

# METHANE MAPPER MULTI-SENSOR UAV PAYLOAD

The ICI Methane Mapper pairs the TDLAS with the Sony R10C high-res visible camera allowing for the collection of concentrated data at 2 Hz above buried gas pipelines. This gives users a clear indication of where underground leaks may be occurring. The data set from the TDLAS is instantly viewable as a KML file and can be color-coded based on threshold levels for easy analysis. The visible camera provides the end user with an up-to-date visible mosaic of the aerial screening analysis.

## Features

- Unmatched image sensitivity
- Radiometric data streaming
- Integrates into embedded systems
- Displays real time color thermal images
- Multi-device linking
- Windows and Linux software
- Small Size, light weight
- Low power
- Drivers and SDK available

## Applications

- Petrochemical (midstream)
- Industrial vision systems
- Aerial radiometric imaging
- UAV integration

## TDLAS Specifications

- **Target Gas:** Methane ( $\text{CH}_4$ )
- **Detector Array:** UFPA (VOx)
- **Measurement Range:** 0 ppm.m to 40,000 ppm.m
- **Detection Distance:** 0.5 m (1.6') - 50 m (164')\*
- **Minimum Resolution:** 1 ppm.m
- **Response Time:** 0.5 seconds
- **Operating Pressure:** 68 kPa - 115 kPa
- **Operation Range:** -20 °C to 50 °C
- **Storage Range:** -40 °C to 60 °C
- **Humidity:** 98%
- **Dimensions:** 39 mm x 45 mm x 45 mm (L x W x H  $\pm$  0.5 mm)
- **Power:** DC 4.2V - 5V, < 1 W
- **Weight (without lens):** 664 g<sup>†</sup>
- **Interface:** USB 2.0
- **Communication Port:** Uart 3.3 V TTL
- **Basic Tolerance:**  $\pm$  10 % @ 1000 ppm.m

\* Long Range version available, does not work from 0 m - 20 m

<sup>†</sup> Payload Weight (without lens): 2994 g

## Software Options

- IR Flash Software
- Windows 32-bit SDK
- Linux SDK (x86, x64 and ARM)



Methane Mapper  
US Patent 9880552

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## Gimbal Specifications

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- **Operation Modes:**
  - Follow mode
  - Lock mode
- Built-in, independent IMU module
- Temperature sensor
- Gremsy specialized gimbal drive motors with encoders
- USB connection
- 32-Bit high performance ARM microprocessor
- S-Bus/Spektrum/PPM receiver supported
- **Working Current:**
  - Static current: 300 mA (@12 V)
  - Dynamic current: 600 mA (@12 V)
  - Locked motor current: Max 3.5 A (@12 V)
- **Operating Temperature:** 5 °F ~ 120 °F (-15 °C ~ 50 °C)
- **Weight:** 1050 g
- **Gimbal Dimension:** 288 mm x 179 mm x 236 mm  
(L x D x H ± 0.5 mm)
- Custom camera tray
- **Camera Tray Dimensions:**
  - Maximum depth: 100 mm
  - Maximum height: 110 mm or 150 mm
  - Maximum width: 152 mm
- **Input Power:** 12V to 52V
- Powered USB hub
- **Connections:**
  - Wifi
  - USB 2.0
  - CAN
  - UART
  - S-bus
  - Spektrum
  - PPM
- **PC Assistant Software Requirements:**
  - Windows XP or above
  - Mac OS X 10.9 or above
- **Mobile Assistant Software Requirements:**
  - iOS 7.1 or above
  - Android 4.3 or above
- **Maximum Payload:** 1700 g
- **Angular Vibration Range:** ± 0.02°
- **Maximum Controlled Rotation Speed:**
  - Pan axis: 200°/s
  - Tilt axis: 100°/s
  - Roll axis: 30°/s
- **Mechanical Endpoint Range:**
  - Pan axis control: 360°
  - Tilt axis control: +270° to -150°
  - Roll axis control: ± 110°
- **Controlled Rotation Range:**
  - Pan axis control: 360°
  - Tilt axis control: +90° to -135°
  - Roll axis control: ± 4

ICI cameras all fall under US Federal Law and Export Control.