Test Scenario 5 – Warehouse Search / Close Range (10 Yards)

This scenario was designed to test the devices in a CQB environment in an open floor plan warehouse, as is common in an industrial building search. Environmental lighting was minimal, as would be the case during non-business hours, and is present from the open loading dock lights in the back.

Gen3 PINNACLE Auto-Gated

ITT PVS-14 Gen3 PINNACLE Auto-Gated Night Enforcer
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
No IR Illumination
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Gen3 Auto-Gated

Litton PVS-14 Gen3 Auto-Gated
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
No IR Illumination
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The subject is very clearly seen with facial features identifiable as well as the presence of a weapon. Surrounding details of the environment are visible. The high performance of the PINNACLE tube creates great contrast and allows for extremely high resolution.

The Gen3 Auto-Gated tube performs well, quickly acquiring the subject and detecting the weapon. Compared to the Gen3 PINNACLE tube, the Litton Auto-Gated unit appears slightly darker. This is more readily seen in the surrounding environment. Note the boxes stacked on the shelves appear to be slightly less resolved. Facial features are still identifiable

ITT PVS-14 Gen3 PINNACLE Auto-Gated Night Enforcer
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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Litton PVS-14 Gen3 Auto-Gated
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator does not offer much assistance in this scenario. The image is slightly brighter, but sufficient ambient light is already present.

The built-in IR illuminator did not add any value to the image.

ITT PVS-14 Gen3 PINNACLE Auto-Gated Night Enforcer
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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Litton PVS-14 Gen3 Auto-Gated
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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The addition of the Surefire M1 helps to better illuminate the scene. While it is necessary for this scenario, it can be seen how the storage bins are not visible on the left side of the image. The focus of the illuminator is reflected off the subject's light-colored shirt, eliminating shadows on his body. This helps to back-light the weapon, making it more quickly identifiable.

The scene is better illuminated with the Surefire M1, allowing the storage bins to be better seen. Shadows on the subject's shirt are gone, allowing the weapon to be back-lit and more quickly identified.

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
No IR Illumination
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The Gen2 SHP tube provides a good image with good resolution under these conditions. The subject is clearly identified through facial features and the presence of a weapon is certain. The surrounding environment is well resolved.

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator did not add any value to the image.

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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While the image is definitely brighter with the addition of the Surefire M1, it is also noticeably flatter in appearance. This is especially seen in the subject. The Gen2 SHP tube struggles to resolve some detail after the infusion of light. The weapon is still visible, though it is somewhat more blurry.

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
No IR Illumination
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The Gen2+ MILSPEC tube produces a significantly darker image than even the Gen2 SHP. The subject is visible and facial features can be recognized. However, the under-powered tube struggles to provide additional data. For a professional conducting a search, this begins to border on dangerous because the surrounding environment is not nearly light enough to detect additional threats.

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator does little to the image. IR reflection is seen in the subject's eyes, but no practical benefit is achieved.

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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An external, higher-power IR illuminator is almost mandatory in this scenario with the Gen2+ MILSPEC tube. The subject is more clearly defined and the presence of the weapon is quite visible. The added light "pops" the subject from the surrounding environment. Resolution of the surrounding environment drops off quickly and it is still dark, making the detection of additional threats difficult.

ATN Gen1+ Viper
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
No IR Illumination

The Gen1 tube is helped by the light from the loading dock, but provides a very dark image in the foreground. The subject is visible, though quick detection is hampered by the performance of the tube. The weapon is visible, but closer study of the image is required to see it. Facial features are unidentifiable and a quick glance might not detect the subject at all. In a fast-paced situation, the performance of Gen1 obviously creates too much room for hesitation.

ATN Gen1+ Viper
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Internal IR Illuminator

The built-in IR illuminator helps the performance of the Gen1+ tube in this scenario. The subject can be more clearly seen as well as the presence of the weapon. The image is still very dark and details are not readily resolved.

ATN Gen1+ Viper
Warehouse Search
Subject Standing 10 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator

Adding a more powerful external IR illuminator definitely helps the Gen1+ unit. The subject is more clearly seen, as well as the presence of a weapon. Facial features are unrecognizable. The surrounding environment is a bit lighter and easier to understand, though the presence of additional threats would still be hard to determine.

Test Scenario 6 – Warehouse Search / Medium Range (20 Meters)

This scenario was designed to test the devices in a CQB environment in an open floor plan warehouse, as is common in an industrial building search. Environmental lighting was minimal, as would be the case during non-business hours. The subject is shown close to a storage rack as if trying to achieve some concealment.

Gen3 PINNACLE Auto-Gated

The Gen3 PINNACLE Auto-Gated tube readily acquires the subject and provides a good view of the surrounding environment. Details are resolved and the presence of a weapon is identified.

The built-in IR illuminator did not add any value to the image. The back-lit warehouse overpowers the illuminator.

The Surefire M1 provides a boost to the foreground lighting. The shelves are more lit up, but more importantly, the subject's weapon really stands out against his body. Facial features are also recognizable because of the forward light source.

Gen3 Auto-Gated

The Gen3 Auto-Gated unit is a bit darker than the PINNACLE tube. While detail is still resolved, the subject appears darker. The weapon is visible.

The built-in IR illuminator brightens the image, giving the user a better view of the subject and weapon.

More detail is visible in the environment with the addition of the Surefire M1. The subject clearly stands out and the weapon is very visible against his shirt.

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
No IR Illumination
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The Gen2 SHP tube performs well in this scenario because of the decent amount of light from the loading dock. The subject is visible, but the weapon is not immediately detected because of less resolution. A second glance will acquire the weapon. Overall, the image shows less-crisp lines and details than the Gen3 units.
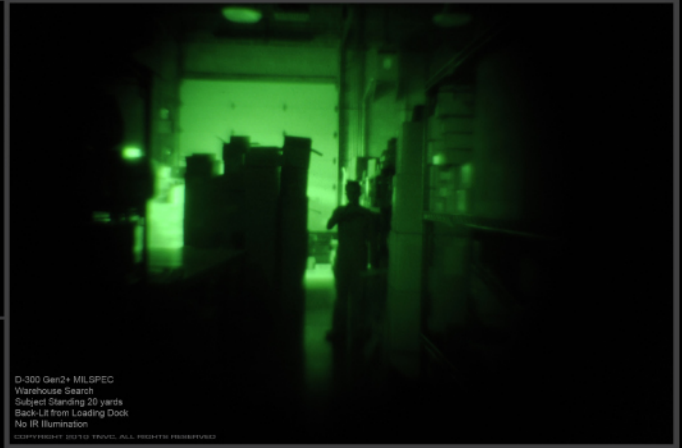

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator did not add much value to the image. It is a little lighter, but the practical application is marginal.

GT-14 Gen2 Super High Performance
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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The Surefire M1 provides more light for the unit and makes the subject stand out against the background. The weapon is more visible against the subject's shirt.

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
No IR Illumination
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The Gen2+ MILSPEC tube shows serious limitation in this scenario. The subject and foreground are completely silhouetted with no discernable detail. The subject can be acquired, but that is as far as the Gen2+ tube will go. It is impossible to see enough detail to identify the presence of a weapon, so the user has no idea of the threat level.
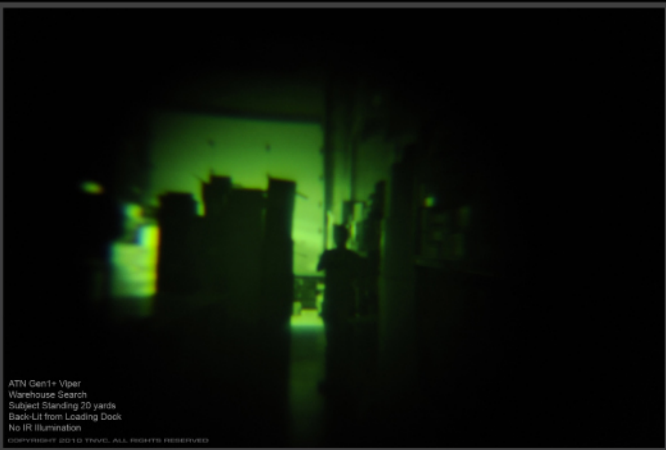

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator did not add any value to the image. It is negligibly lighter.

D-300 Gen2+ MILSPEC
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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The additional higher-power illuminator is required for any useable image with the Gen2+ image intensifier. Even then, the limited capabilities of this tube produce a dark image. The subject is visible, along with the presence of a weapon. However, the image is too dark to detect any additional threats, limiting the user's situational awareness.
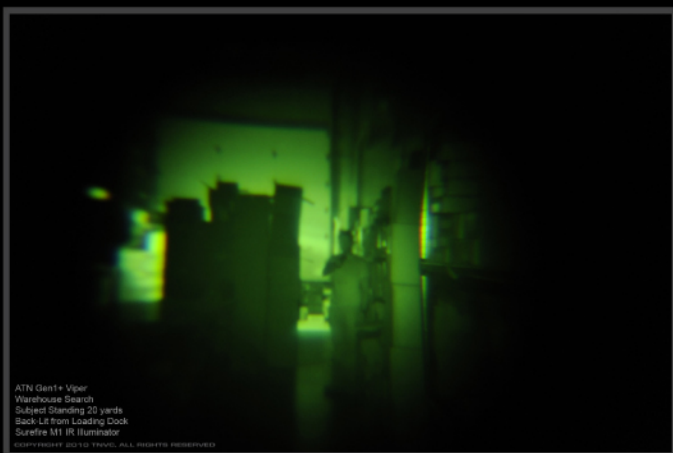
ATN Gen1+ Viper
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
No IR Illumination
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The Gen1+ tube fails to deliver any useable image. The resolution is very poor and the image is completely back-lit, providing no detail of the subject. It is impossible to determine the threat level.

ATN Gen1+ Viper
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Internal IR Illuminator
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The built-in IR illuminator did not add any value to the image. It is negligibly lighter. Very faint detail can be seen in the image, but the weapon is still not detected.

ATN Gen1+ Viper
Warehouse Search
Subject Standing 20 yards
Back-Lit from Loading Dock
Surefire M1 IR Illuminator
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The additional higher-power illuminator is required for any useable image with the Gen1+ tube. However, the lack of resolution is still so apparent, that it is difficult to acquire the weapon.

Thoughts

This exercise illustrates a common scenario for law enforcement professionals. There was ample ambient light from the loading dock. As expected, the Gen3 units performed extremely well, providing high resolution images that immediately acquired the threat. The Gen2 SHP still performed well, though there was a noticed lower resolution. The Gen2+ and Gen1+ failed to produce any real useable information. The photos prove that they are borderline dangerous for professional use.