



# Quantum Design

LATIN AMERICA

Raising The Science

Materials Science

Spectroscopy

Cryogenics

Optics

Nanoscience

Sample Synthesis

Biotechnology & Chemistry

Industries

Microscopy

Quantum Technology

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Imtek Cryogenics is a full-service cryogenic engineering company providing innovative solutions to unique cryogenic problems. Their cryogenic systems can produce cryogens for Healthcare, LNG and Biogas, Research, Universities and Industry, or re-liquefy cold gas in closed loop systems for Observatories, Space simulation chambers, MRI or NMR magnet cooling, cryogenic test and measurement systems. All Nitrogen, Oxygen and Argon Generators work with Purity  $\geq 99\%$ , Noise Level  $< 65$  dB@1 meter, Operating Pressure 1.5 bar

### Cryogenic Storage System - 120 Liter

The CSS 120 - Cryogenic Storage System - provides stable cryogenic storage and easy sample retrieval of up to 8400 1.5/2.0 ml vials in a square outer package. This LN2 freezer has worlds maximum storage density (70 vials/L) and the longest holding time. The CSS120 can be operated in vapor, although engineered for storage in liquid using liquid storage accessory packs.

The control system continually monitors and records parameters like freezer top temperature, 4 bottom temperature, LN2 level and supply tank pressure at fixed interval, manages auto filling when needed and provides audio/visual alarms based on a triggered alarm by advanced alarm management system which allows send e-mails and text messages to various recipients. All the data are stored in the controller, which are available at any time to check the operating status of freezer, insuring sample safety. Meanwhile, history data can be transferred into a computer.

CSS120 has two LN2 filling option; auto and manual. By default, auto mode will fill LN2 into freezer. However, if auto mode fails, manual valve located at the back can be used to fill LN2 to ensure normal LN2 supply. The tiny crystals of the samples in vapor nitrogen is in glass transition. When LN2 is poured into the freezer, the strenous vibration will cause fatal influence to samples.

### Key features:

- Can be used for liquid or vapor storage
- Fully automatic LN2 Level control and temperature monitoring
- Autofill features
- Tracks and displays LN2 consumption
- Defined audio/visual alarms including High Temperature, Low Level, Liquid Usage, Fill Timeout and more
- No maintenance
- Transportable in emergency cases
- 5 liquid level sensors are available to control liquid level and refill
- Safety password protection at different levels
- Optional backup battery provides a full load of up to three days of operation including LN2 auto-filling

### Most common applications:

#### Store and cryopreservation of:

- Cells
- Viruses
- Gametes
- Food transport

#### Coolant for:

- Chemical processes and reactions in research and industrial scales
- Superconductors
- Vacuum pumps
- CCD cameras
- Reactors

#### Production of very dry nitrogen for:

- Chemicals and Pharmaceuticals
- Healthcare
- Food & Beverages
- Metal Manufacturing & Construction
- Rubber & Plastic
- Others

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### Liquid Nitrogen Plants – From 10 up to 480 L/day

Since its foundation 30 years ago, Imtek Cryogenics has developed and manufactured cryogenic test and measurement systems, cryogenic liquid plants, and customer-specific engineering solutions.

You can fill your dispensing thermos or transfer LN2 via a flexible hose to an external dewar with a simple push of the button. LN2 transfer is independent from the system's operation mode. The PLC automatically re-starts when the level drops to 70% in the internal storage dewar, then will stop the plant when the dewar is full and goes into standby mode until some LN2 is transferred.

The ultra precision machining laboratory at Imtek Cryogenics houses a range of ultra precision turning and milling machines from leading suppliers. Machined work pieces have been manufactured to micron size and sub-micron geometric tolerances with very low surface roughness (down to  $Ra=0.010 \mu m$ ). Examples are optical components and air bearing systems. The metrology laboratory is a high class measuring facility dedicated to perform geometrical measurements with extreme high accuracies. With a focus on 3D-metrology and forms measurements are carried out on high-end standard equipment or own built apparatus.

### Key features:

- Production rate:  
10/20/30/60/120/180/240/360/480 L/day
- Dewar Volume: 60 up to 1000 L
- Nitrogen Purity: >99%
- Cooling Water Flow Rate: 9 up to 72 L/min @4 bar for (except 10/20/30 L systems)
- Operating Pressure: 1.5 bar
- Lowest Power Consumption: 2.5 kW@50 Hz; 3.9 kW @60 Hz
- Highest Power Consumption 56 kW @50 Hz; 64 kW @60 Hz
- Electrical Options: 380/400/415 VAC, 3 Ph, 50 Hz; 480 VAC, 3 Ph, 60 Hz
- Color Graphic Touch Screen: 6" and 8"
- Noise Level: <65 db @1 meter

### Most common applications:

- Cryotherapy and Animal Husbandry Centers
- R&D Labs
- Clean Rooms
- Dermatology
- Food and Beverages
- Rubber & Plastic
- Healthcare

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