

3-in-1 Flame-Ox

Multimode Oxidation System



Three Modes — One Oxidation System

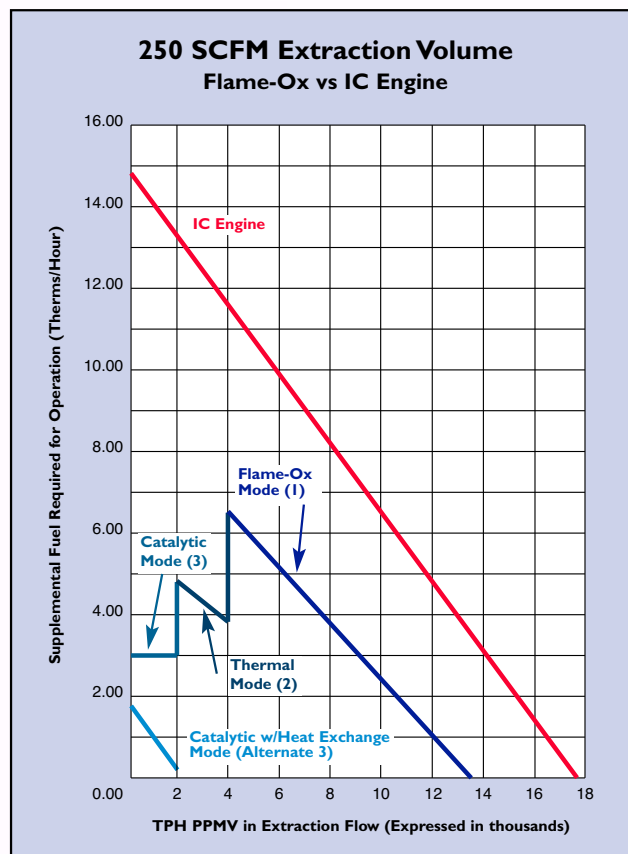
The Flame-Ox oxidation system was specifically engineered for remediation sites with free phase product and/or heavily contaminated soil vapors. The Flame-Ox is designed to provide three individual modes of operation, with each maximizing hydrocarbon throughput while minimizing supplemental energy requirements, as charted below.

The three individual modes allow the site operator to change the Flame-Ox operation as site conditions change, utilizing one system for the entire life cycle of the remediation project.

Accelerate Site Clean-up

The Flame-Ox is ideally suited to treat off-gas from soil vapor extraction systems (SVE) or multi/dual-phase extraction systems (MPE or DPE) in the presence of free phase gasoline.

The Flame-Ox was specifically designed to treat 100% of the process air stream, without having to bleed in ambient air prior to the extraction blower to lower the LEL to a point where traditional technology can safely operate.



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More Reliable Than an IC Engine

As represented in the chart at right, the Flame-Ox is more reliable than an internal combustion engine and operating costs are a fraction of a conventional oxidation system.

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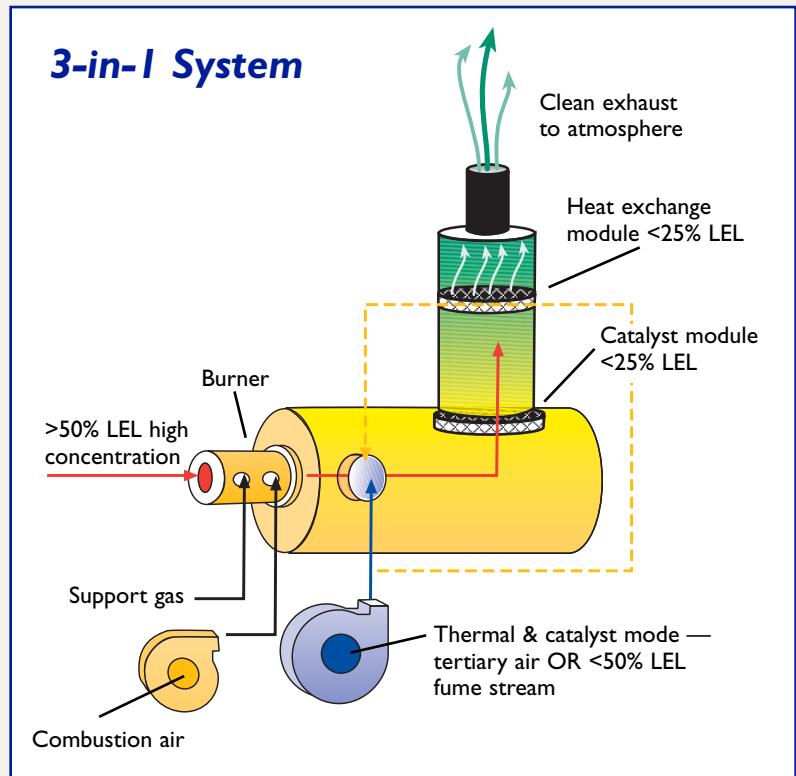
Here's how it works

(1) Flame Mode: The heavily contaminated air stream, which is highly saturated with hydrocarbon vapors, is directed into the specially designed Flame-Ox burner. Prior to combustion, a select amount of air is introduced to ensure complete combustion. In the absence of a sufficient hydrocarbon concentration in the air stream, additional auxiliary fuel is automatically added to maintain a proper mixture.

(2) Thermal Mode: Once the concentration levels decline to <50% LEL, the temperature and air flow adjustments are made and the system operates in a standard thermal mode.

(3) Catalytic Mode: When concentration levels decline to <25% LEL, the catalyst module is inserted, air flow and temperature settings are adjusted and the system operates in a standard catalytic mode. During extended periods of low concentration operation a heat exchanger can be utilized in conjunction with the catalytic mode. During flame and thermal modes, the heat exchanger is by-passed.

HYDROCARBON BURNING CHART	
Technology	Hydrocarbon Process Capability at 250 SCFM
Thermal Oxidizer	20
V8 IC Engine	75
Flame-Ox	195
Pounds Per Hour	0 25 50 75 100 125 150 175 200



Benefits of the Flame-Ox

- One piece of equipment for the entire site clean-up
- Maximum hydrocarbon throughput, accelerating site remediation
- Reliability is maximized, providing superior uptime performance
- Superior destruction efficiency in all operational modes
- Operational flexibility minimizes supplemental energy use
- Safely processes hydrocarbons and eliminates flame propagation potential to source
- Eliminates LEL alarm shut-downs due to high concentrations
- Lowest life cycle cost for off-gas treatment for heavily contaminated sites
- Hazwopper compliant

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