LNG

TANKS AND EQUIPMENT
FOR PRESSURIZED LIQUEFIED GASES AT CRYOGENIC TEMPERATURE

STATIC TANKS
TANKS FOR SERVICE STATIONS
ISO-CONTAINERS
SKIDS
TANKERS FOR TRANSPORT

lapesa
Tanks for LNG

Engineering, development and manufacture of tanks for your projects of pressurized liquefied natural gas at cryogenic temperature.
Tanks designed for different working pressures, from 5 to 40 bar!
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Double-wall liquefied natural gas storage tanks with vacuum insulation, comprising two concentric tanks, an inner tank in austenitic stainless steel and an outer tank in carbon steel, protected against weathering by special anti-rust surface treatment.

The chamber between the two concentric tanks is filled with a material with a high insulating capacity and hygroscopic material is also added. A vacuum (< 5 *10^-2 mbar) is then made in the chamber and this together provides the thermal insulation for the tank.

Lapesa standard tanks have capacities ranging from 5 to 240 m³, for horizontal and vertical installation and with working pressures from 5 to 40 bar depending on the model, and design temperatures of -196 +50°C.

Our tanks are designed and manufactured according to European Directive 2014/68/EU or, upon request, to ASME VIII, div.1. They undergo checking and testing during the manufacturing process in line with Lapesa’s internal quality standards and EN ISO 9001 certification as well as being supervised by independent quality entities.

All of our cryogenic tanks are supplied with the valve fittings mounted, including a PBU pressure build up unit that maintains the tank’s operating pressure in normal working conditions.

This document describes the standard equipment that is supplied with the tanks and the optional fittings available if needed to meet specific project requirements.

Static tanks specifically for LNG service stations, tankers for LNG transport, handling and service, LNG skids and ISO-containers for maritime and land transport of LNG complete the range of CRYOGENIC TANKS AND EQUIPMENT described in this catalogue.
Quality management and planning together with inspections throughout the whole of the manufacturing process of lapesa products is an essential part our corporate strategy and a responsibility that is taken on at all levels of the company. Our permanent objective is centred on continually improving the efficiency of our quality management in order to achieve the highest standards of quality in all of our products.

lapesa boasts ISO 9001 quality certification since 1993, and manufactures its products in accordance with the European standards and directives on the manufacture of pressurized vessels in general and specifically that referring to tanks for gases at cryogenic temperature, with EC marking.

Also in compliance with US ASME VIII, div.1, standards and “U” marking (ASME stamp).
### Static Tanks for LNG Storage

**Horizontal Cryogenic Tanks for Liquefied Natural Gas**

#### 2200 H Series

**Designation example:** "LC6H22-P05". LC: lapesa cryogenic tank, 6: nominal volume 6 m³, H: horizontal installation, 22: diameter 2,200 mm, P05: maximum working pressure 5 bar

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<td>6,0</td>
<td>11,0</td>
<td>16,0</td>
<td>20,0</td>
</tr>
<tr>
<td>NET VOLUME m³</td>
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<td>6,2</td>
<td>10,9</td>
<td>15,7</td>
<td>19,9</td>
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<tr>
<td>INNER TANK material</td>
<td>austenitic stainless steel</td>
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<td>OUTER TANK material</td>
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<tr>
<td>EXTERNAL FINISH</td>
<td>SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish</td>
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#### Technical Details

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<tr>
<td>LNG USEFUL CAPACITY (95%, 1 bar) mt</td>
<td>2,2</td>
<td>2,7</td>
<td>4,8</td>
<td>6,9</td>
<td>8,7</td>
</tr>
<tr>
<td>PRESSURE BUILD UP UNIT (PBU) CAPACITY (for NG consumption at 3 bar)Nm³/h</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
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</table>

(1) Please consult us for other flow and/or pressure requirements.

#### Equipment Included

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE.
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

#### Optional Equipment

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve.
- High point: double.
## Details for Handling and Transport

<table>
<thead>
<tr>
<th>LC5H22-P.*</th>
<th>LC6H22-P.*</th>
<th>LC11H22-P.*</th>
<th>LC16H22-P.*</th>
<th>LC20H22-P.*</th>
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<tbody>
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<td>4.6</td>
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<td>P09</td>
<td>2.9</td>
<td>3.3</td>
<td>4.6</td>
<td>5.9</td>
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<td>3.5</td>
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<td>P28</td>
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<td>7.8</td>
</tr>
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<td>P35</td>
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<td>6.5</td>
<td>8.4</td>
</tr>
</tbody>
</table>

- Approx. tare when empty (tank with full equipment) **mt**
  - LC5H22-P.*: P05 = 2.9, P09 = 3.0
  - LC6H22-P.*: P13 = 3.0
  - LC11H22-P.*: P16 = 3.1, P22 = 3.5
  - LC16H22-P.*: P28 = 3.7
  - LC20H22-P.*: P35 = 4.0

### Dimensions
- L: total length including valves **mm**
- D: total width **mm**
- H: total height including vent pipe **mm**
- P: distance between supports **mm**

### Diagrams
- **Schematic Diagram 2200 H Series**

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**Legend**
- **VG**: Gas phase filling valve
- **VL**: Liquid phase filling valve
- **VC**: Consumption valve
- **VR**: Overflow valve
- **PPR**: Vaporiser (Build Up Unit)
- **VSP**: Output valve PBU
- **F**: Filter
- **VS**: Auxiliary valve – Gas phase
- **IN**: Level
- **IP**: Manometer
- **vn**: Level gate valve
- **re**: By-pass valve
- **ni**: Bottom level valve
- **rs**: Top level valve
- **TP**: Pressure transmitter (according to model)
- **TN**: Level transmitter (according to model)
- **CS**: 3-way valve (safety)
- **VS**: Safety valve
- **SL**: Line safety valve
- **VA**: Pressure relief valve
- **Pe**: Casing safety device
- **Tv**: Vacuum connection
- **Mv**: Vacuum gauge device

---

lapesa reserves the right to carry out technical changes without prior notice.
STATIC TANKS FOR LNG STORAGE

HORIZONTAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

3000 H SERIES

Designation example "LC20H30-P16": LC: lapesa cryogenic tank, 20: nominal volume 20 m³, H: horizontal installation, 30: diameter 3,000 mm, P16: maximum working pressure 16 bar

### MAIN FEATURES

<table>
<thead>
<tr>
<th>NOMINAL VOLUME</th>
<th>LC20H30-P.*</th>
<th>LC30H30-P.*</th>
<th>LC40H30-P.*</th>
<th>LC50H30-P.*</th>
<th>LC60H30-P.*</th>
<th>LC80H30-P.*</th>
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<tbody>
<tr>
<td>m³</td>
<td>20,0</td>
<td>30,0</td>
<td>40,0</td>
<td>50,0</td>
<td>60,0</td>
<td>80,0</td>
</tr>
</tbody>
</table>

| NET VOLUME | m³ | 19 | 30,6 | 39,9 | 49,9 | 59,8 | 79,2 |

<table>
<thead>
<tr>
<th>MAXIMUM WORKING PRESSURE</th>
<th>bar</th>
<th><em>P</em>: 05, 09, 16, 20, 24, 30, 38</th>
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</thead>
<tbody>
<tr>
<td>DESIGN TEMPERATURE</td>
<td>°C</td>
<td>-196</td>
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<tr>
<td>EC marking:</td>
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<tr>
<td>ASME stamp:</td>
<td></td>
<td>ASME VIII, div.1</td>
</tr>
</tbody>
</table>

| INNER TANK material     | austenitic stainless steel |
| OUTER TANK material     | carbon steel               |
| INSULATION              | Perlite insulating material, vacuum < 5 * 10⁻² |

| INTERNAL FINISH         | Particle free |
| EXTERNAL FINISH         | SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish |

### TECHNICAL DETAILS

| LNG USEFUL CAPACITY (95%, 1 bar) | mt | 8,3 | 13,4 | 17,4 | 21,8 | 26,1 | 34,6 |
| PRESSURE BUILD UP UN.TP (PBU)   | Nm³/h | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

(1) Please consult us for other flow and/or pressure requirements.

### EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

### OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.
**STATIC TANKS FOR LNG STORAGE**

**DETAILS FOR HANDLING AND TRANSPORT**

<table>
<thead>
<tr>
<th></th>
<th>LC20H30-P.*</th>
<th>LC30H30-P.*</th>
<th>LC40H30-P.*</th>
<th>LC50H30-P.*</th>
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<td>20.3</td>
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</tbody>
</table>

Approx. tare when empty (tank with full equipment) **mt**

<table>
<thead>
<tr>
<th></th>
<th>P05</th>
<th>P09</th>
<th>P20</th>
<th>P24</th>
<th>P30</th>
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<tbody>
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<td><strong>P09</strong></td>
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**Diagram of Equipment**

**SCHEMATIC DIAGRAM** (EXAMPLE WITH INTERNAL ECONOMIZER) **3000 H SERIES**

**Legend**

- **VG**: Gas phase filling valve
- **VL**: Liquid phase filling valve
- **VC**: Consumption valve
- **VR**: Overflow valve
- **PPR**: Vaporiser (Build Up Unit)
- **VEP**: Input valve PBU
- **VSP**: Output valve PBU
- **RP**: Pressure regulator
- **F**: Filter
- **VE**: Economiser valve
- **VEE**: Economiser Input Valve
- **VAS**: Economiser Output Valve
- **VAG**: Auxiliary valve – Gas phase
- **IN**: Level
- **IP**: Manometer
- **vn**: Level gate valve
- **re**: By-pass valve
- **ni**: Bottom level valve
- **ri**: Top level valve
- **TP**: Pressure transmitter (according to model)
- **TN**: Level transmitter (according to model)
- **CS**: J-way valve (safety)
- **VS**: Safety valve
- **SL**: Line safety valve
- **VA**: Pressure relief valve
- **Pe**: Casing safety device
- **Tv**: Vacuum connection
- **Mv**: Vacuum gauge device

lapesa reserves the right to carry out technical changes without prior notice.
**STATIC TANKS FOR LNG STORAGE**

**HORIZONTAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS**

### 3800 H SERIES

**Designation example: “LC80H38-P16”**
- **LC**: lapesa cryogenic tank
- **80**: nominal volume 80 m³
- **H**: horizontal installation
- **38**: diameter 3,000 mm
- **P16**: maximum working pressure 16 bar

#### MAIN FEATURES

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<td>LNG USEFUL CAPACITY (95%, 1 bar)</td>
<td>mt</td>
<td>34,9</td>
<td>46,9</td>
<td>51,8</td>
<td>67,6</td>
<td>87,2</td>
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<tr>
<td>MAXIMUM WORKING PRESSURE</td>
<td>bar</td>
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<td>INNER TANK</td>
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<td>INSULATION</td>
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<td>Perlite insulating material, vacuum &lt; 5 * 10⁻²</td>
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<tr>
<td>INTERNAL FINISH</td>
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<td>Particle free</td>
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<td>EXTERNAL FINISH</td>
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<td>SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish</td>
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#### TECHNICAL DETAILS

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<td>mt</td>
<td>34,9</td>
<td>46,9</td>
<td>51,8</td>
<td>67,6</td>
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<td>98,8</td>
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<td>PRESSURE BUILD UP UNIT (PBU) CAPACITY (for NG consumption at 3 bar)</td>
<td>Nm³/h</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
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</tbody>
</table>

(1) Please consult us for other flow and/or pressure requirements.

### EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

### OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.
## Details for Handling and Transport

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<td>31.8</td>
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<td>50.1</td>
<td>57.5</td>
<td>63.4</td>
</tr>
<tr>
<td>P17</td>
<td>25.1</td>
<td>31.6</td>
<td>34.2</td>
<td>43.1</td>
<td>54.0</td>
<td>61.9</td>
<td>68.2</td>
</tr>
<tr>
<td>P22</td>
<td>27.6</td>
<td>34.7</td>
<td>37.6</td>
<td>47.6</td>
<td>59.7</td>
<td>68.3</td>
<td>75.1</td>
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<tr>
<td>P27</td>
<td>30.4</td>
<td>38.2</td>
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<td>65.8</td>
<td>75.2</td>
<td>82.5</td>
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<tr>
<td>P30</td>
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<td>43.9</td>
<td>55.5</td>
<td>69.7</td>
<td>79.6</td>
<td>87.2</td>
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<tr>
<td>P34</td>
<td>33.9</td>
<td>42.6</td>
<td>46.3</td>
<td>58.6</td>
<td>73.7</td>
<td>84.1</td>
<td>92.0</td>
</tr>
</tbody>
</table>

- **Approx. tare when empty (tank with full equipment) mt**:
  - P05: 21.6
  - P09: 21.6
  - P14: 23.4
  - P17: 25.1
  - P22: 27.6
  - P27: 30.4
  - P30: 22.1
  - P34: 33.9

- **L: total length including valves mm**:
  - P05: 10,415
  - P09: 13,415
  - P14: 14,695
  - P17: 18,705
  - P22: 23,705
  - P27: 26,870
  - P30: 29,870
  - P34: 32,870

- **D: total width mm**:
  - P05: 3,800
  - P09: 3,800
  - P14: 3,800
  - P17: 3,800
  - P22: 3,800
  - P27: 3,800
  - P30: 3,800
  - P34: 3,800

- **H: total height including vent pipe mm**:
  - P05: 4,150
  - P09: 4,150
  - P14: 4,150
  - P17: 4,150
  - P22: 4,150
  - P27: 4,150
  - P30: 4,150
  - P34: 4,150

- **P: distance between supports mm**:
  - P05: 6,900
  - P09: 10,000
  - P14: 11,000
  - P17: 15,300
  - P22: 20,000
  - P27: 23,200
  - P30: 26,200
  - P34: 26,200

### Schematic Diagram

**3800 H Series**

- **VG**: Gas phase filling valve
- **VL**: Liquid phase filling valve
- **VC**: Consumption valve
- **VR**: Overflow valve
- **PPR**: Vaporiser (Build Up Unit)
- **VEP**: Input valve PBU
- **VSP**: Output valve PBU
- **RP**: Pressure regulator
- **F**: Filter
- **VAG**: Auxiliary valve – Gas phase
- **IN**: Level
- **IP**: Manometer
- **vn**: Level gate valve
- **re**: By-pass valve
- **ri**: Bottom level valve
- **rs**: Top level valve
- **TP**: Pressure transmitter (according to model)
- **TN**: Level transmitter (according to model)
- **CS**: 3-way valve (safety)
- **VS**: Safety valve
- **SL**: Line safety valve
- **VA**: Pressure relief valve
- **Pe**: Casing safety device
- **Tv**: Vacuum connection
- **Mv**: Vacuum gauge device

**Note**: Lapesa reserves the right to carry out technical changes without prior notice.
STATIC TANKS FOR LNG STORAGE
HORIZONTAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

4200 H SERIES

Designation example "LC240H42-P16": LC: lapesa cryogenic tank, 240: nominal volume 240 m³, H: horizontal installation, 42: diameter 4,200 mm, P16: maximum working pressure 16 bar

### MAIN FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>LC195H42-P-*</th>
<th>LC240H42-P-*</th>
<th>LC285H42-P-*</th>
<th>LC307H42-P-*</th>
<th>LC318H42-P-*</th>
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</thead>
<tbody>
<tr>
<td>Nominal Volume m³</td>
<td>195,0</td>
<td>240,0</td>
<td>285,0</td>
<td>307,0</td>
<td>318,0</td>
</tr>
<tr>
<td>Net Volume m³</td>
<td>195,0</td>
<td>240,0</td>
<td>285,0</td>
<td>307,0</td>
<td>318,0</td>
</tr>
<tr>
<td>LNG Useful Capacity (95%, 1 bar) mt</td>
<td>85,2</td>
<td>104,9</td>
<td>124,5</td>
<td>134,2</td>
<td>139,0</td>
</tr>
<tr>
<td>Maximum Working Pressure bar</td>
<td>*16: 05, 09, 13, 16, 22, 28, 35</td>
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<td>-196</td>
<td>-196</td>
<td>-196</td>
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<tr>
<td>Design Temperature ºC</td>
<td>-196</td>
<td>-196</td>
<td>-196</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inner Tank material</td>
<td>austenitic stainless steel</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Outer Tank material</td>
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<td>Internal Finish</td>
<td>Particle free</td>
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<tr>
<td>External Finish</td>
<td>SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish</td>
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### TECHNICAL DETAILS

<table>
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<tr>
<th>Feature</th>
<th>LC195H42-P-*</th>
<th>LC240H42-P-*</th>
<th>LC285H42-P-*</th>
<th>LC307H42-P-*</th>
<th>LC318H42-P-*</th>
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</thead>
<tbody>
<tr>
<td>LNG Useful Capacity (95%, 1 bar) mt</td>
<td>85,2</td>
<td>104,9</td>
<td>124,5</td>
<td>134,2</td>
<td>139,0</td>
</tr>
<tr>
<td>Pressure Build Up Unit (PBU) Capacity (for NG consumption at 3 bar) Nm³/h</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
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</table>

(1) Please consult us for other flow and/or pressure requirements.

### EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

### OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.
STATIC TANKS FOR LNG STORAGE

lapesa reserves the right to carry out technical changes without prior notice.

DETAILS FOR HANDLING AND TRANSPORT

<table>
<thead>
<tr>
<th>Model</th>
<th>P05</th>
<th>P09</th>
<th>P13</th>
<th>P16</th>
<th>P22</th>
<th>P28</th>
<th>P35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. tare when empty (tank with full equipment)</td>
<td>46,2</td>
<td>46,2</td>
<td>49,8</td>
<td>53,3</td>
<td>58,3</td>
<td>63,8</td>
<td>67,3</td>
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<tr>
<td>P05</td>
<td>46,2</td>
<td>54,9</td>
<td>63,5</td>
<td>67,9</td>
<td>70,3</td>
<td></td>
<td></td>
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<tr>
<td>P09</td>
<td>54,9</td>
<td>63,5</td>
<td>68,5</td>
<td>73,5</td>
<td>78,7</td>
<td>81,4</td>
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<tr>
<td>P13</td>
<td>63,5</td>
<td>68,5</td>
<td>73,5</td>
<td>78,7</td>
<td>81,4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P16</td>
<td>53,3</td>
<td>63,5</td>
<td>73,5</td>
<td>78,7</td>
<td>81,4</td>
<td></td>
<td></td>
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<tr>
<td>P22</td>
<td>58,3</td>
<td>69,6</td>
<td>80,8</td>
<td>86,5</td>
<td>89,5</td>
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<tr>
<td>P28</td>
<td>63,8</td>
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<td>94,8</td>
<td>98,1</td>
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<td>P35</td>
<td>67,3</td>
<td>80,5</td>
<td>93,6</td>
<td>100,2</td>
<td>103,7</td>
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</tr>
</tbody>
</table>

L: total length including valves (mm)
- LC195H42-P.\* 19.070
- LC240H42-P.\* 23.070
- LC285H42-P.\* 37.070
- LC307H42-P.\* 29.700
- LC318H42-P.\* 30.070

D: total width (mm)
- LC195H42-P.\* 4.200
- LC240H42-P.\* 4.200
- LC285H42-P.\* 4.200
- LC307H42-P.\* 4.200
- LC318H42-P.\* 4.200

H: total height including vent pipe (mm)
- LC195H42-P.\* 4.200
- LC240H42-P.\* 4.200
- LC285H42-P.\* 4.200
- LC307H42-P.\* 4.200
- LC318H42-P.\* 4.200

P: distance between supports (mm)
- LC195H42-P.\* 15.500
- LC240H42-P.\* 19.500
- LC285H42-P.\* 23.500
- LC307H42-P.\* 25.500
- LC318H42-P.\* 26.500

SCHEMATIC DIAGRAM

4200 H SERIES

VG Gas phase filling valve
VL Liquid phase filling valve
VC Consumption valve
VR Overflow valve
PPR Vaporizer (Build Up Unit)
VEP Input valve PBU
VSP Output valve PBU
RP Pressure regulator
F Filter
VAG Auxiliary valve – Gas phase
IN Level
IP Manometer
r Level gate valve
re By-pass valve
ri Bottom level valve
rs Top level valve
TP Pressure transmitter (according to model)
TN Level transmitter (according to model)
CS 3-way valve (safety)
VS Safety valve
SL Line safety valve
VA Pressure relief valve
Pe Casing safety device
Tv Vacuum connection
Ma Vacuum gauge device
STATIC TANKS FOR LNG STORAGE
VERTICAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

2200 V SERIES

EQUIPMENT INCLUDED
- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

OPTIONAL EQUIPMENT
- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.

2200 V SERIES
Designation example "LC6V22-P05": LC: dlapesa cryogenic tank, 6: nominal volume 6 m³, V: vertical installation, 22: diameter 2,200 mm, P05: maximum working pressure 5 bar

<table>
<thead>
<tr>
<th>MAIN FEATURES</th>
<th>LC5V22-P.*</th>
<th>LC6V22-P.*</th>
<th>LC11V22-P.*</th>
<th>LC16V22-P.*</th>
<th>LC20V22-P.*</th>
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</thead>
<tbody>
<tr>
<td>NOMINAL VOLUME</td>
<td>m³</td>
<td>5,0</td>
<td>6,0</td>
<td>11,0</td>
<td>16,0</td>
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<td>NET VOLUME</td>
<td>m³</td>
<td>4,9</td>
<td>6,2</td>
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<td>15,7</td>
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<tr>
<td>MAXIMUM WORKING PRESSURE</td>
<td>bar</td>
<td>*P): 05, 09, 13, 16, 22, 28, 35</td>
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<td>-196</td>
<td>-196</td>
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<td>STANDARDS</td>
<td>EC marking: European directive 2014/68/EU, (optional) ASME stamp: ASME VIII, div.1</td>
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</tr>
<tr>
<td>INNER TANK</td>
<td>material</td>
<td>austenitic stainless steel</td>
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<td></td>
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</tr>
<tr>
<td>OUTER TANK</td>
<td>material</td>
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<tr>
<td>INTERNAL FINISH</td>
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<td>Particle free</td>
<td></td>
<td></td>
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<tr>
<td>EXTERNAL FINISH</td>
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<td>SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish</td>
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<table>
<thead>
<tr>
<th>TECHNICAL DETAILS</th>
<th>LC5V22-P.*</th>
<th>LC6V22-P.*</th>
<th>LC11V22-P.*</th>
<th>LC16V22-P.*</th>
<th>LC20V22-P.*</th>
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</thead>
<tbody>
<tr>
<td>LNG USEFUL CAPACITY (95%, 1 bar)</td>
<td>mt</td>
<td>2,1</td>
<td>2,7</td>
<td>4,8</td>
<td>6,9</td>
</tr>
<tr>
<td>PRESSURE BUILD UP UNIT (PBU) CAPACITY (for NG consumption at 3 bar)</td>
<td>Nm³/h</td>
<td>400</td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

(1) Please consult us for other flow and/or pressure requirements.
STATIC TANKS FOR LNG STORAGE

lapesa reserves the right to carry out technical changes without prior notice.

**DETAILS FOR HANDLING AND TRANSPORT**

<table>
<thead>
<tr>
<th>Model</th>
<th>LC5V22-P.*</th>
<th>LC6V22-P.*</th>
<th>LC11V22-P.*</th>
<th>LC16V22-P.*</th>
<th>LC20V22-P.*</th>
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<tbody>
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<td>6,0</td>
<td>7,3</td>
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<td>8,9</td>
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<td>9,7</td>
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<td>4,7</td>
<td>6,7</td>
<td>8,5</td>
<td>10,5</td>
</tr>
</tbody>
</table>

Approx. tare when empty (tank with full equipment) mt

- L: total length including valves mm
- D: total width mm
- H: total height including vent pipe mm

**Schematic Diagram 2200 V Series**

Liftig lug S

Liftig lug S (with tank empty)

Support line for transport

Chamber overpressure protection system

Unified filling connection (ND50 NP10)

Vacuum connection

Diagram of equipment

Pressure and level indicator (1)

Nameplate

**Legend**

- VG: Gas phase filling valve
- VL: Liquid phase filling valve
- VC: Consumption valve
- VR: Overflow valve
- PPR: Vaporiser (Build Up Unit)
- VEP: Input valve PBU
- VSP: Output valve PBU
- RP: Pressure regulator
- F: Filter
- VAG: Auxiliary valve – Gas phase
- IN: Level
- IP: Manometer
- Mv: Vacuum gauge device
- VGS: Gas safety valve
- SL: Line safety valve
- VA: Pressure relief valve
- Pe: Casing safety device
- TV: Vacuum connection

**Liftig lug S**

(with tank empty)

**Support line for transport**

**Chamber overpressure protection system**

**Unified filling connection** (ND50 NP10)

**Vacuum connection**

**Diagram of equipment**

**Pressure and level indicator (1)**

**Nameplate**

**Legend**

- VG: Gas phase filling valve
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- TV: Vacuum connection

**Liftig lug S**

(with tank empty)

**Support line for transport**

**Chamber overpressure protection system**

**Unified filling connection** (ND50 NP10)

**Vacuum connection**

**Diagram of equipment**

**Pressure and level indicator (1)**

**Nameplate**

**Legend**

- VG: Gas phase filling valve
- VL: Liquid phase filling valve
- VC: Consumption valve
- VR: Overflow valve
- PPR: Vaporiser (Build Up Unit)
- VEP: Input valve PBU
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- RP: Pressure regulator
- F: Filter
- VAG: Auxiliary valve – Gas phase
- IN: Level
- IP: Manometer
- Mv: Vacuum gauge device
- VGS: Gas safety valve
- SL: Line safety valve
- VA: Pressure relief valve
- Pe: Casing safety device
- TV: Vacuum connection
STATIC TANKS FOR LNG STORAGE

VERTICAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

3000 V SERIES

EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.

### 3000 V SERIES

**Designation example "LC20V30-P09"**
- **LC**: lapesa cryogenic tank,
- **20**: nominal volume 20 m³,
- **V**: vertical installation,
- **30**: diameter 3,000 mm,
- **P09**: maximum working pressure 9 bar

<table>
<thead>
<tr>
<th>MAIN FEATURES</th>
<th>LC20V30-P.*</th>
<th>LC30V30-P.*</th>
<th>LC40V30-P.*</th>
<th>LC50V30-P.*</th>
<th>LC60V30-P.*</th>
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</thead>
<tbody>
<tr>
<td>NOMINAL VOLUME</td>
<td>m³</td>
<td>20,0</td>
<td>30,0</td>
<td>40,0</td>
<td>50,0</td>
</tr>
<tr>
<td>NET VOLUME</td>
<td>m³</td>
<td>19</td>
<td>30,6</td>
<td>39,9</td>
<td>49,9</td>
</tr>
<tr>
<td>MAXIMUM WORKING PRESSURE</td>
<td>bar</td>
<td></td>
<td>*&lt;P&gt;: 05, 09, 16, 20, 24, 30, 38</td>
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</tr>
<tr>
<td>INNER TANK</td>
<td>material</td>
<td>austenitic stainless steel</td>
<td></td>
<td></td>
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<tr>
<td>OUTER TANK</td>
<td>material</td>
<td>carbon steel</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>INSULATION</td>
<td></td>
<td>Perlite insulating material, vacuum &lt; 5 * 10⁻²</td>
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<tr>
<td>INTERNAL FINISH</td>
<td></td>
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<tr>
<td>EXTERNAL FINISH</td>
<td></td>
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</tbody>
</table>

**EXTERNAL FINISH**: SA 2 1/2 blasting/ 60 micron polyamide epoxy primer / 60 micron white polyurethane finish

### TECHNICAL DETAILS

<table>
<thead>
<tr>
<th></th>
<th>LC20V30-P.*</th>
<th>LC30V30-P.*</th>
<th>LC40V30-P.*</th>
<th>LC50V30-P.*</th>
<th>LC60V30-P.*</th>
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<tbody>
<tr>
<td>LNG USEFUL CAPACITY (95%, 1 bar)</td>
<td>mt</td>
<td>8,3</td>
<td>13,4</td>
<td>17,4</td>
<td>21,8</td>
</tr>
<tr>
<td>PRESSURE BUILD UP UNIT (PBU) CAPACITY (for NG consumption at 3 bar)</td>
<td>Nm³/h</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
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(1) Please consult us for other flow and/or pressure requirements.
STATIC TANKS FOR LNG STORAGE

lapesa reserves the right to carry out technical changes without prior notice.

### DETAILS FOR HANDLING AND TRANSPORT

<table>
<thead>
<tr>
<th></th>
<th>LC20V30-P.*</th>
<th>LC30V30-P.*</th>
<th>LC40V30-P.*</th>
<th>LC50V30-P.*</th>
<th>LC60V30-P.*</th>
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<td>20,8</td>
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<td>28,7</td>
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<tr>
<td>Approx. tare when empty (tank with full equipment) mt</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>L: total length including valves mm</td>
<td>5.780</td>
<td>8.144</td>
<td>10.144</td>
<td>12.214</td>
<td>14.144</td>
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<tr>
<td>D: total width mm</td>
<td>3.000</td>
<td>3.000</td>
<td>3.000</td>
<td>3.000</td>
<td>3.000</td>
</tr>
<tr>
<td>H: total height including vent pipe mm</td>
<td>3.040</td>
<td>3.040</td>
<td>3.040</td>
<td>3.040</td>
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</tr>
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</table>

### DIAGRAM

- **Gas phase filling valve** (VG)
- **Liquid phase filling valve** (VL)
- **Consumption valve** (VC)
- **Overflow valve** (VR)
- **Vapouriser (Build Up Unit)** (PRR)
- **Input valve PBU** (VEP)
- **Output valve PBU** (VSP)
- **Pressure regulator** (RP)
- **Filter** (F)
- **Auxiliary valve – Gas phase** (VAG)
- **Auxiliary valve – Liquid phase** (VAG)
- **Manometer** (IN)
- **Vacuum gauge device** (IP)
- **Vacuum connection** (Tu)
- **Level gate valve** (VN)
- **By-pass valve** (Re)
- **Top level valve** (ri)
- **Top level valve** (Ts)
- **Pressure transmitter (according to model)** (TP)
- **Level transmitter (according to model)** (TN)
- **3-way valve (safety)** (CS)
- **Safety valve** (VS)
- **Line safety valve** (SL)
- **Pressure relief valve** (VA)
- **Casing safety device** (Pe)
- **Vacuum connection** (Tv)

lapesa reserves the right to carry out technical changes without prior notice.
STATIC TANKS FOR LNG STORAGE
VERTICAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

3800 V SERIES

EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.

3800 V SERIES
Designation example "LC80V38-P22": LC: lapesa cryogenic tank, 80: nominal volume 80 m³, V: vertical installation, 38: diameter 3,800 mm, P22: maximum working pressure 22 bar

<table>
<thead>
<tr>
<th>MAIN FEATURES</th>
<th>LC80V38-P.*</th>
<th>LC107V38-P.*</th>
<th>LC120V38-P.*</th>
<th>LC150V38-P.*</th>
<th>LC200V38-P.*</th>
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<tbody>
<tr>
<td>NOMINAL VOLUME</td>
<td>m³</td>
<td>80.0</td>
<td>107.0</td>
<td>120.0</td>
<td>150.0</td>
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<tr>
<td>NET VOLUME</td>
<td>m³</td>
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<td>107.4</td>
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<td>154.6</td>
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<td>MAXIMUM WORKING PRESSURE</td>
<td>bar</td>
<td>*(P): 05, 09, 14, 17, 22, 27, 30, 34</td>
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<td>DESIGN TEMPERATURE</td>
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<td>ASME VIII, div. 1</td>
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<tr>
<td>INNER TANK material</td>
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<td></td>
</tr>
<tr>
<td>OUTER TANK material</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>INSULATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>perlite insulating material,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vacuum &lt; 5 * 10⁻²</td>
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<tr>
<td>INTERNAL FINISH</td>
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<tr>
<td>EXTERNAL FINISH</td>
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<table>
<thead>
<tr>
<th>TECHNICAL DETAILS</th>
<th>LC80V38-P.*</th>
<th>LC107V38-P.*</th>
<th>LC120V38-P.*</th>
<th>LC150V38-P.*</th>
<th>LC200V38-P.*</th>
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</thead>
<tbody>
<tr>
<td>LNG USEFUL CAPACITY (95%, 1 bar)</td>
<td>mt</td>
<td>34.9</td>
<td>46.9</td>
<td>51.8</td>
<td>67.6</td>
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<tr>
<td>PRESSURE BUILD UP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIT (PBU) CAPACITY (for NG consumption at 3 bar)</td>
<td>Nm³/h</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

(1) Please consult us for other flow and/or pressure requirements.
STATIC TANKS FOR LNG STORAGE

DETAILS FOR HANDLING AND TRANSPORT

<table>
<thead>
<tr>
<th></th>
<th>LC80V38-P.*</th>
<th>LC107V38-P.*</th>
<th>LC120V38-P.*</th>
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<td>45,3</td>
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<td>30,2</td>
<td>36,6</td>
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<td>29,7</td>
<td>32,6</td>
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<td>64,9</td>
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<td>42,9</td>
<td>47,1</td>
<td>58,3</td>
<td>72,8</td>
</tr>
</tbody>
</table>

Approx. tare when empty (tank with full equipment) mt

L: total length including valves mm 10.920 13.945 15.195 19.195 24.195
D: total width mm 3.810 3.810 3.810 3.810 3.810
H: total height including vent pipe mm 3.810 3.810 3.810 3.810 3.810

lapesa reserves the right to carry out technical changes without prior notice.

Gas phase filling valve = VG
Liquid phase filling valve = VL
Consumption valve = VC
Overflow valve = VR
Vaporiser (Build Up Unit) = PPR
Input valve PBU = VEP
Output valve PBU = VSP
Pressure regulator = RP
Filter = F
Auxiliary valve – Gas phase = VAG
Level = LV
Manometer = IP
Vacuum gauge device = MV

Level gate valve = LV
By-pass valve = LB
Bottom level valve = LB
Top level valve = TP
Pressure transmitter (according to model) = TP
Level transmitter (according to model) = TN
3-way valve (safety) = CS
Safety valve = VS
Line safety valve = SL
Pressure relief valve = PV
Casing safety device = PV
Vacuum connection = TV

Schematic Diagram 3800 V Series

Diagram of Equipment

Lift lugs (with tank empty)
STATIC TANKS FOR LNG STORAGE

VERTICAL CRYOGENIC TANKS FOR LIQUEFIED NATURAL GAS

4200 V SERIES

EQUIPMENT INCLUDED

- Vent pipe with flame arrester: directional.
- Vacuum gauge sensor.
- Standard filling connection: ND50.
- Electronic level indicator (with pressure and liquid level transmitter): SAMSON.
- Regulator and economiser valves: CASH, SAMSON, HEROSE
- Pressure build up unit (PBU).
- Safety valve block: HEROSE, CAEN.
- General valves: HEROSE, CAEN, BESTOBELL.

OPTIONAL EQUIPMENT

- External economiser kit with pressure regulator, filter and shut-off valve.
- Internal economiser: ND20.
- Pressure build up unit: PBU/ other capacities.
- Level indicator: mechanical.
- Fittings/valves: other makes.
- Valves pneumatically driven.
- Double Filling valve
- High point: double.

### 4200 V SERIES

**Designation example "LC240V42-P20":** LC: lapesa cryogenic tank, 240: nominal volume 240 m$^3$, V: vertical installation, 42: diameter 4,200 mm, P20: maximum working pressure 20 bar

<table>
<thead>
<tr>
<th>MAIN FEATURES</th>
<th>LC195V42-P-*</th>
<th>LC240V42-P-*</th>
<th>LC285V42-P-*</th>
<th>LC307V42-P-*</th>
<th>LC318V42-P-*</th>
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</thead>
<tbody>
<tr>
<td>NOMINAL VOLUME</td>
<td>m$^3$</td>
<td>195,0</td>
<td>240,0</td>
<td>285,0</td>
<td>307,0</td>
</tr>
<tr>
<td>NET VOLUME</td>
<td>m$^3$</td>
<td>195</td>
<td>240</td>
<td>285</td>
<td>307</td>
</tr>
<tr>
<td>MAXIMUM WORKING PRESSURE</td>
<td>bar</td>
<td>*'(P) : 05, 09, 12, 15, 20, 24, 27, 30</td>
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<td></td>
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<tr>
<td>DESIGN TEMPERATURE</td>
<td>ºC</td>
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<td>-196</td>
<td>-196</td>
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</tr>
<tr>
<td>INNER TANK</td>
<td>material</td>
<td>austenitic stainless steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OUTER TANK</td>
<td>material</td>
<td>carbon steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSULATION</td>
<td></td>
<td>Perlite insulating material, vacuum &lt; 5 * 10$^{-2}$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STANDARDS</td>
<td></td>
<td>EC marking: European directive 2014/68/EU, (optional) ASME stamp: ASME VIII, div.1</td>
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<td></td>
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<tr>
<td>TECHNICAL DETAILS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNG USEFUL CAPACITY (95%; 1 bar)</td>
<td>mt</td>
<td>85,2</td>
<td>104,9</td>
<td>124,5</td>
<td>134,2</td>
</tr>
<tr>
<td>PRESSURE BUILD UP UNIT (PBU) CAPACITY (for NG consumption at 3 bar)$^1$</td>
<td>Nm$^3$/h</td>
<td>2.000</td>
<td>2.000</td>
<td>2.000</td>
<td>2.000</td>
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</table>

(1) Please consult us for other flow and/or pressure requirements.

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STATIC TANKS FOR LNG STORAGE

lapesa reserves the right to carry out technical changes without prior notice.

DETAILS FOR HANDLING AND TRANSPORT

<table>
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<td>82,2</td>
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<td>99,4</td>
<td>106,4</td>
<td>110,1</td>
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</table>

Approx. tare when empty (tank with full equipment)  mt

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>L: total length including valves</td>
<td>mm</td>
</tr>
<tr>
<td>D: total width</td>
<td>mm</td>
</tr>
<tr>
<td>H: total height including vent pipe</td>
<td>mm</td>
</tr>
</tbody>
</table>

Diagram of Equipment

Schematic Diagram

4200 V SERIES

VG   Gas phase filling valve
VL   Liquid phase filling valve
VC   Consumption valve
VR   Overflow valve
PPR  Vaporiser (Build Up Unit)
VEP  Input valve PBU
VSP  Output valve PBU
BP   Pressure regulator
F    Filter
VAG  Auxiliary valve – Gas phase
IN   Level
IP   Manometer
MV   Vacuum gauge device

wn  Level gate valve
re  By-pass valve
ri  Bottom level valve
rs  Top level valve
TP  Pressure transmitter (according to model)
TN  Level transmitter (according to model)
CS  X-ray valve (safety)
VS  Safety valve
SL  Line safety valve
VA  Pressure relief valve
Pe  Casing safety device
Tv  Vacuum connection
LNG TANKS FOR SERVICE STATIONS

SPECIFIC LNG TANKS FOR SERVICE STATIONS

LC GNV

Tanks for the supply of natural gas for vehicles at Service Stations, for CNG (compressed natural gas) and LNG (liquefied natural gas) or both at the same time.

GENERAL FEATURES

- Tanks designed and adapted to the needs and characteristics of each individual supply station.
- Tanks adapt to the supply plant design, incorporating all the necessary outputs and connections for each function:
  - LNG connection.
  - CNG connection.
  - Pump returns, saturation return.
  - Extra connections for consumption at the station itself…
- For volumes as per our catalogue, at different design pressures.
- Tanks with “cold converter” or “thermosiphon” system.

Consult us about your project requirements!
EXAMPLES OF SCHEMATIC DIAGRAMS

SUPPLY OF CNG AND LNG FOR VEHICLES

SCHEMATIC DIAGRAMS
ISO-CONTAINERS FOR LNG TRANSPORT

TANK-CONTAINER

LTCC43

Cryogenic tank-container for transporting liquefied natural gas LNG (UN 1972), methane (UN 1972), ethane (UN 1961), ethylene (UN 1038), nitrogen (UN 1977), with cryogenic insulation, cryogenic vacuum insulation and non-compressible insulating material.

TANK DESIGN DATA

- DESIGN PRESSURE (ADR): 13.7 bar.
- TEST PRESSURE: 13.7 BAR.
- ALLOWABLE MAX. PRESSURE: 9.5 bar.
- DESIGN TEMPERATURE: -196 +50 ºC.
- CONSTRUCTION CODE: ADR.
- ISO CONTAINER TESTS ACCORDING TO ISO, IMDG, CSC.

FINISHES

- PRIMER: Polyamide epoxy (60 microns).
- TOP COAT: White polyurethane (60 microns). Total thickness: 120 microns.
- INTERIOR: Particle-free and dry.

GENERAL FEATURES

- Tank-container for transporting cryogenic liquefied gas.
- Multimodal transport (short sea journeys).
- Cryogenic vacuum insulation and non-compressible insulating material.
- For the transport of cryogenic liquefied gases: LNG (UN 1972), methane (UN 1972), ethane (UN 1961), ethylene (UN 1038), nitrogen (UN 1977).
- Container type: 1AA acc. to ISO 668.
- Apt for transport with partial load.
- Applicable European directives: 2010/35/EU (Pi marking), 2008/68/EC.
- Number of compartments: 1.
- Volumen nominal: 43,5 m³.
- Empty weight: 9.5 mt.
- Carga de GNL: 15,6 mt.
ISO-CONTAINERS FOR LNG TRANSPORT

EQUIPMENT AND FUNCTIONS

- LIQUID PHASE and GAS PHASE:
  - ENAGAS 2" type bronze connector with screw cap.
  - Shut-off valve, seat valve, manual valve, extended stem valve.
  - CAEN type pneumatic bottom valve with non-return.
  - Automatic safety valve between manual stopcock and cap.
- OVERFLOWS: Two high-point pipes with manual valve (95% and 83%).
- SAFETY: Cryogenic safety unit with double valve and diverter.
- VENTING: Pipe for manual venting.
- LEVEL AND PRESSURE: Differential pressure level indicator. Samson or Wika type. Includes gas phase pressure manometer.
- EXTRA CONNECTION: Connection to fit pressure build up unit (PBU).
- SHUT-OFF VALVES: All manual valves are HEROSE type, cryogenic, extended stem valves.
- OPTIONAL PBU UNIT: The equipment can be supplied with the PBU fitted. A SAMSON type mechanical regulator is included.
LNG SKIDS

LCUA 1000 V

Cryogenic skid unit for liquefied natural gas LNG (UN 1972), methane (UN 1972), ethane (UN 1961), ethylene (UN 1038), nitrogen (UN 1977).

GENERAL FEATURES

- "Plug and play" equipment.
- Geometric volume: 1,000 litres.
- Maximum allowable pressure: 10 bar (other pressures available upon request).
- Approximate weight: 1,200 kg.
- Modular.
- Insulation system: perlite in vacuum chamber.
- Easy to transport vertically on truck. 192 x 92 mm orifices for handling with forklift, when empty.
- Good use of space.

FITTINGS INCLUDED

- Pressure build-up unit (PBU).
- Environmental gasifier to consumption.
- Auxiliary gas phase connection.
- Economiser.
- ND40 flame arrester, directional and detachable.
- "Teledyne" type vacuum gauge.
- Media 05 (Samson) type level and pressure indicator. Options: electric, with level transmitter and pressure transmitter.
MODULAR EQUIPMENT

- **STD 35 Nm³/h ambient gasifier. (Extendable to 70 Nm³/h and 105 Nm³/h).** Possibility of extending after installation.*
- Elevated frame.
- PBU: 1/2" input/output piping. Max. capacity 100 Nm³/h at 3 bar (extendable at request).
- Filling lines.
- 1/2" economiser and economiser-regulator valve.
- ND20 auxiliary gas phase connection. (Optional temperature controlled shut-off valve).
- Safety: Flame arrester; double safety valve; 3-way valve; discharge manifold with drainage system and manual drainage valve.

(*) Gasification capacity can be increased by including more powerful gasification modules.
Cylindrical cryogenic tanker for the transport and supply of LNG, 58 m³ capacity, 44 TN MAM chassis.

GENERAL FEATURES
- Type: Cylindrical, chassis-mounted.
- Nominal volume: 58 m³.
- Maximum authorised mass (MAM): 44 mt.
- Section: Circular.
- External tank diameter 2,550 mm.
- Total tank length* 13,800 mm.
- Total vehicle length* 14,000 mm.
- Tractor head tare* 7.5 mt.
- Semitrailer tare* 12.5 mt.
- Load capacity 95%* 23 mt (a 3 bar).
- Load capacity 88%* 21 mt (a 0 bar).
- Load capacity (MAM 44 mt)* 24 mt.
- No. of manholes: No manhole.

DESIGN
- TPED 2010/35/EU approved, compliant with directive 2014/103/EU, IMDG (short distances).
- Design code: UNE-EN-13530.
- ADR transport regulations.
- Classes 2.
- Products to be transported: LNG (UN 1972), methane (UN 1972), ethane (UN 1961), ethylene (UN 1038), nitrogen (UN 1977).
- Maximum operating pressure: 3 bar.
- Test pressure 5.2 bar.
- Design temperature: -196°C + 50°C.
- Material inner tank in austenitic stainless steel.
- Thermal insulation: Multilayer insulation + vacuum.

INSPECTION
- Tank body: 100% X-ray
- Tests: according to ADR/TPED (EN-13530).
- Certified tests:
  - Resistance test.
  - Helium leak testing.
  - Volume check.
  - Tightness test.
  - Interior inspection.

FINISHES
- Anti-corrosive primer + polyurethane top coat.

ACCESSORIES INCLUDED
- Discharge pump with pressure build up.
- Volumetric flow meter.
- Cabinet for loading/unloading equipment.
- Toolbox.
- Powder fire extinguishers.

(*) guideline values.
CONTROL AND SAFETY FITTINGS
- Safety valves.
- High point stopcock. Mechanical level.
- Filling level and pressure indicator.
- Manual and automatic relief valves on pipes.
- Internal valves on connections to tank.
- Control panel.

LOADING AND UNLOADING
- Valves-liquid phase loading and unloading.
- Valves-gas phase loading and unloading.
- Valves-liquid phase pressure build up.
- PBU vaporiser.
- Discharge valves on both sides of the truck.

WHEELS, SUPPORTS AND KING-PIN
- Three axles with 20” wheel hub.
- Pneumatic suspension.
- Two wheels per axle. Disc brakes 430 x 45.
- Ruedas 385/62 R22,5 (continental).
- Aluminium wheel rims with semi-polished finish.
- 2” King-pin.
- Telescopic mechanical legs: 50 ton static load, 24 ton elevated load.
- Lashing rings.
- Electrical installation: 24 V, two 7-pole connections.
- Rear lights with six functions.
- Aluminium rear bumper.
- Mudguards.
- Boxes for fire extinguishers.
- Underrun protection bars.
- Marking according to ADR.
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WORLDWIDE PROJECTS