

QHRRXX Helium (Re)Liquefier 20/40/60/80 liters/day

QHRRXX HELIUM
(RE)LIQUIFIER



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:

- QDE415D G-M coldhead(s) (see Appendix 1 for details) and QDC6000V compressor(s) (see Appendix 2 for details)
- Auto-control including computerized pressure control
- Safety protection unit
- Elevated platform

Specifications:

QHRR20: 20L/day He liquefaction capacity (one coldhead):

- ~16-18 liters per day at 2 psig 60 Hz
- ~20-22 liters per day at 10 psig 60 Hz

QHRR40: 40L/day He liquefaction capacity (two coldheads):

- ~40-44 liters per day at 10 psig 60 Hz
- ~32-35 liters per day at 2 psig 60 Hz

QHRR60: 60L/day He liquefaction capacity (three coldheads):

- ~60-77 liter per day at 10 psig 60 Hz
- ~45-50 liters per day at 2 psig 60 Hz

QHRR80: 80L/day He liquefaction capacity (four coldheads):

- ~80-88 liter per day at 10 psig 60 Hz
- ~60-66 liters per day at 2 psig 60 Hz

Specification/Model	QHRR20	QHRR40	QHRR60	QHRR80
Dewar Capacity	160 liters	250 liters	350 liters	500 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	Four Years	Four Years	Four Years	Four Years
Coldhead	>Two Years	>Two Years	>Two Years	>Two Years
Warranty				
Compressor	Four Years	Four Years	Four Years	Four Years
Coldhead	Three-year or 20k hrs	Three-year or 20k hrs	Three-year or 20k hrs	Three-year or 20k hrs

Appendix

Appendix 1. QDE415D – Two-stage G-M coldhead to 3.5K



MODEL: QDE415D	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	Four Years
Warranty		Coldhead	Compressor
		Three Years	Four Years

Appendix 2. QDC6000V – Helium compressor



MODEL: QDC6000V	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 :	Four Years	