	MPEG-4	MPEG-4	MPEG-4	MPEG-4	MPEG-4	MOV
Still Photo Mode	No	No	Yes	Yes	Yes	Yes	Yes
Time/Date Stamp	**	Embedded	**	No	Metadata	Yes	**
Field of View	75°	71°	**	72°	Wide	120°	160°
Night Mode	Low light	Low light	IR Lens	No	IR Lens	IR Lens	Yes
Playback Screen	Via phone	No	Yes	No	Yes	Yes	Yes
Audio/Format	Various	MP2	Yes	Yes	Yes	AAC	Yes
Video Safeguards	Yes	Yes	No	No	Yes	Yes	No
30 sec Pre-Event Record	Yes	No	No	No	Yes	No	No
Event Marking	Yes	No	No	No	Yes	No	No
Recording Life	4 hrs	4 hrs	8 hrs	4 hrs	4 hrs	5 hrs	0.5/3 hrs
Standby	12 hrs	72 hrs	400 hrs	250 hrs	12 hrs	**	**
Charge Time	6 hrs	3 hrs	2 hrs	2 hrs	**	**	3 hrs
Battery Type	**	Li-Ion	Lithium	**	**	**	Li-Ion
Storage	**	4GB	8 or 32GB	8GB	Variable	32GB	4/8 GB
GPS	Via phone	No	No	No	No	Yes	No
Dimensions***	Multiple	3x2.2x.75	3.8x2.5x.8	2.8x.85x.8	2.7x4.3x1	**	3.3x2x.75
Weight	3.8 oz	3.5 oz	10 oz	1.7 oz	**	**	**
Environment Testing	MIL-STD 810F	IPX5	**	**	IP55	IP67, IPX3	**
Warranty	1 yr, 90 days	90 days	1 year	**	**	**	**
Optional Video Software	Yes	Yes	**	**	Yes	**	**
Police Radio Interface	No	**	**	**	**	Yes	No
Vehicle Mountable	**	Yes	**	**	**	Yes	Yes
Approximate Price	\$1,000.00	\$900.00	\$800.00	\$120.00	\$800.00	**	\$119/\$249

* Also sold as CopVU or Coban VIEVU

** Unspecified

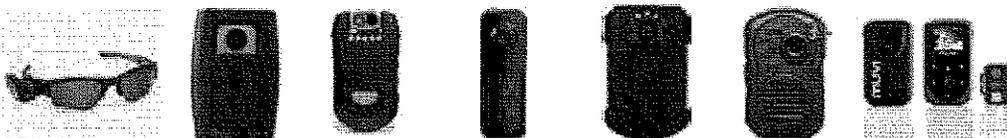
*** Dimension in inches

At the time of publication, the Panasonic WVW310 was not available for comparison.

This market survey may not be fully comprehensive and all-inclusive. Many company websites host sample capture video.

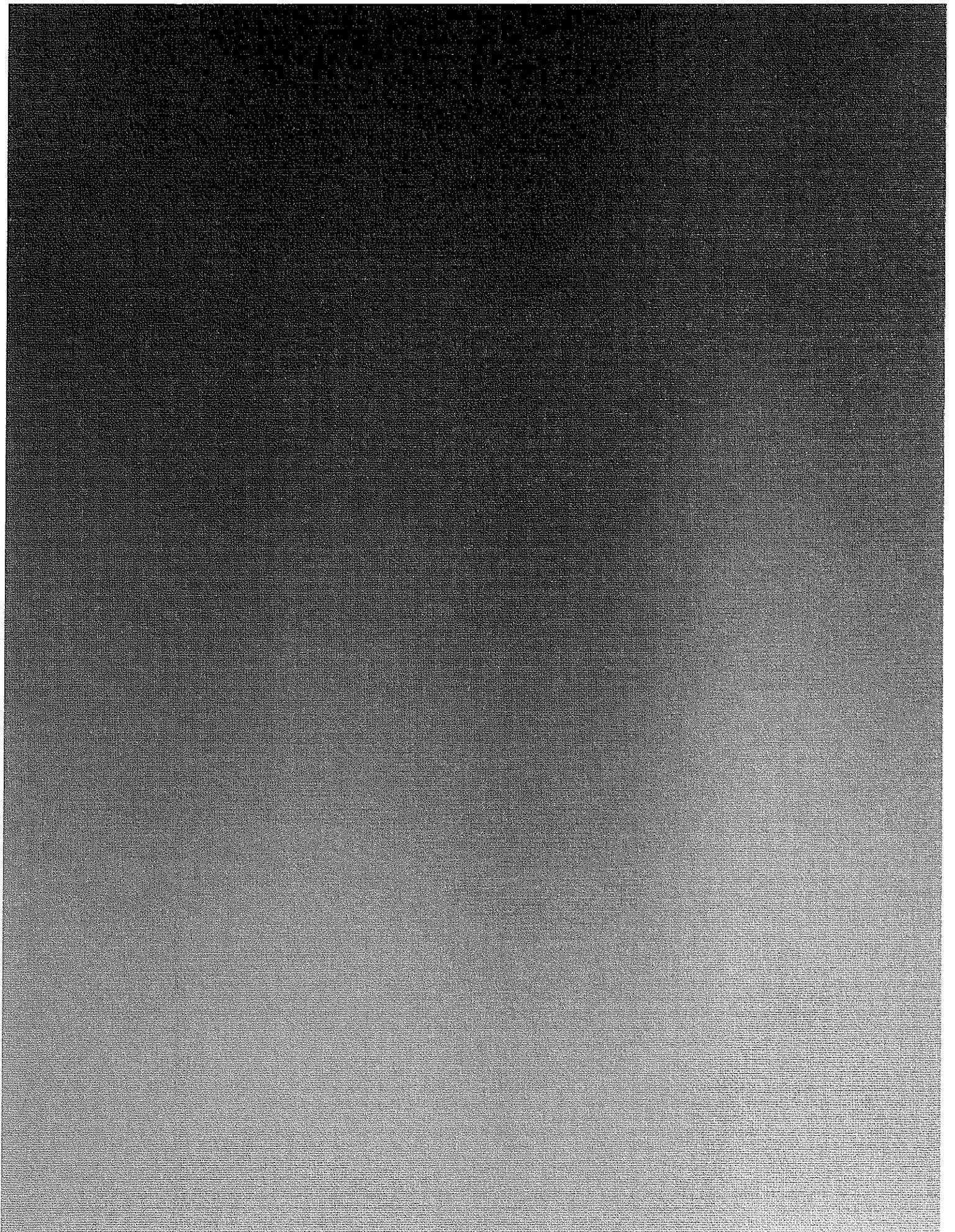
What should an agency consider before Implementation?

Policy/Training – An agency should develop policies and procedures for cameras, ensure the policies and procedures are in place, and officers are properly trained on the use prior purchase and use. These would outline when the camera can be/are required to be used, what the download requirements are and describe the limitations regarding recorded data.



B Appendix- Acronyms and Abbreviations

Acronym	Description
APRI	American Prosecutors Research Institute
BCC	Biometrics Consortium Conference
BWC	Body-Worn Camera
CoE	Center of Excellence
DHS	Department of Homeland Security
DOJ	Department of Justice
e-IC	Enterprise Integration Center
IACP	International Association of Chiefs of Police
LETI	Technology Institute for Law Enforcement
ManTech	ManTech Advanced Systems International, Inc.
NDAAs	National District Attorneys Association
NIJ	National Institute of Justice
NLECTC	National Law Enforcement and Corrections Technology Center
POV	Point of View
R&D	Research and Development
RCFP	The Reporters Committee for Freedom of the Press
SAVER	System Assessment and Validation for Emergency Responders
SSBT	Sensor, Surveillance, and Biometric Technologies
SWAT	Special Weapons and Tactics
TCIP	Technologies for Critical Incidence Preparedness



Attachment 3:
US Department of Homeland Security,
System Assessment and Validation for
Emergency Responders, Wearable
Camera Systems Summary.



**Homeland
Security**

Science and Technology

Summary

U.S. Department of Homeland Security



System Assessment and Validation for Emergency Responders

The U.S. Department of Homeland Security (DHS) established the System Assessment and Validation for Emergency Responders (SAVER) Program to assist emergency responders making procurement decisions.

Located within the Science and Technology Directorate (S&T) of DHS, the SAVER Program conducts objective assessments and validations on commercial equipment and systems, and provides those results along with other relevant equipment information to the emergency response community in an operationally useful form. SAVER provides information on equipment that falls within the categories listed in the DHS Authorized Equipment List (AEL).

The SAVER Program is supported by a network of technical agents who perform assessment and validation activities. Further, SAVER focuses primarily on two main questions for the emergency responder community: "What equipment is available?" and "How does it perform?"

For more information on this and other technologies, contact the SAVER Program Support Office.

RKB/SAVER Telephone: 877-336-2752

E-mail: saver@dhs.gov

Web site: <https://www.rkb.us/saver>

Reference herein to any specific commercial products, processes, or services by trade name, trademark, manufacturer, or otherwise does not constitute or imply its endorsement, recommendation, or favoring by the U.S. Government. Neither the U.S. Government nor any of its employees make any warranty, expressed or implied, including but not limited to the warranties of merchantability and fitness for a particular purpose for any specific commercial product, process, or service referenced herein.

Wearable Camera Systems

(AEL reference number 13LE-00-SURV)

In order to provide emergency responders with information on currently available wearable camera systems, the Space and Naval Warfare Systems Center (SPAWARSYSCEN) Atlantic conducted a comparative assessment of wearable camera systems for the System Assessment and Validation for Emergency Responders (SAVER) Program in June 2011. Detailed findings are provided in the Wearable Camera Systems Assessment Report, which is available by request at <https://www.rkb.us/saver>.

Background

Wearable camera systems are valuable tools used by patrol officers to record traffic stops, sobriety tests, and interviews. A wearable camera system typically includes a camera, microphone, battery pack, and video storage. Depending on the model, wearable camera systems are designed to be head-mounted or worn on the body.

Assessment Methodology

Prior to the assessment, seven emergency responders were chosen from various jurisdictions to participate in a focus group. Participants possessed strong backgrounds in law enforcement, specifically patrol operations, narcotics, information technology analysis, and airport security. The group's primary objectives were to recommend evaluation criteria, product selection criteria, products and vendors, and possible scenarios for the assessment.

Based on focus group recommendations, market research, and system availability, the following wearable camera systems were assessed:

- POV.T, V.I.O. Inc.;
- PVR-LE2, VIEVU LLC;
- Muvi-LE Pro, MPH Industries;
- AXON[®], TASER International Inc.; and
- First Vu[™], Digital Ally.

Four responders, each with a strong law enforcement background, served as evaluators for this assessment. These responders were members of detective, livability, metro narcotics, and patrol/special weapons and tactics units.

Evaluators were tasked to participate in two phases of the assessment: the specification assessment and the operational assessment. During the specification assessment, evaluators assessed the systems based on vendor-provided product information and specifications. Hands-on experience with the systems during three scenarios—a field sobriety test, a vehicle search, and a residential call—served as the basis for the operational assessment.

Assessment Results

Evaluators rated the wearable camera systems based on the evaluation criteria established by the focus group. The focus group assigned each criterion to one of the five SAVER categories, and then assigned a weight for its level of importance. Once the criteria were weighted, the five SAVER categories were assigned a percentage value to represent the level of each category's importance relative to the other categories.

Table 1 displays the composite assessment scores as well as the category scores for each product. Higher scores indicate a higher rating by evaluators. The advantages and disadvantages of each system, as identified by evaluators, are listed in table 2. To view how each wearable camera system scored against the evaluation criteria assigned to the SAVER categories, see table 3. For product specifications, see table 4.

The following paragraphs provide a brief summary of evaluator comments and feedback on each wearable camera system used during the assessment; the complete assessment report includes a breakdown of evaluator comments by SAVER category. The systems are listed from highest to lowest composite score.

POV.T

The POV.T received a composite score of 3.4. The POV.T costs \$676 and includes the following: a mountable camera head with a tethered video recorder, a 4-gigabyte micro secure digital (SD) card, a universal serial bus (USB) cable, a wireless remote, video management software, a user manual, a 1-year warranty, and technical support.

Details in the recorded video were clear and sharp in normal lighting conditions, especially during the traffic stop scenarios. The image quality of the video captured during the residential call scenario was good when a flashlight was used. The field of view captured on the video was wide, and the camera was able to capture—from head to toe—an individual standing 8 to 10 feet away. Video can be transferred quickly and easily using either the included USB cable or a removable microSD card. The video is date/time stamped, and important points in the video can be tagged while recording, making them easy to locate when viewing or editing the video; however, video tagging

SAVER Category Definitions

Affordability groups criteria related to life-cycle costs of a piece of equipment or system.

Capability groups criteria related to the power, capacity, or features available for a piece of equipment or system to perform or assist the responder in performing one or more relevant tasks.

Deployability groups criteria related to the movement, installation, or implementation of a piece of equipment or system by responders at the site of its intended use.

Maintainability groups criteria related to the maintenance and restoration of a piece of equipment or system to operational condition by responders.

Usability groups criteria related to the quality of the responders' experience with the operational employment of a piece of equipment or system. This includes the relative ease of use, efficiency, and overall satisfaction of the responders with the equipment or system.

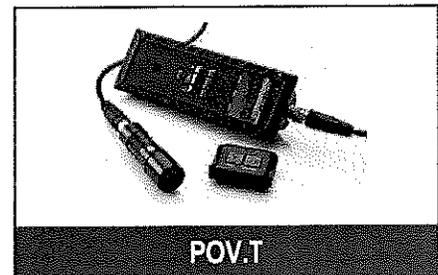
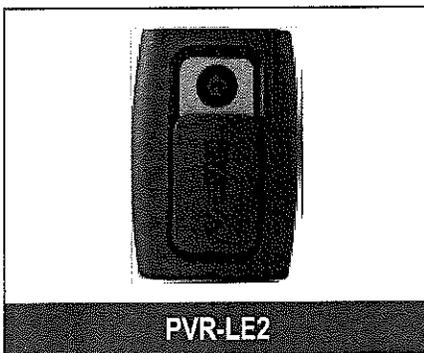


Table 1. Wearable Camera System Assessment Results

System	Composite Score	Affordability (7% Weighting)	Capability (35% Weighting)	Deployability (20% Weighting)	Maintainability (13% Weighting)	Usability (25% Weighting)
POV.T	3.4	3.8	3.3	3.1	3.8	3.6
PVR-LE2	3.4	3.0	3.2	3.8	3.3	3.5
Muvi-LE Pro	3.3	3.8	2.8	3.6	3.5	3.5
AXON®	3.3	2.3	3.7	2.6	3.3	3.6
First Vu™	3.0	2.8	3.1	2.9	3.8	2.8

cannot log global positioning system (GPS) coordinates. Battery life and storage capacity indicators are favorably located on the camera. Settings in the software can be adjusted to turn the microphone off, which may be beneficial for agencies that are not authorized to record audio. Video can be edited after it has been downloaded from the system. It is easy to play back video and to adjust the volume on the system. The camera is easily turned on and off with or without gloves. The system appears to be durable and built extremely well. The system has an excellent operating temperature range but would likely need to be stored in a controlled environment when temperatures are at extremes. The camera has favorable attachment options; it remained in place when evaluators were running, and it did not become entangled in the evaluators' seatbelts. The battery compartment is easily accessed in the field; no tools are required. The cost of the system is competitive, and ongoing costs are minimal.

The system does not feature a low-lux camera, and it is not equipped with an illuminator. During the residential call scenario in low-light conditions, the video captured what was illuminated by the flashlight, but surroundings that were visible to the naked eye were not visible in the video. Objects and people cannot be observed without direct artificial lighting in low-light conditions. Checking on system status is inconvenient, as the system indicators are located on the recorder, which must be stored in a pocket or holster. The audio is not clear; the microphone is part of the cable that connects the recorder and the camera, and it picks up noise from rubbing on clothing and equipment. Using a microSD card for data storage could compromise data security; once removed, it could be lost, stolen, or destroyed. The system is excessive in size and weight, and the video recorder component does not come with any type of attachment method.



PVR-LE2

The PVR-LE2 received a composite score of 3.4. The PVR-LE2 costs \$900 and includes the following: a proprietary USB cable, a 110-volt wall charger, a 12-volt car charger, VERIPATROL software and future updates, a 90-day warranty, a user manual, technical support, and training.

Security of the video is excellent, as users are unable to edit the video. The system indicators are located on top of the device and are easily understood. The image is clear in low-light conditions if a flashlight is used. The audio quality is great even though it is not in stereo. Video is

date/time stamped, and users can add a case number or comments using the included VERIPATROL software; however, video tagging does not log GPS coordinates. Data transfer is easy, but requires the included proprietary cable. The 4-gigabyte data storage capacity should be sufficient for most operations since data can be transferred while the unit is charging and the unit can be charged in a patrol car; however, expandable data storage is preferred. The system can be charged quickly and easily with a USB cable that plugs into a wall charger or computer USB port. It is easy to start recording video with or without gloves, and unintentional recording is not likely to occur. The unit is small, lightweight, compact, and easy to use. The software is user friendly, and future updates are included with system purchase. The unit can be clipped on a shirt just below pocket level; it is easy to attach and remains in place when the user is running. The unit did not interfere with user maneuverability. The system has a favorable operating temperature range.

The image quality is clear with minimal distortion, but the camera captures a limited field of view; during the field sobriety test scenario, the camera did not capture an image of the suspect from the waist down. The microphone is always on when capturing video; this may be an issue in jurisdictions that do not permit audio recording. The system is not equipped with an illuminator. The system does not feature instant video playback directly on the device; however, video could be easily viewed on a mobile data terminal. Depending on where the unit is attached to the chest, it is possible that it might interfere with the user's seatbelt. The storage temperature range is limited; the system will need to be stored in a controlled environment when temperatures are at extremes. The unit is sealed with a permanently installed battery so the entire unit must be replaced when the battery will no longer hold a charge, making the value of the system a little less favorable.



Muvi-LE Pro

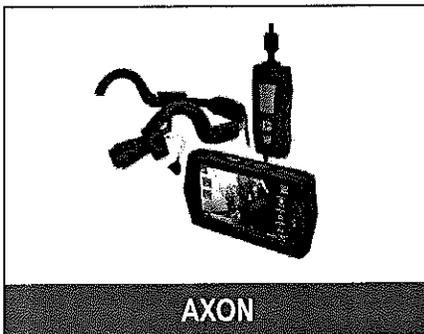
Muvi-LE Pro

The Muvi-LE-Pro received a composite score of 3.3. The Muvi-LE Pro costs \$119 and includes the following: a Muvi micro DV camcorder, a 4-gigabyte microSD card, a USB cable, a software disc, a spring mounting clip, a nylon lanyard, a carrying pouch, a user manual, a 1-year warranty, and technical support.

The system indicators are easy to see and understand. Data can be quickly and easily transferred via the included USB cable or removable microSD card. The unit is easy to use and extremely compact and lightweight. The camera is easy to turn on and off with or without

gloves. The unit is easy to wear; it clips on a shirt pocket, stays in place when the user is running, and does not interfere with maneuverability. The unit appears to be durable; however, audio recording is negatively affected when the waterproof sleeve is used. The unit has good operating and storage temperature ranges but it would likely need to be stored in a controlled environment when temperatures are at extremes. The system can be charged with the included USB cable. The initial cost is relatively low, and there are no recurring costs for continued operation of the system; the camera must be replaced when the battery will no longer hold a charge, but considering the low cost of the unit, this is acceptable.

The image quality was less than favorable; video paused during playback and the audio was not always in sync with the video. The system has a 2-hour battery run time and would require frequent charging during an 8-hour shift, though it is easy to recharge the unit. The field of view is narrow, and the video appeared shaky at times. The video is date/time stamped, but users cannot add additional tags, notes, or case numbers. The microphone is always on when capturing video, which may be an issue in jurisdictions that do not permit audio recording. Objects and people are difficult to identify in video captured in low-light conditions; additional lighting (e.g., a flashlight) is required to obtain a clear image under these conditions. The system is not equipped with an illuminator. Using a microSD card for data storage could compromise data security; once removed, it could be lost, stolen, or destroyed. The narrow field of view makes it difficult to ensure the camera is capturing what the user is seeing. The evaluators had to turn their bodies in the direction of the subjects to capture them on video; the subjects were not captured on the video if the evaluators were in a bladed stance. It is not possible to instantly view video on the unit. It is possible that the unit could interfere with the user's seatbelt depending on the size of the user and the placement of the device. The unit is sealed with a permanently installed battery.



AXON

AXON

The AXON received a composite score of 3.3. The AXON costs \$3,030 and includes the following: an AXON tactical computer, communications hub, and head-mounted camera; a headband mount; SYNAPSE™ evidence transfer manager docking station; 1 year of EVIDENCE.COM™ usage; a 1-year warranty; and a user manual.

The wide-angle field of view captures a large area. The video has excellent image quality and clarity. The system records well in low-light conditions; people and objects were identifiable when a flashlight was

used. The system has an excellent battery life. The system's 16-gigabyte internal storage is adequate and likely sufficient for an 8-hour shift; however, no add-on storage is available. In addition to visual indicators, the system has audio prompts that inform the user when it is recording and when video has been tagged. The audio quality recorded with the video is good. Video is date/time stamped and metadata includes GPS coordinates; users can add descriptions to the tags when reviewing the video. The microphone is built into the system and cannot be detached; however, software settings can be adjusted to turn off the microphone, which is good for agencies that are not authorized to record audio. Instant video playback on the AXON tactical computer is quick and easy. The system has a head-mounted camera that captures the user's point-of-view. Video recording is easy to start and stop with or without gloves. The system appears to be rugged and well

built. The system has a favorable operating temperature range, but it would likely need to be stored in a controlled environment when temperatures are at extremes. The battery can be ordered from TASER and replaced by the user, but tools are required.

The system indicators convey excellent information; however, the indicators are located on the AXON tactical computer's display, which evaluators typically placed in their pockets during the assessment. The system is not equipped with an illuminator. The system provides good data security; however, video is stored on the third party server, EVIDENCE.COM. The system must be docked with a connection to the Internet in order to transfer video to EVIDENCE.COM. If the connection to the Internet is lost, the unit will lock until the connection is restored; if an Internet connection is not available, users cannot download or upload video. Users must press the start/stop button twice, which is not user friendly. The AXON tactical computer is large and heavy and would be difficult to add to a gun belt. There was some concern that the system would be dropped a lot due to the number of components and cables. The AXON tactical computer does not have a clip for a gun belt and finding an appropriate attachment point is difficult. While the system did not seem to interfere with getting in or out of a vehicle, it does affect user maneuverability; the cable that runs from the AXON tactical computer to the communications hub and then to the head-mounted camera is not long enough and it interferes with a user's ability to freely move his or her head. The unit can only be charged in the docking station. The higher than average initial cost and the recurring costs (i.e., EVIDENCE.COM subscription) may be too expensive for some agencies.



First Vu

The First Vu received a composite score of 3.0. The First Vu costs \$995 and includes the following: a camera unit, earphones, a USB cable, a 120-volt alternating current (AC) battery charger, a 12-volt direct current (DC) battery charger, a quick start guide, an operation manual, a VideoManager and Configuration software DVD, a 1-year warranty, technical support, and operational training.

The data storage options on this system are excellent; users can store video to the 16-gigabyte internal storage or to the 8-gigabyte removable microSD card. Data storage can be expanded up to a 32-gigabyte microSD card. Video is date/time stamped, and users can add case numbers and notes when video is reviewed; however, video tagging cannot log GPS coordinates. The camera acts as an external hard drive, and video can be accessed without the software. Video can be transferred from the device via a USB cable (included) or a microSD card (not included). The system did not feature an illuminator; however, an illuminator is available as an option. The point of view is good, and the wide field of view helps capture most things in the user's line of sight. The system is compact and lightweight for a system with a monitor. Instant video playback on the device is easy; however, there is no speaker for audio playback and headphones must be used. The system has an excellent operating temperature range. The system had minimal interference with users' maneuverability. The unit can be charged with a DC charger, an AC charger, or the included USB cable. The battery is user replaceable, and no tools are required to access the battery compartment. While the initial cost of the system is higher than some of the other systems assessed, there are no recurring costs.

The audio quality is good; however, the microphone picked up some external noise (i.e., wind, etc.). The 4-hour battery run time and high number of charge cycles are favorable; however, the battery would require charging if used continuously throughout an 8- to 12-hour shift. The image quality is good, but the video appeared choppy at times and the audio did not sync up with the video. Some evaluators experienced slow data transfer. Using a microSD card for data storage could compromise data security; once removed, it could be lost, stolen, or destroyed. Video appeared dark in low-light conditions and no details of objects outside of the flashlight beam were evident when reviewing the video. The system indicators are favorable; however, the location of the indicators on the front of the device is less favorable as the controls are located on the back. Video recording is easily activated, but the smaller size of the buttons may make it difficult for some users to press them, especially when wearing gloves. The camera takes some time to boot up and begin recording.

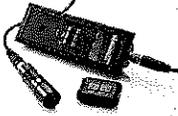
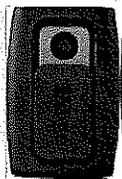
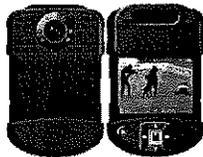
The durability of the camera is less favorable due to its plastic housing. The unit attaches to a shirt or tactical vest with a clip; some evaluators found the camera to be heavy for attachment to their shirt, and the mounting clip broke during the assessment. The unit bounced when users were running, capturing the sky on video. It would be more favorable if alternate attachment options were included in the initial cost.

Conclusion

All five wearable camera systems scored favorably overall, and evaluators indicated that all five systems would be suitable for most overt operations. Emergency response agencies that may be considering the purchase of wearable camera systems for patrol operations should carefully consider each system's overall capabilities and limitations in relation to their jurisdiction's operational needs.

All reports in this series, as well as reports on other technologies, are available in the SAVER section of the Responder Knowledge Base (RKB) Web site at <https://www.rkb.us/saver>.

Table 2. Wearable Camera System Advantages and Disadvantages

System	Advantages	Disadvantages
 <p>POV.T Composite Score: 3.4</p>	<ul style="list-style-type: none"> • Clear and sharp images in normal lighting conditions • Wide-angle field of view • Quick and easy data transfer • Easy video playback on the device 	<ul style="list-style-type: none"> • Video recorder is large and does not have a mounting bracket • Cable interferes with user maneuverability • Audio is not clear
 <p>PVR-LE2 Composite Score: 3.4</p>	<ul style="list-style-type: none"> • Wearable component is small, lightweight, and compact • System is easy to use • Video recording is simple to start/stop • Video cannot be modified or erased by users • Great audio quality 	<ul style="list-style-type: none"> • Narrow field of view • The rechargeable battery cannot be replaced because it is permanently installed • Users must be careful when the device is attached to ensure an accurate point of view • No instant video playback
 <p>Muvi-LE Pro Composite Score: 3.3</p>	<ul style="list-style-type: none"> • Compact and lightweight unit • Easy to start/stop video recording • Multiple charging methods • Data transfer via USB cable or removable microSD card • Video is date/time stamped 	<ul style="list-style-type: none"> • Video pauses unintentionally during playback • Audio and video are not always in sync • Narrow field-of-view • Two-hour battery run time • No video tagging • No instant video playback
 <p>AXON® Composite Score: 3.3</p>	<ul style="list-style-type: none"> • Records well in low-light conditions • Video is tagged with GPS coordinates • Wide-angle field of view • Head-mounted camera captures the user's point of view 	<ul style="list-style-type: none"> • Internet connection and docking station are required to transfer data from the device • Video is uploaded and stored to a third-party server • The AXON tactical computer is too large and bulky • The cable connecting the AXON tactical computer to the camera is too short and interferes with user maneuverability
 <p>First Vu™ Composite Score: 3.0</p>	<ul style="list-style-type: none"> • Multiple and expandable data storage options • Video is date/time stamped, and users can add notes and case numbers easily • Up to 500 charge cycles before battery replacement • Users can play back video instantly on the device 	<ul style="list-style-type: none"> • Video appears distorted with a fish-eye look to it • Audio not always in sync with video • Camera takes time to boot up • System indicators and camera controls are on opposite side of the camera • The system has limited attachment options

Notes:

GPS = global positioning system
SD = secure digital

USB = universal serial bus

Table 3. Wearable Camera System Criteria Ratings¹

KEY									
Least Favorable					Most Favorable				
					POV.T	PVR-LE2	Muvi-LE Pro	AXON®	First Vu™
Affordability									
Value									
Capability									
Image quality									
Day/night operations									
Power									
Data storage									
Field of view									
System indicators									
Audio quality									
Data security									
Video tagging									
Microphone options									
Data transfer									
Illumination control									
Deployability									
Attachment options									
Durability									
Operating/storage temperatures									
Interference									
Maintainability									
Recharge method/time									
Battery access									
Usability									
Physical characteristics									
Camera activation									
Instant video playback									
Point of view									
Software requirements									

Note:

¹ Averaged criteria ratings for each assessed product are graphically represented by colored and shaded circles. Highest ratings are represented by full green circles.

Table 4. Wearable Camera System Specifications¹

Specifications	POV.T	PVR-LE2	Muvi-LE Pro	AXON®	First Vu™
MSRP	\$676	\$900	\$119	\$3,030 ²	\$995
Camera dimensions (L x W x H)	2.7 x 0.8 inches (length x diameter)	3.0 x 2.0 x 0.8 inches	2.2 x 1.1 x 0.8 inches	2.3 x 1.1 x 0.8 inches	4.3 x 2.8 x 1.0 inches
Camera weight	2.0 ounces	3.5 ounces	1.8 ounces	1.2 ounces	6.5 ounces
Operating temperature	14° to 140°F	-4° to 140°F	14° to 140°F	-4° to 122°F	-4° to 158°F
Storage temperature	14° to 140°F	23° to 95°F	14° to 158°F	23° to 95°F (up to 1 month) 32° to 95°F (up to 6 months)	-10° to 175°F
Durability	Not provided by vendor	Drop tested from 10 feet	Minimal resistance to shock and vibration	Drop tested from 7 feet	Drop tested from 6 feet
Water resistant	Yes	Yes	Yes with waterproof sleeve (\$49.95)	Yes	Yes
Recording time	8.3 hours	4 hours	3 hours	9.5 hours	16 hours
Field of view	110 degrees	71 degrees	72 degrees	110 degrees	133 degrees
Battery type	4 AA batteries (lithium recommended)	Proprietary, built-in (non-replaceable)	Proprietary, built-in (non-replaceable)	Proprietary, rechargeable lithium ion battery	Proprietary, rechargeable lithium ion battery
Battery run time (with continuous use)	10 hours with lithium batteries	4 hours	3 hours	12 hours	4 hours
Battery charge time	N/A	3 hours	2 hours	4 hours	2.5 to 3 hours
Charge cycles (before suggested replacement of rechargeable battery)	N/A (disposable or rechargeable AA batteries)	400	Information not provided	400	500
Data storage	4GB removable microSD	4GB internal memory	4GB removable microSD	16GB internal memory	16GB internal memory; 8GB removable microSD
Expandable data storage	Yes; up to an 8GB microSD	No	Yes; up to an 8GB microSD	No	Yes; up to a 32GB microSD
System indicators on camera	LED: Recording indicator LCD: Battery and storage capacity status	LEDs indicate when battery is fully charged or when 20 percent of time or free space remains	LED flashes different colors and speeds to indicate camera mode	LCD: Battery indicator, low-battery alert, storage capacity, low storage alert, recording indicator, privacy mode engaged, GPS lock	LCD: Battery status, recording time remaining LED: Camera mode
Overt or covert system indicators	Overt	Overt	Covert	Covert	Overt or covert (adjust setting)

Notes:

¹ Information was provided by manufacturers and has not been independently verified by the SAVER Program.

Attachment 4:

Wolfcom Vision Police Body Worn Camera System, website screenshots demonstrating specifications, mounting options, and features.

Patent Pending

WOLFCOM VISION™

1080P A/V RECORDER FOR POLICE AND MILITARY

Our Vision for the Future



The very first body camera in the World that can record 36 hours of video. Can take 56,000 Photos and can record 360 hours of audio.



The First Place Ribbon means that we are the first company in the world to have this feature in a Police Body Worn Camera.

Wolfcom Enterprises is proud to introduce its newest addition to its body worn camera line. The **Wolfcom Vision™**. Designed and assembled in Los Angeles, California. This new unit is Wolfcom's vision for the future. It is the world's smallest, lightest, secure, and most versatile law enforcement body camera in the market today. The new Wolfcom Vision's design and creation is a result of hundreds of pages of feedback from professional law enforcement worldwide and from Wolfcom's 20 years of combined knowledge, experience, and expertise in the specialized field of personal body worn camera systems for law enforcement and private investigators.

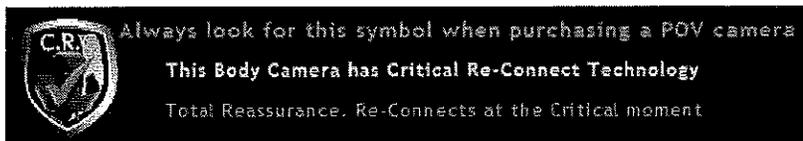
What makes the **Wolfcom Vision™** so uniquely special is that it is designed to exceed the needs and requirements of just about every single law enforcement agency that is looking for the world's leading technology at a price affordable to everyone.



1.5 in. wide x 2.9 in. height x 0.6 in. thick

- Main Features:
- It's a Video Camera that records 18 Hours of Video (36 Hrs with 64 GB)
- It's a Digital Camera that takes over 28,000 Digital Photos (56,000 with 64 GB)
- It's a Voice Recorder that records 180 hours of audio (360 Hrs with 64 GB)
- Up to 1080p High Resolution recording
- 120 Degree Wide Angle lens
- Camera Flash and Flash Light
- Up and down Rotatable Camera Head
- GPS with Location Tagging or Marking during a Pursuit
- Pre- Record Buffering from 60 seconds to 30 minutes at 1080p with audio
- Ability to Stamp an Officers Badge number onto Video and Photos
- Vibration and Audio Chime Confirmation on/off confirmation and low battery alert
- Video Streaming out for Optional Live Remote View
- One Touch Record Switch
- Covert Photo Taking

- Headset Camera Capable
- Eye Glasses, Sunglasses, Collar, Epaulette, Cap Camera
- Covert Pinhole Button Camera for Plainclothes Detectives
- Critical Reconnect Technology (Patent Pending)
- Night Vision capable with External Night Vision Camera
- In-Car Camera Capable
- Up to 8.5 Hours with Battery Packs and 20 Hours with Super Pack
- Programmable Record Light for Public Awareness



The **Wolfcom Vision™** main unit is an all-in-one, self-contained digital video recorder with a rotating camera head, built-in rechargeable battery, and 32GBs of internal memory. The unit can be used alone as a fully functioning body worn camera. If so desired, an external clip on camera can be plugged into the main unit for Point of View (POV) recording. The main unit has auxiliary input and output ports allowing the unit to be connected to a PC or external battery. The unit weighs only 2.2 ounces with a dimension of 2.9 inches high by 1.5 inches wide by 0.6 inches thick, making it one of the smallest and lightest police body worn cameras in the world.

The **Wolfcom Vision™** can record and store over 18 hours of video, can take over 28,000 digital photos, and can record over 180 hours of audio. In short, the unit is a video camera, a digital camera, and a voice recorder, combined into one single lightweight unit. The Wolfcom Vision has a high quality 120° degree wide angle camera lens that can be rotated up or down allowing the officer to point the camera in the correct direction according to his or her height or stature. (120° is the maximum allowed before warping or bending of the video image occurs.) Video recording quality is exceptional and configurable with selectable recording quality from 1080P true HD all the way down to 640x480 resolution allowing police departments the ability to adjust the camera resolution according to their memory storage capacity.



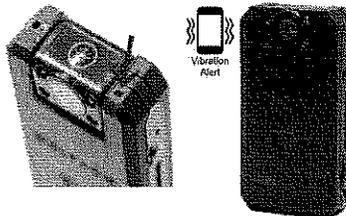
Up to 1080p HD Video Recording with One Touch Record (OTR)

The Wolfcom Vision can record up to 1080p high resolution video. To begin recording audio and video, the officer simply needs to slide the One Touch Record switch to the DOWN position. While recording video, he can simultaneously take photos by pressing the center button on the camera. To stop recording, the officer simply

sliding the One Touch Record switch to the UP position. The Wolfcom Vision can record up to 18 hours of Video.

Vibration and Visual Confirmations Alerts

The unit has vibration confirmation when activating and de-activating recording. At any time, an officer can look down into the top of the unit at the status indicator light to confirm if the his body camera is ON and Recording. This same status light cannot be seen by the public.



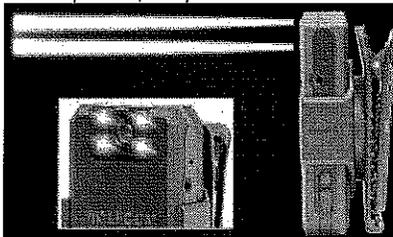
Public Awareness Light

The Wolfcom Vision features a first-ever Public Awareness Light (PAL) located on the front of the unit. The purpose of the PAL is to inform the public that they are being recorded. Designed to promote good behavior from the knowledge of being recorded, the PAL can be programmed to flash during recording, stay steady on or never turn on at all. The PAL is completely programmable to your preference.



16 Megapixel Built-in Digital Camera with Flash and Flashlight

This police body worn video camera can take up to 28,000 photos. Should the officer wish to take digital photos, he/she would switch to Photo Mode, turn the unit on and press the center button to snap a photo. The Vision has 4 Super bright LEDS that works as both a camera flash and flashlight. During a night time traffic stop the Officer simply activates the flashlight by pressing on a button on top of the unit. The flashlight will illuminate the officers traffic citation book as well as the occupants of the vehicle allowing the officer to keep both hands free in the event he has to reach for his weapon. He no longer needs to hold a flashlight in his hands.



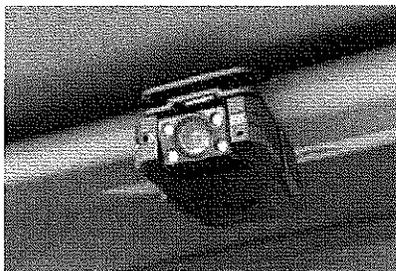
Use as a Camera Flash or Flashlight

Audio Voice Recorder

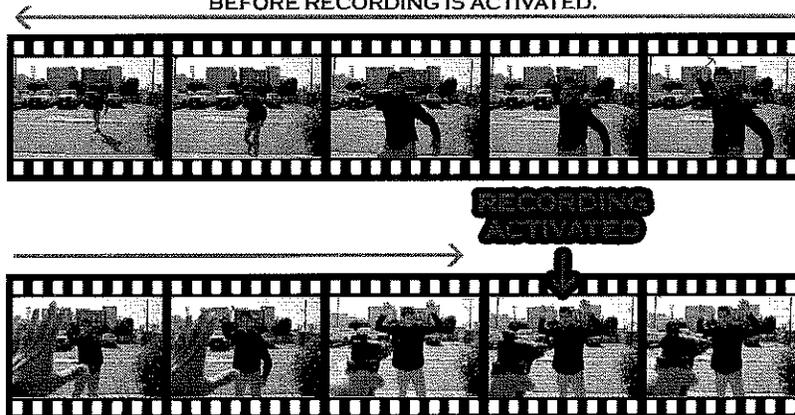
The Wolfcom Vision also has a voice recording option for recording sound when no video is needed. Perfect for recording victims or witnesses statements, especially when they are camera shy. During questioning, an officer can simply detach the unit from his body, switch the Unit to Voice Recorder Mode and hold the unit like a microphone in front of the person being questioned or place it down on a table. The unit can store over 180 hours of audio recordings.

Instant in-Car Video Camera

The Wolfcom Vision police body worn video camera can also be used as a police car dash camera. Just clip right onto the window visor. No need for a windshield mount that will only get in the way. When the officer gets into his vehicle, he can quickly clip the Wolfcom Vision BWV camera onto the window visor. When he exits his vehicle, he can unclip it from the visor and attach it onto his uniform.



ADVANCED PRE RECORD CAN CAPTURE 60 SECONDS AND UP TO 30 MINUTES IN 1080P WITH AUDIO BEFORE RECORDING IS ACTIVATED.



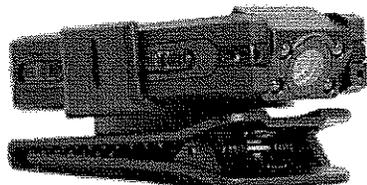
Advanced Pre-Record with Audio (60 Seconds to 30 Minutes Buffer Time)



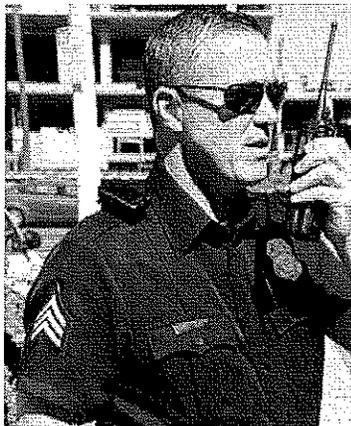
The unit also features configurable pre-record with buffer time up to 30 minutes at 1080P resolution with audio and at 16:9 aspect ratio. With pre-record enabled, events from 60 seconds to 30 minutes before the activation of the camera will be recorded. Audio recordings can also be configured to be on or off.

Configure it to your preference

We know that the number one problem with body cameras is mounting onto a human body. That's why we made the Wolfcom Vision™ configurable to fit every body type. YOU choose what's comfortable for you!



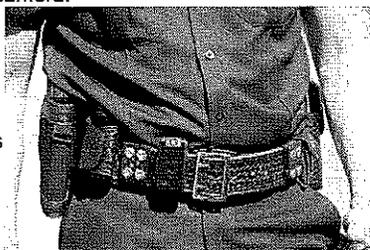
Wear it on your shoulder



Above the Shoulder View

The new Wolfcom Vision™ body camera can be worn horizontally on a shoulder epaulet. By rotating the camera upwards 90° degrees the unit can be clipped on to the shoulder epaulet instantly making it an above the shoulder camera.

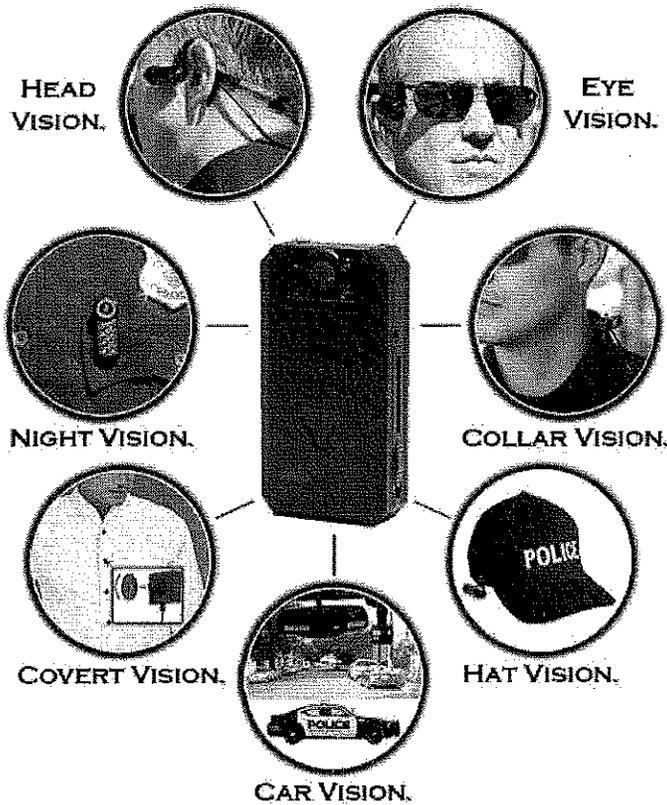
The Wolfcom Vision can also be worn on the belt with the camera head tilted upwards for maximum comfort and convenience. The officer will still be able to record audio and video without being top heavy. Additional Battery Packs and GPS Modules can be worn next to the Vision on the belt.



Wear it on your belt

Ability to add Secondary Cameras

Audio and video inputs on the unit lets an officer attach a variety of secondary external cameras allowing the officer the ability to choose between a dozen mounting options in order to choose the most comfortable configuration.



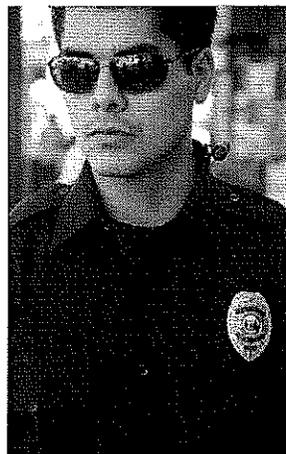
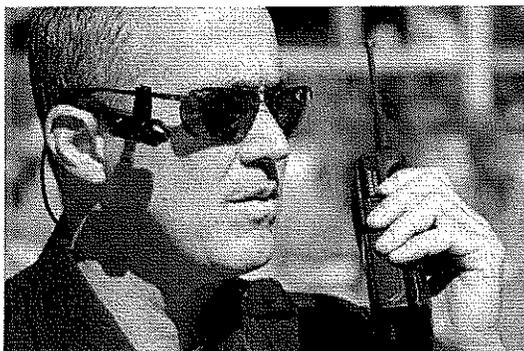
Connect multiple cameras for a different Points of View

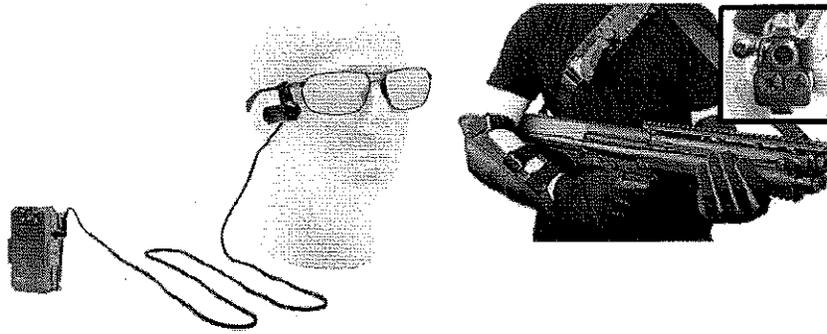
Point of View (POV) Cameras

Need POV (Point of View) recording?

Our POV cameras can be mounted above the shoulder in various configurations, such as collar, cap, helmet, headset, epaulet, sunglasses, prescription eye glasses, and firearm using the built-in clip.

Just connect the **Eye Vision™** camera to your sunglasses or eyewear or clip in onto your shirt collar or cap or firearm.





The **Eye Vision™** (POV) Point Of View camera with built-in microphone, can be clipped on to an officer sunglasses, safety glasses, or prescription glasses allowing the unit to see and record in the direction his head is facing. Once the Eye Vision camera is plugged into the Wolfcom Vision A/V port, the main camera on the Vision is deactivated and all audio and video recording is taken from the external Eye Vision POV Camera. The same camera can also be clipped onto a baseball cap, hat, helmet, or shirt collar.

Critical Re-Connect Technology (CRC)



The Wolfcom Vision™ is the first body camera in the world with Patent Pending **Critical Re-Connect™ Technology (CRC)**. With other POV body cameras, a camera that is on a Police officer's eyewear, collar or headset may be ripped or torn off during a struggle with a suspect, causing the POV body camera to become inoperable. This means that **NO Audio and No Video** will be recorded. With the Wolfcom Vision's Critical Re-Connect Technology, if this were to happen, the main unit's camera and microphone will re-connect and recording of Audio and Video will resume.

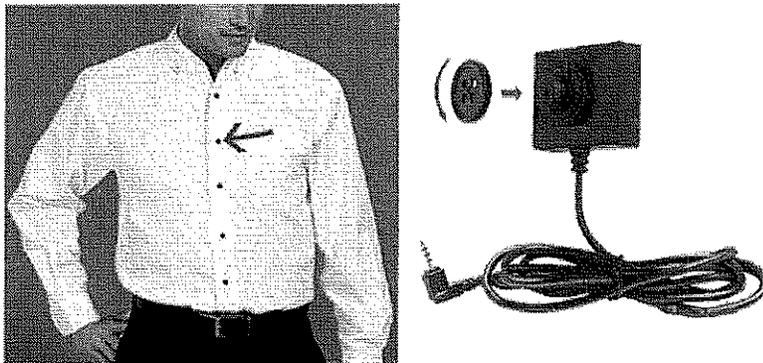


The Most Comfortable Headset Ever!

Our POV **Head Vision™** headset camera with built-in microphone can be worn comfortably on the head and will not fall off during a foot pursuit. The headset connects directly to the Wolfcom Vision. For maximum comfort, the Officer can choose to clip the Wolfcom Vision to his uniform or onto his belt.

Night Vision

Need Night Vision? Connect our **Night Vision Camera** with built-in Microphone to the Vision™ and clip onto your pen pocket. The Vision™ body camera then clips onto your belt for a low profile look. Night Vision infrared LED's can be activated with a push of the button. The range of the Night Vision is 20 feet or more in total darkness.



Use as a Covert Button Camera Recorder

**Covert
Vision**

Connect our **covert pinhole button camera** with built-in Microphone to the Wolfcom Vision™ body camera and you instantly have a covert hidden camera recorder for detectives or private investigators. Our covert vision camera set comes with extra matching buttons you can sew onto your shirt. The Wolfcom Vision™ body camera can then be hidden in the pants pocket and then activated when needed.

GPS Module



Connect the optional GPS module to the Wolfcom Vision body camera and you instantly have all the GPS



features of the Wolfcom 3rd Eye. With the GPS feature, all video files and photos are tagged with the GPS coordinates of the unit showing where the video or photo was taken. GPS geotagging will show the route an officer took while video recording. GPS geotagging is very useful when reviewing footage of a foot pursuit or car chase. When reviewing videos on our [Wolfcom Management Software](#), you'll be able to see the route of the video simultaneously on a map next to it and as the video moves so does the dot on the map. This is valuable when reviewing video of a foot or car chase as you'll be able to see the exact route taken as footage of the chase unfolds before you.



Location Tagging or Marking during a pursuit

During a foot chase or vehicle pursuit, an officer has a million things going on in his mind. The last thing he wants to do is to take his eyes off the suspect. With the Wolfcom Vision™ GPS module, the officer can press the Snap Shot button to record the exact location that an item was tossed out by a suspect. After the pursuit is over, if the officer cannot remember the location where the items were tossed, he can then bring up the GPS coordinates to pinpoint the exact location.

GPS Time Sync- Automatic GPS Time and Date Synchronization

You'll also enjoy the benefits of GPS Time Sync. With the Optional GPS module connected to the Wolfcom Vision, the Date and Time is always accurate. Although the date and time can be manually adjusted, with our built in GPS Sensor the officer never has to worry about it. The Wolfcom Vision's internal clock will automatically be updated using received GPS information from satellites in orbit. With GPS Geo Tag, the location where the video or photo was taken cannot be disputed.

Extended Battery Pack

Adding an optional Extended Battery Pack will give an additional 4 hours of battery life to the Wolfcom Vision™. The Wolfcom Vision body camera has a 2.5 hour battery life so adding 1 extended battery pack will give you 6.5 hours of recording time. But that's not all, we've designed the extended battery packs so that they can easily be daisy chained to each other. So if you connect 2 battery packs to the Vision, You'll have a total of 10.5 hours of recording time. Add a third battery pack and receive 14.5 hours of recording time. The Extended battery pack is exactly the same size and demensions as the Wolfcom Vision and the Optional GPS module and weigh only 1.2 ounces each. They can be worn alongside each other comfortably on the belt and are so light the officer won't notice them at all.

While in the Vehicle, the Officer can simply insert the Wolfcom Vision, GPS module, and Extended Battery Pack into the docking station to charge if necessary.

Car Mode In-Car Camera Docking Technology



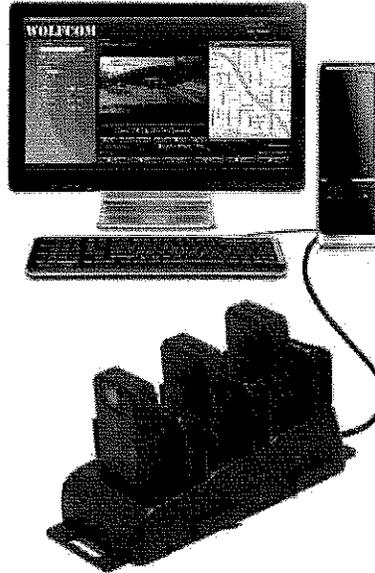
The Car Mode function enables the unit to be used as an in-car camera system. The unit will begin recording video when the vehicle ignition is activated and will stop recording video when the vehicle ignition is de-activated. If desired, the Wolfcom Vision™ can began recording when a siren is activated (Additional Installation and parts will be needed for Siren Activation). When docked, the Wolfcom

Vision™ and all of its accessories will also be charging. This would allow an officer to always have a fully charged body camera.

Docking Station and Management Software

The Wolfcom Vision can be docked into a docking station. Docking stations are modular and can connect to each other. Each docking station will charge and download the files from the main unit and also charge the extended battery module. The docking station is connected to a workstation via USB which allows automatic transfer of recorded videos, digital photos and audio recordings to the backend solution, the Wolfcom Management Software. Once the files have been transferred, they are processed, tagged with all meta-data and secured with an SHA2 hash.

The Wolfcom Vision is designed with chain of custody and security in mind. The memory of the unit is not removable. The camera is sealed with security screws and can only be opened by a Wolfcom technician. When the unit is plugged into a computer, files cannot be accessed without the correct software and password. All of this ensures that your evidence cannot be tampered with.



Can be used to dock up to 3 Wolfcom Visions at a time or use it to dock 1 Wolfcom Vision, 1 GPS Module, and 1 Extended Battery Pack or 3 of any kind.

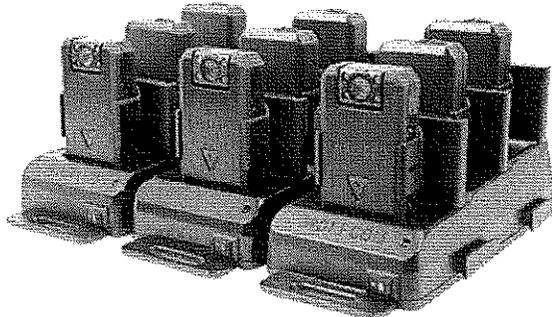


Photo above shows 3 docking stations with 3 Wolfcom Visions, 3 GPS Modules, and 3 Extended Battery Packs.



Photo above shows 8 docking stations with 8 Wolfcom Visions, 8 GPS Modules, and 8 Extended Battery Packs, connected to our Wolfcom Management Software.

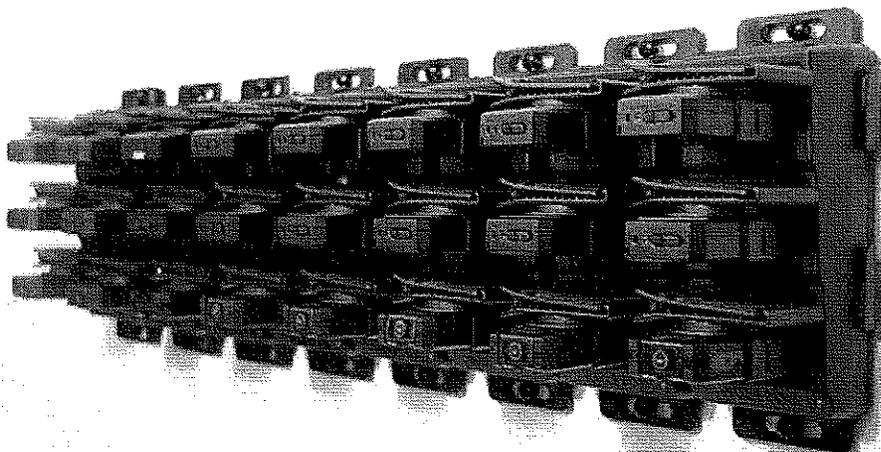


Photo above shows the Wolfcom Vision Docking Station mounted on a wall. Status lights will indicate if the units are downloading, charging, or fully charged.

New Product Alert!
Tur your Wolfcom Body Camera into a Bomb Inspection camera tool or use it to look into dark attics and over walls and barriers. Perfect for SWAT. Works with both the Wolfcom 3rd Eye and Wolfcom Vision

Find Out Why Wolfcom Police Body Cameras are the best throughout the World

Wolfcom body cameras are considered multi-functional, multi-purpose Law Enforcement devices that have a wide array of uses. Our units can be used as a standalone video recorder, as an In-Car video system, or attached to a police radio to use as both a body camera and speaker microphone with PTT function. Police Officers can use our body cameras to record 1080p quality video, photograph crime scenes, record audio statements, peek around corners, and use the GPS feature to tag locations of tossed objects during a pursuit.

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Police Camera Products

- [eCe](#)
- [Space](#)
- [Downloads](#)
- [Software](#)

WOLFCOM MANAGEMENT SOFTWARE

- ✓ User Friendly
- ✓ GPS Motion Playback
- ✓ Chain of Custody
- ✓ Tagging & Bookmarking
- ✓ Fully Customizable
- ✓ IACP Compliant
- ✓ SHA2 256 bit Encryption



[Learn More](#)

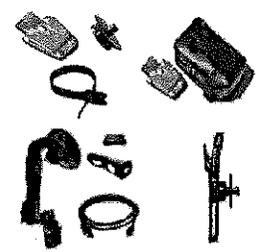
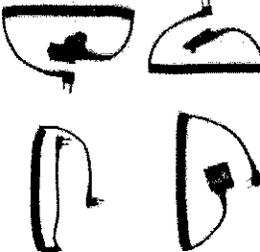
How do you manage all of you photo, video, and audio evidence?
Especially if you have multiple officers with precious evidence on their body worn
cameras or In-car cameras.

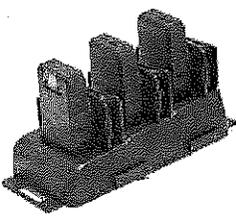
The Wolfcom Managment Software will do it all for you.

[Learn More here](#)

As low as \$175.00

To Purchase this item please [contact us](#)

Wolfcom 3rd Eye	Product Description and Price
<p>LEARN MORE</p>	<p>Wolfcom 3rd Eye Police Body Worn Camera System <u>1 Year Warranty</u> included.</p> <p>Radio and cable not included \$475.00</p> <p>To Purchase this item please contact us</p>
	<p>Body & Car Mounting Options</p> <p>Everyones needs are different. We have mounts for all body types and vehicles.</p> <p>Click for Price List</p>
	<p>Cables to connect to your 2 way radios</p> <p>You'll need a cable only if you plan to connect the Wolfcom 3rd Eye to your 2 way radio</p> <p>Click for Price List</p>

Wolfcom Vision	Product Description and Price
	<p>Wolfcom Vision Police Body Worn Camera System <u>1 Year Warranty</u> included.</p> <p>\$199.99</p> <p>To Purchase this item please contact us</p>
	<p>Docking Station</p> <p>Can be used in the vehicle or inside the station. Connects to PC for transferring files and charging. Can be used to dock up to 3 Wolfcom Visions or use it to dock 1 Wolfcom Vision, 1 GPS Module, and 1 Extended Battery Pack or 3 of any kind.</p> <p>To Purchase this item please contact us</p>
	<p>4 Hour Extended Battery Pack</p> <p>Connects directly to the Wolfcom Vision for a total of 6.5 Hours of recording time. Can also be connected to each other for additional recording time. 2 of these connected to the Vision will give you a total of 10.5 hours. 3 will give you 14.5 hours of recording time. Weighs only 1.2 Ounces each</p> <p>To Purchase this item please contact us</p>
	<p>GPS Module/Battery Pack</p> <p>Connects to the Wolfcom Vision to add GPS Geotag function. Also</p>

	<p>provides an additional 1.5 Hours of battery life to the Wolfcom Vision.</p> <p>To Purchase this item please contact us</p>
	<p>The Eye Vision™ (POV) Point Of View camera with built-in microphone, can be clipped on to an officer sunglasses, safety glasses, or prescription glasses allowing the unit to see and record in the direction his head is facing. Once the Eye Vision camera is plugged into the Wolfcom Vision A/V port, the main camera on the Vision is deactivated and all audio and video recording is taken from the external Eye Vision POV Camera. The same camera can also be clipped onto a baseball cap, hat, helmet, or shirt collar. (Glasses Not included)</p> <p>To Purchase this item please contact us</p>
	<p>The Most Comfortable Headset Ever!</p> <p>Our POV Head Vision™ headset camera with built-in microphone can be worn comfortably on the head and will not fall off during a foot pursuit. The headset connects directly to the Wolfcom Vision. For maximum comfort, the Officer can choose to clip the Wolfcom Vision to his uniform or onto his belt.</p> <p>To Purchase this item please contact us</p>
	<p>Night Vision Camera</p> <p>Need Night Vision? Connect our Night Vision Camera with built-in Microphone to the Vision™ and clip onto your pen pocket. The Vision™ body camera then clips onto your belt for a low profile look. Night Vision infrared LED's can be activated with a push of the button. The range of the Night Vision is 20 feet or more in total darkness.</p> <p>To Purchase this item please contact us</p>

Model	Description
<p>Protect your investment with a 2 year Free Upgrade Extended Warranty</p>	<p>Our 2 year Extended warranty program not only protects your investment but also lets you trade in your current model for a new one when a newer model is released, (we will release a new model about every 18 months) you can trade in your old model for the new model at no charge. This way</p>

your officers will always have the most up to date model and will be able to enjoy its new features.
[Learn More](#)

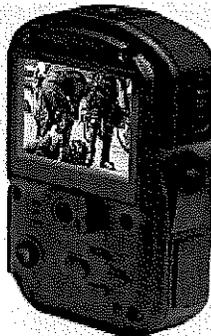
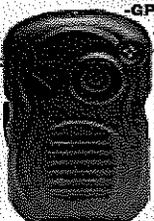
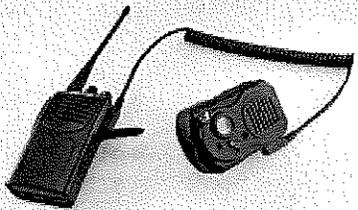
LE-5000
 \$179.99



For Covert Applications:
 Wolfcom's LE-5000 has all the items you need to secretly record video and audio. The spy body worn pinhole video camera has changeable lenses so the unit can be used for many different applications. Perfect for undercover work. Recording quality is 720 x 576 [Click for more info on this Police Body camera](#)

Management Software

Starting at \$185.00

WOLFCOM 3RD EYE

A/V RECORDER FOR POLICE AND MILITARY

- 1080p Full HD Resolution
- GPS positioning
- 2" TFT LCD Screen w/ Pro Glass
- One Touch Automatic Recording
- One Touch Picture Snap Shot
- 32GB Internal Memory
- Up to 60 Frames Per Second
- NightVision Mode
- Digital Zoom & Macro Capabilities
- Waterproof IP67, IPX3 Ratings
- High-Capacity Battery Pack
- Date & Time Stamp



Police Cameras



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[DIMS Demo Presentation](#)

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Attachment 5:
Primal USA Body Worn Video Cameras,
website screenshots demonstrating
video glasses mounting options.

Body Worn Video Cameras



DutyVUE HD1920 Body Worn Appliance

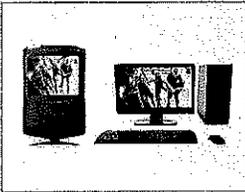
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Purpose built, law enforcement grade with a whopping 16,32 or 64 gigs of internal storage. More than a mere body worn camera, its a fully digital evidence gathering appliance. The DutyVUE Trooper is a camcorder, still camera and audio recorder in one. It's TRUE HD quality of 1920 x 1080P digital that captures vivid visual evidence that stands up in court.

The DutyVUE HD1920 can be configured to display the devices unique serial number, officer ID, day, hour, minute and second. This ensures there is an accurate record of which device captured the video and at what time.



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DutyCAM Digital Forward Observer Streaming Video Appliance

Without a doubt the most advanced body worn video appliance on the market allowing real time streaming video. See what the officer has encountered and allow approaching units to see, as well. This small footprint, yet rugged unit is ideal for tactical, K-9 and surveillance units.

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SPIDERVU Point of View Video Glasses

Capture the officer's point of view with the SpiderVU POV Glasses with interchangeable lenses. Built in camcorder and audio recorder in the cost effective format. Great for patrol, investigators, corrections and code enforcement.

SPIDERVU Wi Fi Point of View Video Glasses



Capture the officer's point of view with the SpiderVU POV Glasses with interchangeable lenses. Built in camcorder and audio recorder in the cost effective format. Great for patrol, investigators, corrections and code enforcement.

Attachment 6:
Police Body Worn Video Management:
Cloud-Hosted Storage vs. On-Site
Storage

Find Out Why Wolfcom Police Body Cameras are the best throughout the World

Wolfcom body cameras are considered multi-functional, multi-purpose Law Enforcement devices that have a wide array of uses. Our units can be used as a standalone video recorder, as an In-Car video system, or attached to a police radio to use as both a body camera and speaker microphone with PTT function. Police Officers can use our body cameras to record 1080p quality video, photograph crime scenes, record audio statements, peek around corners, and use the GPS feature to tag locations of tossed objects during a pursuit.

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Police Body Worn Video Management: Cloud-Hosted Storage vs. On-Site Storage

Whether to purchase body worn cameras is an important decision for a police department. While which camera to purchase is usually considered the main decision, backend video storage is another important factor to consider. How the body worn video is going to be stored is also extremely important and there is some debate over what is the best.

- [FAQs](#)
- [User List](#)

There are two main options. The first is on-site storage. This means that there is a server for the body worn camera video owned and managed by the agency. The second is cloud hosted storage. This means that the videos are uploaded to a third party facility and hosted there.

Let's look at on-site storage. On site storage has many advantages. It has much cheaper upfront costs than cloud, the police department has total control of all aspects of storage, video is available almost immediately after download, and there is excellent video management software available to ensure complete chain-of-custody, audit reports and correct filing of the body-worn video.

First, let's compare costs. For 15 TB of cloud hosted storage (at \$1.50 per GB per year), the cost is about \$24,000 per year. This is for storage alone and does not include other costs such as internet service for uploading or downloading, licensing fees or annual service maintenance etc.

On the other hand, a 97 TB RAID 6 server is also about \$24,000. This is a one-time cost and gets a police department much more bang for their buck with more than 6 times the capacity for the same price without reoccurring expenses. Video management software is also needed. For 10 cameras, it's about \$2,000.

Security is also something to consider. Others store their data in the same facility. Cloud storage facilities are still venerable to the hacking, DDOS attacks and other cyber security breaches. Even if the police department's data is not the target of the attack, it could still be affected by an attacker who is going after someone else's data. This has already happened to a company that used Amazon cloud services to store its customers data. Hackers got in and deleted everything. [Read the article here.](#) It's what cloud based storage providers don't want you to read.

Another thing to keep in mind about cloud is that video upload time may be slow even with the best internet infrastructure and bandwidth. Since it uses the department's internet,

internet may be noticeably slower for all personnel while video is uploading. Video can take 20 minutes or more to become available online after uploading. If video is needed immediately during an emergency, there is simply no way to get it faster.

Proponents of cloud argue that on-site storage leads to a loss of officer productivity and that everything must be done manually. Their cost estimates are wildly exaggerated and make it appear that a department would need a veritable army of people to manage it. Supporters of cloud argue that managing body worn video is time consuming, complicated and causes a huge loss of time and production. This is not the case with the [Wolfcom Management Software](#). Uploading and downloading video is fast and can be done automatically. Once a camera, such as the [Wolfcom Vision](#), is plugged into a docking station, downloading and charging begins automatically. The video is encrypted once it is ingested by the software. The officer's badge number, the unit number, the time and date of recording, GPS coordinates, and other metadata is automatically associated with the video. It is then filed and moved to storage according to the department's configuration settings. Sharing video via the software is also fast. Other agencies with the [Wolfcom Management Software](#), such as the DA, can be sent a copy via internet (no DVDs necessary), the original video stays put, and since everything stays within the WMS environment, everything is logged in the chain-of-custody audit report.

Cloud storage seems so good, so convenient, but it is really as good as it claims to be? IT tasks are not managed by law enforcement agency personnel, but it is being managed and maintained by someone and the storage is rented, not owned. The police department is simply paying someone else, who is not a police officer or employee of your city or county, to maintain everything. If the department chooses to discontinue service in the end, they must download all of their video off the cloud to their own on-site server anyway.

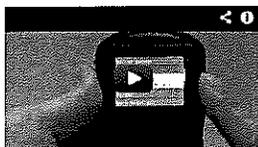
The debate is really about cloud convenience vs. complete on-site control. If you are still unsure, let me ask you this: How much do you trust the cloud with your own personal data, your own documents and your own pictures? Could it be you still store all of your own digital assets on on-site HDD? Why is that?

In conclusion, on-site is the best choice. Body worn video recorded by police officers is extremely important. It is evidence. It is a record of police interactions with the public, witness statements, crime scenes and other footage critical to criminal justice that must be protected and completely secure for a variety of reasons. Preserve it on-site.



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**Make the Right
Decision**
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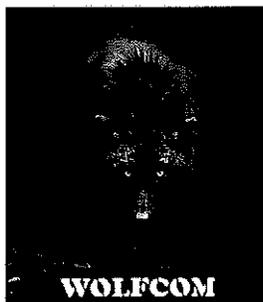
[Police cameras reduce crime?](#)

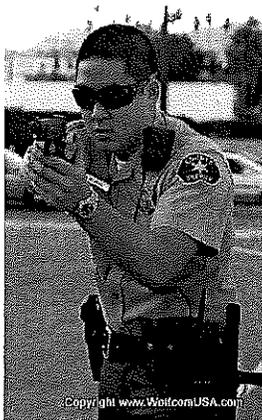
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Attachment 7:
The Body Worn Video Steering Group
guide to implementing a large scale
Body Worn Video programme.



The Body Worn Video Steering Group guide to implementing a large scale Body Worn Video programme.

V1 (draft September 2013)



This document is intended to provide guidance and offer recommendations in regards to implementing a Body Worn Video (BWV) program in a large organisation.

The following document has been based on the experiences of the most successful Police BWV implementation programs in the UK. Whereas no two organisations are the same, the general principles and recommendations made in this document have been designed to be applicable in as many situations as possible.

Much of the content provided has been gathered from discussions with individuals who have been closely involved with successful programs and the BWVSG is grateful for the time and insight that these individuals have contributed.

The BWVSG thanks the following contributors:

Inspector Steve Goodier (Hyperion Lead) Hampshire Police

Detective Inspector Mark Parish (BWV Lead) Leicestershire Police

Chief Inspector Gavin McMillan (BWV Lead) Hampshire Police

PC Scott Walters (BWV SPOC) Sussex Police

Inspector Daniel Inglis (BWV lead) Greater Manchester Police

(* note: this document is provided in draft form. There are some sections which require completion and this will document will be updated from time to time. However the document should provide valuable assistance in its current form)

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Getting your project started: Build internal support

The key to the successful implementation of BWV lies in a combined effort. Inspector (Insp) Steve Goodier of Hampshire Police states “You won’t get large scale deployment without large scale enthusiasm”. In order to build this kind of support from every level in the organisation, it has to be made clear that BWV is strategically beneficial for the entire force, the perks of the technology do not end exclusively at an operational level. Chief Inspector (CI) Gavin McMillan of Hampshire Police agrees, saying it is essential that “the Project sits within the plans for the Force and as a priority to get other departments to deliver”.

Building support at a management level

The significant benefits that BWV delivers are now well understood and documented. A credible way of highlighting the benefits of BWV is to be familiar of the research that has been collected regarding its use and extracting relevant. These can be found at BWVSG.com in the Resources section.

<http://www.bwvsg.com/>

- Body Worn Video Projects in Paisley and Aberdeen
- A FIELD EXPERIMENT ON THE EFFECT OF BODY-WORN CAMERAS ON POLICE USE-OF-FORCE
- GUIDANCE FOR THE POLICE USE OF BODY-WORN VIDEO DEVICES

Insp Goodier recommends highlighting the benefits of BWV to the ACPO (Association of Chief Police Officers) lead, PCC (Police and Crime Commissioner) and senior management if they are not already aware, explaining exactly how the Force will benefit from implementing a program, leading on more specifically to how it will deliver their objectives. He continues “Not only will the Force be investing in cost savings, reduced crime, streamlining the justice process and encouraging the “victim first” mentality but also adhering to the *digital case file* initiative”. CI McMillan affirms the importance of high level support, saying “if possible have the ACPO lead and PCC buy in to the program at an early stage and it is important to argue the many benefits that BWV provides: it can be used in so many ways”.

The Criminal Justice System (CJS), led by the police, Crown Prosecution Service (CPS) and HM Courts & Tribunals Service (HMCTS), have introduced the “digital case file” initiative. ACPO is committed to this nation-wide push to update the operations of the UK Police Force to a “digital first” system,

which will save time and reduce costs whilst also making collaboration between the forces more efficient. Evidently, BWV sits very comfortably within this initiative.

Detective Inspector (DI) Mark Parish of Leicestershire Police agrees that ideally “you have some ACPO backing before you get started” because ultimately, the final decision to implement constabulary-wide BWV lies with highest authority within the Force.

The argument to the PCC and ACPO lead is most persuasive when pitched as a business case, a long term investment with the future of Policing in mind. Insp Goodier believes that “BWV is in line with *everything* the Police are trying to do now”.

CI McMillan also recommends exposing the ACPO lead to the front line officer’s opinions about the equipment. If, from an operational level, officers are responding positively and good examples can be highlighted, this will act as a persuasive argument to further investment. Furthermore, Insp Goodier recommends leading the PCC and ACPO lead to other Force’s experience, “put them in contact with a PCC from Hampshire Constabulary or Leicestershire Police. Hearing the positive viewpoints from a successful program has more clout coming from the high authority, which is why the London Mayor’s office has planned a visit this autumn to speak to the authorities in Hampshire.”

Building support at an operational level

DI Mark Parish agreed that Forces must “ensure they have the buy in from officers who are using the system” because, as PC Scott Walters explained, “the nature of the impact BWV has on policing and the benefits it offers means getting it right at an early stage by listening to what the users want and need will provide no end of success”.

As shown, building support at this level is important because the actual use of the technology is vastly down to the users of cameras and evidence management software so if there is a reluctance to use the equipment then the potential benefits are stunted. Inspector Daniel Inglis of Greater Manchester Police agreed that the “culture amongst officers” directly affects the overall use of the equipment, “officers who understand the benefits tend to use it far more”.

Building the right team

Following the first step, a team of supportive individuals from across the Force will need to adopt a role in converting the enthusiasm into a functioning program. PC Walters stressed “Above all, having passionate people involved will yield much better results for your force.” Insp Goodier added at this point that “every Police Force is going to be completely different”, however there are seven recommended positions that need to be filled”.

Business Owner

Firstly, there needs to be a business owner on board to initiate and take responsibility for the program. The ACC, DCC and ACPO lead are all people who could fill this role. When the business owner declares the program is happening, the responsibility cascades down into the remaining positions. CI McMillan stresses that "this person has to co-ordinate implementation by ensuring that it appears as a priority in every departments 'change program'". It is no use, for example, selecting and training with equipment that is not yet supported by the IT infrastructure.

Strategic Lead

The strategic lead is the head of the "strategic team". This person maintains the long term vision of BWV and co-ordinates the various support leads in the team. Insp Goodier summarises the strategic lead as "someone who makes sure everything is happening".

This person also needs to be middle management: Insp Goodier suggests a Chief Inspector level as minimum. The strategic lead is the middle ground of the operation, where they communicate with and influence people both above and below them in rank. Ideally, Insp Goodier recommends, "they are a good front line officer, it's better to be uniform" because they understand the implications of the program from an operational level.

Operational Lead

The operational lead is the engine behind the physical use of the cameras and evidence management equipment. When Hampshire was implementing BWV, it was Insp Steven Goodier who was on the ground, sparking enthusiasm for the benefits of the technology and driving its use. The person in this role needs to have a holistic view of the entire operation. Insp Goodier explains "they need to understand it all, from the grass roots of how the camera functions, to the software, and all the way to the media preparation for criminal proceedings".

"They ideally should be uniform" Insp Goodier continues, "someone who has the respect of the police men and women who are going to be using the cameras and back office software, it has to be operationally led". This person will be in regular contact with the front line officers, keeping track of its use. As such, the operational lead is the ideal role to address complaints regarding BWV and perform any necessary training procedures for incorrect use.

PC Scott Walters is the operational lead for Sussex Police and states "This is an ongoing commitment and takes a good proportion of my time but is wholly worthwhile. BWV is such a fluid entity owing to progressions in technology and the current budgetary constraints on forces. It pays to keep well abreast of developments in the BWV arena."

Project Manager

A project manager is the person who has the overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling and closure of a project. Key among his or her duties is the recognition that risk directly impacts the likelihood of success and that this risk must be both formally and informally measured throughout the lifetime of the project.

This document will be updated with content from Patricia Rich (Staffordshire Police Project Manager) presentation to the BWVSG on Sept 10th

IT Lead

You cannot implement large scale BWV without senior IT on board. Ultimately, it is in their hands to finally implement BWV within the the current IT system. This is why, according to DI Mark Parish, it is essentially that you “involve the IT at an early stage”

Mark Fogwill is the Hampshire Police IT lead for implementing BWV. Insp Goodier comments “the senior IT managers delegated the responsibility of co-ordinating the implementation to Mark because he was acquainted with the operational side of the Force’s IT, and was aware of the implications it would have on that level.” Insp Goodier therefore recommends finding an IT member with similar standing, having roots in both the operational and management levels.

CI McMillan recommends working closely with IT at each stage. Maintaining communication and problem solving before, during and, in particular, after the implementation stages.

IT and camera equipment is discussed in the section: Evaluation of Internal Readiness

Procurement Lead

Procurement can be a lengthy and complicate process so it is highly desirable that an experienced procurement expert is brought in at an early stage and fully on-board with the project. Procurement is discussed in detail later in this document.

Training Lead

Training an organisation how to use BWV will require someone to oversee its co-ordination and, eventually, to evaluate and manage the correct procedures. The principles and implications of training is covered later in this document

Performance Analysis Lead

When BWV has been implemented it is necessary for somebody to keep track of the impact it is having. It is necessary to ask the questions “is BWV being used to its full potential? Is it helping?”

Insp Goodier stresses that “these questions are asked not to check if BWV works, because it does, they are to see how the use of BWV can be improved, to find out where the areas are where the benefits can be maximised.”

Insp Daniel Inglis conducted the evaluation of Greater Manchester Police’s program because he was the business change manager and project lead. It is recommended that the project lead conduct the evaluation as they will then do so with the original vision in mind and an understanding of the journey the Force has been on to reach this point.

Finding the right supplier/partner – equipment selection

The Police use of BWV is an established industry with a growing number of suppliers to choose from. This section has been designed to help you navigate your way through the right questions in order to choose the supplier that will most benefit your program. It is also helpful at this point to think of the supplier as a “partner”, since using BWV requires an ongoing relationship with the company of choice.

PC Walters warns that “Implementing a solution because it’s the cheapest option or because it’s all that is available at that time will, in my experience lead to a failed or dysfunctional project.” It is highly recommended to invest time discerning which supplier will best meet the operational requirements of the program. PC Walters also advised “careful consideration needs to be given to back office management software”, the cameras are only half the solution.

You therefore need to be aware of the choices available. Insp Goodier; “whoever has been given the responsibility of deciding which supplier to go with needs to be willing to travel in order to find out what is out there”. The recommended way of discovering the suppliers available is to visit other Forces and see what they are using. Large scale BWV programs have been adopted by a number of Police Forces in the UK, which makes this an increasingly more productive exercise.

Listening to the testimonies of people in different departments of the Force will also provide a holistic view of their experience with that supplier. The frontline users are not the only people who are working with BWV, the IT department will have an important testimony to add.

It is essential that the person visiting other Police Forces has at least a basic understanding of these technical aspects to BWV. It will then be possible to identify which of the suppliers have the correct specification of equipment you are looking for.

Insp Goodier recommends considering the following:

Supplier’s capability

“The supplier has to be capable of providing hardware, software and support that meets the operational requirements of your program.” According to Goodier, any supplier that cannot meet these basic requirements should be discounted from consideration.

Hardware

- Does the supplier provide quality cameras that are fit for purpose?
- Can the supplier provide the number of cameras you are looking for?

Software

- Does the supplier provide an integrated software package to process the recorded evidence from the cameras?
- Is the software
 - Able to provide the necessary capability to ensure videos are treated in an evidentially sound way?
 - Scalable: can it grow with the needs of the programme?
 - Easy to use and manage?
 - Able to be deployed on your IT infrastructure?

Support

- Does the supplier offer quality support?
- Does the supplier provide quality training?
- Can the supplier provide updates and fix bugs with both the hardware and software?

Supplier's experience

- Does the supplier have an extensive history in the field of BWV?
- Has the supplier been successful in the past?

Other considerations

- Does the supplier have the future in mind? Updating already existing equipment is easier than implementing completely new equipment from a different company.
- Does the supplier understand your business plan? Can they reasonably match the horizon you have in mind?
- Do you already have an existing relationship with a supplier?
- How flexible is the supplier?

When a short list of potential suppliers has been drawn up, the next step is to trial the suitable partner's cameras. PC Walters states “test the equipment thoroughly (often to destruction!)”. Both Insp Goodier and CI McMillan suggested giving the specific point of contacts (SPOCs) sufficient time to evaluate with the different cameras, testing them by giving them to front line officers to use on shifts. This is the best way to test the operational aptitude of the cameras and evidence management software whilst also building enthusiasm for the equipment. If the officers feel as if

they have had an involvement in the selection of the equipment, they will be more likely to use the equipment.

Insp Goodier suggests trialling a handful of solutions in an "assessment phase", intending to get the whole of the police team on side with the program. Insp Goodier added "The cameras are difficult to imagine, people want to see the cameras and use them". Trialling different cameras and software is the best way to educate the Force about BWV and to create enthusiasm for the program. Insp Daniel Inglis agrees to make sure the officers "understand where and how BWV can be used to maximise the benefits".

BWV needs to be looked at as a total solution, rather than just the camera hardware. Therefore it is vital to understand that the back office software is equally important when it comes to the testing phase, which will require the same amount of input from the officers who will be using it.

Appendix 1: Choosing equipment

(Extracted from "Guidance for the non-Police use of overt body worn video devices" by Reveal Media available at <http://www.bwvsg.com/wpcontent/uploads/2013/07/Non-Police-BWV-Guidance.pdf>)

Simplicity is key.

Often working alone, users will have many things running through busy minds. The equipment should be unobtrusive (but clearly visible to the subject), easy to wear, durable and above all, easy to use.

Image quality verses storage requirements.

As has been said above we all want the best images possible. In fact the courts require 'best evidence' but a degree of pragmatism is always required. File size and storage must always be considered in the early stages. HD images require more storage space and longer uploading times but may give clearer quality pictures. Consider that most events captured by BWV are at close quarters so ultra-high resolution recordings are typically unnecessary.

Battery life.

As with any portable equipment, the device will only work if the batteries are charged. They are as essential as any other part of the device. Most people have felt the frustration of a mobile phone that is not charged. On average it has been found that BWV is used in short bursts, seldom requiring lengthy recordings but you should assess how much recording your users are likely to make before they can return the recorder for recharging or battery replacement.

Wearability/ergonomics/ease of use.

One thing is for sure you will not please all of the people all of the time and much is personal preference. Here are some things to consider when acquiring BWV devices.

Head worn.

- Will record the point of view of the wearer.
- All head movements are captured which can be disorientating for the later viewer.
- The apparatus to use the camera 'head mounted' can be uncomfortable to wear for users.
- Wires will pass from the camera to the recorder along the neck line, a potential hazard.
- If wearing when driving can be in peripheral view causing distraction.

Chest (body) worn.

- All in one device.
- Can be placed in different areas on body.
- User has to be aware to point camera at event not just look.
- No wires.
- Easily seen by the subject.
- Becomes 'just another piece of equipment' for the wearer.
- Allows user to scan event without creating disorientating footage.

Who should get it.

If you are reading this you probably have a good idea of where and who you want to use BWV in your organisation. With a few legal and intimate exceptions BWV can be used anywhere in the public domain and therefore is open for use by many staff.

Consider do you want BWV equipment to be

Personal issue

- Personal responsibility for equipment.
- Familiarity with the equipment.
- Ease of identification of user.
- Potentially a shorter business process.
- No returning to base required.

Pool issue

- Less equipment required (potentially).
- Resource available to many.
- Spare available in case of malfunction.

As with any new equipment willing staff will give you the greatest success but you should not overlook the use of BWV to improve standards of poor performing staff.

Equipment storage.

Take time to consider where the equipment will be stored especially if a pool of equipment is preferred. A log of issue return and repair is recommended. The site will need to be close to the center of activity ensuring ease of access but sufficiently discreet to ensure footage is not viewed inappropriately.

Managing the material

Obtaining the video is usually the easy part: the real challenge lies in the management of the material.

Having secured footage it is essential this is uploaded stored and managed in a safe, secure, easy to access site. This is best described as back office.

It is essential that a sound business process is created to manage the footage as it is virtually useless without one. Responsibility for BWV, back office function and the business process must be assumed by an individual with appropriate skills within the organisation.

If your organization is widely dispersed you will require a network enabled solution

The siting of the back office again will require careful consideration as with the BWV equipment the site will need to be close to the center of activity ensuring ease of access but sufficiently discreet to ensure footage is not viewed inappropriately.

"The solution will ideally be computer (PC) based and should allow the user to:

- *download video from the body-worn camera;*
- *review video on the system;*
- *create master and working copies of evidential material on WORM media; and*
- *store non-evidential material for 31 days before deletion."*

<http://www.revealmedia.com/LinkClick.aspx?fileticket=dH4lOGWh9Zl%3d&tabid=156> (HO BWV Guide)

Evaluation of internal readiness

BWV requires competent back office facilities, in regards to both the IT infrastructure and the physical site.

PC Walters said "ensure your infrastructure can handle the data. In the early stages of our project our back office facility was not prioritised and it lead to failures in the system and fundamentally a huge loss of confidence in BWV and the ethos behind it." Evaluating the IT infrastructure that is currently in place is therefore an essential pre-requirement to implementing BWV.

Insp Gooder also believes that the physical space necessary at each station for BWV is significant enough to need to perform a site survey to evaluate and plan an area to host the equipment.

IT infrastructure

Ideally the IT infrastructure needs to be as up to date as possible to handle the amount of digital data the cameras create. Both the management and storage of the data are essential to the effective use of BWV. It is highly recommended that the IT lead begins talking with the IT department as early as possible to see what is available and what is possible.

Evidence Management

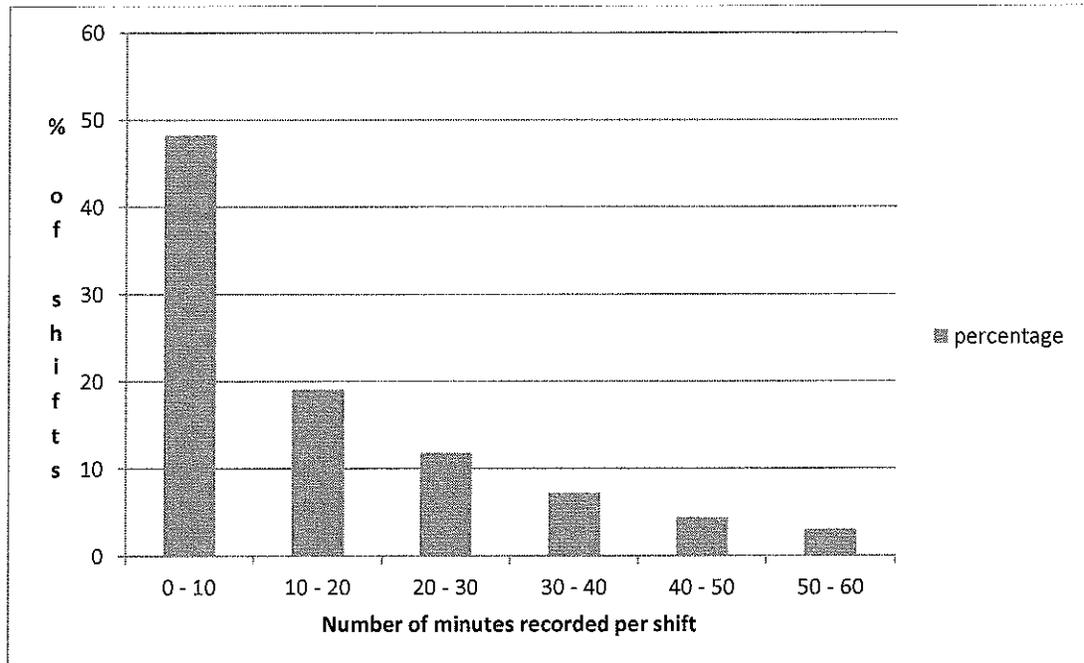
Robust evidence management is an essential component of any BWV programme. The success of a programme will depend largely on the procedure and equipment selected for evidence management. The policy around this aspect will need to be thoroughly considered and documented (see Appendix 1: Sample Operating Procedure in this document).

Storage

The amount of available storage needs to be considered. There are many factors that influence the amount of storage required.

- Bitrate of the recordings (how big are file sizes per minute/hour of recording by your particular camera)
- How many minutes/hours each camera will record each shift
- How many shifts per day the camera will be used
- Policy around usage – under what circumstances recordings are made
- What percentage of recordings are evidential and need to be kept
- What time period non-evidential recordings be kept for

Given the many variables it is hard to make a theoretical calculation. Perhaps the simplest method is to consider what established BWV programs generate. Data extracted from a large scale Police BWV programme shows the average number of minutes of recordings per shift is less than 20.



This document will be appended with more data in relation to the likely storage requirements as information becomes available from other large scale deployments.

Site Survey

Insp Goodier recommends that the buildings estates management team work closely with the project lead and IT to decide what action needs to be taken on site. The solution required will depend entirely on what the envisioned program is, however the basic need for storing BWV is a data point, in which are charging pods and computer stations.

Data Points

A data point is a specific area in the police station that is used for the storage and management of BWV. This area will include charging pods/ docking stations and a computer to upload and manage the video files.

The amount of cameras will dictate the amount of data points needed, however it is recommended that a specific area is set aside exclusively for BWV. Within this area there will need to be space allocated for camera charging pods, which will require an electrical power source. The Cameras may also require a space allocated for secure storage.

Computers will be the second basic requirement of the data point. The computers will manage and store the video evidence. Physical space and electrical power will be required to house the computers.

Training

Training is an essential part of implementation. There are huge business risks for the misuse of the equipment, potentially jeopardising the entire operation. Training also boosts confidence in the usage of the equipment, Insp Goodier says “the officers might be afraid to use the cameras if they are not sure when it is an appropriate time to use them”. To avoid undermining the abilities of the cameras, officers need to have full confidence in the kind of situations it is acceptable to be using them.

Insp Goodier said that “the most ideal method is front line training, where you make contact with every officer to demonstrate the equipment and brief them on the legal implications.” However, CI McMillan agrees that this is “labour intensive” and thus the most expensive method. The most cost effective way of training the officers without compromising quality, suggests Insp Goodier, is a combination of E-learning and operational, hands on learning.

The essentials of the legislative details and the theory behind BWV can be learnt via E-learning resources which are available at (please contact Jack Ashton at Reveal Media Ltd who will put you in touch with constabularies who have created packages) If the Police Force requires specific training, then the learning and development team will have to be informed from an early stage so that the resources are ready for deployment.

In regards to operational training, Insp Goodier suggests investing in enhanced training from the supplier for the SPOC in each Police force sector. The SPOCs then cascade the training down to the front line officers and take responsibility for the correct use of the cameras. Insp Goodier explains “Giving the SPOC time to use with the equipment beforehand will generate enthusiasm for BWV, which will make the training more effective. It will also be considered as the “testing phase” to deal with any minor operational issues before the program becomes full scale”.

Insp Goodier has found in his experience that re-assessment and re-training will be required at regular intervals, “in order to keep up with any legislative changes and to make sure the BWV is being used correctly”. The SPOC, ideally, will be briefed with any new information and again cascade the training out to their respective areas.

Business case

(We are seeking a road-tested sample business case for this document. In the meantime please contact Jack Ashton at Reveal Media Ltd who will put you in touch with constabularies who have created successful business cases)

Procurement

Procurement can be a complicated process if it is not done properly.

CI McMillan recommends approaching the procurement department with the exact equipment in mind. Avoid approaching the department with little information as procurement will not have the operational understanding necessary to determine which cameras and evidence management software to buy. The process is streamlined when procurement simply have to purchase equipment rather than research the market and decide which supplier to go with.

The notes below are taken from the minutes of the inaugural BWVSG meeting

How to get through the procurement process with Martin Nel:

Martin Nel, Service Support & Vendor Manager within ICT of Hampshire and Thames Valley presented the different options for procurement. Martin was fortunate that he has an I.T background as well as procurement. Body worn video is often described as troublesome from an I.T department's point of view due to amounts of storage and bandwidth required as well as data integrity.

If your organisation's policy allows it, purchasing directly from the supplier should be the simplest solution but other formal procurement options include:

EU Procurement or similar compliant tender:

This option is unadvisable as realistic timeline to complete 9-12 months. If you do decide to take this route, don't describe the technical details of the product you desire, describe what you want the product to do. It was also pointed out that the tendering process can discriminate against worthy suppliers and lead to operationally poor equipment being procured.

Sprint II Framework Contract:

The Sprint II framework is a 'one stop shop national framework agreement'. The Home Office state that Police Forces must use it for all commodity ICT purchases. The Sprint 11 framework is managed by SCC. This is an advantageous method to procuring for various reasons including:

- Sprint II allows equipment to be purchased immediately
- No tender process
- No maximum value
- It maintains compliance with all local Standing Orders and EU Procurement Directives
- It provides a highly flexible contracting platform now and into the future
- There are low fixed margins

You will be required to pay a small margin to procure through SCC (1.9% for hardware). Payment cycles to suppliers can also be significantly extended when processed through SCC, so it isn't uncommon for suppliers to ask for a deposit or reduced payment terms. Both these factors are negligible compared to the cost and time of going to tender.

There are benefits to be gained by forces choosing a common set of suppliers.

Sprint II is a platform to make procurement easier and you can continue to engage directly with your supplier. The supplier will be offering support for your cameras and can offer advice on rolling out your projects.

Communications

The Strategic Lead needs to have made communications for BWV a priority so that a comprehensive marketing communications plan can be available for the launch. CI McMillan recommends having both an internal and external campaign.

Internal

CI McMillan states that the internal communications are to encourage the front line officers to use the equipment and to answer obvious questions that may arise. Branding materials for BWV can be downloaded for free at: www.bwvsg.com/resources/mediabranding-materials.

External

The external communications are for the public's awareness and understanding of the equipment. CI McMillan recommends using the local radio, papers and billboards as means to mark the launch of the program.

The communications are to clear up the obvious questions that surround BWV, regarding privacy and usage policies that may concern members of the public and other stake holders.

Operating Procedure

The appendix below is a sample operating procedure that you could use as the basis of a formal document for your organisation (extracted from "Guidance for the non-Police use of overt body worn video devices" by Reveal Media available at <http://www.bwvsg.com/wpcontent/uploads/2013/07/Non-Police-BWV-Guidance.pdf>

Appendix 2: Sample Operating Procedure

Introduction

Body Worn Video (BWV) is an overt method by which staff can obtain and secure evidence at incidents. This document is intended to enable staff to comply with legislation and guidance to create evidence suitable for use ultimately in court proceedings if required. In addition to providing compelling supportive evidence for court it has been found that BWV can furnish other benefits such as;

- Raise standards of service.
- Reduce incident escalation.
- Augment opportunities for evidence capture.

- Reduce complaints.

BWV equipment provided for users should be compliant with the recommendations in the 'Technical specifications' section of the Guidance for the Police use of Body-Worn Video Devices published July 2007 by the Police and Crime Standards Directorate.

This document explains the process by which <Organisation Name> will utilise BWV devices. It will ensure a consistent and effective system is adopted throughout the organisation, benefiting both members of the public and staff.

BWV devices will be used by staff. It has the potential to significantly prevent, stop escalation, and record events involving conflict. In cases which involve legal redress it can improve the quality of evidence provided by members of the organisation. It will also raise standards of service providing a good reference for staff development.

BWV can be used across a wide range of operations and in all cases users and supervisors must use professional judgment with regard to the use of this equipment.

There are some examples of situations where the use of BWV is not appropriate; the following list is for guidance only and is not exhaustive.

- Legal privilege – users must be careful to respect legal privilege and must not record material that is, or is likely to be, subject to such protections.
- Private dwellings – users must consider the right to private and family life (Article 8 of the ECHR) and must not record beyond what is necessary for the requirements of the individual case.

Managers must ensure that the use of the cameras is widely advertised prior to the start of a programme of use ensuring 'fair processing' a requirement of the Data Protection Act 1998.

At an individual case level the use of BWV must be made clear by staff making a verbal announcement to those persons who may be recorded. In some cases it will not be practical to make such an announcement, on these occasions this announcement must be made as soon as practicable. Staff may also wear a sign/symbol in order to ensure fair processing is achieved in compliance with the Data Protection Act.

BWV cameras might be small, but they are not to be worn or used in a hidden or covert manner ensuring maximum impact on prevention and escalation of an incident.

The decision to record or not to record any incident remains with the user. The user must be mindful that failing to record an incident may require explanation. Therefore, if the user is present at an encounter where BWV can be used the user should record the incident.

Recording should be incident-specific: users should not indiscriminately record entire duties and only use recording to capture video and audio at incidents that would normally require reporting, whether or not these are ultimately required for use in evidence.

Risk Assessments / Health and Safety Considerations

Each incident should be subjected to a dynamic risk assessment on its own merits. When using BWV the decision to record or not record forms part of this risk assessment. The assessment should include consideration of the health and safety, human rights and welfare of all those involved.

Booking Out Equipment

All cameras should be stored in a secure area, in a suitable location along with any batteries and media cards. A supervisor will be responsible for maintaining the security of the cameras and the allocation to staff who have been instructed in its use. They should ensure that a suitable issue and returns log is available in order to show continuity if required.

When issued with the equipment the user should ensure that it is working correctly. This process should include the following basic checks:

- Unit is correctly assembled;
- Recording picture is the right way up;
- Sound recording level is appropriate to use;
- Date and time stamp is accurate.

Only specifically instructed personnel should be permitted to use BWV devices. On completion of instruction they will be locally authorised to use the equipment. Local trainers will carry out this instruction package. A record of instruction will be maintained at local level and added to the skills list of the individual.

Recording Events

Recordings should only be made in situations where the BWV wearer decides to take some form of action, or make an intervention e.g. violence prevention. All recordings have the potential to be used in evidence even if it appears at the time that this is unlikely.

It is important to record as much of an incident as possible. Recording should begin at the earliest opportunity at the start of an event.

Image Capture

At the start of any recording, the user should, where possible, make a verbal announcement to indicate why the recording has been activated. If possible, this should include:

- the date, time and location;
- the nature of the incident;
- confirmation to those present that the incident is now being recorded using both video and audio recording;

If the recording has started prior to arrival at the scene of an incident, the user should, as soon as possible announce to those present that recording is taking place and that actions and sounds are being recorded. Users should use straightforward speech that can be easily understood by those present, such as "I am video recording

you”, “I am video recording this incident” or “everything you say and do is being recorded on video”.

Users should attempt to minimise intrusion of privacy on those persons who are present but not involved in the incident, by keeping the camera focused on the incident and not bystanders.

Unless circumstances dictate otherwise, recording must continue uninterrupted from the start of recording until the conclusion of the incident. It is advisable that the member of staff continues to record for a short period after any incident to clearly demonstrate to any subsequent viewer that the incident has concluded and that the user has resumed other activities.

Prior to concluding recording, the user should make a verbal announcement to indicate the reason for ending the recording. This should state:

- the date, time and location; and
- the reason for concluding recording.

Selective Capture and Bookmarking

Selective capture is the user making a choice of when to record and when not to record. The nature of some incidents may make it necessary for the user to consider the justification for continuing to record throughout an entire incident. In cases where the user does interrupt or cease recording, they should record the decision including the grounds for making such a decision.

In recording an incident, it is likely that BWV users will encounter different people, as well as recording the visual evidence at the incident itself. Selective capture is a means by which users may separate encounters with each person in order to allow for easier retrieval at a later time. It is recognised that bookmarking (temporarily stopping and restarting recording) is not always practicable due to the nature of incidents; therefore it should only be attempted if the situation is calm and the operator is easily able to undertake this action.

Prior to any temporary suspension for the purpose of bookmarking, the user should make a verbal announcement clearly stating the reason for suspending recording. Following the pause at the start of recording the user should also announce that they have recommenced recording.

The bookmarking process will be demonstrated on the final whole recording of the incident by a missing section of a few seconds.

Use of BWV in Private Dwellings

If a BWV user is in a private dwelling, provided this is an incident that would normally be the subject of a written record, the user should record the incident using BWV in the same way in which any other incident is recorded.

It is particularly relevant when in a private dwelling that the user should, where practicable, make a general verbal announcement that recording is taking place. Recording should only be used when it is relevant to the incident, and users should

be mindful of the rights of individuals to respect for a private and family life under Article 8 of the European Convention on Human Rights.

In some circumstances staff may find that one party may object to the recording taking place. In such circumstances staff should consider the need to continue recording with care. Factors to consider in this decision making process are;

- the requirement to secure best evidence of any events that have occurred, whether this is in writing or on video, and that the video evidence will be more accurate and of a higher quality and therefore in the interests of all parties.
- that continuing to record would safeguard both parties, with a true and accurate recording of events, any significant statement made by either party and of the scene.

These factors should be explained to any person objecting to the recording of any incident.

It is recommended that staff continue to record where incidents are occurring. However, if it becomes clear that the incident is not a matter suitable for recording the user must make a verbal announcement that the recording is being stopped prior to stopping the recording.

Transfer of images to BWV Evidence Management Software

Before completion of duty the BWV user will transfer all data from the camera or removable media card to the BWV Evidence Management software system for storage and retention.

All recordings will be transferred to the organisation's chosen BWV Evidence Management Software only. Any transfer to unauthorised storage facilities may result in legal or disciplinary proceedings.

Any recordings that require retention for evidence in court proceedings will be evidence and as such should be recorded as evidence through the BWV Evidence Management software. This footage will be retained in accordance with the organisations requirements and in line with current legislation. Non evidential footage will be erased after 31 days in accordance with legislation.

Deletion of Images

There are no circumstances in which the unauthorised deletion by the user or other person of any images that have already been recorded can be justified, and any such action may result in legal or disciplinary proceedings.

All non-evidential data will be retained on BWV Evidence Management software for 31 days and then deleted through the system.

Once transfer of the images has been completed all footage stored on a recording device or similar media will be deleted through the correct use of BWV Evidence Management software.

Return of Equipment

When the BWV equipment is no longer required it will be returned to the appropriate storage facility. The user will ensure that all equipment is in working order and suitable for re issue. Any damage or malfunctions must be reported to the supervisor responsible for the equipment. Care should be taken to ensure that the device and any batteries are placed on charge for the next user.

Responsibilities

User

The User of the BWV will have received basic instruction in the use and legislation surrounding BWV prior to any use.

It is the responsibility of the BWV user to ensure that:

- Equipment is checked prior to deployment to ensure it is working correctly.
- That the batteries are charged prior to use (consider taking spare batteries) and immediately recharged on return.
- That the time and date settings are accurate.
- That camera lenses are clean and the picture quality is suitable.
- The camera lens is aimed and focused appropriately to capture evidence.
- Compliance with legislation and guidance.
- View only footage they have a bona-fide reason for viewing.

Administrator

Administrators will be responsible for ensuring the BWV Evidence Management software is maintained and being used correctly.

They will dip sample entries within the system to ensure standards are maintained. Findings will be reported to line management.

They will also ensure that all documents associated with BWV use, such as booking in/out, viewing of footage, deletion and production of evidence conforms to this procedure and the policy document.

Ensuring viewing of footage is appropriate and controlled in line with guidance and legislation.

Responsible for fault reporting and seeing it is actioned at the earliest opportunity ensuring the equipment is available for use at all times.

Managers

Identified managers are responsible for the implementation of this document within their own area of business. They will ensure the use of BWV is ethical and correct in all areas of business.

Review of procedure

This document will be reviewed annually, commencing one year from the date of publication unless a change in procedure is identified earlier. The review will take account of changes in legislation and working practices, as well as the outcome of

consultation with relevant internal departments and external agencies and any evaluation. This review will be carried out by <Organisation Name>.

Usage Policy

The appendix below is a sample policy that you could use as the basis of a formal document for your organisation (extracted from "Guidance for the non-Police use of overt body worn video devices" by Reveal Media available at <http://www.bwvsg.com/wp-content/uploads/2013/07/Non-Police-BWV-Guidance.pdf>)

Appendix 3: Sample Policy Document

About This Policy

This document explains how <Organisation Name> will approach and use Body Worn Video (BWV) technology and is primarily aimed at all staff.

The intention is for BWV to;

- Raise standards of service.
- Reduce incident escalation.
- Augment opportunities for evidence capture.
- Reduce complaints.

These are for illustration purposes and individual organisations may wish to replace or add their own.

Staff should comply with Policy when dealing with members of the public and when gathering evidence/information, ensuring the quality and integrity of that evidence/information. This document and associated procedure/SOPs must be followed at any incident where BWV is / has been used.

Organisations should have a Body-Worn Video evidence management system. This system should ensure compliance of all relevant legislation and provide a full audit trail maintaining evidential continuity.

General Principles

The decision to use BWV as a tactic must be justifiable and proportionate to the issue at hand.

<Organisation Name> is committed to the following and the use of BWV should be considered in any inter-action with members of the public.

If BWV is the preferred tactic then careful consideration must be given to the use of a comprehensive (local) marketing strategy to comply with 'fair processing' within the Data Protection Act 1998.

Declaration of Policy

Describe the current situation within your organisation re BWV. This document and associated procedure/SOP will standardise the use of BWV and the evidential product produced.

<Organisation Name> is committed to maximising its effectiveness in tackling (include objective for use of BWV). To this end it will explore the use of BWV to positively effect these areas.

<Organisation Name> will develop procedure/SOPs that clearly demonstrate how to use BWV, to improve the quality of the service this organisation delivers.

Staff are required to use the equipment in line with this document, with procedure/SOP, and local organisation strategies. They should receive full instruction in its use and the relevant legislation.

All staff will use equipment in line with organisation risk assessments.

Insert comment (if required) on professional standards approach to BWV e.g. will not routinely search the back office system for misdemeanours or unlawful acts committed by users, but if a complaint is received interrogation of the system is an appropriate line of enquiry.

Implications of this Document

This document focuses <Organisation Name> on using the right tactics for each identified problem. As such it gives direction to local managers in the strategic use of BWV.

BWV will have ongoing financial implications. After initial start up costs, these costs could include;

- Time of selected administrators to manage the system and instruction of staff.
- Time of staff undergoing instruction in the effective use of BWV.
- Time of business operational leads to effectively manage the use of BWV, and support and encourage the initiative.
- Signage to comply with 'fair processing' within the DPA.
- Ongoing costs to maintain and service both the BWV equipment and back office system and replace when necessary.

All staff identified suitable to use BWV equipment must have full instruction from an identified administrator or lead before using BWV.

Corporate guidance will be given wherever possible to reduce the necessity for local procedures to be overly complex.

Corporate risk assessments will be produced to give guidance on the use of BWV and associated equipment. These must be used in conjunction with other generic risk assessments. All staff will use equipment in line with published risk assessments.

<Organisation Name> will monitor the use of BWV to ensure the equipment is an appropriate tactic and that the use is in line with policy and procedure.

Tracking and Appraisal

This document is to be reviewed in the light of legal and procedural changes to ensure that the use of BWV is appropriate and adds value to <Organisation Name> objectives.

A full evaluation should take place within a reasonable period of time (e.g. 6 months) after initial set up to ascertain the value of BWV use to <Organisation Name> and the customers it serves.

Other Related Organisation Documentation

Related Policies

Information Sources

Guidance for the Police use of Body-Worn Video Devices

Data Protection Act 1998

European Convention on Human Rights

ICO - CCTV Code of Practice

SIA – CCTV Licensing and Use of BWV

HOSDB – Storage, Replay and Disposal of Digital Evidence Images

HOSDB – Digital Imaging Procedure
