

CRYOBOX™

LNG Production Station



GALILEO
Technologies ▶

Overview

Cryobox™ packages all the capabilities of a large scale LNG plant into one compact and transportable module which shares the off-the-shelf components and main features of Galileo's compressor packages, namely: modularity, low weight, economies in transport and ease of installation. You can be a leader in the LNG revolution by implementing the widely proven technology of Galileo.

+100

Installed Cryobox
Stations and operating
worldwide.

+9

Years of uninterrupted
production.



Main Features

Portability

Every Cryobox measures the size of a 40-foot container. This allows an easy transportation on a trailer and multiple relocations in the small areas of a plant.

Boil-Off Free

The automatic boil-off recovery system provides emission-free LNG storage and loading. This feature avoids natural gas waste, ensuring safe operations in compliance with environmental regulations. The Cryobox reliquifies the BOG of any storage.

Plug-And-Play

Focused on the rapid availability of LNG, the Cryobox installation and commissioning takes only 6 months, simply through a concrete platform as a base and the access to electric power, compressed air and Internet.

High Availability

The reduced amount of dynamic components ensures an autonomous operation rate over 95%. This is especially important for the operation in remote areas, such as hydrocarbon fields.

Proprietary Technology

Its multiple-stage liquefaction cycle removes any inerts and is powered by a 450 Kw engine linked to a Galileo MX 400 Compressor.

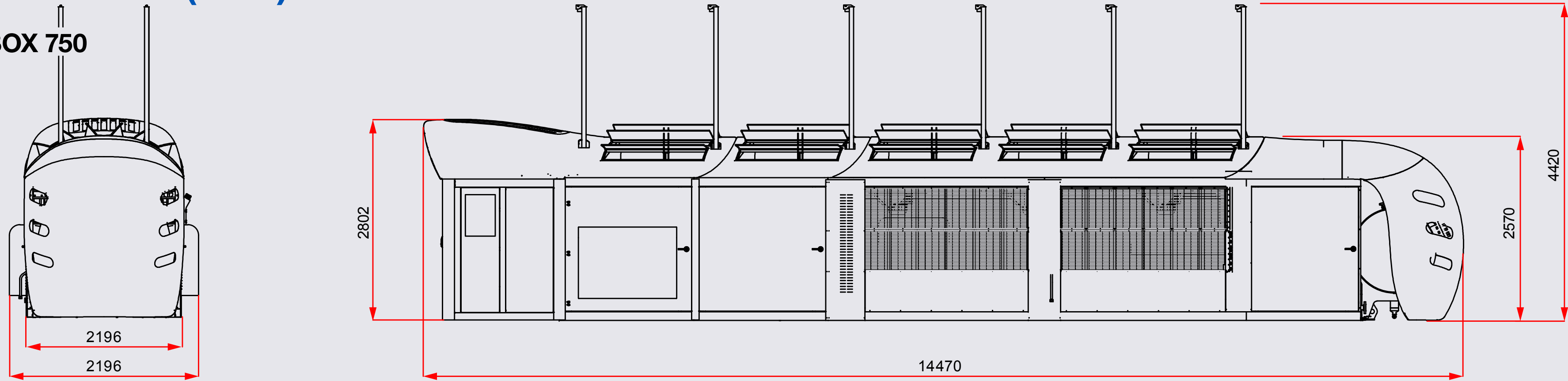
Fast and Easy Filling

The transfer of LNG to the storage tanks does not require the use of pumps. Thanks to its LNG Management system the liquefied gas can also be transferred from these tanks to the distributon trailers or to other vehicles or industrial equipment for immediate consumption.

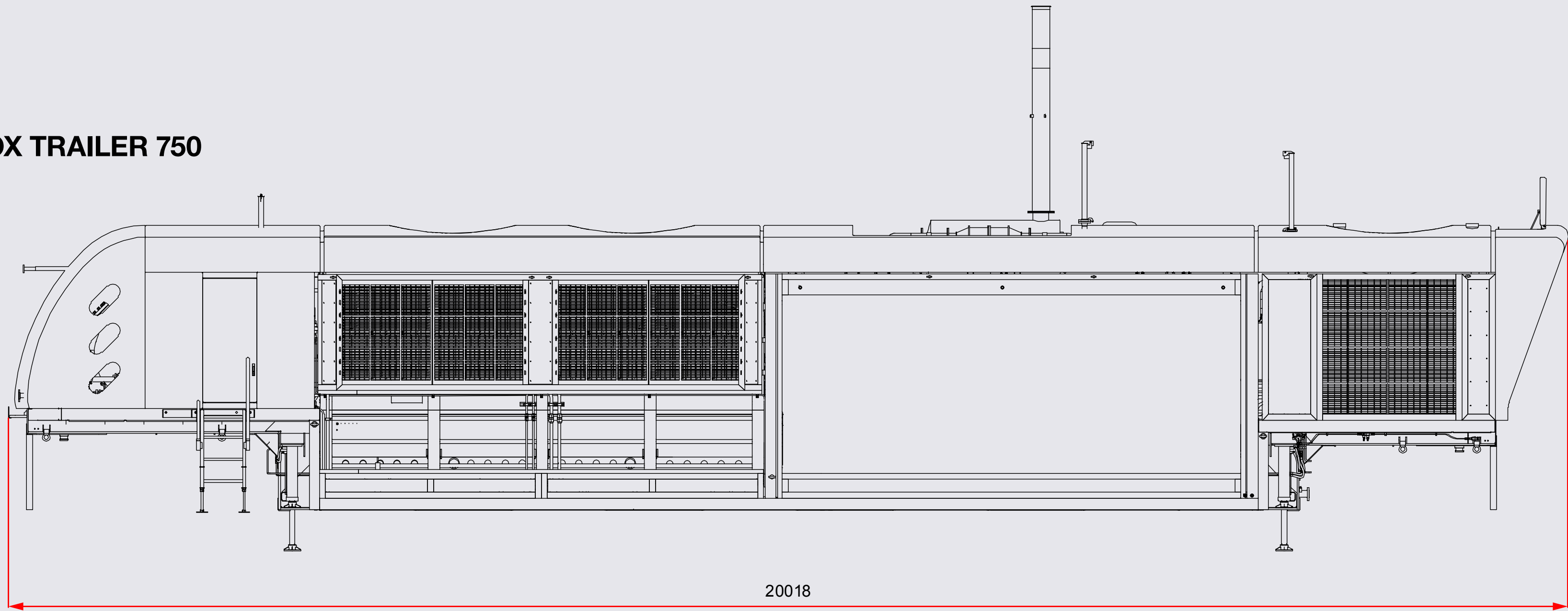


Dimensions (mm)

CRYOBOX 750

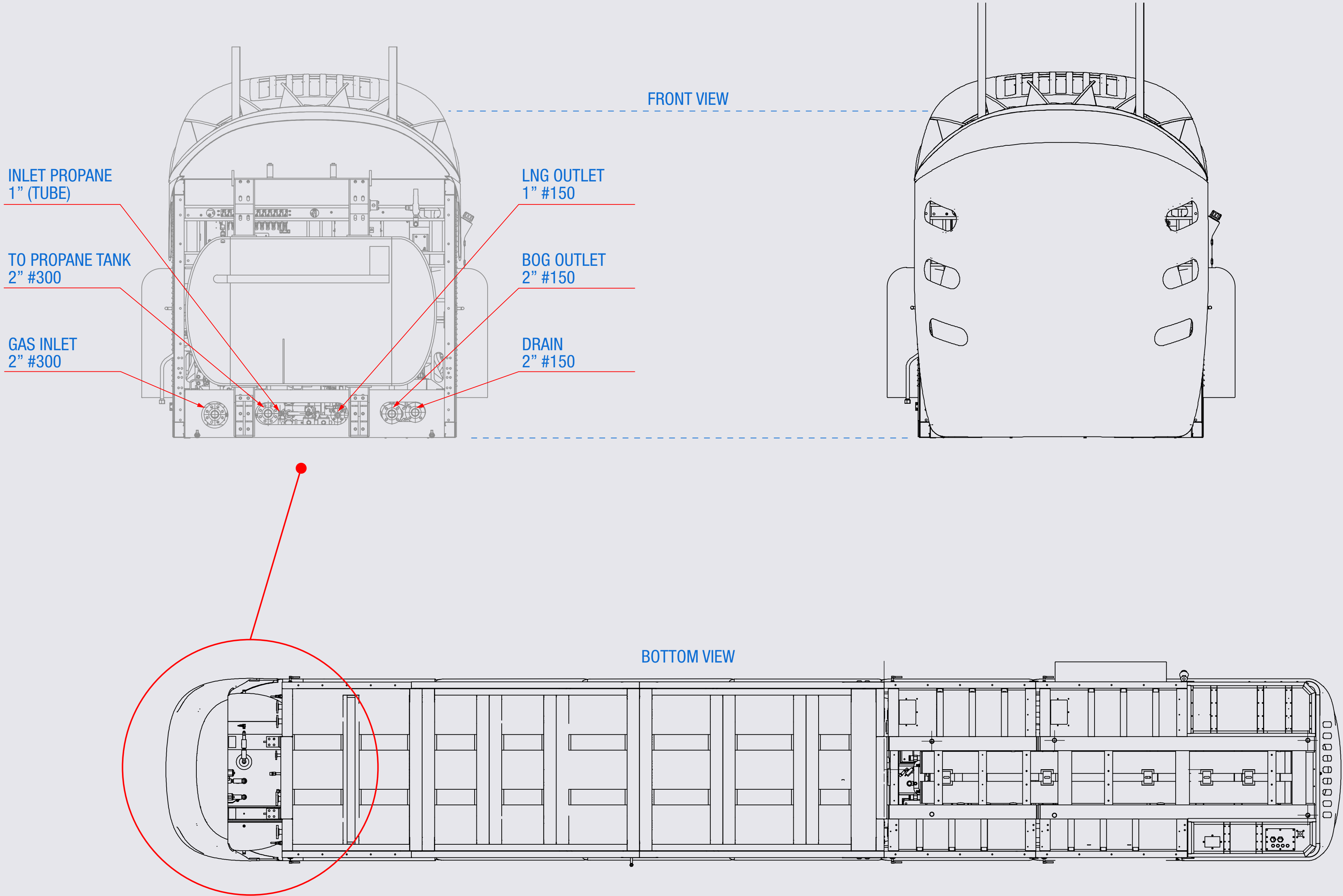


CRYOBOX TRAILER 750



Piping Connections

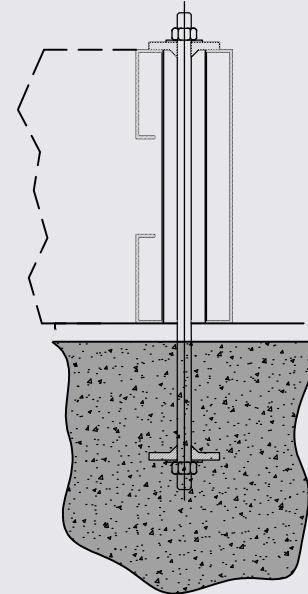
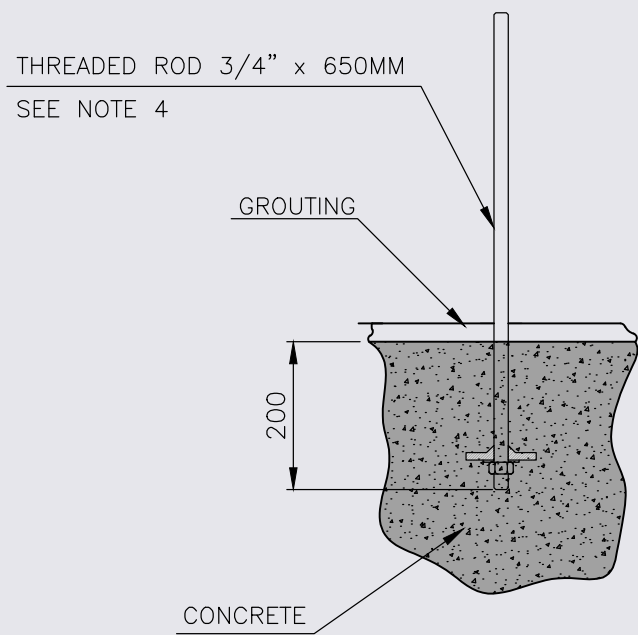
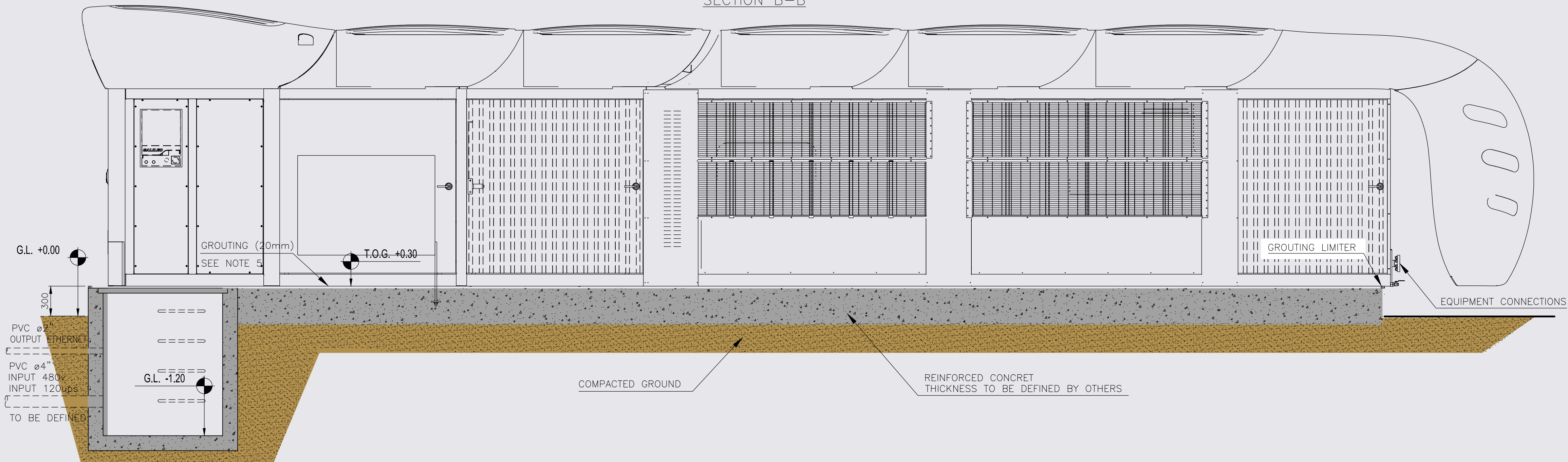
CRYOBOX 750



Foundations Drawing

CRYOBOX 750

SECTION B-B



ANCHORING DETAIL

34 Cryobox units at the Eneva LNG production facility in Campo do Azulão, Manaus, Brazil.



4 Cryobox Trailer units at Los Cavaos well,
Vaca Muerta, Argentina.



3 Cryobox Trailer units in Marcellus basin,
Pennsylvania, USA.

Ways to deliver LNG production

1. Direct load: positive pressure displacement to fixed isotanks.

2. Direct load: positive pressure displacement to mobile isotanks.

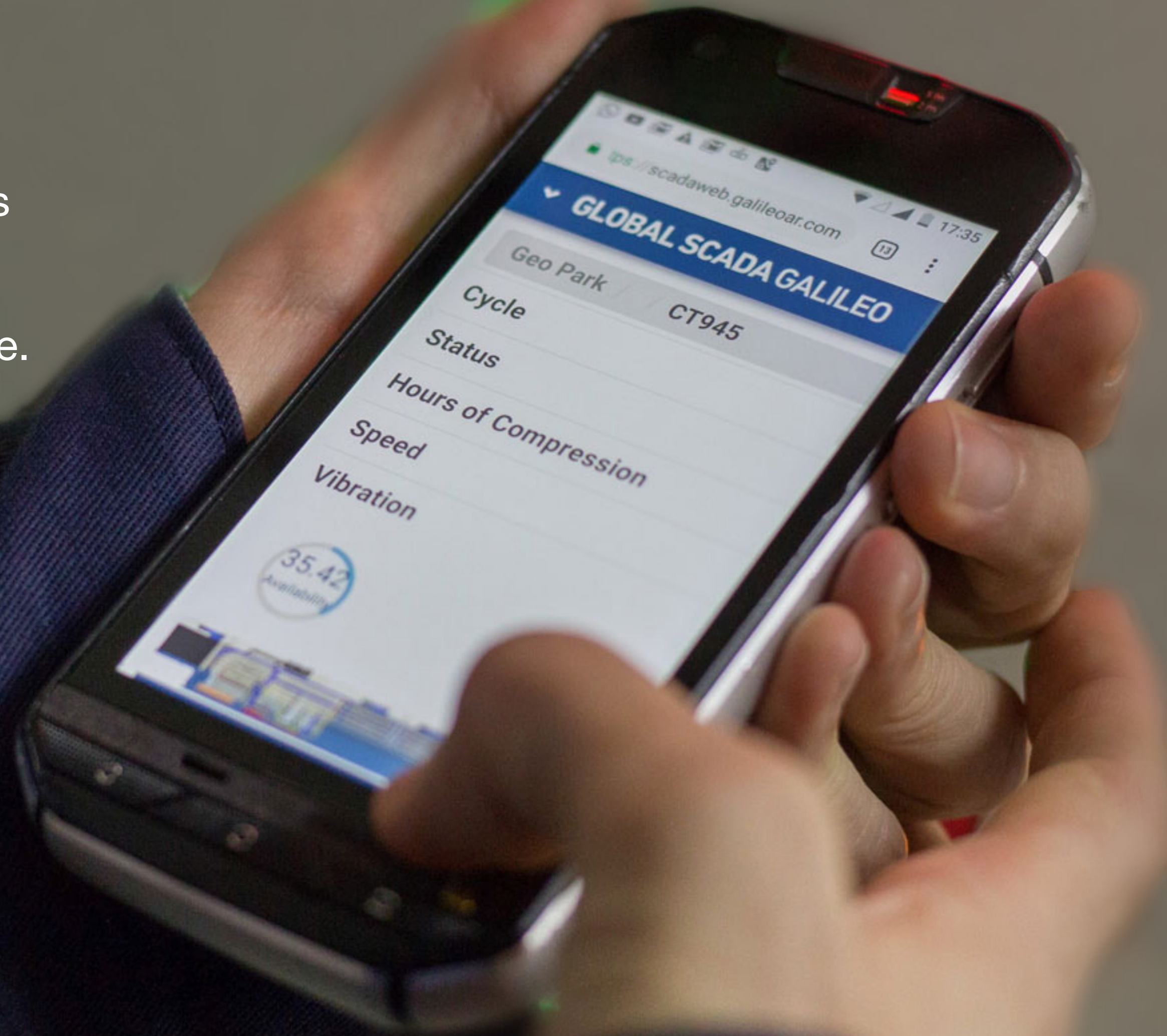
3. Through LNG transfer.

4. Through Unloading Bay with a BOG management module.



Global SCADA Galileo

We don't just sell technology; we provide a service. We will be with you 24/7, monitoring key parameters through our SCADA system* and providing on-the-ground support to keep your uptime as high as possible.



*This is an additional service and is contracted separately.

Datasheet

		CRYOBOX 750	CRYOBOX TRAILER 750
Electric Installed Power	KW	490	-
Gas Engine		-	CAT CG137-12 or CUMMINS GTA38
Nominal Consumption*	kWh/kg	0,54	
Gas characteristics			
Inlet Pressure	barg	15	
Outlet Pressure	barg	1 / 3	
Inlet Temperature	°C	10 / 50	
Outlet Temperature	°C	-153 / -145	
LNG Production	kg/h	750*	
	ton/d	18*	
	MMBTU/d	900	
	MWh/d	250	
Water Content	H ₂ O	Dew Point < 80°C	
Carbon Dioxide	CO ₂	< 150 ppm (0,015%) average	
Sulphidric Acid	H ₂ S	< 5 ppm	
Nitrogen	N ₂	up to 2% without purge gas	up to 10% with purge gas
Heavy Hydrocarbons	C ₅ +	Our technology is very flexible to manage high levels of C ₅ +. Volumes higher than 15% will be checked & confirmed with our engineering department.	

*Considering a gas of 0.65 specific gravity, ambient temperature of 22°C and N₂ content lower than 0.5%. For other conditions, check on derating curves.

Datasheet

		CRYOBOX 750	CRYOBOX TRAILER 750
Utilities Consumption	Lube Oil	< 1,5 l/day (Glygoyle 220 or similar)	
	Refrigerant	Up to 3 kg/day	
	Instrument Air	0,3 Nm³ @ 7 barg (ISO-8573-1 Type [2;2;2] or higher quality)	
	Fueling Gas	-	3600 SCMD
Dimensions		14,47m length x 2,18m width x 2,81m height	20,02m length x 2,73m width x 3,65 height
Weight		30 ton	44 ton
Features			
Boil-off free*		Yes. The unit is capable to absorb and process BOG from storage and auxiliaries.	
Transportable		No	Yes
Intrinsically safe		Yes	Yes
Monitoring		24/7 trough our Galileo Global SCADA	
Modularity		Yes	Yes
Plug & Play		Yes	Yes
Start up	Cold	2 min for 100% of the load	
	Warm	10 min for the 100% of the load	
		No limitation in start cycles	
Scalability	Micro	18 TPD / 1 Cryobox / 4 GWh/year	
	Small	90 TPD / 5 Cryoboxes / 20 GWh/year	
	Mid	1 MTPA / 150 Cryoboxes / 640 GWh/year	

*Considering a gas of 0.65 specific gravity, ambient temperature of 22°C and N₂ content lower than 0.5%. For other conditions, check on derating curves.

Datasheet

		CRYOBX 750	CRYOBX TRAILER 750
Electrical parameters*			
Nominal Active Power	kW	490	-
Nominal Apparent Power	kVA	600	-
Installation Nominal Current	A	715	-
Active Peak Power	kW	600	-
Apparent Peak Power	kVA	2000	-
Peak Current	A	2300	-
Main compressor cos Φ (fi)		0,86	-
Main compressor efficiency		0,96	-
Main compressor start system		SOFT-STARTER / VFD under requirement	-
Maintenance	Preventive Maintenance schedule every 1500 operating hours		
Regulations	Area clasification: Class 2 Div 1 according to NFPA 59		
	Reciprocating compressor under API 618		
	Vessels under ASME VIII div I (ASME U STAMP)		
	Welding under ASME IX (ASME U STAMP)		
	NEC (NFPA 70)		
	Heat exchangers under ASME B39 (ASME U STAMP)		

*Considering a gas of 0.65 specific gravity, ambient temperature of 22°C and N₂ content lower than 0.5%. For other conditions, check on derating curves.

Some succes cases

1. Buquebus

Total units: 7

Application: Produce LNG as a clean fuel for international transportation ship (Francisco Ship).

Location: Buenos Aires, Argentina.



2. Eneva

Total units: 34

Application: Non-connected gas monetization in the middle of the Amazonian Forest (reservoir-to-wire).

Location: Manaos, Brazil.



3. Canacol

Total units: 4

Application: increase natural gas production reaching new markets with virtual LNG pipelines, substituting heavy fuels.

Location: Departamento de Córdoba, Colombia.



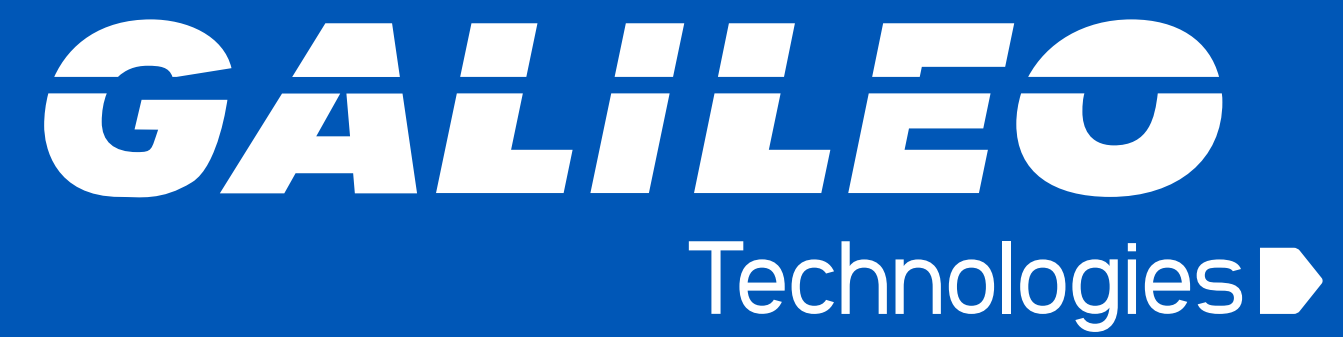
4. Edge

Total units: 20

Application: Monetization of Flared Gas and fuel supply to end users.

Location: United States of America (USA).





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