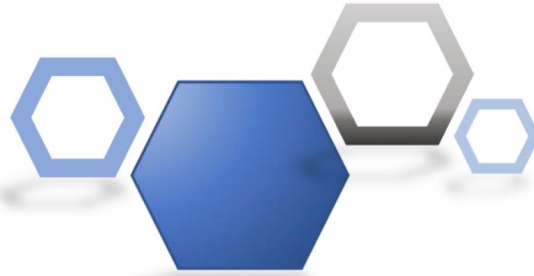


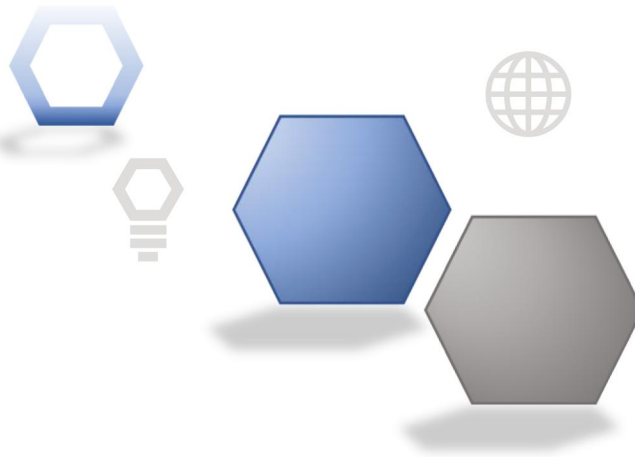
Quantum technology



**Quantum
Technology Corp.**



**Nitrogen Liquefier
Systems**



Quantum Technology Corporation

Quantum Technology Corporation, also known as QTC, is a global industry leader in developing solutions for industrial gases, particularly in helium and the cryogenics fields.

For over 35 years, our expert staff have been assisting customers worldwide. We pride ourselves on providing customer focused solutions, delivered with professionalism and excellence. Our long client list includes top world universities, government and corporate research laboratories, hospitals and leading industrial outfits, from small businesses to Fortune 100 companies, private and government-ran entities.

Nitrogen Liquefier System

Quantum Technology Corporation offers a wide range of Nitrogen Liquefiers with liquefaction capacities between 10 to 1000 liters/day, or larger customized sizes. Our Liquefiers use advanced mixed refrigerants (MR) in a Joule-Thompson (JT) refrigerator system. Compared with traditional cold heads and Stirling cryocoolers, the MR-JT systems have higher liquefaction efficiency and improved reliability, due to the use of quasi-standard refrigeration equipment.



Figure 1: Quantum's Equipment



Figure 2: QTC Compact Layout Small Series Liquefier

Main System Components

Air Compressor

- a. Rotary Screw
- b. 380 V 50 Hz or 460 V 60 Hz AC 3 phase
- c. Up to 217 PSI
- Dryer
 - a. Regenerative desiccant
 - b. 0.05 kW
 - c. 100-240 V 50/60 Hz AC 1 phase
- Nitrogen Generator
- Liquefier
 - a. Air/Water cooled
 - b. Proprietary cryogenic cycle
 - c. 380 V 50 Hz or 460 V 60 Hz AC 3 phase
 - d. Remote start/stop
- Liquid Nitrogen Dewar



Figure 3: Q1.3 LN2-240 Liquefier

Control System

- PLC: Siemens S7-1200
- HMI: Siemens KTP series touch screen

“ If your nitrogen bill is significant or supply is unreliable

Quantum has a solution for you

Call +1-604 222 5539 to connect with our technical/sales staff ”

Several Options for a variety of applications

HIGH-PRESSURE
SYSTEMS

COMPACT
SYSTEMS

TECHNICAL
ASSISTANCE

CUSTOM DESIGNED
SIZES

Technical Parameters SMALL Units			
Liquefier Model	Q1.3 LNCS-20	Q1.3 LNCS-50	Q1.3 LNCS-120
Production rate (liters per day)	20	50	120
Electrical rating	220-230/240 VAC, 1Ph, 50 Hz 208-240 VAC, 1Ph, 60 Hz		3ph, 50 Hz 460-480 VAC,
Power consumption (kW), liquefier standalone	1.2	3	7
Approximated Dimensions (W×L×H) in mm	560x750x1500	900x900x1500	750x960x1950
Weight (kg)	110	220	310
Cooling Water Flow Rate (m3/h) at max 25 °C	0.5	1.6	3
Ambient air temperature range (°C)	5-40		
Noise level at 1 m(dB)	<65		
Nitrogen Requirements			
Flow Rate (m3/hr)	1.5	3	6
Purity	99%		
Dew Point (°C)	<-70		
Pressure (barg)	>8		
Screw Compressor Power (kW)	4	4	6
Screw Compressor Flowrate (m3/h)	4.2	4.2	6.3
Dewar Capacity (L)	100	100	100

Technical Parameters LARGE Units				
Liquefier Complete System Model	Q1.3 LNCS-240	Q1.3 LNCS-500	Q1.3 LNCS-1200	Q1.3 LNCS-2400
Production rate (liters per day)	240	500	1200	2400
Electrical rating	380/415V, 3ph, 50Hz 460/480V, 3ph, 60Hz			
Power consumption (kW), liquefier standalone	15	26	50	80
Power consumption (kW), system total	26	56	106	192
Approximated Dimensions (W×L×H) in mm	1400×1000×2000	1500×1200×2000	2000×1500×2000	3500×2500×2000
Weight (kg)	500	720	800	1000
Cooling Water Flow Rate (m3/h) at max 25 °C	5	8	12	25
Ambient air temperature range (°C)	5-40			
Noise level at 1 m(dB)	<65			
Nitrogen Requirements				
Flow Rate (Nm3/hr)	12	30	60	120
Purity	99%			
Dew Point (°C)	<-70			
Pressure (barg)	>8			
Screw Compressor Power (kW)	11	30	56	112
Screw Compressor Flowrate (m3/h)	128	328	595	1190
Dewar Capacity (L)	250	500	1000	2000

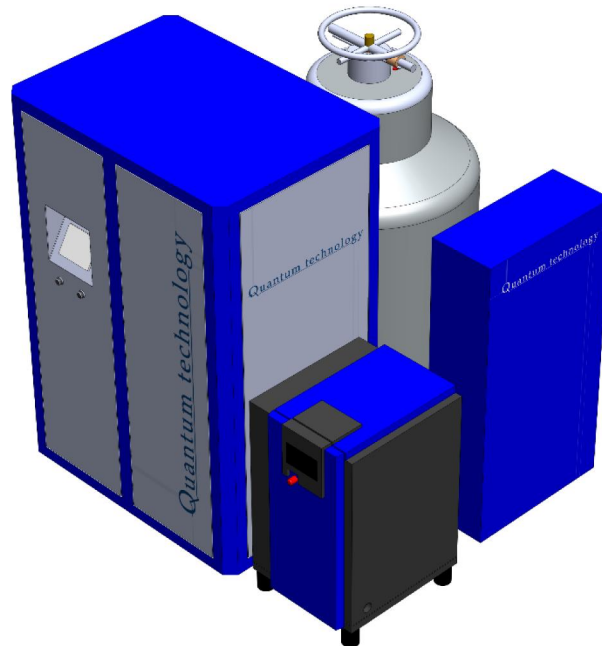
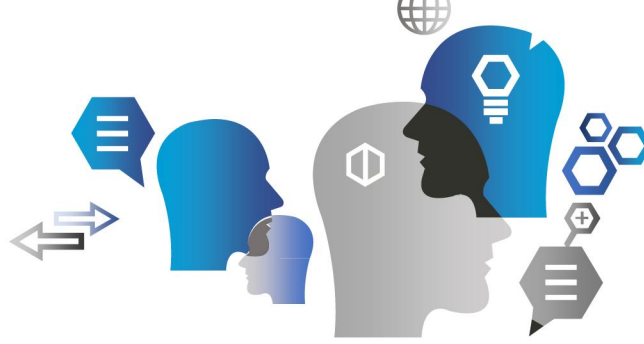


Figure 4: QTC Liquefier Complete System Layout



Warranty of parts / factory
service
Lifetime after sales remote
technical support.



International Standards
and Certification options



Global Industry leader in designing solutions for cryogenics, gas recovery, purification and liquefaction systems.



Global Presence through Local Support.

-  Representative Sales Office
-  Quantum's Facility

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