



Laser Gas Oy

Ultra-pure gas, virtually immediately

Laser Gas designs and manufactures advanced gas generators for a wide range of uses, both military and civilian. Units can be customised to match any user's needs and always include a comprehensive support and service package as standard.



Gas generators supplied by Laser Gas are used to keep the missiles carried by the Finnish Air Forces' Hornet fighters fully capable at all times. Photo by Ville Tuokko/Finnish Defence Forces.

Based on pressure swing adsorption (PSA) or membrane technology, Laser Gas' compact on-site oxygen and nitrogen generators extract oxygen or nitrogen directly from ambient air, making them a cost-effective alternative to pressurised cylinder gas in many applications.

The company's PSA-based oxygen generators produce up to 99% pure oxygen; while its nitrogen generators, with output capacities of 1-180 m³/l and delivery pressures of 6-700 bar, can achieve a maximum purity of 99.9999%. Gas is also available very quickly, within just a couple of minutes after a system has been switched on, in fact.

The benefits of the company's technology has seen it selected both by the Finnish Air Force, for example, to cool the missiles used on its F/A-18 Hornets, as well by the Russian Air Force for use with its new, advanced Su-35 multi-role fighters.

Not a bad achievement to be selected for front-line fighter duty in both East and West!

LOW COST AND COMPLETE RELIABILITY

The cost of the gas produced by Laser Gas' systems is a fraction of that of cylinder gas. Less than a kilowatt of electricity is sufficient to generate a kilo of oxygen or nitrogen; while high-output generators designed for the paper and electron-

ics industries can generate tonnes of oxygen an hour using less than 0.5 kWh per kg of product.

An even more valuable benefit perhaps, however, is the capability to produce gas on-site, making a unit independent of outside suppliers and eliminating the need to transport hazardous materials from location to location. This is particularly valuable in crisis situations, when maximum mobility is essential and users need to be able to rely 100% on the quality of the gas produced.

The easy transportability and built-in power supply of Laser Gas' oxygen generators have made them a natural choice for keeping civilian hospitals operational and supplying the needs of field hospitals as well.



A WORLD FIRST

Laser Gas has recently taken its gas generation expertise – as well as the flexibility of its product range – one step further with the introduction of an O₂ and N₂ combi-generator.

This is the world's first mobile unit capable of generating both oxygen and nitrogen on-site, and is capable of refilling gas cylinders up to 900 bar in the case of N₂. For users who need both gases and want to take advantage of the multiple benefits of Laser Gas technology, this combi-generator is an ideal choice and delivers

everything needed in a compact and highly mobile package.

VIRTUALLY MAINTENANCE-FREE TOO

Laser Gas' PSA units are based on two or more molecular sieves, which adsorb (attract) nitrogen at high pressure and desorb (release) it at low pressure. These sieves are subject to practically no wear in normal operation and have minimal servicing requirements. Coupled with the straightforward design and construction of units, this makes them highly reliable.

"The technology of choice for both East and West."

Recharging vital cooling gas

As part of their acquisition of Eurospike missiles, the Finnish Defence Forces needed a reliable source of ultra-pure nitrogen to cool the missiles' infrared sensors that would be available 24/7. Given the large amount of gas needed for testing missiles and guaranteeing their safe storage in peak operating condition, dedicated generator systems were decided on. The choice went to Laser Gas technology because it:

- provides ultra-pure gas very cost-effectively
- can be tailored to a user's specific needs
- requires minimal servicing, and
- is very safe to use.

Laser Gas nitrogen generators have been selected as part of the Su-35's ground services package, based on their excellent track record with the Finnish Air Force's F/A-18 Hornets.



An ideal choice for crisis and disaster use

Oxygen is one of the things first needed by field hospitals and emergency care centres in disaster areas and crisis zones. The conditions in these areas can often make supplying units with sufficient numbers of conventional oxygen cylinders difficult, however.

Laser Gas' mobile generators offer an ideal solution here. They generate extremely pure oxygen from the surrounding air and their mobility means that they can be used virtually anyway; they can even generate their own electricity if necessary as well, making them completely self-contained.

As the medical-grade oxygen produced conforms to the US 'Oxygen 93 Percent' Pharmacopeia Standard, physicians and surgeons can rely on it to meet all their needs.

Which explains why the EU's Rapid Deployment Forces (EUFOR) turned to Laser Gas for their oxygen needs during their peacekeeping operations in the Congo, for example, where Laser Gas-designed medical oxygen generators were used to guarantee field hospital operations.



The Laser Gas combi-generator is the first unit of its type, capable of generating both oxygen and nitrogen on-site.

info

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