

PSI pioneered the development of Tunable Diode Laser Absorption Spectroscopy for industrial trace gas detection, measurement, and control applications. Transformative products are utilized in the natural gas, combustion, process control, automotive, environmental, and biomedical markets.



RMLD-IS<sup>®</sup>



REM<sup>™</sup>



RMLD-CS<sup>®</sup>



ScanEagle Hygrometer



RMLD-OGI



FALCON-XL<sup>®</sup>



NH3-OGI

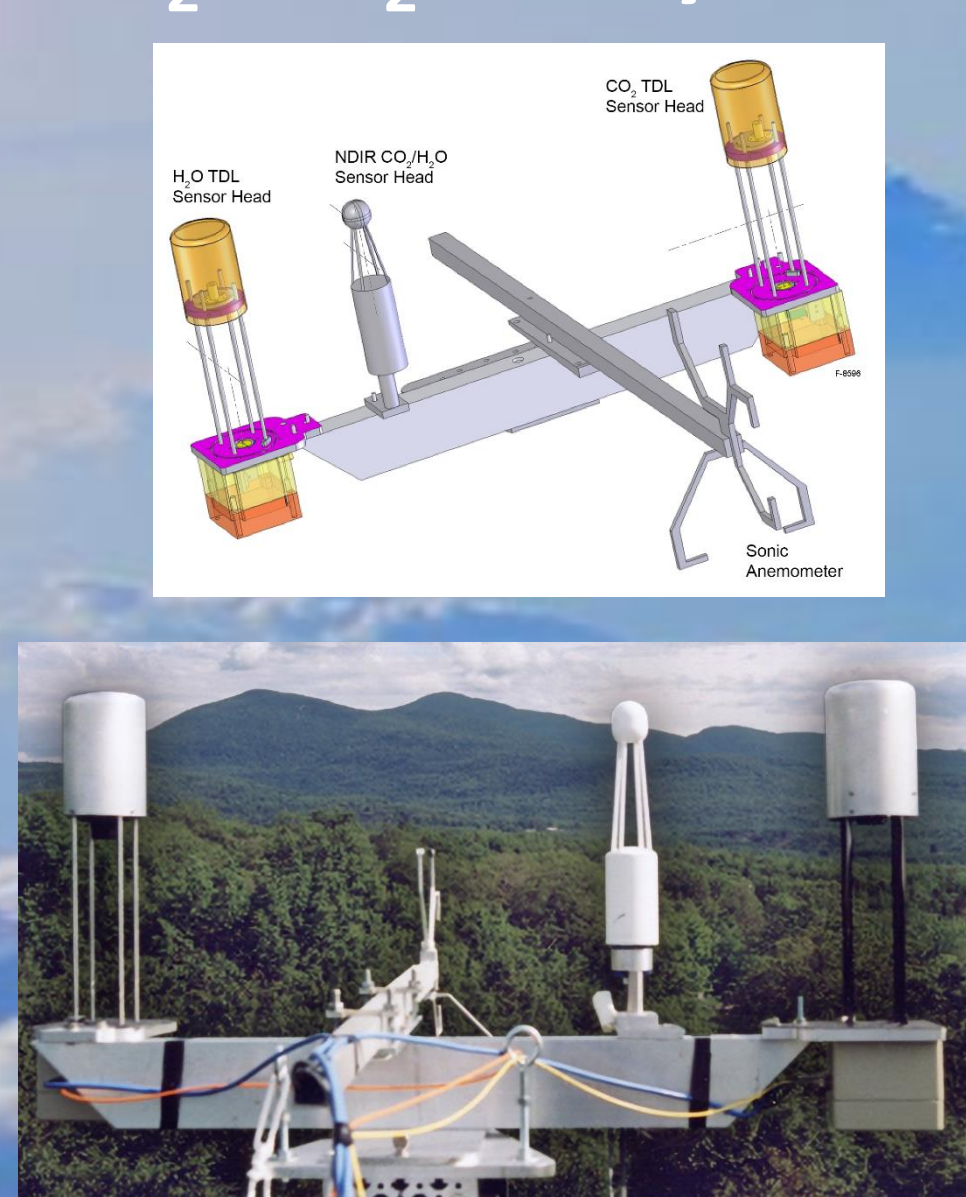
1994

SpectraScan<sup>®</sup>



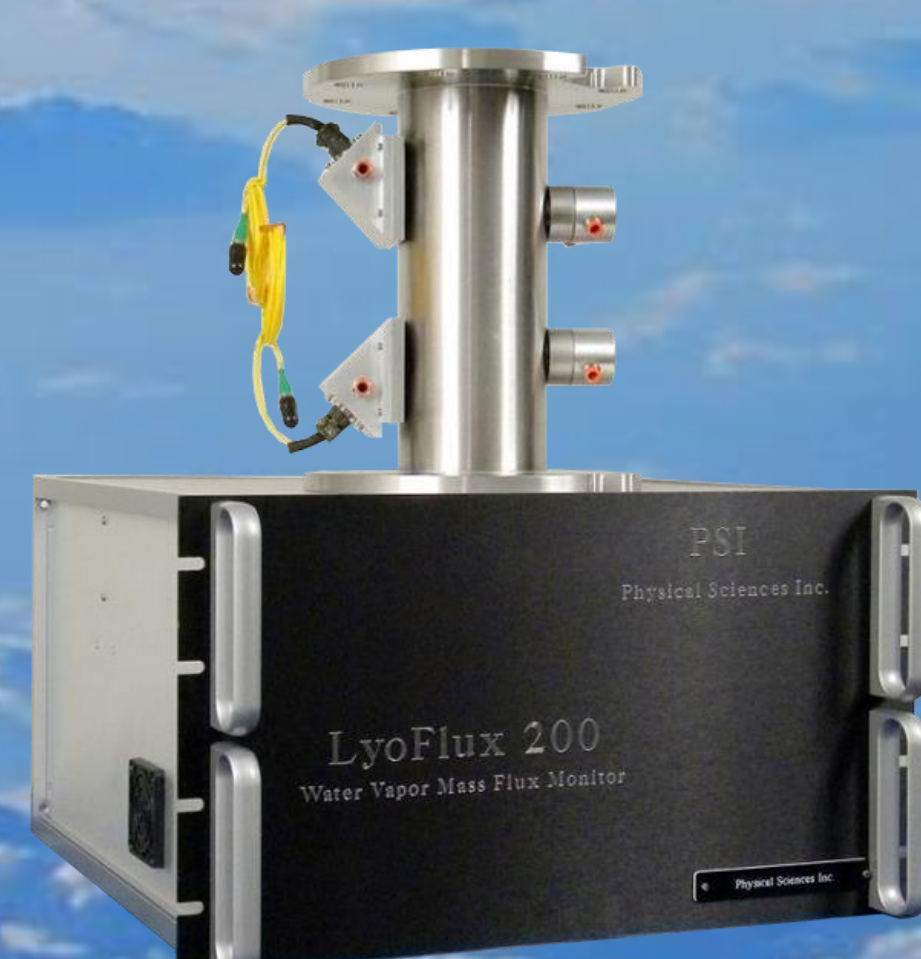
2001

CO<sub>2</sub> & H<sub>2</sub>O Eddy Fluxes



2004

LyoFlux-200



2015



2016

RMLD-UAV



2019

AccuLase-GPA<sup>®</sup>



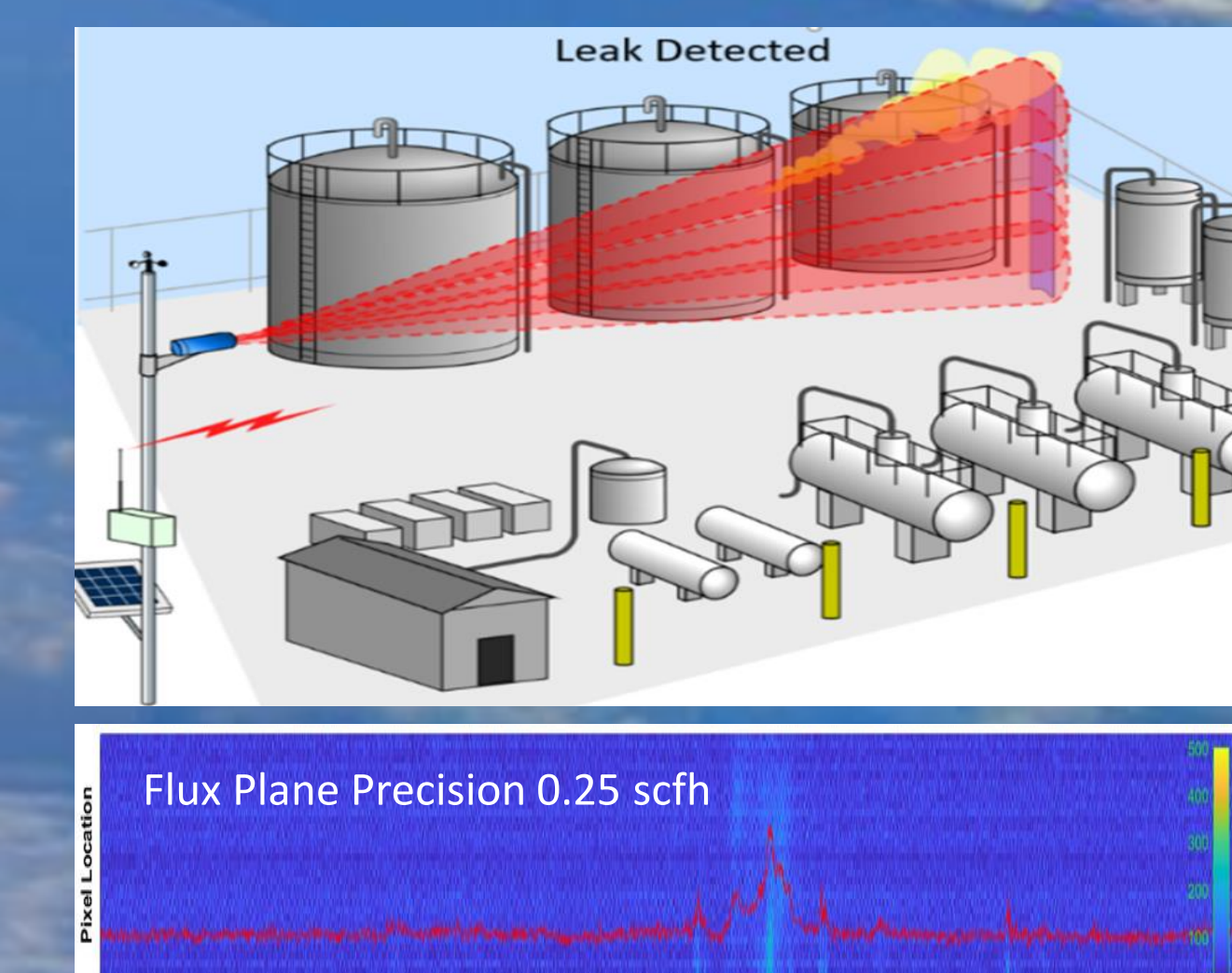
2022

DISCOVER-AMLD<sup>®</sup>



2023

eREM



CO2-LD/OGI

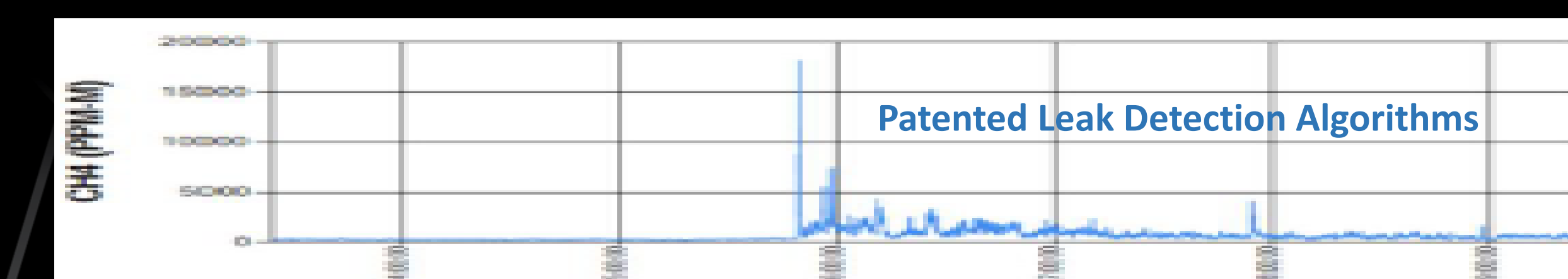
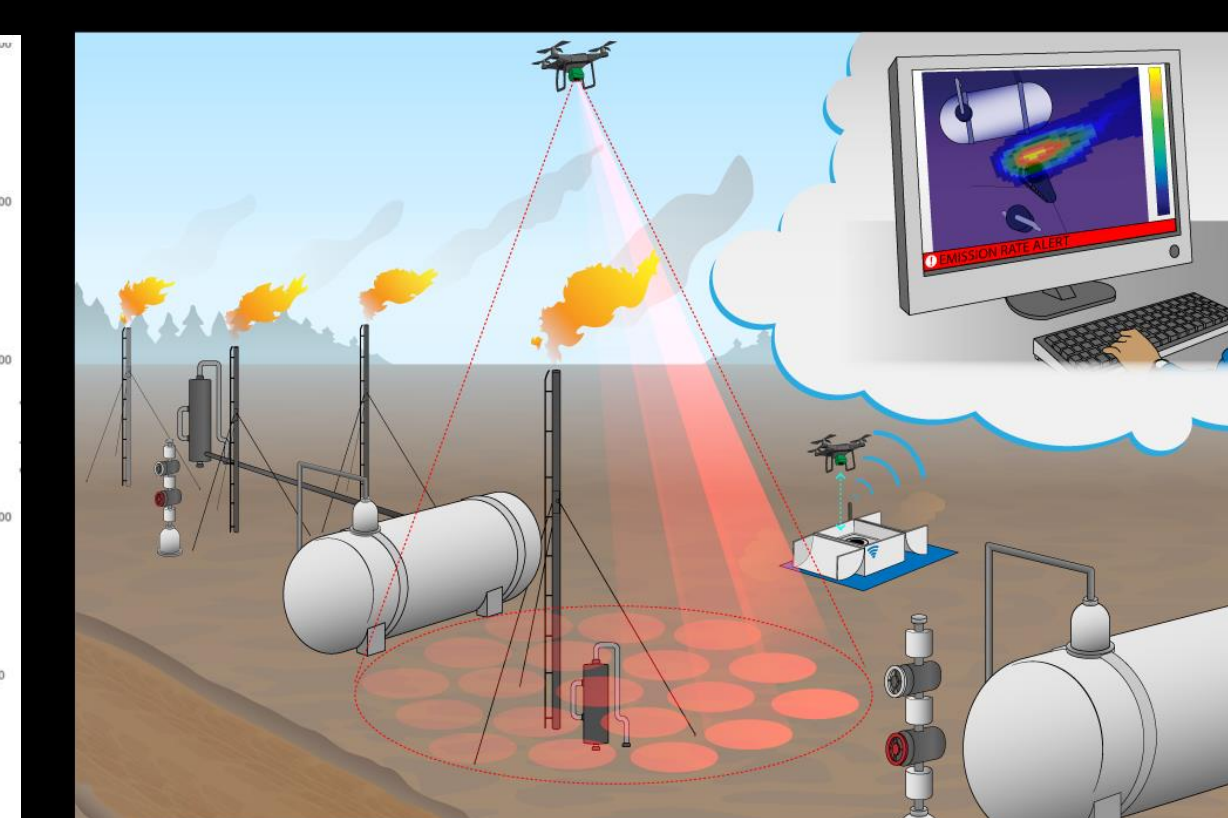
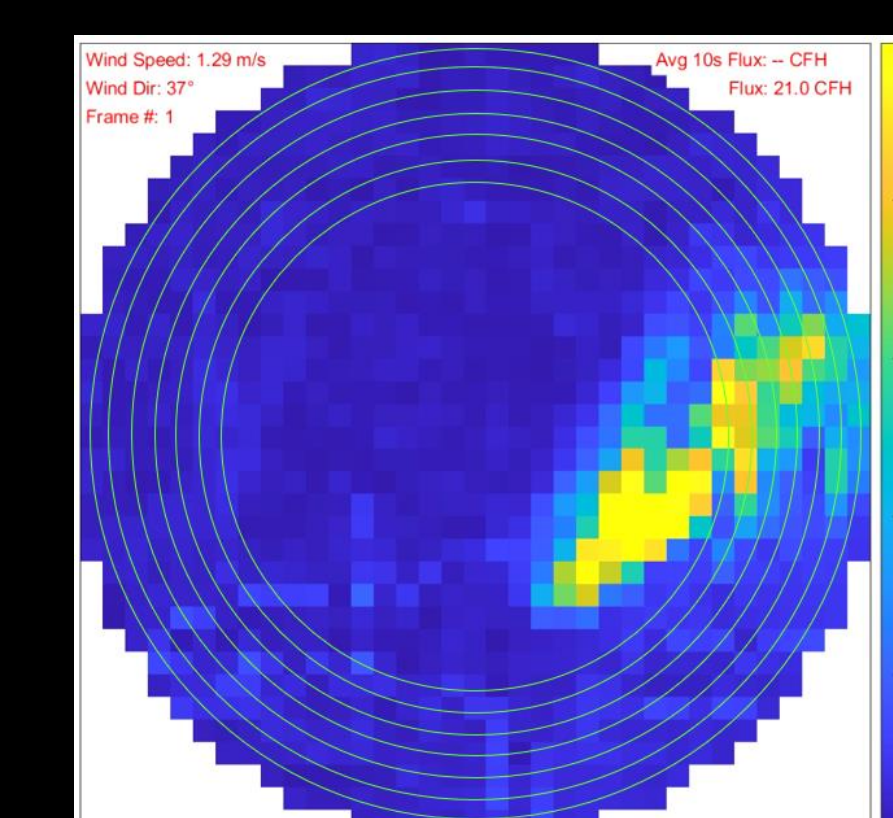


Tunable Diode Laser Absorption Spectroscopy (TDLAS) combines miniature diode lasers operating at near- and mid-infrared wavelengths with high-sensitivity absorption spectroscopy to sense trace concentrations of vapor-phase chemicals.

In 1992, PSI's spin-off Spectrum Diagnostix (SDx) created the SpectraScan<sup>®</sup> family - the world's first commercial line of near-IR TDLAS gas analyzers. Initially installed at petrochemical refineries, SpectraScan<sup>®</sup> HF and H<sub>2</sub>S open path perimeter monitors sensed leaks before they become hazardous. Later versions detect CO<sub>2</sub> at carbon sequestration sites and methane at natural gas storage facilities.

The underlying backscatter-TDLAS configuration is the basis of the disruptive handheld Remote Methane Leak Detector or RMLD<sup>®</sup>, produced by PSI's partner Heath Consultants Inc. Introduced in 2005, RMLD<sup>®</sup> transformed the leak detection industry. It is now one of the world's most successful TDLAS products, having sold over 7000 units worldwide. The DISCOVER<sup>®</sup> Advanced Mobile Leak Detector was subsequently developed as a vehicle-mounted ultra-sensitive mid-IR methane/ethane detection system.

Emerging RMLD<sup>®</sup> derivatives include : a) Low-cost aerial natural gas leak survey and quantification using lightweight airplanes, helicopters, and small UAVs; 2) Optical Gas Imagers that locate, visualize, and quantify emissions from CH<sub>4</sub>, CO<sub>2</sub> and NH<sub>3</sub> storage, processing, and transport infrastructure and facilities.



## Industrial & Environmental Sensors Group

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