

# AIRBORNE CHEMICAL DETECTOR

Model ~ DRONECHEM-WDE-U ~ CHEM-WDE-H

## FEATURES:

- HIGH-PRESSURE MASS SPECTROMETER
- QUICK CONNECT FOR UAV (DRONECHEM-WDE-U)
- OR AS HAND HELD (DRONECHEM-WDE-H)
- DETECT AEROSOL, VAPOR, SOLIDS, LIQUIDS
- BULK (VISIBLE) GRAMS PPM; RESIDUE (BARELY VISIBLE) MILLIGRAMS PPM/PPB; TRACE (INVISIBLE); NANOGRAMS PPB
- INTUITIVE USER INTERFACE
- CHEMICAL MASS RANGE 50-460 M/Z
- REAL-TIME DETECTION AND FAST ANALYSIS
- ANALYSIS OF VAPOR, SOLID AND LIQUID PHASE CHEMICALS
- FLEXIBLE TRACE DETECTION FOR DRUGS, EXPLOSIVES, CWAS AND HAZARDOUS CHEMICALS
- CLEAR AUDIO AND VISUAL ALERTS
- A SIMPLE AND EASY-TO-USE USER INTERFACE
- LOW MAINTENANCE AND OPERATIONAL COSTS
- QUICK CHANGE MODULAR ACCESSORIES TO TRANSITION BETWEEN SOLID/LIQUID AND VAPOR SAMPLING
- USER FRIENDLY INTERFACE
- INTERNAL PUMP WITH CONTINUOUS AIRFLOW
- CHEMICAL DATABASE WITH FULL CBRN DETECTION CAPABILITY - (CWA/TIC)
- MISSION-SPECIFIC MODES FOR CHEMICAL ANALYSIS
- WIRELESS NETWORK CONNECTIVITY
- BUILT-IN GPS AND GROUP LOCATION
- UAV & UGV USE WITHOUT INTEGRATION
- RUGGED, IP54 RATED AND MIL-STD-810G TESTED



DRONECHEM-WDE-U



CHEM-WDE-H

## APPLICATION:

- CWAs, drugs, and explosives detection and identification
- Hazmat response and hazardous area perimeter definition
- Battlefield detection and monitoring
- UAV & UGV chemical monitoring
- Chemical reconnaissance and surveillance
- Locating leaks and faulty containers
- Customs and border control
- Mass and VIP events security



CHEM-WDE-H

## DESCRIPTION:



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# AIRBORNE CHEMICAL DETECTOR

## Model ~ DRONECHEM-WDE-U ~ CHEM-WDE-H

The DRONECHEM-WDE-U mounted on a UAV flight platform or CHEM-WDE-H; a handheld instrument, are portable chemical identifiers utilizing High-Pressure Mass Spectrometry (HPMS) for analysis. Field use either in aerial surveillance with the DRONECHEM-WDE-U or ground use with the CHEM-WDE-H, detection and identification of a range of chemical targets, including illegal drugs, explosives, chemical warfare agents and hazardous chemicals such as TICs and TIMs is easily available.

Both the DRONECHEM-WDE-U or CHEM-WDE-H performs trace-level threat detection, with high sensitivity and selectivity. Analysis is achieved with all phases of matter in less than 60 seconds. This is a rugged, easy to use instrument.

With multiple built-in mission modes for drugs, chemical warfare agents and explosives, the DRONECHEM-WDE-U OR CHEM-WDE-H is an ideal instrument for first responders, environmental protection agencies, and the military.

The DRONECHEM-WDE-U or CHEM-WDE-H utilizes three different mission specific modes of operation.

1. CWA analysis
2. Drug Analysis
3. Explosive Analysis

### CWA Analysis

The DRONECHEM-WDE-U or CHEM-WDE-H can detect and identify traditional priority chemical warfare agents and emerging threats. These include fourth generation agents, also known as Novichoks or A-series agents as well as GA, GB, VX, VE and a range of other agents.

The DRONECHEM-WDE-U or CHEM-WDE-H is the only field-deployable tool for rapid trace detection and identification of A-series agents at low nanogram levels. This capability is in addition to pharmaceutical based agent detection and traditional CWAs – the DRONECHEM-WDE-U or CHEM-WDE-H are all in one portable devices.

With real-time vapor quantification (in mg/m<sup>3</sup>), early indication and identification of fatal chemical threats is available.

### Drug Analysis

The CHEM-WDE-H can identify a range of drugs of abuse down to trace level, in particular, fentanyl and its analogues.

With the unique algorithm for the detection of novel fentanyl analogues not available in chemical libraries (2000+ analogues) the CHEM-WDE-H previously undetectable threats can be classified, with no library updates required.

This instrument is capable of identifying mixed samples of street drugs e.g. heroin, cocaine and methamphetamine with fentanyl analogues, with no sample preparation required for heroin, unlike other analysis techniques.

Additionally, as the CHEM-WDE-H detects nanogram/ppb levels of substances, users can sample exteriors of suspect packages for trace residues, limiting their exposure to the substances inside.

### Explosives Analysis

With the explosives mode, the CHEM-WDE-H can detect a range of explosives in the vapor and solid/liquid phase

## DESCRIPTION SUMMARY:

With the availability of these three built-in modes of mission specific operations, the DRONECHEM-WDE-U and CHEM-WDE-H are multi-mission instruments. Utilizing both aerial surveillance for airborne CWAs with the DRONECHEM-WDE-U or on the ground contamination of liquids, solids, aerosols, and vapors with the sampling power of the CHEM-WDE-H for CWAs, drugs, and explosives the full range of public security is insured.



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## SPECIFICATIONS:

<b>Ionization Source</b>	Non-radioactive, internal ionization, variable energy, dual polarity
<b>Sample Introduction</b>	Continuous gas/vapor analysis; rapid trace-to-bulk solid/liquid analysis via thermal desorption swabs
<b>Power</b>	Replaceable, hot swappable batteries with >3 hours of continuous operation (2 spare batteries included)
<b>Display</b>	Adjustable ultra-bright backlit display for direct sunlight and nighttime conditions, 12.7 cm (5 in)
<b>Alarm Type</b>	Audio and visual for both detection and identification
<b>Software</b>	Embedded, self-contained, on-board analytics
<b>Decontamination</b>	IP-54 rated, chemical resistant housing spray/splash and wipe down
<b>Operating Temperature</b>	0°–40° C (32°-110° F)
<b>Storage Temperature</b>	-20°–60° C (-4°-140° F)
<b>Ruggedness</b>	MIL-STD-810G

## Weight & Dimensions:

<b>Dimensions:</b>	Approx. 29.8 x 21.6 x 12.2 cm (11.8 x 8.5 x 4.8 in)
<b>Weight:</b>	Approx. ≤4.3 kg (9.5 lbs); varies based on module, accessories



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CHEMICAL DETECTORS (CWA) – HANDHELD (H) AND AERIAL SURVELLIENCE (DRONE)  
AGENTS DETECTED

AGENTS AND PRECURSORS	MAJOR DETECTION	DRONECHEM-WDE CHEM-WDE-H (Warfare, Drugs, Explosives)	DRONECHEM-2-IWC CHEM-2-IWC-H (Irritants, Warfare, Chemicals)
<b>WAR GASES</b>			
		YES	YES
	CWA	YES	YES
<b>NERVE GASES</b>			
		YES	YES
<b>POISONS</b>			
		YES	YES
	NOVICHOK	YES	
	SARIN	YES	YES
	SULFUR MUSTARD	YES	YES
	VS VX	YES	
	CYANIDE		YES
<b>IRRITANTS</b>			
		YES	YES
	PEPPER SPRAY	YES	YES
	MACE		YES
	TEAR GAS		YES
<b>EXPLOSIVES</b>			
	EXPLOSIVES	YES	
	LEL EXPLOSIVE LEVEL		YES
<b>DRUGS</b>			
	METHAMPHETAMINE	YES	
	FENTANYL	YES	
<b>DANGEROUS CHEMICALS</b>			
	TIC -TOXIC INDUSTRIAL CHEMICALS	YES	YES
	CHLORINE	OPTIONAL – YES	YES
	AMMONIA	OPTIONAL – YES	YES
	SULFUR DIOXIDE	OPTIONAL – YES	YES
	CARBON MONOXIDE	OPTIONAL – YES	YES
	FORMIC ACID	OPTIONAL – YES	YES
	PHOSPHORUS	OPTIONAL - YES	YES
	DIESAL FUMES/PARTICULATES	OPTIONAL - YES	OPTIONAL - YES
	METHANE	OPTIONAL - YES	OPTIONAL - YES
	HYDROGEN SULFIDE	OPTIONAL - YES	OPTIONAL - YES
	CARBON DIOXIDE	OPTIONAL - YES	OPTIONAL - YES
	NITROGEN DIOXIDE	OPTIONAL - YES	OPTIONAL - YES



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