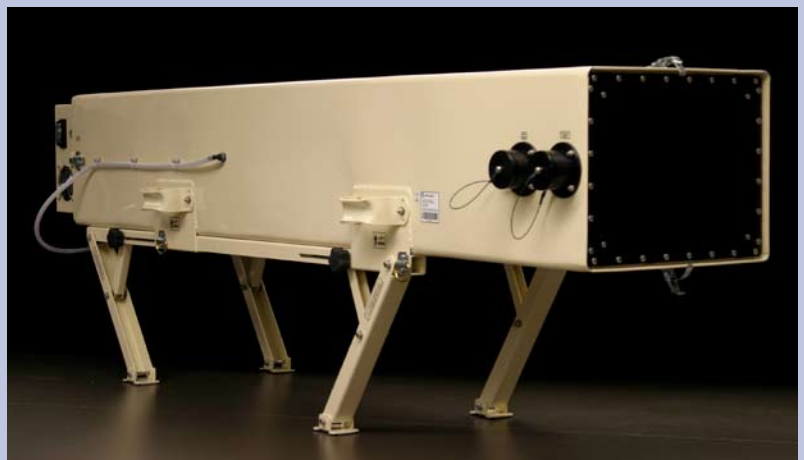


COMPACT AEROSOL TEST SYSTEM (CATS)

Aerosol detection and collection systems should be characterized in their intended operational environment in order to determine the field performance of the system. Air samples that include naturally occurring background can influence the results for biological detectors and collectors. Also, the challenge aerosols often used in field tests may be harmful, toxic or subject to regulatory environmental control. The answer to these test and evaluation challenges is the Compact Aerosol Test System (CATS):

Dycor's CATS platform allows testing professionals to quickly and accurately determine the effectiveness of field deployed aerosol detectors/collectors. Its unique features allow challenge aerosols to be combined with air sampled from the ambient environment, while minimizing the risk of exposure to personnel or the environment.



Typical Applications

- CBRN instrumentation testing
- Development of sampler, collector and detector technologies
- Regular validation of equipment performance
- Integrated bio-detection system validation (Vehicles and other platforms)

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CATS Features

- Compact, portable platform
- Ambient air inlet
- Simple setup and operation
- HEPA filtered outlet
- Rugged construction
- Convenient sampling ports
- Automated control software
- Decontamination port

Easily transported and assembled

Allows ambient background into test section

Achieves rapid test throughput

Avoids exposure to environment/ personnel

Enables indoor or field use

Allows simultaneous testing of two devices

Enhances test repeatability & throughput

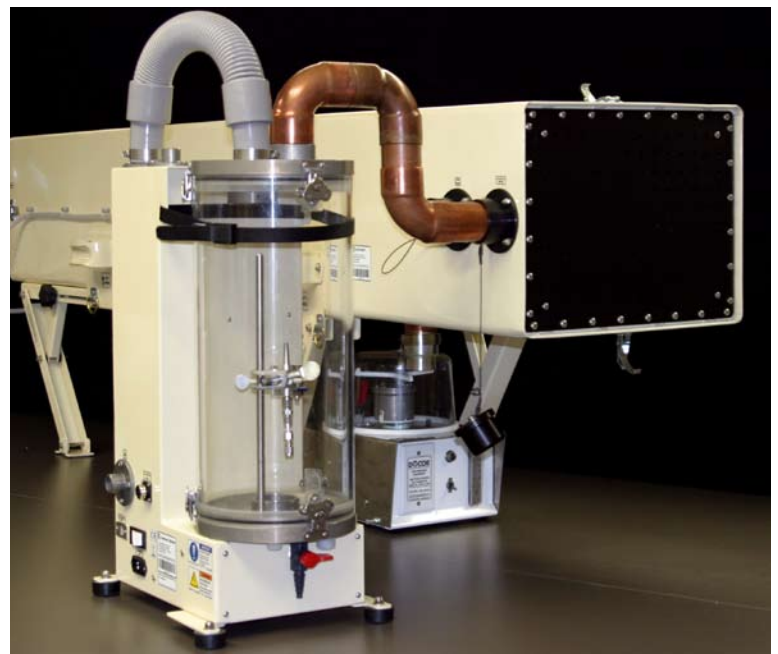
Fast and effective vaporous decon

Description

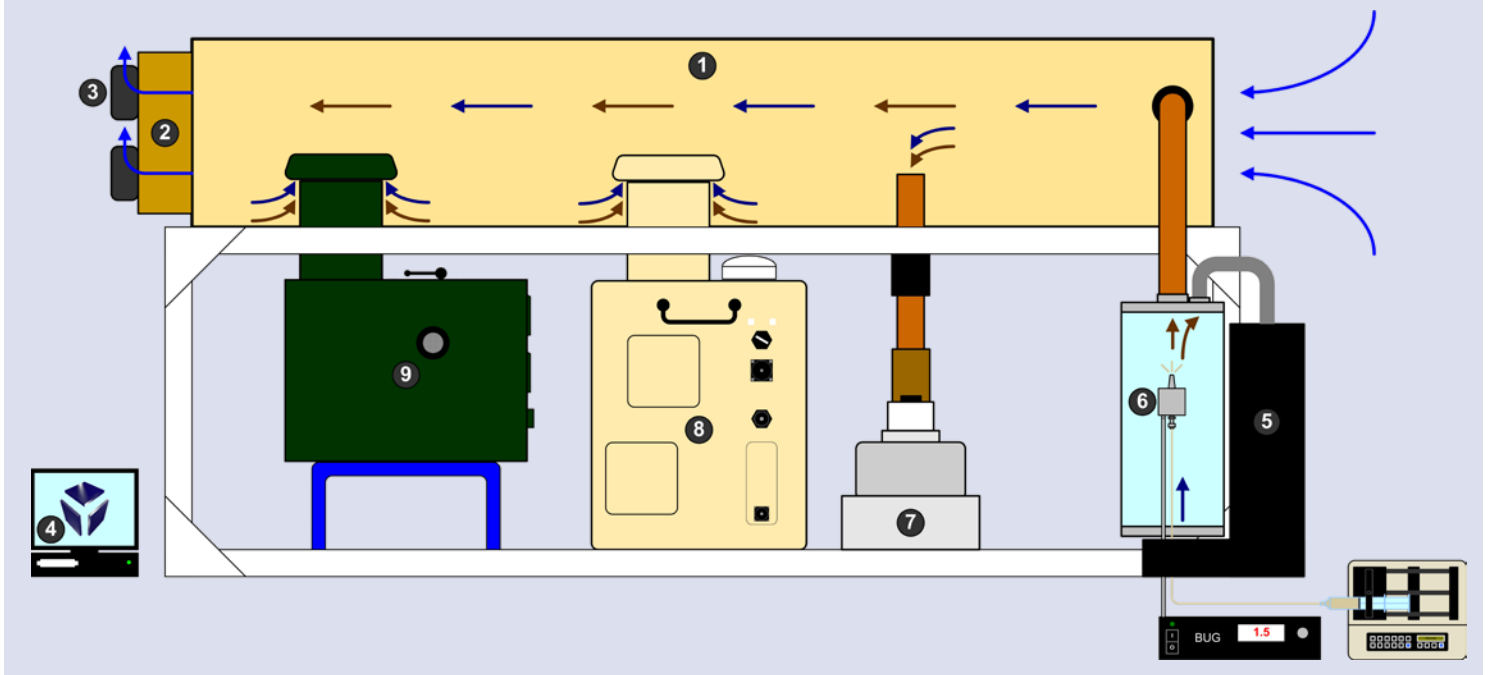
The CATS is a portable platform consisting of an aerosol generation/dilution system (ADS) and an aerosol test duct (ATD). The CATS provides a means to disseminate and dilute a prescribed dose of the challenge aerosol, combine the test aerosol with unfiltered ambient air and deliver the aerosol cloud over the sample ports. Exposure of personnel or the environment to the aerosol is avoided by maintaining a negative pressure within the ATD and using HEPA filtered outlets.

Principle of Operation

The aerosol detector/collector is mounted beneath the ATD using an adapter plate (user customizable orifice size). The dissemination source is attached to the ATD, using the optional ADS diluter. A control module allows the concentration of the injected aerosol to be established. HEPA outlet filters prevent the aerosol from leaving the test section uncaptured. The ATD can be operated independently of an ADS with ambient background air only. The operator selects the test parameters using the included user interface and installs a referee system in order to validate the sampler/collector results. Upon executing the test protocol, the control software automatically performs the entire test. Finally, the operator removes the sample along with the reference sample and submits them for analysis. The CATS is immediately available for the next trial.



The diagram below displays the air flow path of the ambient air and aerosolized biological simulant through the CATS platform. Ambient air is drawn through the ATD (1) while the biological simulant is disseminated by nebulizer (6) through the ADS (5). The mixture of ambient air and biological simulant is drawn by the blowers (3) past the reference sampler (7), the detector (8) and the collector (9) before being exhausted through the HEPA filter (2). The ADS and the ATD are controlled remotely via a PC user interface (4).



Specifications

CATS – Compact Aerosol Test System

Dimensions (W x H x D)	ATD-002 (without stand): 210 x 62 x 38 cm (83 x 25 x 15 in) ADS-A20: 28 x 79 x 43 cm (11 x 31 x 17 in)
Weight	ATD-002 (without stand): 35 kg (77 lbs) ADS-A20: 14.9 kg (33 lbs)
Power Requirements	ATD-002 / ADS-A20: 100 - 240VAC, 2.8 A (max), 50/60Hz
Communications	10/100baseT Ethernet (wired)
Included Software	LabVIEW executable, Web-based diagnostics interface
Minimum PC Requirements	MS Windows XP/Vista, Pentium III 800MHz or equivalent, 128MB RAM, Wired Ethernet port.
Maximum Exhaust Flow	ATD-002: 1500 slpm (53 cfm) ADS-A20: 200 slpm (7.1 cfm)
Rated Pressure Differential (Relative to Ambient)	-125 to 0 Pa (-0.5 to 0 in H ₂ O)
Temperature Range*	0 to 30°C (32 to 86°F)
Humidity*	5 to 90%, non-condensing
Approvals	CE Marking, Special Inspection CSA/UL

ADS-A20 with Sono-Tek Dissemination Option

Particle Size**	1 to 10 microns
Liquid Dissemination Volume	2 x 60 mL (2 oz) syringes
Dissemination Rate	240 to 2400 microliters per minute

* Rated for indoor use only.

** Dependant on disseminated sample.

Product Selection

Product Number: CATS-XXX-YYY-ZZ-(options)

Build the product number from the choices below

XXX	Aerosol Test Duct
002	ATD-002 – Aerosol Test Duct. Includes: duct and controller, operating software, two sampling ports with templates, owner’s manual, stand, power cord, shipping crate and basic adapter kit; limited one year warranty

YYY	Aerosol Dilution System
Z00	No ADS-A20
A20	ADS-A20 – Aerosol Dilution System Includes: mixing vessel assembly and controller, operating software, owner’s manual, power cord, shipping crate and fittings; limited one year warranty.

ZZ	Dissemination System
00	No dissemination system
30	DIS-30 – Sono-Tek dissemination package (<i>ADS-A20 required</i>) Includes: Sono-Tek nozzle (8700-48MS), Sono-Tek Broadband Ultrasonic Generator BUG, Sono-Tek Syringe Pump System, interface cables, mounting hardware and tubing. <i>Sono-Tek system tested and configured by Dycor.</i>

(options)	Accessories / Options
A001	Slit-to-agar sampler, tested and configured by Dycor.
A002	Adjustable adapter for slit-to-agar sampler Includes: pipe, ball valve, STA sampler adapter
A003	Custom CATS Mounting – please request quote
A004	ATD-002: Spare sampling port gaskets for standard C-FLAPS or XMX/2L orifice size (qty: 2)
A005	ATD-002: HEPA Filter Kit
B001	ADS-A20: HEPA Filter Kit
B002	ADS-A20: O-ring Kit
B003	ADS-A20: Replacement Mixing Vessel
B004	ADS-A20: Transport Case
Z001	On-site Commissioning and Training – please request quote

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