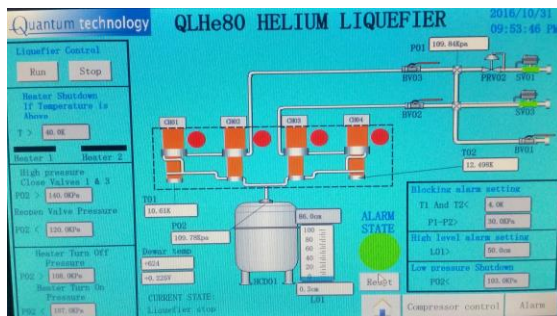


QLHeXX Helium Liquefier Series 20/40/60/80 liters/day

QLHEXX



Quantum 80 liter per day liquefier,
first in its class



Quantum 80 liter per day liquefier HMI,
most modern in its class

Features:

- Recycles costly helium boil-off
- More cost efficient than buying helium
- Different sizes to fit production needs
- Fully automated and operates with no/minimal monitoring
- Easy to install, small floor footprint

Components:

- QCH4KH - G-M coldhead (Appendix1) and QCLHeW compressor (Appendix 2)
- Auto-control including computerized pressure control
- Safety protection unit
- Elevated platform

Specifications:

QLHe20: up to max 25 l/day in proper conditions of usage. He liquefaction capacity(one coldhead):

>22 liters per day at 10 psig 60 Hz

>18 liters per day at 2 psig 60 Hz

QLHe40: 40L/day He liquefaction capacity (two coldheads):

>43 liters per day at 10 psig 60 Hz

>34 liters per day at 2 psig 60 Hz

QLHe60: 60L/day He liquefaction capacity (three coldheads):

>65 liter per day at 10 psig 60 Hz

>51 liters per day at 2 psig 60 Hz

QLHe80: 80L/day He liquefaction capacity (four coldheads):

>84 liter per day at 10 psig 60 Hz

>70 liters per day at 2 psig 60 Hz

If your helium bill is significant,

Quantum may have a solution for you.

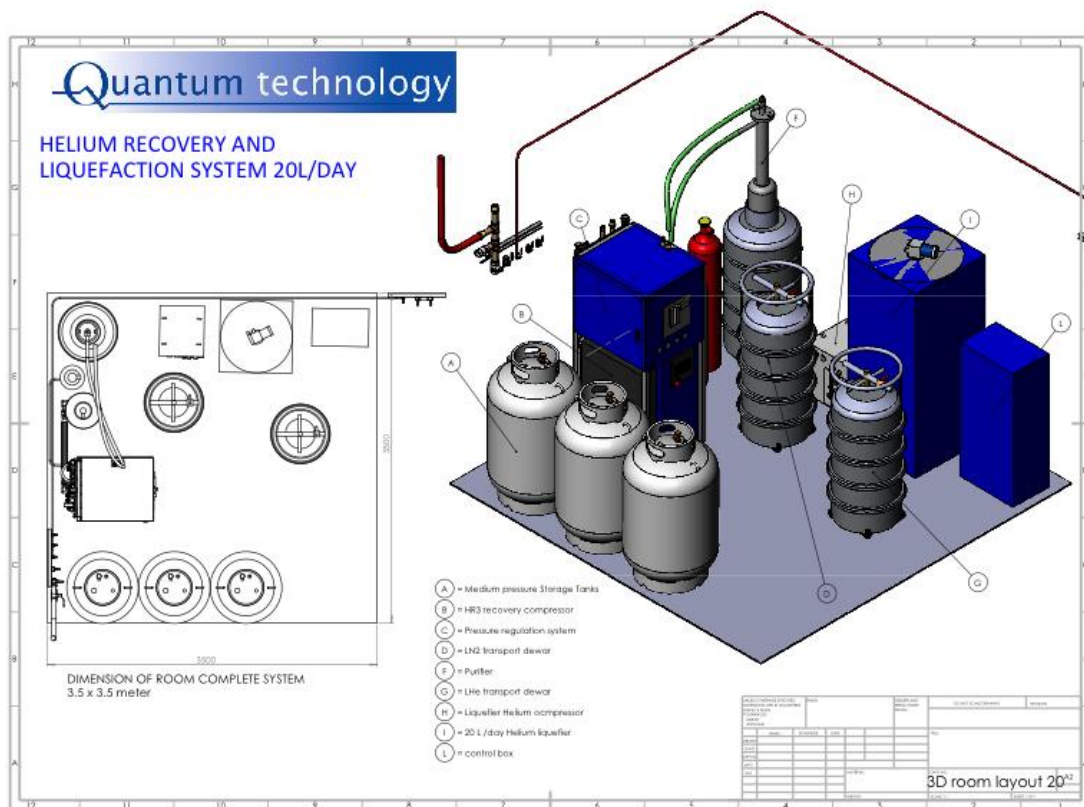
Call +1 604 222 5539 to connect with our technical/sales staff.

Specification/Model	QLHe20	QLHe40	QLHe60	QLHe80
Standard Dewar Capacity*	50 liters	150 liters	350 liters	350 liters
Cooldown Time	< 30 hours	< 30 hours	< 30 hours	< 30 hours
Compressor Type	Water	Water	Water	Water
Cooling Water Requirement**	> 1.8 GPM - 7 l/min	> 3.6 GPM - 14 l/min	> 5.4 GPM - 21 l/min	> 7.2 GPM - 28l/min
Power Consumption (Compressor & Coldhead)	7.8kW @60Hz 6.5kW @50Hz	15.6kW @60Hz 13.0kW @50Hz	23.4kW @60Hz 19.5kW @50Hz	31.2kW @60Hz 26.0kW @50Hz
Weight				
Compressor(s)	262 lbs (118 kg)	524 lbs (236 kg)	786 lbs (354 kg)	1048 lbs (472 kg)
Coldhead(s) + Dewar	310 lbs (145 kg)	462 lbs (193 kg)	486 lbs (220 kg)	565 lbs (256 kg)
Maintenance Interval				
Compressor	Three Years	Three Years	Three Years	Three Years
Coldhead	Two Years	Two Years	Two Years	Two Years
Warranty				
Compressor	Three Years	Three Years	Three Years	Three Years
Coldhead	Two Years	Two Years	Two Years	Two Years

* By specific request from the customer it is possible to customize the size of the dewar

** By specific request from the customer it is possible to include in the offer a Chiller that will provide the cooling water requirement

Example of a QLHe20 liquefier in a QuantumPure™ Helium Recovery, Purification and Liquefaction System



Appendices

Appendix 1. QCH4KH – Two-stage G-M coldhead to 3.5K



MODEL: QCH4KH	Lowest Temperature < 3.5K		
Cooling Capacity		First Stage	Second Stage
	50Hz	35W @ 50K	1.5W @ 4.2K
	60Hz	39W @ 50K	1.7W @ 4.2K
Cooldown Time (2nd stage)		< 60minutes (4.2K)	
Weight		Coldhead	Compressor
		42 lbs (19 kg)	262 lbs (118 kg)
Power Consumption (compressor + coldhead)		Steady	Cooldown
	50Hz	6.5 KW	7.2 KW
	60Hz	7.8 KW	8.7 KW
Compressor Type		Water	
Cooling Water Requirement		> 1.8 GPM (7 l/min)	
Flex-lines		Standard 3m, up to 20m optional	
Maintenance Interval		Coldhead	Compressor
		Two Years	Three Years
Warranty		Coldhead	Compressor
		Two Years	Three Years

Appendix 2. QCLHeW– Helium compressor



MODEL: QCLHeW	Helium Compressor	
Electrical Power :	3 Phase 480V / 60Hz	
Helium Purity Requirements :	≥ 99.999%	
Cooling Water Temperature :	Inlet	Outlet
	5°C ~ 35°C	< 44°C
Power Consumption (50Hz) :	Steady	Cooldown
	6.5 KW	7.2 KW
Pressure Range :	Supply	Return
	16.6 ~ 20.7 bar	2.8 ~ 6.9 bar
Compressor Type :	Water-cooled	
Cooling Water Requirement :	7-10 L/min 28°C	
Ambient Temperature :	Operating	Storage
	4°C ~ 40°C	-20°C ~ 65°C
Weight :	118 kg	
Maintenance Interval :	Three Years	