

SCENTROID

Distributor in Poland:



ATUT Sp. z o.o. ul. B. Prusa 8, 20-064 Lublin
tel/fax: +48 81 740 33 45
e-mail: info@atut.lublin.pl
www.atut.lublin.pl

DR2000 FLYING LAB

Product Brochure



Letter from Scentroid's CEO

Scentroid's mission is to empower our clients with vast in-depth knowledge, state-of-the-art instruments, and the most extensive customer support. To this end, we strive in every aspect of our operation to put our client first and to use our research expertise to develop the most innovative and effective products and services in the sensory industry. We envision a future where environmental impacts will be easily and accurately measured and mitigated.



Dr. Ardevan Bakhtari
CEO, Scentroid

02

Introducing the DR2000

04

DR2000 Overview

10

DR2000 Features

12

Data Server and
Communication

16

DR2000 Applications

21

Installation, Maintenance,
Operational Costs

24

After Sales Support



INTRODUCING THE DR2000



What's New?

After years of testing and client feedback, we have improved upon the DR1000 technology in several ways. First and foremost, a weight reduction to 800g now allows for a much more diverse drone portfolio, and less weight grants the operator a longer flight time. We have also improved the DR2000's communication capabilities, offering more range and a faster/higher throughput.

Our advancements in sensor electronics allows for a much more stable and accurate reading, electrochemical sensor health and lifetime check, and improved particulate matter measurements. On top of that, our sensors now boast a significantly shorter warm up time.

Our newly designed advanced lightweight carbon fiber casing now provides a sleek, aerodynamic body, further reducing drag. And last but certainly not least, our improved sample intake provides a continuous and smooth air flow for stable readings, dramatically reducing the pulsation from pumps.

Please contact us for any questions or clarifications at info@scentroid.com OR call us at +1.416.479.0078

Thank you for expressing an interest in the DR2000 - Scentroid's incredibly advanced flying laboratory.

The DR2000 provides continuous monitoring of multiple chemicals. While in flight, built-in chemical sensors can provide remote monitoring of chemicals selected at the time of ordering. It can be used to sample and analyse ambient air at heights of up to 150

meters above ground level that was previously impossible to accomplish. Air quality mapping, model verification, and analysis of potentially dangerous sites are all made possible!

While in flight, five built-in chemical sensors can provide remote monitoring of chemicals selected at the time of ordering. It is often necessary to sample stacks, ponds, and oth-

er location where human access is difficult and/or dangerous. Furthermore, operator exposure to dangerous chemicals during sampling must be carefully considered. The Scentroid DR2000 flying laboratory allows the operator to stay safely away from potentially hazardous sources while acquiring the required air sample for laboratory analysis.

DR2000 OVERVIEW





Intelligent Flying Air Quality Monitoring Laboratory

The DR2000 measures gases using a series of sensors selected based on application from a list of more than 50 sensors. Each unit can be equipped with:

- Up to 4 electro-chemical sensors
- Volatile organic compound sensing using photo-ionization technology
- CO₂, Methane, or Nitrous oxide using non-dispersive infrared sensor
- Sensing capabilities for particulates PM 1, PM 2.5, and PM 10
- Total Reduced Sulfurs (or TRS), along with other contaminants using our Metal Oxide technology
- Temperature, humidity, and barometric pressure
- High accuracy GPS recording
- High accuracy altitude measurements

The DR2000 now features a brand-new patented sampling system that samples only undisturbed ambient air, completely avoiding propeller downwash! It then analyzes data continuously while in flight at a rate of more than 100 samples per second, and sends it back to the ground station using long range radio transmission (LoRa protocol) for up to 10km, providing a secure & encrypted transmission of data to the ground station. The data is automatically stamped with GPS position, latitude, time, date, humidity, and temperature. This data can be used for numerous applications using our proprietary DR2000 software.

Included With DR2000:

DR2000 Analyzer
Ground Station Receiver
Ground Station (Laptop)
Carbon Fiber Probe
GPS, GSM, and LORA antennas
Charge adapter
Extra batteries and wall charger (optional)

*Does not include drone

Endless Applications

The DR2000 Flying laboratory provides a robust platform to conduct impact assessment and air quality measurement for a wide range of applications including monitoring of: fugitive emissions, flare emissions, leak detection along oil pipe lines, landfill methane, odour emissions, military or emergency applications, urban scanning, and much more!

A thermal imaging camera can also be installed for visual confirmation of fugitive emissions in a variety of applications such as landfills, storage tanks, and oil/gas pipes.

Recommended Drones

Due to its new lightweight design, the DR2000 can now be mounted to a much wider series of drones. Our system is completely self-contained and requires nothing from the attached drone except to operate as a vehicle. Although it can be attached to many drones, this catalogue features it being used with the DJI Inspire 2, and the Phantom 4.





Specifications

Product name	DR2000 Flying Laboratory
Maximum # of sensors	6
Type of sensors	PID, NDIR, EC, Laser Particulate counter, and MOS
Sampling rate	Adjustable from 1/s to 1/m
# of sampling ports	5 Seconds per liter, time based off of sampling bag size
Weight	800g
Size	26 cm x 16 cm x 18 cm
Max. operating time	12 hours with a full battery charge
Time in flight	Varies per drone type/batter life
Communication	3G / 4G (default) WiFi
On-board data storage	64GB - SD Card
Cloud server	Included by Default
Local server	Optional
On-Board server	Included by Default
Software	Free one year subscription to DRIMS2 (Drone Information Management System)
Temperature range	0 °C to + 60 °C user will receive warning at 55 °C
Calibration	Automatic and Optional, using built in calibration gas. User can initiate calibration with ground station
Warranty	24 months full warranty to all parts including sensors
Sensor replacement frequency	Sensor dependent - first 2 years covered by warranty
Ground station	Specialized laptop with pre-installed Ubuntu and Windows 10 operating system, high gain powerful WiFi antenna, and DRIMS2 software
Mounting hardware	Customized mounting hardware based off of drone
Battery	Fast charge battery for continuous operation of up to 12 hours

Scentroid Sensor List

#	Sensor ID	Type	Formula	Chemical	Max. Detection Limit	Lowest Detection Threshold	Resolution	Cross sensitivity		Industry	Expected Life (years)	Warmup Time (Sec)	Response Time (Sec)
								Required	Recommended				
1	CD1	NDIR	CO2	Carbon Dioxide - High Concentration	5%	100 ppm	20 ppm	-	-	Safety/Combustion/process control	1	120	120
2	CD2	NDIR	CO2	Carbon Dioxide - Low Concentration	2000 ppm	1 ppm	0.6 ppm	-	-	Urban, Industrial, IAQ	1	120	120
3	CM1	EC	CO	Carbon Monoxide (Low Concentration)	100 ppm	0.03 ppm	0.01 ppm	-	H2, C2H4	Urban, Industrial, IAQ	2	40	40
4	CM3	EC	CO	Carbon Monoxide (Medium Concentration)	1000 ppm	1 ppm	1 ppm	-	-	Urban, Industrial, IAQ	5	40	20
5	CM2	EC	CO	Carbon Monoxide (high concentration)	10000 ppm	30 ppm	3 ppm	-	-	Safety/Combustion/process control	2	45	40
6	CL2	EC	Cl2	Chlorine (High Concentration)	2000	1 ppm	1 ppm	NO2	BR2	Safety/Combustion/process control	2	45	40
7	CL1	EC	Cl2	Chlorine (Low Concentration)	10 ppm	0.05 ppm	0.01 ppm	NO2	NO2	Industrial, Safety	2	120	60
8	H1	EC	H2	Hydrogen	10000 ppm	100 ppm	10 ppm	-	CO	Industrial, Safety, IAQ	2	120	40
9	HCL1	EC	HCl	Hydrogen Chloride	20 ppm	0.5 ppm	0.2 ppm	H2S	HBr	Industrial, Safety	2	120	60
10	HCY1	EC	HCN	Hydrogen Cyanide	50 ppm	0.1 ppm	0.1 ppm	H2S, NO2, SO2	-	Industrial, Safety	2	120	30
11	PH1	EC	PH3	Phosphine (low Concentration)	5 ppm	50 ppb	30 ppb	NO2	SO2, H2S	Industrial, safety	2	60	20
12	PH2	EC	PH3	Phosphine (high Concentration)	2000 ppm	5 ppm	2 ppm	NO2	SO2, H2S	Industrial, safety	2	60	25
13	HS1	EC	H2S	Hydrogen Sulfide (low Concentration - ppb)	3 ppm	7 ppb	1 ppb	-	-	WWTP, Odour, IAQ, Urban, Industrial	1	180	35
14	HS2	EC	H2S	Hydrogen Sulfide (high Concentration - ppm)	2000 ppm	15 ppm	2 ppm	-	-	Safety, WWTP	2	180	25
15	HS3	EC	H2S	Hydrogen Sulfide (medium Concentration - ppm)	200 ppm	2 ppm	0.2 ppm	-	-	Safety, WWTP	2	180	60
16	E2	MOS	C2H6O, H2, C4H10	Organic solvents (Ethanol, Iso-Butane, H2)	500 ppm	25 ppm	1 ppm	-	Benzines <20%	Industrial, Odour, Compost	1	30	10
17	MT1	NDIR	CH4	Methane (LEL)	20,000 ppm	10 ppm	10 ppm	-	Propane	Safety/Combustion/Inprocess control, Industrial	>3 years	45	12
18	NC1	EC	NO	Nitric Oxide (Low Concentration)	1 ppm	0.01 ppm	0.001 ppm	-	-	Urban, IAQ, Industrial	2	120	60
19	NC2	EC	NO	Nitric Oxide (Medium Concentration)	25 ppm	0.2 ppm	0.1 ppm	-	-	Urban, IAQ, Industrial	2	120	60
20	NC3	EC	NO	Nitric Oxide (High Concentration)	5000 ppm	2 ppm	2 ppm	-	-	Industrial, safety, Process control	3	120	10
21	ND1	EC	NO2	Nitrogen Dioxide (Low Concentration)	1 ppm	0.01	0.001 ppm	-	-	Urban, IAQ, Industrial	>5 years	120	60
22	ND2	EC	NO2	Nitrogen Dioxide (Med Concentration)	20 ppm	0.1 ppm	0.1 ppm	-	-	Urban, IAQ, Industrial	>5 years	120	60
23	ND3	EC	NO2	Nitrogen Dioxide (high Concentration)	1000 ppm	2 ppm	1 ppm	-	-	Industrial, safety, Process control	2	120	60
24	NS1	NDIR	N2O	Nitrous Oxide	10,000 ppm	100 ppm	1 ppm	-	Negligible	Urban, Industrial, Process control	5	30	30
25	O2	EC	O2	Oxygen (high Concentration)	250,000 ppm	5000 ppm	200 ppm	-	-	Process control, Safety	1	60	15
26	PD3	PID	VOCs	Total VOCs 10.0 eV	100 ppm	5 ppb	5 ppb%	-	Aromatic Carbons	WWTP, Odour, IAQ, Urban, Industrial	5*	5	3
27	PD1	PID	VOCs	Total VOCs (Low Concentration) - PID 10.7 eV	50 ppm (isobutylene)	1 ppb	1 ppb	-	All VOCs	WWTP, Odour, IAQ, Urban, Industrial	5*	5	3
28	PD2	PID	VOCs	Total VOCs (High Concentration) - PID 10.7 eV	300 ppm (isobutylene)	1 ppm	50 ppb	-	All VOCs	Safety, Industrial	5*	5	3

#	Sensor ID	Type	Formula	Chemical	Max. Detection Limit	Lowest Detection Threshold	Resolution	Cross sensitivity		Industry	Expected Life (years)	Warmup Time (Sec)	Response Time (Sec)
								Required	Recommended				
29	SD1	EC	SO2	Sulfur Dioxide (high Concentration)	2000 ppm	2 ppm	1 ppm	NO2	-	Safety, Industrial	2	120	25
30	SD2	EC	SO2	Sulfur Dioxide (low Concentration)	1 ppm	0.01 ppm	0.001 ppm	NO2	-	Urban, IAQ, Industrial	2	120	20
31	SD3	EC	SO2	Sulfur Dioxide (medium Concentration)	100 ppm	0.4 ppm	0.2 ppm	NO2	-	Urban, IAQ, Industrial	2	120	20
32	FM1	EC	CH2O	Formaldehyde	5 ppm	10 ppb	10 ppb	-	Ethanol	IAQ, Safety, Industrial,	2	180	60
33	PM 2.5-10	Laser Scattere	PM	Particulate PM 2.5, 10 (simultaneous)	1000 µg/m3	1 µg/m3	1 µg/m3	-	NA	Urban, IAQ, Industrial	>5 years	NA	NA
34	TS1	Laser Scattere	TSP	TSP - PM Required	20000 µg/m3	1 µg/m3	1 µg/m3	-	NA	Urban, IAQ, Industrial	>5 years	NA	NA
35	NMH	EC	NMHC	Non-methane Hydrocarbon	25 ppm	0.1 ppm	0.1 ppm	-	NA	Industrial, Process, Combustion	2	180	55
36	MS2	MOS	TRS	TRS and Amines	10 ppm	10 ppb	2 ppb	-	Trimethyl Amine, Methyl Mercaptans, H2S, other amines and sulfur compounds	Odours, WWTP	1	30	10
37	MS3	MOS	NH3-C2H6O-C7H8	Air Contaminants (Ammonia, Ethanol,	30 ppm	1 ppm	4 ppb	-	(ammonia, Ethanol, Toulene)	Odours, WWTP, Industrial	1	30	10
38	AM2	EC	NH3	Ammonia (High concentration)	100 ppm	3 ppm	1 ppm	CL2	H2S, NO2	Agricultural, Industrial	2	30	40
39	AM1	EC	NH3	Ammonia (Low Concentration)	10 ppm	0.005 ppm	0.001 ppm	CL2	H2S	Agricultural, Industrial	2	30	50
40	OZ1	EC	O3	Ozone (low Concentration)	0.5 ppm	1 ppb	1 ppb	CL2	H2S, NO2	Urban, Industrial	>5 years	60	30
41	OZ2	EC	O3	Ozone (High Concentration)	5 ppm	20 ppb	20 ppb	CL2	H2S, NO2	Urban, Industrial	>5 years	60	30
42	RD1	Geiger Counter	α-, β-, γ, X	Radiation Monitor (α-, β-, γ- and x- radiation)	1000 µSv / h	0.01 µSv / h	0.01 µSv / h	-	-	Mining, Industrial, Nuclear Energy, Security	>3 years	0	0
43	CIO21	EC	CIO2	Chlorine Dioxide	50 ppm	0.01 ppm	0.05 ppm	-	CL2	Odour, Industrial	2	180	60
44	CH4L	TDLS	CH4	Methane - ppb	100 ppm	0.4 ppm	0.01 ppm	-	-	Greenhouse gases, industrial	10+	20	1
45	ET1	EC	C2H4	Ethylene - Low Concentration	10	0.05 ppm	0.01 ppm	CO	-	Greenhouse gases, industrial	2	120	30
46	ET2	EC	C2H4	Ethylene - Medium Concentration	200	1 ppm	0.5 ppm	CO	--	Greenhouse gases, industrial	2	120	30
47	ET3	EC	C2H4	Ethylene - High Concentration	1500	5 ppm	2 ppm	CO	-	Greenhouse gases, industrial	2	120	30
48	MM	EC	CH3SH	Methyl Mercaptan	10 ppm	0.05 ppm	0.01 ppm	H2S	-	Odours, WWTP, Leak Detection, Industrial	2	120	35
49	EMF	EMF	EMF	Electro Magnetic Field	200 mGauss	0.1 mGauss	0.1 mGauss	-	-	Urban, Industrial, power plants	3	<1	<1
50	CS	EC	CS2	Carbon Disulfide	100 ppm	1 ppm	0.1 ppm	-	-	Odour, WWTP, Industrial	2	120	30
51	TBM	EC	C4H10S	Tert Butylthiol	14 ppm	0 ppm	0.1 ppm	-	-	Odour, Leak detection, Industrial	2	120	30
52	THT	EC	C4H8S	Tetrahydrothiophene	14 ppm	0 ppm	0.1 ppm	-	-	Odour, Leak detection, Industrial	2	120	30
53	THT	EC	C4H8S	Tetrahydrothiophene	99.9 pCi/l (3,700Bq/m³)	0.2 pCi/l (700Bq/m³)	0.2 pCi/l (350Bq/m³)	-	-	IAQ, Safety, Industrial,	2	10	<1

For our most updated sensor list, please email us at info@scentroid.com, or visit us online at www.scentroid.com

A low-angle, upward-looking photograph of industrial buildings. The buildings have grey horizontal siding and dark blue accents. A tall, vertical metal pipe runs through the center. To the right, there are horizontal pipes and a window with a white frame. In the upper right, a small drone is flying against a bright blue sky with scattered white clouds. The overall scene is industrial and modern.

DR2000 FEATURES



Ground Station

The Ground station that is included with every DR2000 Flying Laboratory consists of a specialized laptop with a pre-installed Ubuntu operating system, high gain powerful communication antenna, and DRIMS2 software. DRIMS2 (Drone Information Management Software) provides the user with means to control the flying laboratory and log all acquired data as it occurs. DRIMS2

will provide both live data as well as all historical data for all sensors plus GPS position, altitude, temperature, and humidity. The user can also command the drone when to take the sample, select the sampling interval, adjust sampling rate, and perform routine maintenance such as calibration of sensors. If an optional on-board camera is selected the video feed will also

be sent to the ground station for simultaneous viewing. The laptop will be dual boot and can be used for other work including GIS mapping, viewing flight path on Google Earth, data post processing, or any other task.



DATA SERVER & COMMUNICATION

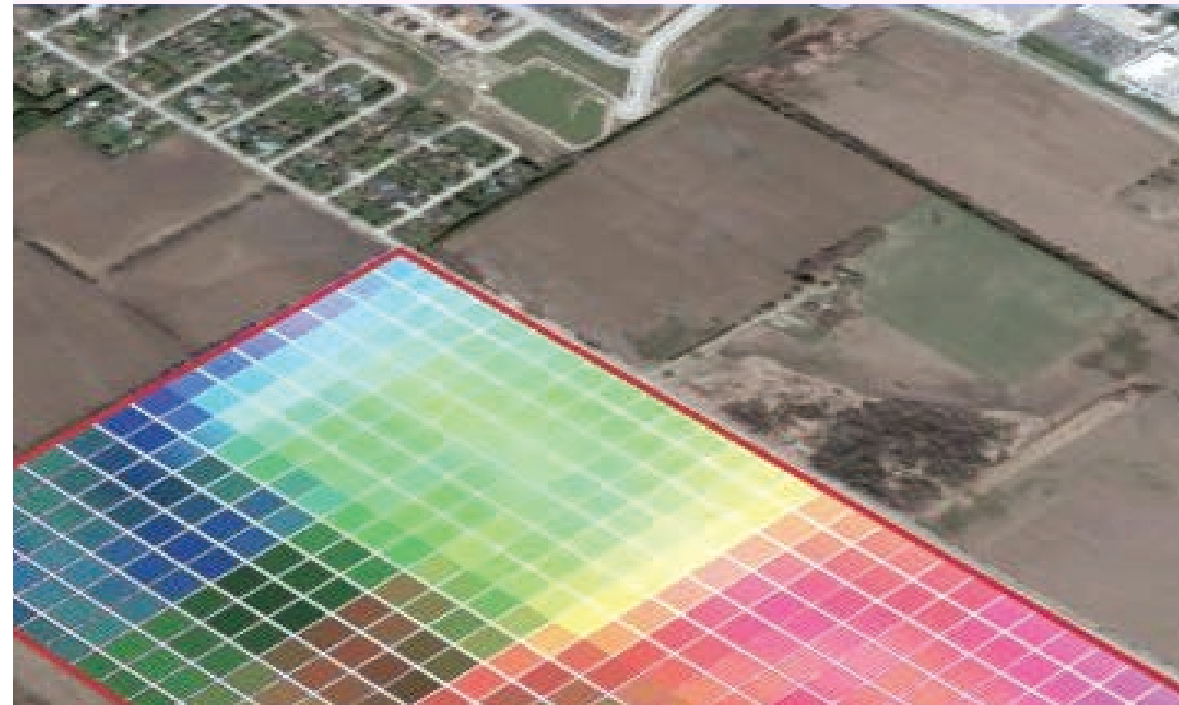
Reliability

DR2000 provides 3 levels of data storage:

1. Storage of data on pre-installed SD card
2. Transmission and storage of data on the on ground station
3. Transmission and storage of data on the cloud/localized server

Communication

The DR2000 comes with simultaneous GPRS and WIFI communication capabilities. The GPRS is used to send data to Scentroid cloud server called Drone Information Management System (DRIMS). The secure online system will allow you to remotely monitor and even control the flying laboratory as well as store and process the data collected. The Drone also connects to the ground station using WIFI communication protocol. Both Ground station and Cloud based servers run DRIMS2 software and simultaneously can log data from multiple DR2000 drones.



Cloud Based Hosting

The central monitoring station is hosted on a secure cloud-based server; allowing remote access with any smart device that is connected to the internet. The access is restricted, and the data is encrypted for maximum security. Users are given an identification and password combination which will define their permission level. For example, a standard user who accesses the platform is only able view and download the results, while a user with administrator access can reconfigure the system and redefine parameters.

The monitoring station is designed to collect all data from the sensors and present the sensor data in an easy to understand graphical interface.

Local Server (Optional)

DR2000 can be configured so that the DRIMS2 software is hosted on a local server, specified by the user. This server must have adequate connection to a secure Wi-Fi or LAN network. Scentroid will provide all necessarily hardware and software to setup a local server. This option includes: Computer hardware, DRIMS2 software, Ethernet hub.



Communication Protocols

GPRS

DR2000, by default, comes with a GPRS module, allowing for wireless communication through existing cell towers. The communication is encrypted and sent to Scentroid's secured DRIMS2 cloud server. A local SIM card should be obtained by the user to facilitate this data transmission.

Transmitting data of 3G or 4G networks to Scentroid's server or a secured local server allows for a high speed internet connection. Scentroid will cover data charges for one year after purchase of the DR2000.

RF Communication (LoRa)

Using license-free sub-gigahertz radio frequency bands, LoRa enables long-range transmissions (more than 10 km in rural areas) with low power consumption. The DR2000 uses LoRa communication to send information to the ground station and to receive settings and sampling commands.

DRIMS2

Drone Information Management System, DRIMS2, is an all-inclusive software, used to view historical data, run diagnostics, configure, and set alarm levels for DR2000. Provided as part of the DR2000 package, the software is installed on our on-board server (default), Scentroid's cloud-based server (default) and on your localized server (optional).

DRIMS2 provides easy analysis tools for an operator to determine: pollutant hot spots, possible sources, sampled areas, and much more. The easy to use graphical interface makes allows anyone to run complicated data analytics without being a GIS expert.

The software also provides a 3D live mapping of all your readings. The system can provide an auto generated iso-concentration graph, along with an auto generated heat map. By automatically syncing with the DRIMS2 cloud software, data export, transfer, and backup are all made easy.

DRIMS2 is capable of controlling and displaying data from multiple DR2000s in the same fleet. Users can analyze data and monitor progress of their entire DR2000 fleet remotely from a single platform.

Plus, as a valued Scentroid customer, you will receive a free one-year subscription to our DRIMS2 cloud software.





DR2000 APPLICATIONS (INDUSTRIES AND RECOMMENDED SENSORS)

Urban

Urban air pollution is a significant threat to human health and the quality of life of all people around the world. Minimizing urban air pollution not only serves as a healthy buffer for people in their everyday lives but also encourages reducing the emissions of harmful compounds. Scentinal is a perfect fit for air quality monitoring of the cities.

Recommended Sensors:

- Carbon Dioxide - (Low Concentration)
- Carbon Monoxide - (Low Concentration)
- Oxidizing Gases Ozone
- Nitric Oxide - NO (Low Concentration)
- Nitrogen Dioxide - (Low Concentration)
- Oxygen
- Total VOCs (ppb) - PID
- Sulfur Dioxide - (Low Concentration)
- Particulate PM 1, 2.5, 10 (Simultaneous)

Odour

Environmental odour is among the highest sources of nuisance; festering the largest amount of complaints from residents. Environmental odour can be generated from a variety of industries including food processing, tobacco products manufacturing, chemical plants, paint plants, asphalt plants, pulp and paper, WWTP, and etc. Scentinal can be used to monitor odour emissions in order to help plants optimize processes and reduce odour impact.

Recommended Sensors:

- Ammonia
- Hydrogen Sulfide - (Low Concentration - ppb)
- Organic Solvents (Ethanol, Iso-Butane)
- Total VOCs (ppb) - PID
- General Purpose Odours (VOCs)
- TRS and Amines
- Air Contaminants (Ammonia, Ethanol, Toluene)





Wastewater

One of the most prominent issues of concern from wastewater treatment plants (also known as sewage treatment plants) is odour. Many chemicals in these facilities generate odour; the majority are sulfur-based. At the start of the process H₂S, DMS, and other sulfur compounds are abundant, while at the trailing end of the process (sludge processing), VOCs are more predominant. Recommended sensors include:

- Ammonia
- Hydrogen Sulfide - (Low Conc. ppb) (High Conc. ppm)
- Total VOCs (ppb) - PID
- TRS and Amines
- Air Contaminants (Ammonia, Ethanol, Toluene)

Pipeline Leak Detection

Drones equipped with DR2000 can make offshore oil and gas operations safer and more efficient. For instance, the DR2000 can be used for monitoring of gas emissions from leaks within a pipeline, storage tanks and even stacks. To accomplish this, the DR2000 could be equipped with a fast response PID, H₂S, NMHC, and SO₂ sensors. Aerial inspection can also result in early detection of leak, damage to structural abnormalities, piping and other external and internal inconsistencies. New technology and innovation for drones is making them more accessible than ever. The oil and natural gas industry has embraced this innovation, to help their efforts as good stewards of the environment. With drone operating costs dropping as technology improves, this tech is rising as the new eye in the sky for oil and natural gas producers.

- Ammonia
- Formaldehyde
- Organic Solvents (Ethanol, Iso-Butane, H₂)
- Methane (LEL)
- Total VOCs (ppb, ppm) - PID
- Sulfur Dioxide
- Particulate PM 1, 2.5, 10 (Simultaneous)
- Air Contaminants (Ammonia, Ethanol, Toluene)



Oil & Gas

Pollutant and Odour monitoring in the petrochemical and oil and gas industry is critical due to the number of hazardous air pollutants released in these processes. In-plant stack and ambient air monitoring allows the plant to not only ensure adherence to emission regulations and standards, but also to detect issues within the process such as tank leaks, loading spills, and other unexpected events.

Recommended Sensors:

- Carbon Dioxide - (Low Concentration)
- Carbon Monoxide - (Low Concentration)
- Chlorine
- Ethylene Oxide
- Hydrogen Sulfide
- Hydrogen Chloride
- Hydrogen Cyanide
- Ammonia
- Oxidizing Gases Ozone and Nitrogen Dioxide
- Phosphine - (Low Concentration)
- Phosphine - (High Concentration)
- Hydrogen Sulfide - (Low Concentration - ppb)
- Organic Solvents (Ethanol, Iso-Butane, H₂)
- Methane (LEL)
- Nitric Oxide - NO (Low Concentration)
- Nitric Oxide - NO (High Concentration)
- Nitrogen Dioxide - (Low Concentration)
- Oxygen
- Total VOCs (ppb) - PID
- Total VOCs (ppm) - PID
- Sulfur Dioxide - (High Concentration)
- Sulfur Dioxide - (Low Concentration)
- Formaldehyde
- Particulate PM 1, 2.5, 10 (Simultaneous)
- Air Contaminants (Ammonia, Ethanol, Toluene)





Agriculture

Agricultural facilities emit a wide array of pollutants that must be monitored. The majority of these pollutants are not hazardous but are odourous and therefore a source of nuisance. Scentinal can provide monitoring of both odour and pollutants in agricultural facilities. Recommended sensors include:

- Ammonia
- Carbon dioxide
- Methane
- Particulate PM 1, 2.5, 10 (Simultaneous)

General Safety

Workers from many industries are exposed to multiple harmful gasses every day. These chemicals can lead to fatigue, respiratory decline, illness, and a general decrease in the overall quality of life. Industries need to monitor their air quality and ensure safety for their workers. Recommended sensors include:

- Carbon Dioxide - (High Concentration)
- Carbon Monoxide - (High Concentration)
- Chlorine
- Ethylene Oxide
- Hydrogen
- Hydrogen Chloride
- Hydrogen Cyanide
- Ammonia
- Oxidizing Gases Ozone and Nitrogen Dioxide
- Phosphine - (Low and High Concentration)
- Hydrogen Sulfide - (High Concentration - ppm)
- Methane (LEL)
- Nitric Oxide - NO (High Concentration)
- Nitrogen Dioxide - (High Concentration)
- Total VOCs (ppm) - PID
- Sulfur Dioxide - (High Concentration)
- Formaldehyde



Compost

Workers in compost facilities are exposed to chemical and biological risks. Additionally, nearby neighborhoods may also be affected by the same contaminants. It is critical to monitor air quality in these type of facilities in order to ensure proper operation and uphold adherence to pertinent regulations. Recommended sensors include:

- Organic solvents (Ethanol, Iso-Butane)
- Hydrogen Sulfide
- Ammonia
- TRS and Amines
- Total VOCs - PID

First Responders, Disaster Aid

Drones are starting to become a common piece of technology used in emergency situations and this is due to the various benefits they provide. Operators fly drones equipped with a Scentroid DR2000 into an active area when they have the go-ahead from the Incident Commander to monitor hazardous gases from catastrophes. This allows first responders to have a complete picture of the entire affected area, a list of possible hazardous gases to be able to make informed decisions on actions to be taken and proper protective equipment to be used. The data can also be used to determine the areas that need to be evacuated and the urgency of the evacuation.

In the event of a wildfire or a controlled burn, information is critical for fire management and suppression. Drone equipped with a Scentroid DR2000 is a powerful tool to collect information both during and after a fire, helping the decision makers direct the firefighting activities. Scentroid's DR2000 has been used by several companies and universities, including University of California, Berkeley to monitor emissions from forest fires. These emissions can help create better models to predict the impact of the fire on air quality both locally and globally. The data can also be used to predict ground level impact up to 48 hours in the future to ensure proper measures such are taken to protect the safety of the public.

Recommended Sensors are:

CO, CO2, O3, NO2, NO, PM2.5, PM10, PM100 SO2, VOC, HF, HCL, Radiation, O3, NO





INSTALLATION, MAINTENANCE

Installation

The small form factor and small mass of the DR2000 makes it easy to transport and install. To install the DR2000, all that is required is to mount it on the specific drone being operated. The DR2000 is self powered and requires no connection to the actual drone being used, therefore any drone with a lift capacity of 800g will work with the DR2000, however, other vehicles such as, automobiles and even hot air balloons have been used with the DR2000.

Sensor Replacement

Sensors are under a comprehensive warranty for 24 months from the date of shipment. Additional warranty can be purchased to cover sensor replacement. Typical sensor life cycle depends on the type of sensor - generally this is between 1 to 5 years.

Calibration

DR2000 provides a self calibration-check every time it is powered and will adjust zero calibration as required automatically, and requires minimal technical skills.





AFTER-SALES SUPPORT

Training

Training is the key of using any instrument, and Scentroid provides worldwide training programs for our clients and distributors. Training can be conducted by Scentroid or your local distributor. Scentroid training tools include: online training, videos, brochure, operation manual and on-site workshops. We also offer a hands-on training program using our high-tech simulation room. Scentroid's state of the art simulation room is located at our headquarters in Toronto, Canada. You are more than welcome to visit us and meet with the people behind these products

Warranty

We are so confident of the reliability of our products, that we are glad to offer our clients a comprehensive 24 month warranty for every DR2000. Additionally, warranties can be extended for the 3rd, 4th and 5th year. For more information about our extended warranties, speak to us today.

Technical Support

We are responsible for any products that exit from our manufacturing warehouse! Our support team offers different ways to help you. Choose the one most convenient for you below!



Local Support

We have developed a vast growing network of distributors and repair facilities. To find your local support please check our distributors map.



Phone Support

Our highly professional customer services are here to serve you, for any technical issue reach them easily via phone: 416.479.0078 - Ext 210



SME Support

Connecting you to the Subject Matter Experts! Our customer support is unique in that you can talk directly to the designer or programmer of each product.



Live Chat

If you feel more convenient to solve your technical issue via chat, No problem! Reach our highly professional customer services through our website-hosted Live Chat.



Email Support

For any technical issue you our engineers are happy to assist via email. For fast and efficient support, simply email our team at support@scentroid.com

Distributor in Poland:



ATUT Sp. z o.o. ul. B. Prusa 8, 20-064 Lublin
tel/fax: +48 81 740 33 45
e-mail: info@atut.lublin.pl
www.atut.lublin.pl

LET'S
BUILD OUR
NETWORK

[linkedin.com/company/
scentroid](https://linkedin.com/company/scentroid)



DO YOU
FOLLOW
US YET?

[@Scentroid](https://twitter.com/Scentroid)



GET THE
FULL
PICTURE

[@Scentroid](https://www.instagram.com/Scentroid)



LIKE
SHARE
COMMENT

facebook.com/scentroid



WATCH
FOLLOW
SUBSCRIBE

youtube.com/scentroid



SCENTROID
Future of Sensory Technology

Scentroid (Division of IDES Canada Inc.)

70 Innovator Avenue, Units #6-8 | Toronto, ON, L4A 0Y2

T: 416. 479.0078 or 1.888.988.IDES (4337)

info@scentroid.com | www.scentroid.com