
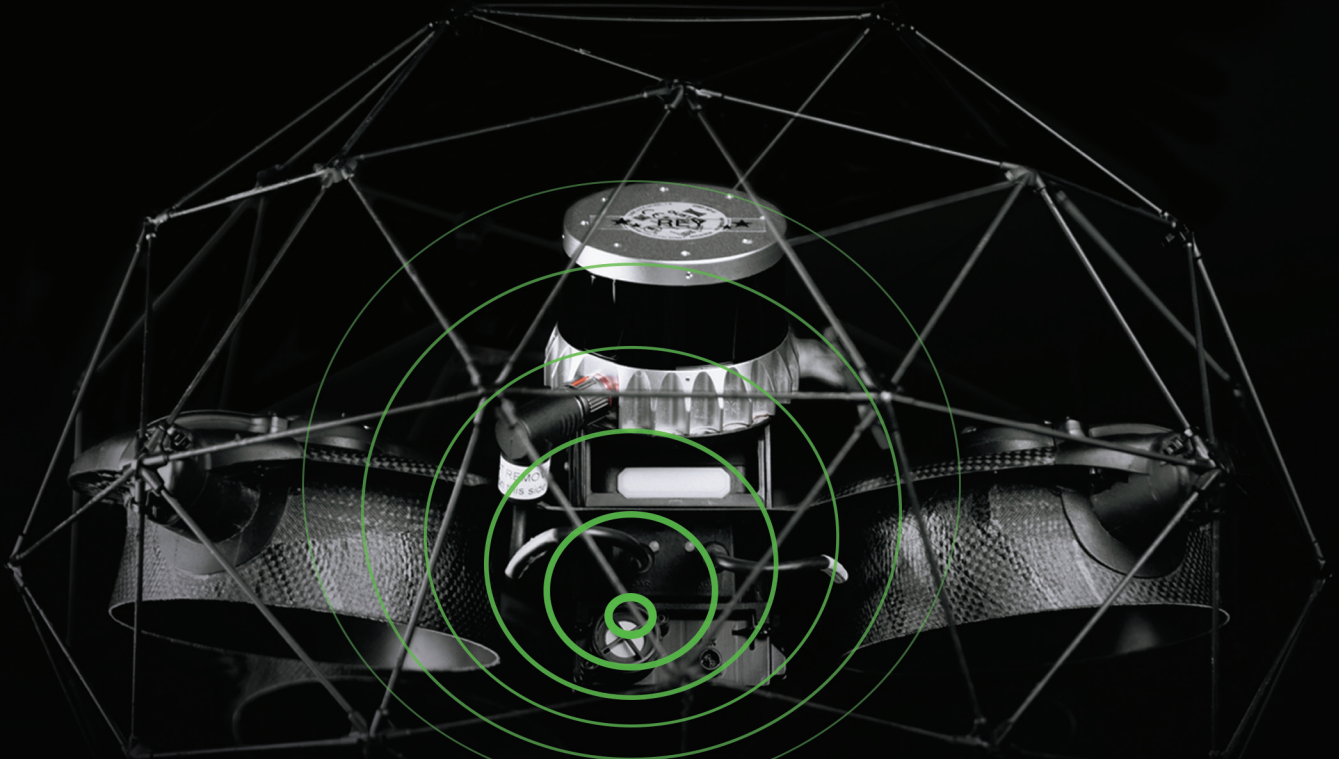


WARNING OF GAS PRESENCE

Elios 3 Flammable Gas Sensor

In partnership with  NevadaNano



Real-time warning of flammable gases

Achieve greater safety

Reliably detect flammable gases in hazardous areas, enhancing awareness of atmospheric conditions inside your assets to quickly adjust safety measures during drone operations.

Ease permitting process

Complement traditional handheld sensors with airborne detection to ensure continuous flammable gas monitoring, streamlining risk assessments and accelerating permit approvals.

Enjoy greater peace of mind

Reduce stress factors when operating drones in high-risk areas. The gas sensor adds an extra layer of safety and provides real-time awareness of potential hazards.

Important notice: The Flammable Gas Sensor is designed as an extra safeguard for detecting flammable gases. It is meant to complement, not replace, existing safety measures and protocols. However, the sensor itself doesn't alter or minimize the potential risks associated with flying the Elios 3 non-ATEX drone in flammable environments.

Elios 3 Flammable Gas Sensor Payload

Technical specifications



FLAMMABLE GAS SENSOR PAYLOAD

Sensor manufacturer	NevadaNano
Sensor type	Molecular Property Spectrometer™ (MPS™) Flammable Gas Sensor 5.0
Calibration	No calibration required (factory calibrated)
Response time (T90)	< 20 seconds ¹
Operating temperature	0 °C to 50 °C (32 °F to 122 °F)
Humidity range	0% to 95% ¹
Pressure range	80 to 120 kPa ¹
Airflow velocity	7 m/s ¹
Bump Test flow rate	Min: 150 mL/min ¹ Max: 500 mL/min ¹
Keep alive	Max: 3 min
Ingress protection	Splash and dust resistant design
Weight	45.5 g, 1.60 oz

1. Value subject to change

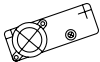

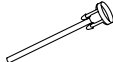

FLAMMABLE GASES DETECTED

The Flammable Gas Sensor is factory calibrated to the accuracy levels shown below, with no need for further recalibration or adjustment. It also detects other gases not listed in the table, including 1-butene, acetylene, ammonia, cyclohexane, decane, diesel, dimethyl carbonate, ethanol, gasoline vapors, hexane, and methanol. However, the sensor does not provide LEL accuracy for these gases and may over- or under-report, so special precautions should be taken when using the MPS to detect them.

Gas	Formula	Class	Detection Range [%LEL]	% Volume of gas at 100 %LEL ¹ (ISO 10156)	MPS Accuracy 0 to 50 %LEL ¹ (ISO 10156)	% Volume of gas at 100 %LEL ¹ (IEC60079-20-1)	MPS Accuracy 0 to 50 %LEL ¹ (IEC60079-20-1)
Butane	C ₄ H ₁₀	4	0-100	1.8 %VOL	±5 %LEL	1.4 %VOL	±5 %LEL
Ethane	C ₂ H ₆	4	0-100	3.0 %VOL	±5 %LEL	2.4 %VOL	±5 %LEL
Hydrogen	H ₂	1	0-100	4.0 %VOL	±5 %LEL	4.0 %VOL	±7 %LEL
Isobutane	HC(CH ₃) ₃	4	0-100	1.8 %VOL	±5 %LEL	1.3 %VOL	±9 %LEL
Isobutylene	C ₄ H ₈	4	0-100	1.8 %VOL	±5 %LEL	1.8 %VOL	±5 %LEL
Isopropanol	C ₃ H ₈ O	4	0-100	2.0 %VOL	±10 %LEL	2.0 %VOL	+20 %LEL
Methane	CH ₄	3	0-100	5.0 %VOL	±3 %LEL	4.4 %VOL	±3 %LEL
MEK	C ₄ H ₈ O	5	0-100	1.4 %VOL	±5 %LEL	1.5 %VOL	+16 %LEL
Pentane	C ₅ H ₁₂	5	0-100	1.5 %VOL	±5 %LEL	1.1 %VOL	±6 %LEL
Propane	C ₃ H ₈	4	0-100	2.1 %VOL	±6 %LEL	1.7 %VOL	±8 %LEL
Propylene	C ₃ H ₆	4	0-100	2.4 %VOL	±5 %LEL	2.0 %VOL	±5 %LEL
Acetone	C ₃ H ₆ O	5	0-100	2.5 %VOL	+20 %LEL	2.5 %VOL	+24 %LEL
Ethylene	C ₂ H ₄	4	0-100	2.7 %VOL	-12 %LEL	2.3 %VOL	-14 %LEL
Heptane	C ₇ H ₁₆	5	0-100	1.1 %VOL	±12 %LEL	0.85 %VOL	±15 %LEL
Octane	C ₈ H ₁₈	6	0-100	1.0 %VOL	±12 %LEL	0.8 %VOL	±15 %LEL
Styrene	C ₈ H ₈	6	0-100	1.1 %VOL	-20 %LEL	1.0 %VOL	-17 %LEL
Toluene	C ₇ H ₈	6	0-100	1.2 %VOL	±12 %LEL	1.0 %VOL	±13 %LEL
Xylene	C ₈ H ₁₀	6	0-100	1.1 %VOL	±12 %LEL	1.0 %VOL	±13 %LEL

1. Accuracy is guaranteed for methane and hydrogen across the full environmental range. For other gases, accuracy typically meets published tolerances under standard conditions of 20°C and 50% RH, and when oxygen is present in the air. Additionally, the airflow generated by the drone's propellers can disperse gas concentrations around the sensor and interfere with the accuracy of gas measurements. For more precise readings, it is recommended to land the drone and turn off the propellers.

FLAMMABLE GAS SENSOR PACKAGE

 Sensor	 Sensor mount	 Bump test tool	 Spare filters
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AIRCRAFT WITH GAS SENSOR PAYLOAD MOUNTED

Modification from nominal specifications

Payloads compatibility	Rev6 and Rev7 LiDAR Payloads, RAD Payload, UT Payload
Flight time while hovering¹	Elios 3 + Lidar Rev6: 9 min 8 sec Elios 3 + Lidar Rev7: 8 min 39 sec Elios 3 + Lidar Rev7 + RAD Payload: 7 min 26 sec Elios 3 + Lidar Rev7 + UT Payload: 7 min 31 sec

1. All tests run at Sea Level, 20°C, 0% humidity, no wind, in ASSIST, Lighting by default (20W), new battery full capacity 98.8Wh, 100% to 0% on tablet (a margin of 10% is kept by the system).

IN-FLIGHT READING

1. Sensor status
2. Gauge defined thresholds
3. Max recorded LEL % value
4. LEL % live value
5. Gas class

