

# Climate Drone

## UAV with Methane Sensor Package DRONECHEM-Series

Models: DroneCHEM-LX and DroneCHEM-FX

Model: DroneCHEM-Methane (Climate Drone Methane-Dual Detector System)

### Features

- Optical Laser Methane Detection - **DRONECHEM-LX**
  - Detects Methane at Distance
- Air Sensor - Methane Detection - **DRONECHEM-FX**
  - Detects Methane at Close Proximity
- Sensor Package
  - DRONECHEM-METHANE**
    - Two Detectors
      - **DRONECHEM-LX** and
      - **DRONECHEM-FX**
- Real-Time Direct Wireless Data Download to Ground Station, Laptop, or Other Data Acquisition System
- Data GPS Linked Via UAV
- Integrated Software
- Display on Ground Station: Graph and Map
- Small and Lightweight
- Sensors and Sensor Package - Quick Connect to **UAV**



Dronechem-Methane  
Climate Drone With Dual Sensor Package



DRONECHEM-LX  
Methane Laser Sensor



UAV  
DRONECHEM-FX  
Methane Air Sensor

### Application

**Dual Detector System:** The UAV based **DroneCHEM-METHANE** two detector package is perfect for flying pipelines, oil fields and other facilities that run the risk of methane leaks into the atmosphere. It is recommended to fly both sensors at the same time. The real-time download of data and GPS location from methane package to ground station, laptop, or other data acquisition system is wireless.

Use the **DroneCHEM-LX** for an overview of any methane activity. The **DroneCHEM-FX** provides close up source quantitative leak detection: pinpoint location and measurement of leak.

Fly Either **DroneCHEM-LX** or the **DroneCHEM-AERO-FX** Separately

The **DroneCHEM-LX**; a laser detector for determining any methane leaks from a distance.

The **DroneCHEM-FX**; a flow through air sensor pinpointing specific location of methane leaks.



## TECHNICAL ASSOCIATES OVERHOFF TECHNOLOGY

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### Advanced Drone Platform

#### 6 Propellers - Long Endurance Batteries

#### Typical Features

- **Flight Time :** 70 minutes
- **Payload:** 11 lb (5kg)
- **Flight Range:** 9.3 miles (15km)
- **Operating Range:** 9.32 mi (15 km)
- **Empty Weight:** 11.8 lbs (5.38 kg)
- **Weight with Batteries:** 22.7 lbs (10.3kg)
  - Without Payload
- **Dimensions:** 49.4" W (1255 mm) x 19" H (485mm)
- **Ground Clearance:** 12" (395 mm)
- **Speed:** 35 mph (56 km/h)

### Description

UAV methane sensor flight packages: DroneCHEM-Methane, DroneCHEM-LX or DroneCHEM-FX provide real-time wireless download to ground station, laptop, or other data acquisition systems.

The DroneCHEM-Methane combines both the laser sensor (DroneCHEM-LX) and the flow through air sensor (DroneCHEM-FX) in one flight package. This dual detector system provides a full service: detecting a methane leak and specific source location of a leak.

The DroneCHEM-LX is an optical laser detection, light-weight unit for methane and can be up to 82 feet away, depending on plume size and methane ppm.

The DroneCHEM-FX is a flow-through air sensor for detection of methane. This light-weight UAV based unit can fly along pipelines or in areas of potential methane leaks pinpointing specific location of leaks.

Each detection method keeps workers out of harm's way. Detection is GPS tagged.

The use of an **Optional** Real-Time Kinematic Station (RTK) provides GPS Accuracy with  $\pm 2.0$  cm.



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Model: DroneCHEM-Methane (Climate Drone Methane-Dual Detector System)

### Specifications: DRONECHEM-LX

<b>Detector:</b>	Optical Laser
<b>Gas Measured:</b>	Methane (CH <sub>4</sub> ) and methane containing gases (natural or similar)
<b>Sensitivity:</b>	1 to 50,000 ppm
<b>Detection Distance:</b>	82 feet (25 meters) (Sensitivity decreases with distance increases)
<b>Laser Wave-Length:</b>	1.65 μm
<b>Laser Power – Measurement:</b>	10 mW Class 1, Wavelength: 1653 nm
<b>Laser Power – Guide Light:</b>	5 mW Class 2, Wavelength: 532 nm
<b>Laser Safety Class:</b>	Guide light (Red Laser): Class 2 Measurement light (infrared laser light): Class 1

#### Laser Beam Diameter at Altitude:

Altitude	Diameter
32 feet (10 meters)	3 inches (0.08 meters)
65 feet (20 meters)	7 inches (0.18 meters)
98 feet (30 meters)	10 inches (0.27 meters)

<b>Flight Speed:</b>	Best results – 8 knots; Max: 30 knots
<b>Accuracy:</b>	±10%
<b>Electronics:</b>	Integrated software for ground station, laptop, or other data acquisition system
<b>Display:</b>	Real-time wireless download to ground station, laptop, or tablet.
<b>Environmental Temp:</b>	1.4° F to 122° F (-17° C to 50° C)
<b>Humidity:</b>	30%– 90%
<b>Detection Speed:</b>	0.5 seconds
<b>Detector System Power:</b>	UAV Power
<b>Case:</b>	Detector and Electronics housed in fitted, rugged, enameled aluminum housing with quick release to UAV.
<b>Weight and Dimensions:</b>	
<b>Dimensions:</b>	7.25" L x 2.75" W x 1.5" H (18.5 L cm x 7 W cm x 4 H cm)
<b>Weight:</b>	1 lb. (0.45 kg)



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Model: DroneCHEM-Methane (Climate Drone Methane-Dual Detector System)

### Specifications: DRONECHEM-FX

<b>Detector:</b>	Fan Driven Flow-Through Air Sensor
<b>Gas Measured:</b>	Methane (CH4) and methane containing gases (natural or similar)
<b>Sensitivity:</b>	0 to 10,000 ppm
<b>Flight Speed:</b>	Best results – 8 knots; Max: 30 knots
<b>Accuracy:</b>	±10%
<b>Electronics:</b>	Integrated software for ground station, laptop, or other data acquisition system.
<b>Display:</b>	Real-time wireless data download to ground station, laptop or tablet. Minimum, Maximum, and Average readings
<b>Environmental Temp:</b>	32° F to 104° F (0° C to 40° C)
<b>Humidity:</b>	10%– 95%
<b>Detection Speed:</b>	60 seconds for highest accuracy
<b>Detector System Power:</b>	From UAV power

### Weight and Dimensions

<b>Dimensions with Sensor Head:</b>	7.6" L x 4.75" W x 2.1" H (19 L cm x 12 W cm x 5.4 H cm)
<b>Weight:</b>	1 lb. (0.45 kg)
<b>Carrying Case:</b>	Fitted Case with quick release to UAV

<b>DRONECHEM-MX</b>	
Interchangeable sensor head	Yes
Digital LCD Display	Yes
Min, Max, Average readings on screen	Yes
Field Replaceable Battery	Yes
Remote Sensor Capability	Yes
Wireless Data Download	Yes
Temp and HR Sensor - Optional	Yes

External Control Outputs	Yes
Audible Alarm	Yes
High and Low Alarms	Yes
0-5 VDC Analog output	Yes
Zero Calibration capability	Yes
Span Calibration capability	Yes
Internal Data Logging Capability	Yes
PC connection and cables	Yes



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## Carrying Cases



Drone Carrying Case



LX Carrying Case



MX Carrying Case



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