

XMX/2L-MIL Technical Data Sheet

This unit was designed and built in response to the need for a weatherproof, outdoor aerosol collector. It has been sold to various U.S. Air Force bases and other military and first responder organizations around the world.

The XMX/2L-MIL is an aerosol separator, sample preparation, and high mass flow concentrator system, design to operate under harsh field conditions. This system was designed to process and collect large concentrations of aerosols in the respirable range (1 to 10 microns in diameter) in relatively short periods of time, i.e., when the cloud is over the XMX. This system collects high volumes of air, strips away the large dust particles and the very small micro debris and concentrates the aerosols of interest. The particles are then impinged into a sample collection vial (centrifuge tube) containing customer specified liquid (normally type 1, sterile water or phosphate buffered saline). Once the sample is collected, the user removes the centrifuge tube for subsequent analysis (immuno-assay, PCR, culturing). One of the primary issues in bioaerosol detection is the fact that it is difficult to obtain enough sample of interest to detect an airborne threat concentration that is lethal to humans. Our system captures high concentrations of particles and prepares a small aqueous aliquot for analysis with minimal dilution.



- Recent advances in XMX capability have included third-party validation of exceptional collection efficiencies in the human respirable range, especially in the 2-5 micron range, as well as in capturing and maintaining viability of viral and bacterial particles in human and animal disease outbreaks (*contact Dycor for details*). Not only is the XMX suitable for industrial hygiene applications, as in PM-10 monitoring, but its practicality as a biosampler has now been field-proven as well.
- The XMX/2L-MIL is fully field-decontaminable.
- The XMX system is designed to operate under field conditions, while wearing MOPP gear. There is superior system reliability, with only two moving parts, to reduce maintenance and ensure a high MTBF. This feature minimizes operator effort to reduce the possibility of cross-contamination between collection missions.
- Dycor now supplies a **field validation kit**, allowing for confirmation of collection efficiencies and operator training in the field using a simple visual confirmation kit.
- For dry collection applications, the XMX comes with a dry filter unit option, which can replace the liquid vial. The particles, rather than impinging into water, are impacted onto



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the dry filter which is then removed and dissolved in liquid for further analysis. Filter cartridges are COTS and are readily available.

- The XMV/2L-MIL is on the USAF Table of Allowances, with **National Stock Number 6665-01-509-9540**, Sampler Kit-Air, and is available through DLA via DSCP today.

Specifications

Dimensions	Width: 46 cm, Height: 58 cm (with stack), Depth: 33 cm
Weight	Approximately 17 kilograms
Power Requirements	110V AC or 220V AC
Power Consumption	10 A @ 110V AC, 5A @ 220V AC (optional)
Intake Flow Rate	530 Standard Litres/Minute (SLPM) +- 25 SLPM
Secondary Flow Rate	12 liters per minute
Particle Size Range	~ 1 – 10 microns
Operating Temperature Range	0 to +50°C
Decontamination Options (Application Dependent)	Air Purge – 5 minutes Bleach Paraformaldehyde VHP (Vaporous Hydrogen Peroxide)
Collection Vials	Fisher commercial-off-the-shelf 50ml centrifuge tube
Setup/Teardown Time	5 minutes
Collection Medium	Liquid – includes sterile water, PBS solution, surfactant solution OR Dry Filter – COTS filter
Collection Medium Volume	Fixed at approximately 5ml (liquid) ; minimizes dilution for integrated collection period
Ingress Protection (Environment)	Mil-Std 810F Rating
National Stock Number	6665-01-509-9540

For further information on the XMV/2L-MIL Collector or any other Dycor products, please contact:

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