

## Linde's LNG Integrated Storage and Vaporization Unit.



Linde's Integrated Storage and Vaporization (ISV) unit provides a safe, compact, mobile, PLC controlled, natural gas fueling solution for drilling rigs. The unit is customized to Linde's specifications and designed to incorporate the company's extensive experience with cryogenics and other flammable gaseous products such as hydrogen and oxygen, as well as practical and field experience from Linde's existing Oil and Gas Services.

- Designed to supply LNG for both dual fuel and dedicated natural gas drilling rig engines
- Capable of providing a solution for a small or partial fracturing spread
- 16,866 gallons of LNG storage (provides fuel for approximately 10 days of natural gas in a typical bi-fuel system)
- On-board electric vaporizers provide a maximum flow rate of 20,000 standard cubic feet per hour (SCFH) or 4.2 gallons per minute (gpm) of natural gas at 30 psi
- Fully automated PLC controls and remote fuel inventory management
- Integrated and redundant safety features include multiple emergency stop buttons on the trailer, one remote emergency stop button, 3 methane and 3 flame detectors
- Transportable with up to 3,450 gallon of LNG on board
- Suitable for off-road deployment
- Requires 480 VAC, 3-PHASE, 60 HZ, 200 AMPS Power Supply
- Complies with applicable NFPA, ASME, CGA and DOT codes and standards

### The Benefits of Working with Linde

- **Safety-First Culture:** Collaborative approach to providing the safest, most reliable, and effective LNG fuel solution. Formal site reviews ensure setbacks and regulatory requirements are met and documented. Equipment commissioning, mobilization, and ongoing maintenance training provide on-site personnel with confidence and sound understanding of the system
- **Full Solution Partner:** Linde offers LNG production capabilities, LNG transportation, application equipment design, and experienced technical support
- **On-site Services:** Services include commissioning, decommissioning, and transporting the mobile fueler unit between sites, providing system maintenance, and remote inventory monitoring and ordering

### Talk to Linde

Gain the economic and environmental benefits of LNG fuel. Contact Linde today for more information on LNG fueling solutions at 1.800.262-4273. Learn more at [www.lindelng.com](http://www.lindelng.com).

## Key Equipment Specifications

**General**

Configuration	horizontal/cylindrical
Nominal capacity:	16,866 us gallons
Product service:	liquid methane
Maximum working pressure:	113 psig
Length (nom):	53 feet
Width:	8 feet 6 inches (102 inches)
Height:	13 feet 3 inches (159 inches)
Evaporation rate:	0.55% in 24 hours (lng)

**Vaporizer**

Flow	20,200 scfh (4.2 gpm)
Outlet temp	40 DEG F
Supply pressure	30 psi
Fluid passages	304 stainless steel
Power requirement	480 vac, 3-phase, 60 hz, 200 amps

**Safety**

All methane and flame detectors are fully functional whenever the system is powered up and will close all valves in the event of a leak of fire being detected. A battery backup system is provided to run the control system and valves in the event of a power failure. The flame and methane detectors are located above the electric vaporizer and in the rear compartment. Four e-stops are located on the unit with an additional connection for a remote customer e-stop.

**Applicable standards**

- American Society of Mechanical Engineers (ASME) boiler and pressure vessel code
- Compressed Gas Association (CGA) - "standard for insulated cargo tank specification for nonflammable cryogenic liquids"
- US DOT, CFR 49 Part 178.338, spec. MC-338; insulated cargo tank motor vehicle
- NFPA 385-2007, std. For tank vehicles for flammable and combustible liquids
- NFPA 59A, std. For the production, storage, and handling of liquefied natural gas
- CGA S-1.2-2009, pressure relief device standards part 2

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