

A blue-tinted background image showing a group of business professionals in an office setting. A man in the foreground is holding a laptop, and others are looking at it. The overall scene is professional and collaborative.

LOWENCO

Large Scale Storage Unit

August 2018

Key features

Large Scale Storage Unit

Key features

- Modular approach – 1 by 1 units with corridor between
- Very easy to expand for more capacity – without any disturbance on the existing freezer setup during installation of new units
- Temperature range from positive down to -80°C
- Storage- and blast freeze in one unit – as well separate units
- Storage capacity up to 3,200 kg. fluid product per unit
- Extreme low deviation +/-1°C
- Full redundancy
- Low power consumption



Large Scale Storage Unit

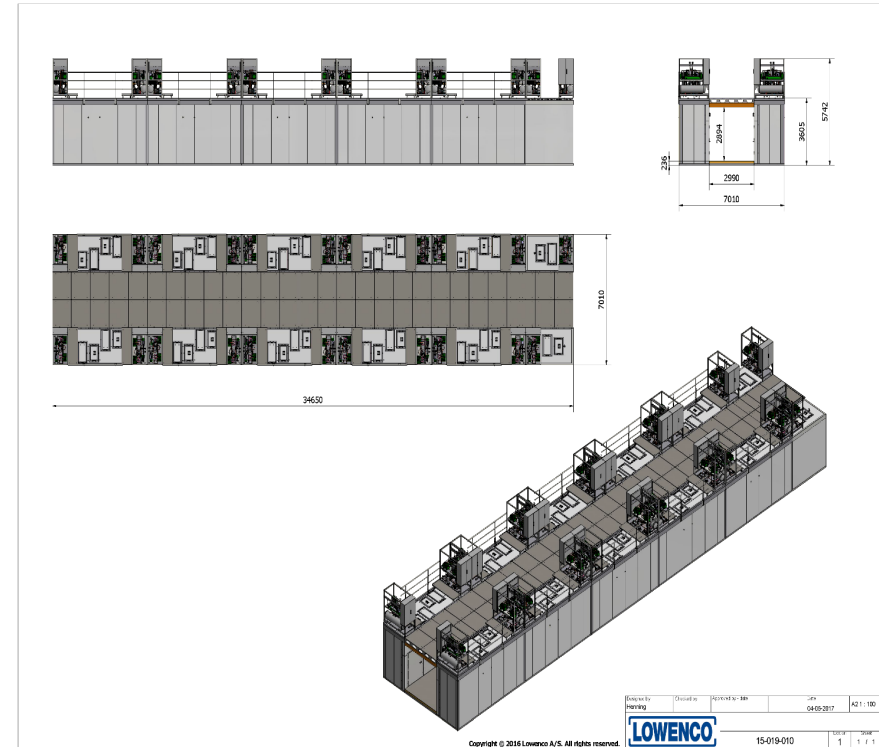
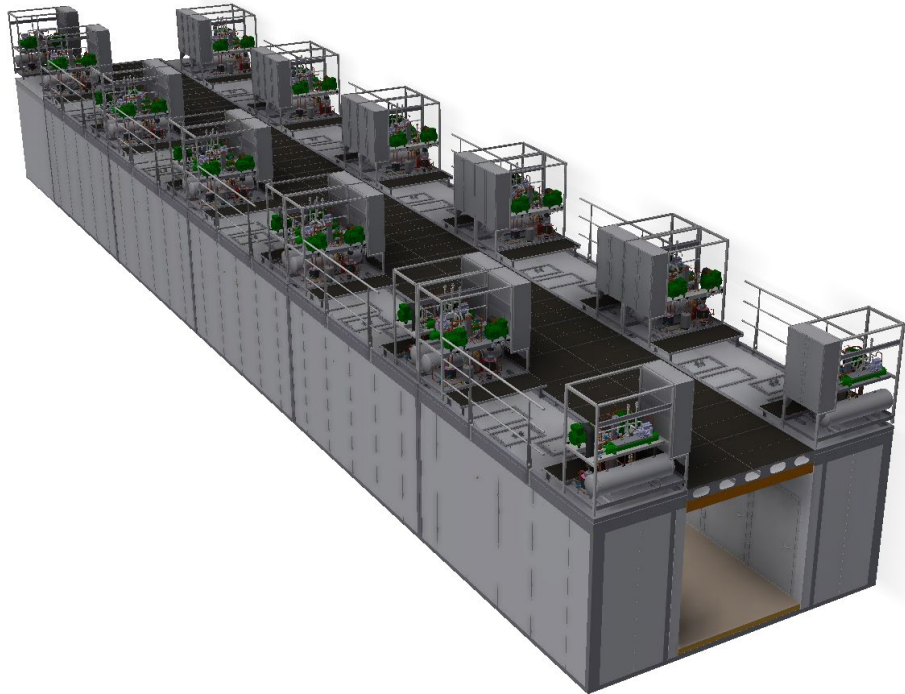
Key features

- High personal safety, no entrance in the freezer
- Fire Rating FR60
- More than 150 alarms on each freezer unit
- Service and maintenance during full operation
- Software complies with GMP guidelines
- Factory Acceptance Test performed together with the client at our workshop in Denmark
- Very comprehensive documentation according to GDP
- Fast delivery time and limited on-site installation time
- Every installation finalizes with a Site Acceptance Test



Large Scale Storage Unit

Overview – a typical Sales drawing



Technical specifications

Large Scale Storage Unit

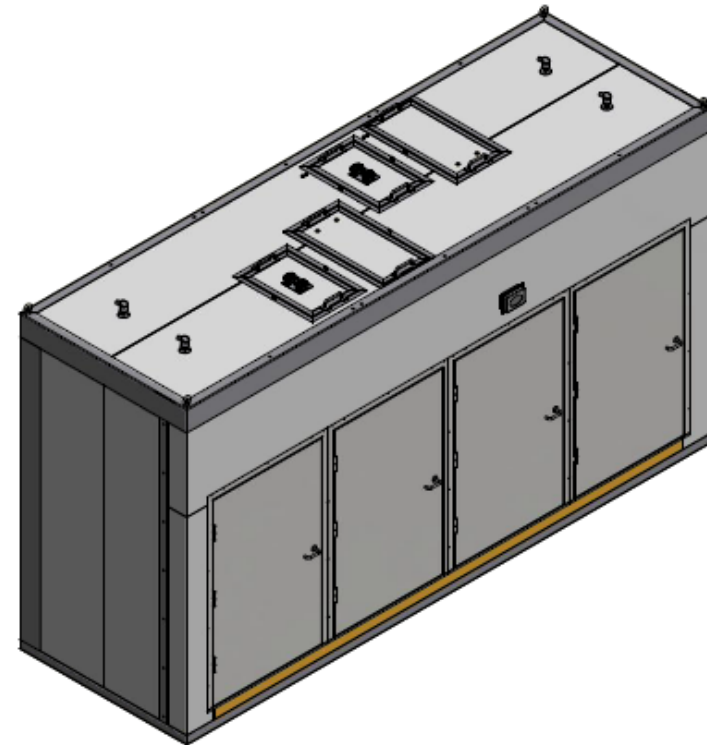
Technical specifications – In general

- 220 mm. FR60 rated PIR insulation panels
- FR60 rated door with 1,200 mm. door opening
- A complete closed clean room environment
- Water cooled compressor skids
- 2 pcs. 19” Siemens touch operator HMI
- Lowenco invented duct evaporator system
- Forced air ventilation method
- All components accessible from outside – no maintenance people will enter the storage room

Large Scale Storage Unit

Technical specifications – Storage units

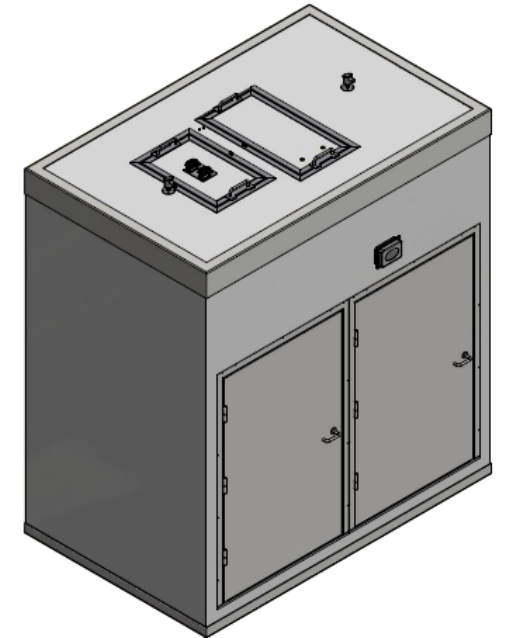
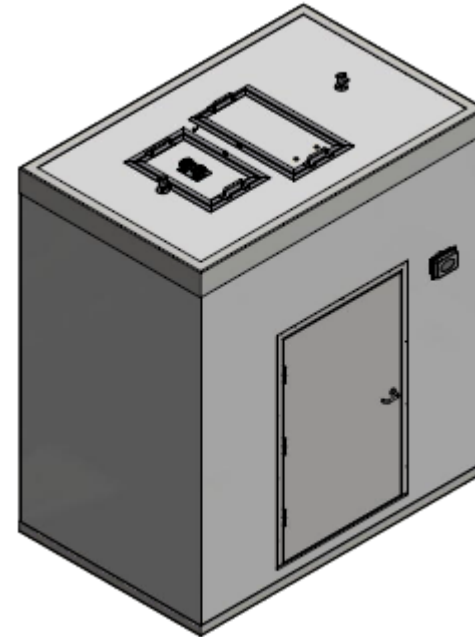
- 3 or 4 doors version
- Capacity; up to 2,400 kg. or 3,200 kg. fluid products
- Blast freeze capability can be included
- Double duct evaporator system
- Circulating the air by 3,000 m³/hour – 6,000 m³/hour in assist mode
- 4 door version dimensions – without tech. space:
 - L: 6,300 mm. D: 2,100 mm. H: 3,600 mm.
 - L: 5,860 mm. D: 1,660 mm. H: 3,160 mm.



Large Scale Storage Unit

Technical specifications – Blast units

- 1 or 2 door version
- Capacity; up to 800 kg. or 1,600 kg. fluid products
- Compressor technology – no Liquid Nitrogen
- Full control of blast process and time
- Fast blast time e.g. 160 kg. from +8°C to -60°C in less than 4 hours – and 1,600 kg. from +25°C to -60°C in less than 21 hours (custom made)
- Dimensions – without tech. space:
 - L: 3,890 mm. D: 2,030 mm. H: 3,600 mm.
 - L: 3,450 mm. D: 1,590 mm. H: 3,160 mm.



Large Scale Storage Unit

Technical space



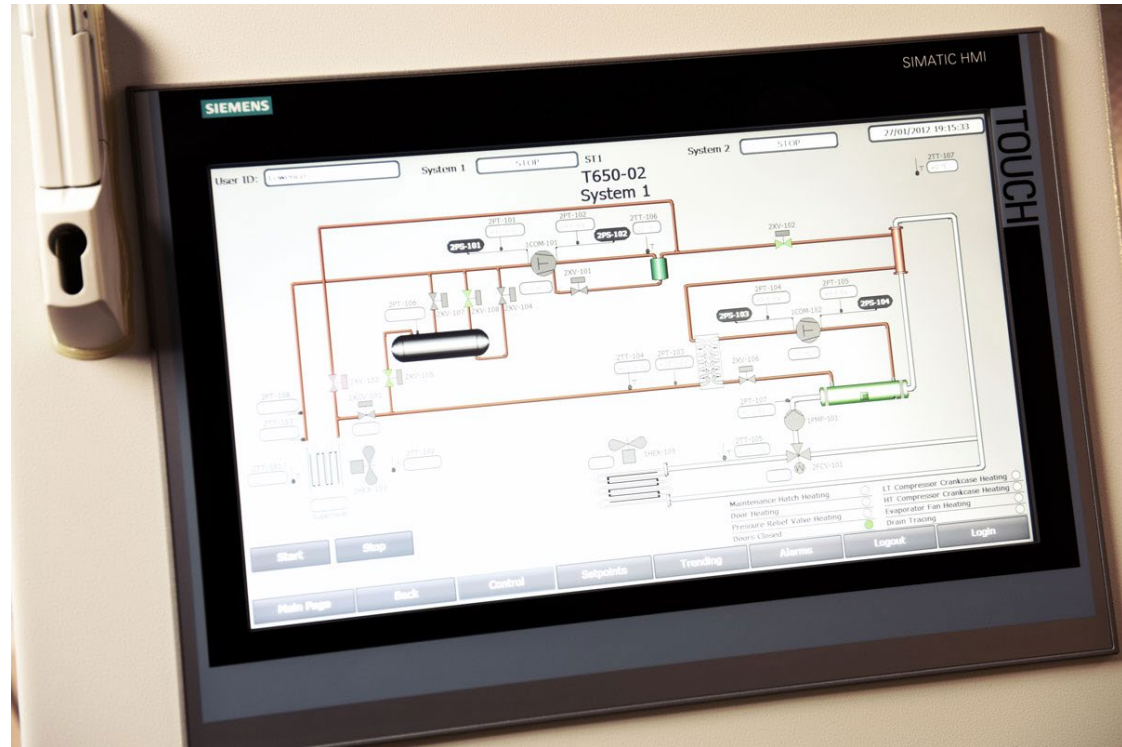
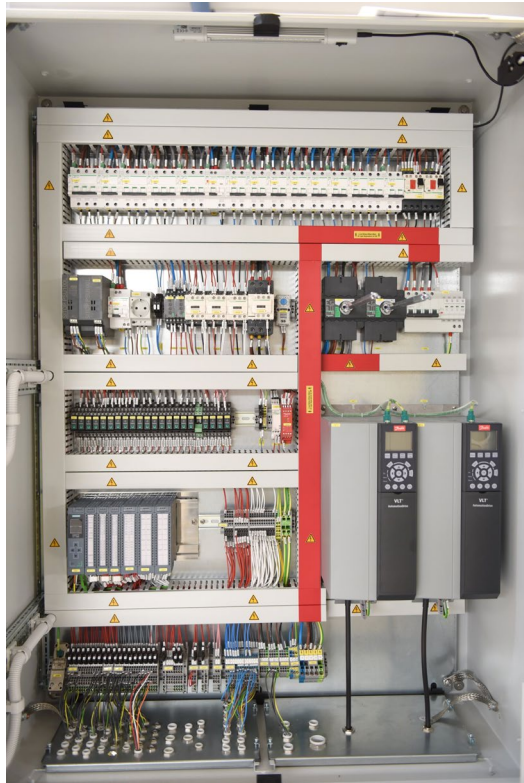
Large Scale Storage Unit

Technical space



Large Scale Storage Unit

Technical space



Large Scale Storage Unit

On-site installation



Large Scale Storage Unit

Technical details – only Best in Class components used

- Siemens S7-1500 PLC
- Siemens 19” touch HMI
- Bitzer compressors
- Danfoss VLT
- Grundfos pumps
- Fischer Kälte Klima
- ABB
- Belimo
- PR electronics temperature transmitters
- Kingspan FR60 panels

Storage systems

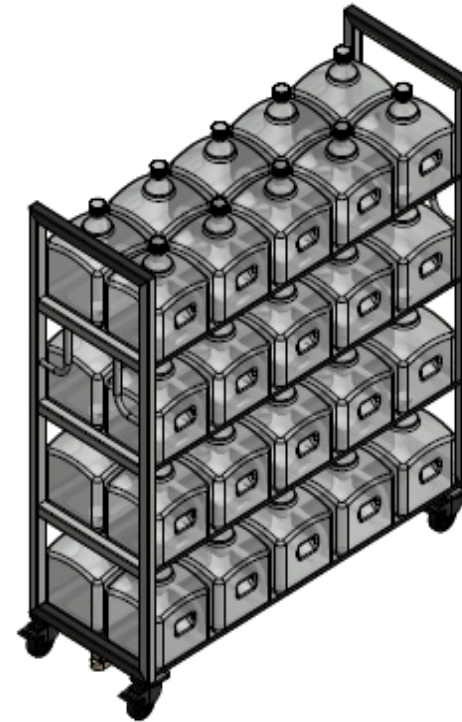
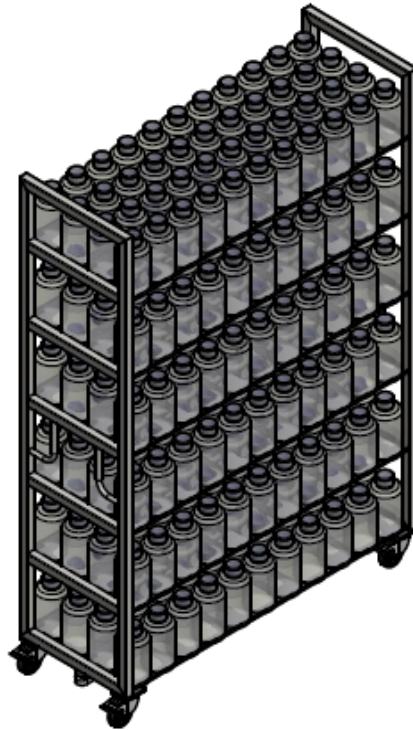
Large Scale Storage Unit

Trolley designs

- We design the trolley
 - to fit your products and needs – bags, bottles or
 - to get the best possible utilization of capacity
- As standard two trollies goes into each door for easier handling and due to weight
- Maximum dimensions of a standard trolley: L: 1,500 mm. W: 550 mm. H: 2,140 mm.
 -but as mention, we design the trolley to fit your specific needs and wishes

Large Scale Storage Unit

Trolley designs - examples



Large Scale Storage Unit

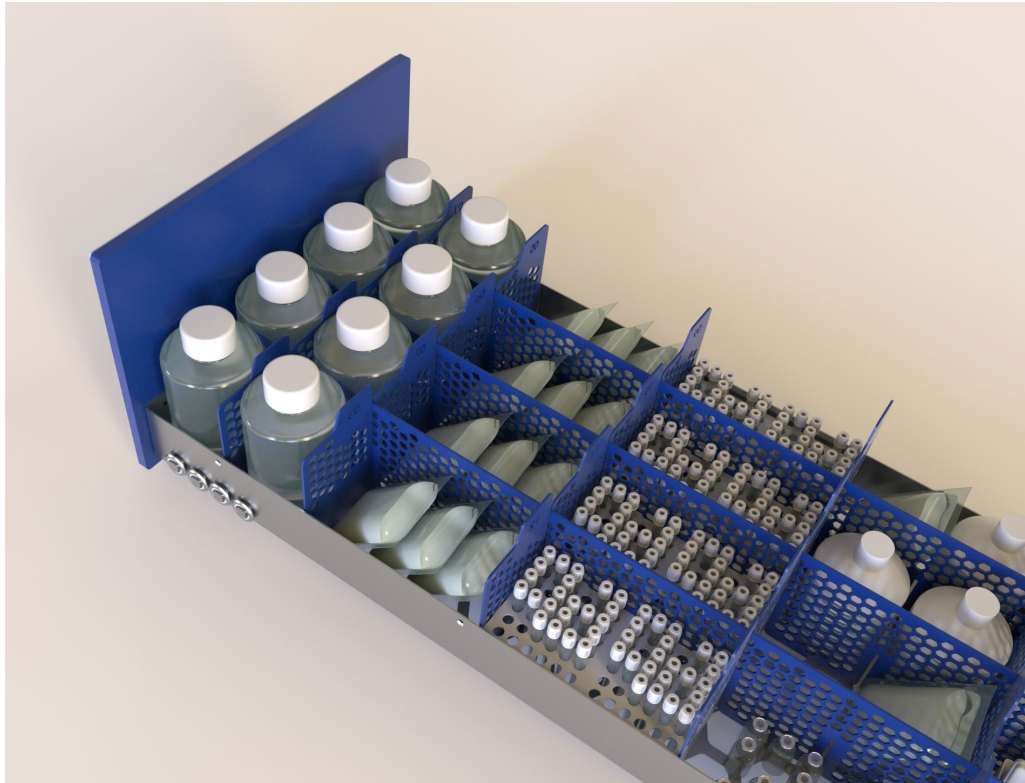
Drawers system

- Capacity up to 800 kg. per door
- Maximum load of 100 kg. in each drawer
- Full pullout drawers
- From 8 to 16 drawers in each door
- Drawers in three different heights; 158 mm., 225 mm. and 358 mm. Inside: L: 1.405 mm. W: 535 mm.
- Height of rack is 1,700 mm.
- Drawers sizes can be mixed in each door rack
- Individual, adjustable and flexible interior design
- Location Management System integrated



Large Scale Storage Unit

Individual and full flexible interior design of drawers



Why LSSU – and not a traditional refrigeration solutions

Large Scale Storage Unit

Competitors traditional refrigeration solutions – Up-rights freezer units

- Small capacity per unit
- Large required footprint for large capacity needs
- Requires a clean room
- Air cooled compressor system
- Requires a large HVAC system
- Validation of every single freezer unit
- >85% higher power consumption
- High deviation even in such a small chamber – typical >+/-5°C
- No redundancy
- No fire rating
- Not possible to get the products insured
- Limited numbers of alarms
- Limited operator information's and functions
- No service and maintenance during operation
- No Factory Acceptance Test
- Very limited documentation
- Documentation not according to GDP
- 3½ times longer pull-down time from ambient to 70°C - empty
- No blast freeze capability
- Reloading and handling of all products
- Lower unit price – but much higher installation cost
- Nearly ten times higher yearly Total Cost of Operation

Large Scale Storage Unit

Competitors traditional refrigeration solutions – Larger cold rooms

- Constructed on site – no Factory Acceptance Test is possible
- Long construction and installation time on-site
- Safety risk when persons entering the freezer room
- Use of LN₂ for blast freezing – no control of the blast freezing process at all. -110°C blast into the room
- Often very limited expansion possibilities – if some, it will often be very difficult
- High deviation in the large room – typical >+/-5°C





LOWENCO

Creating a better world – one unit at a time

For further information
– please visit our website:
www.VDWCoolSystems.nl