



QUALITY SOLUTIONS • SOLUTIONS DE QUALITÉ

EMISSIONS MONITORING



AND DIAGNOSTIC TOOLS

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EX EMISSION MONITORING SYSTEMS

DEVELOPED BY

THERMAL LUBE INC.



DIESEL OPACIMETER

SAE J1667 PIEVAL

Thermal-Lube's **EXL Diesel Emission Detector**® is a portable optical system that measures the opacity of the smoke emitted from heavy diesel engines, such as those found in heavy trucks. It was designed for the **Snap-Acceleration Test** following **SAE J1667** protocols and guidelines. Thermal-Lube's **U.M.P.I.R.E.EXL**® analytical software enables technicians to fine-tune engine efficiency in order to reduce costly emissions.

Maintaining maximum engine operation is also important from a financial point of view. If the engine is not running properly, then its efficiency is down, and costs are up (i.e. increased fuel consumption and maintenance). In addition, substantial fines will be levied on operators whose vehicles do not meet the minimum requirements. The **EXL Diesel Emission Detector**® makes it easy for owners/operators to monitor the operating level of their engines.

The **EXL Diesel Emission Detector**® offers several advantages:

- *Completely portable*
- *Includes a built-in laptop computer*
- *Practical and easy to use*
- *Immediate response time*
- *Accurate and dependable results*
- *Stainless steel sampling head for easy maintenance and durability*
- *Compensates for ambient atmospheric conditions (temperature, pressure, relative humidity, etc.)*

Display Window:

- Allows real-time graphical viewing of testing procedures
- Viewing of archived files for comparison purposes
- Displays and prints final opacity measurements
- Indicates either "Pass" or "Fail"
- Archives all the necessary information
- Easy retrieval for future examination

The **EXL Diesel Emission Detector**® from Thermal-Lube Inc. is the only Canadian-made system validated by the Government of Quebec for the Snap Acceleration Test.



EXL5G 5-Gas Analyser

**BC AirCare, OIML
BAR 90, BAR 97**

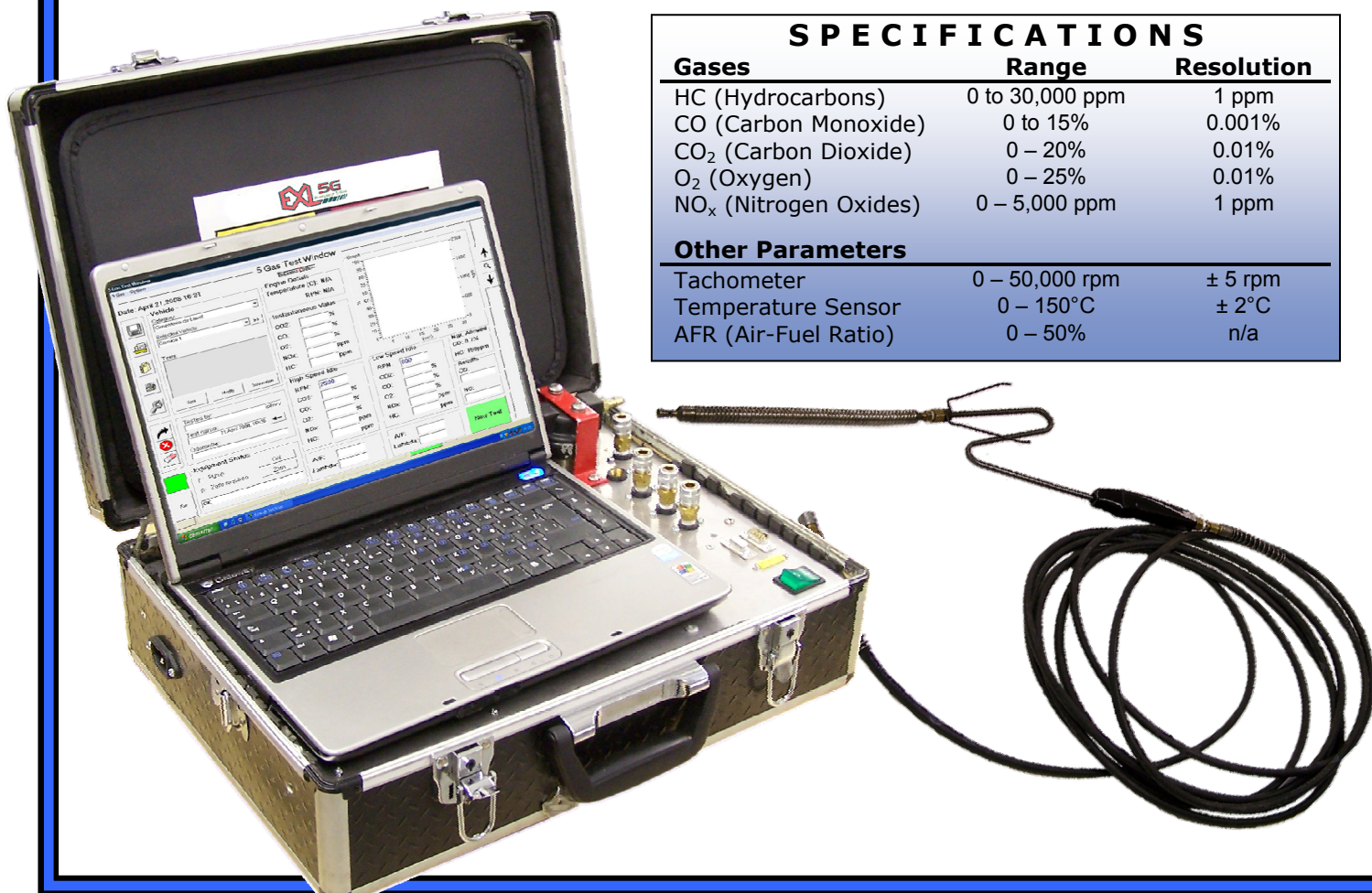
Thermal-Lube's **EXL-5G® 5-Gas Analyser** is an instrument based on **BAR 97** specifications to precisely measure the following five exhaust gases:

Hydrocarbon (HC) Carbon Monoxide (CO)
Carbon Dioxide (CO₂) Oxygen (O₂)
Nitrogen Oxides (NO_x)

With the **EXL-5G® 5-Gas Analyser**, analyzing engine emission gases can be done easily and precisely at your facility, on the road, or in a specialized maintenance shop. Designed for gasoline engines, the **EXL-5G® 5-Gas Analyser** can just as easily be used with diesel, propane, or any other type of combustion engine.

The **EXL-5G® 5-Gas Analyser** also takes samples of the surrounding environment to compensate for temperature, barometric pressure, and relative humidity – all of which can influence the results of the analysis. The **U.M.P.I.R.E.EXL®** Software incorporates advanced diagnostic tools that ensure that all components of the **EXL-5G® 5-Gas Analyser** are functioning properly. A user-friendly graphic interface allows the operator to follow the analysis in progress in real time.

Built from reliable, high-quality components, and running Thermal-Lube's patented **U.M.P.I.R.E.EXL®** software, the **EXL-5G® 5-Gas Analyser** is easy to operate and can be used in all weather conditions.



SPECIFICATIONS

Gases	Range	Resolution
HC (Hydrocarbons)	0 to 30,000 ppm	1 ppm
CO (Carbon Monoxide)	0 to 15%	0.001%
CO ₂ (Carbon Dioxide)	0 – 20%	0.01%
O ₂ (Oxygen)	0 – 25%	0.01%
NO _x (Nitrogen Oxides)	0 – 5,000 ppm	1 ppm
Other Parameters		
Tachometer	0 – 50,000 rpm	± 5 rpm
Temperature Sensor	0 – 150°C	± 2°C
AFR (Air-Fuel Ratio)	0 – 50%	n/a



Opacimeter/ 5-Gas Analyser

Thermal-Lube's portable **EXL comBo** Opacimeter / 5-Gas Analyser is a complete diagnostic system that combines our state-of-the-art diesel exhaust emission opacimeter, together with our five-gas Analyser, assembled into a single portable unit.

Built from reliable, high-quality components, and running Thermal-Lube's patented **U.M.P.I.R.E.EXL®** software, the **EXL comBo** is easy to operate and can be used in all weather conditions.



Features:

- Integrated Opacimeter
- Measures heavy-duty diesel engine exhaust
- Exceeds specifications for "Snap Acceleration Test" SAE J1667
- Accurate measurements of HC, CO, CO₂, O₂, and NO_x
- Exceeds ASM/BAR97, BAR90, BC AirCare, and OIML specifications

Thermal-Lube's **EXL comBo** Opacimeter / 5-Gas Analyser is approved by the Government of Quebec for the Snap Acceleration Test

Exhaust Emissions and Environmental Concerns

With today's significant environmental issues, there is more and more emphasis on keeping our planet clean. Government and Industry are now starting to find and improve on ways to reduce pollution. Excessive malfunctioning of diesel engines is a major contributor to air pollution and global warming.

The analysis of exhaust emissions can help trace problems and malfunctions in the engine, and help the operator stay in compliance with any applicable laws. Thermal-Lube has developed an innovative line of analytical devices designed to help companies "go green", suitable for everyone from garage mechanics to trucking fleets to cargo ships, and anyone in between.



Visit our website for more information: www.thermal-lube.com/emissions