



# KRAKEN™

Autonomous Pathogen Detection Platform  
for Biosurveillance





# ELIMINATE LAG TIME & RETAKE CONTROL

## Streamlining Microbial Monitoring

Kraken Sense's mission is to make pathogen detection quick, easy, and accessible to everyone. Unlike typical microbial testing protocols that have a turnaround period of multiple days, KRAKEN™ allows you to autonomously test water in as little as 1 hour. We leverage real-time amplification methods and cloud-based data processing to bring unparalleled speed to pathogen detection. No sample preparation or manual work is required. KRAKEN™ can be programmed to continuously monitor your water source on a schedule. Our system can be set up at your site for your convenience - whether indoors or outdoors - and monitored remotely.

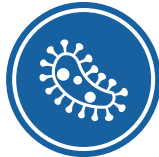


# CAPABILITIES



## Autonomous

KRAKEN™ autonomously samples **without any manual preparation**, taking samples at **any set schedule**.



## Specific

KRAKEN™ employs **strain-specific** sensors to accurately detect & quantify pathogens in just **60 minutes**.



## Real-time

Simultaneously monitor **multiple pathogens in real-time**. Results are available as **raw data** and **graphs**.



## Usability

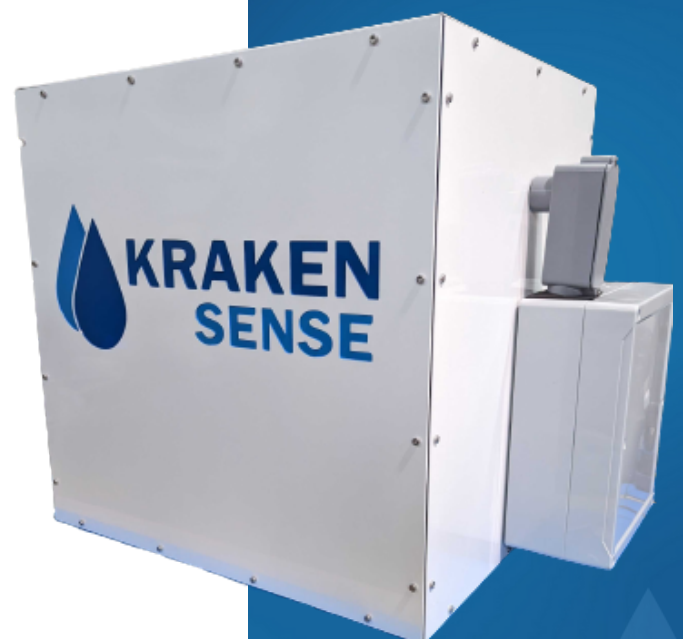
KRAKEN™ is **simple to install**, only requiring power, WiFi/GSM connection, & access to a water line.

KRAKEN™ sensors are very sensitive to particular bacterial strains and viral variants without succumbing to background interference from other contaminants. Our system can monitor for multiple pathogens simultaneously, delivering quantitative results about the exact contamination levels of each species (down to 1 copy/mL).

## Detectable Pathogens

Our catalog of available pathogen sensors is always expanding. We are typically able to develop a new target sensor for you in under 6 weeks. We can also measure physical attributes such as redox potential, pH, oxygenation, conductivity, temperature, and more. Our current readily available catalog includes:

- *E. coli* (including O157:H7)
- *Salmonella*
- *Legionella*
- *Listeria monocytogenes*
- *Vibrio*
- *Campylobacter*
- SARS-CoV-2
- Monkeypox
- CrAssphage
- PMMoV





# TECHNOLOGICAL OVERVIEW



All of Kraken Sense's manufacturing is done in-house and tailored to your project needs. Our highly skilled Microbiologists and Engineers will ensure your **custom** all-in-one system is designed specifically to meet your project requirements. KRAKEN™'s microfluidic chip tests an array of targets against controls to ensure reliability and accuracy.



KRAKEN™ can be installed in-line with virtually any water source, including water pipes, runoffs, canals, liquid containers, open bodies of water, and more.



Concentrated sample is analyzed using single-use pathogen-specific sensors. Each test takes only 60 minutes to complete. Our refillable cartridges can hold up to 66 single-use sensors.



All processing and analysis are completed within the device. Excess liquid is safe to release back to the source since KRAKEN™ does not grow or cultivate any pathogens internally.



KRAKEN™ only requires power and WiFi or a GSM connection. The results of each test are available via a mobile app or web-based dashboard.

## Each microfluidic chip cartridge is customized with an array of relevant target sensors





# CUSTOMER STORY

As Canada's airports returned to full capacity following the COVID pandemic, Kraken Sense had the opportunity of working with the Greater Toronto Airport Authority to conduct wastewater testing at Pearson Airport for Monkeypox and Omicron (SARS-CoV-2 variant) without interrupting passengers or staff.



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[KRAKEN™'s] ability to provide rapid, on-site, automated [sic] pathogen testing has been invaluable to provide us with an early warning to allow us to put mitigants in place for the protection of our passengers and our employees. Its ability to be rapidly deployed, its user-friendliness has allowed our employees to be able to use this equipment quite easily. We are very grateful to Kraken Sense for their ability to work with us, to customize the system to meet the needs of Toronto Pearson [Airport]. And I highly recommend Kraken Sense to any organization out there that is looking to have on-site pathogen testing available.

Dwayne Macintosh

Director of Safety, Security, & Health, **Greater Toronto Airport Authority**



## Kraken Sense works with you on system design and set up

# Technical Specifications

## **PATHOGEN DETECTION**

## **TECHNICAL DATA**

PATHOGENS	<i>E. coli</i> (INCLUDING O157:H7), <i>Salmonella</i> , <i>Legionella</i> , <i>Vibrio</i> , <i>Listeria monocytogenes</i> , <i>Campylobacter jejuni</i> , SARS-CoV-2, Monkeypox, CrAssphage, PMMoV, & MORE
OPERATIONAL TEMPERATURE	4 - 35°C
ANALYSIS TIME	AS LITTLE AS 60 MINUTES
SAMPLING RATE	80 MINUTES
ALARMS	ALERT THRESHOLD NOTIFICATION VIA EMAIL OR TEXT
CARTRIDGE REPLACEMENT	IN-SITU QUICK REPLACE SYSTEM

## **SAMPLE QUALITY**

## **TECHNICAL DATA**

SAMPLING RATE	CONTINUOUS
TEMPERATURE DETECTION RANGE	0 - 100°C
PH DETECTION RANGE	0.001 - 14
OXIDATION-REDUCTION POTENTIAL	± 2000 mV
CONDUCTIVITY	5 - 200,000 µS/cm
DISSOLVED OXYGEN	0 - 50 mg/L

## **PARAMETERS**

## **TECHNICAL DATA**

COMMUNICATION	WIFI, ETHERNET, OR GSM*
REAL-TIME DASHBOARD	AVAILABLE VIA WEB-BASED DASHBOARD
DIMENSIONS	27 X 23 X 25 INCHES
POWER	120 - 240 VAC 50 - 60 Hz (200 WATTS AT 120V)
CALIBRATION	PROTOCOL AVAILABLE
ENCLOSURE	WATER RESISTANT, ALUMINUM
PRESSURE RATING	15 PSI
FLUID CONNECTION	1/4" TUBE BARBED, PUSH FITTINGS, OR 1/4 INCH MPT
STORAGE TEMPERATURE	0 - 35°C
APPROXIMATE WEIGHT	75 LBS
COLLECTION RANGE	STANDARD MODEL - MAX 30 FT
SAMPLE SIZE	100 ML MINIMUM





# KRAKEN SENSE

Revolutionizing Real-time Pathogen Detection



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