



# VACUUM METAL DEPOSITION Latent Fingerprint Development

3101 North Front Street, Harrisburg, PA

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Vacuum Metal Deposition (VMD) is an optimal technique for a wide range of exhibits, including flexible plastic packaging, plastic bottles, glass, fabrics, firearms, glossy paper, thermal paper, polymer & currency, wood etc.



The VMD systems are self-contained for simple installation and are available in a range of models to suit customer requirements, laboratory space and budgets.



	VMD360	VMD560	VMD1260
Overall	Height 700mm (27.5") Width 900mm (35.4") Depth 600mm (23.6")	Height 1850mm (72.8") Width 1150mm (45.2") Depth 665mm (26.1")	Height 1974mm (77.7") Width 1400mm (55.1") Depth 2059mm (81")
Maximum exhibit	Height 480mm (18.8") Width 285mm (11.2")	Height 800mm (31.5") Width 560mm (22")	Height 1214mm (47.8") Width 1200mm (47.2")



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VMD is the physical process of coating evidence with very a thin metal film under high vacuum. Gold, Zinc, Silver, Tin, Aluminum, and some alloys are used to coat the substrate. The result is a reversed developed latent print. Since the process coats the substrate and not the latent print, it does not interfere with the collection of samples being submitted for DNA analysis.



The Vacuum Metal Deposition (VMD) instrument is operated via an intuitive and simple to use icon based touch screen. This unique control system and advanced vacuum technology provides quick and easy processing of evidence.

Evidence can be safely and easily suspended or magnetically mounted on the retractable evidence holder.

Developing fingerprints using the VMD has never been so simple thanks to the precise process control throughout the evaporation process.

Fingerprints developed using Vacuum Metal Deposition (VMD) are often higher quality with excellent contrast and ridge clarity. Fingerprints developed by VMD are also of a much higher definition (often to 3rd level detail) and have superior contrast than prints developed using the cyanoacrylate fuming technique. The VMD process can also be used sequentially with other traditional techniques making it ideal for cold cases which have been previously processed.



Vacuum Metal Deposition (VMD) has developed latent fingerprints on evidence that is over twenty (20) years old. The technique has also provided remarkable results on exhibits that have been submerged in water or buried underground.



Vacuum Metal Deposition (VMD) is known to develop high quality fingerprints on difficult substrates. West Technology Forensics recently undertook a two (2) month research study to test VMD's capabilities to develop fingerprints on fired ammunition—a notoriously challenging exhibit from which to recover fingerprints.

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Ridge detail was developed on 82% of samples processed. High quality ridge detail was developed on 72% of shotgun cartridges and 65% of rifle cartridges.

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Vacuum Metal Deposition (VMD) is one of the only available techniques capable of developing fingerprints on fabrics. Previous research has shown that VMD can develop ridge detail and reveal areas of touch (for subsequent DNA testing) on a wide range of fabrics. The West Technology Forensic Application Laboratory continues to carry out research & development on fabrics, including the use of alternative metal processes such as silver/zinc to improve development quality.



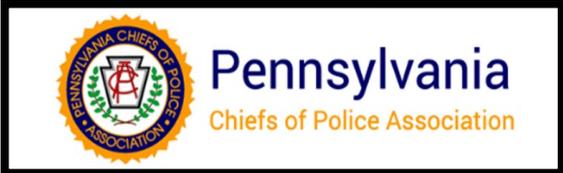
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Research has shown that VMD has low interference on subsequent DNA recovery, making it the preferred technique for print development on clothing and other fabric evidence.

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Vacuum Metal Deposition (VMD) has advantages over other methods of latent print development, especially items that have been exposed to harsh and adverse environmental conditions. "...VMD was around five (5) times more effective than Cyanoacrylate fuming, producing a greater amount of ridge detail..."



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<http://www.west-technology.co.uk>

The National Center for Biotechnology Information that demonstrates some advantages of VMD versus cyanoacrylate (Super Glue) processing called, "*A comparison of the use of vacuum metal deposition versus cyanoacrylate fuming for visualization of fingermarks and grab impressions on fabrics*" is available at:  
<https://www.ncbi.nlm.nih.gov/pubmed/24630323>



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