

**CRYO**

***CRYOCOOL-LHE***

**4.5 K**  
**-268 °C**

**4.5 K Crystal Temperature**

**No Icing**

**No Shield Gas**

**No shield tube around  
crystal**



**CRYOCOOL-LHE**

**Helium-Temperature Gas Stream Cooler  
for Single-Crystal Diffractometry:**

- Low temperature of 4.5 K  
at five (5) mm from nozzle
- Low liquid helium consumption  
2.2 liters/hour at 4.5 K  
1.0 liters/hour at 15 K

Discover a "whole new world" below 5 K

The sample (crystal) locates in the cold stream. No windows, tubes or crystal shielding are needed. The result is complete freedom of movement and maximum sensitivity. Elimination of shield gas reduces turbulence, allows lower temperatures, reduces operating costs, and makes for an easier to use system. Set-up is very simple. Crystal mounting can be learned in five minutes. The only maintenance needed is occasional re-evacuation of the transfer line.

With a base temperature of 4.5 K, the CRYOCOOL-LHE features the lowest temperature in the industry. **4.5 K** and efficiency (*1.0 liters/hr at 15 K, 2.2 liters/hr at 4.5 K*), performance far better than any other commercially available helium gas stream cooler!

	<p><b>TOP LEFT</b> Start ChA= nozzle (295.578K) ChB= never ice tip</p>	
	<p><b>10 minutes later</b> ChA= nozzle (5.007K) ChB= never ice tip</p>	

The model 34 CRYO Controller automatically holds gas stream set point temperature .

The never ice nozzle heater is also completely under automatic control.

### **“CRYOCOOL-LHE”**

- **Low temperature of 4.5 K at five (5) mm from nozzle**
- **10K at ten (10) mm**
- **2.2 liters/hour liquid helium consumption at 4.5 K**
- **2.0 liters/hour at 10 K, 1.0 liter/hour at 15 K**
- **Cooldown time about 10 minutes**
- **Variable temperature control, 4.5 K to 300 K**
- **Large nozzle diameter (7 mm)**
- **Flow control valve with ice filter**
- **7 ft (2.1m) flexible length for easy handling and manipulation**
- **54 inch (137cm) length storage dewar insert length**
- **Never ice ‘warm-tip’ (no shield gas needed - ever)**  
- ice free nozzle without using shield gas!  
**Never-ice tip completely under automatic control**
- **X-Y-Z Axis Nozzle Support stand**  
- precision nozzle adjustment
- **Continuous gas stream and tip temperature monitor**
- **Automatic control of gas temperature**
- **Computer interfaces = USB, GPIB and RS-232**

#### Some User's Notes:

“This system really works. We can easily collect data at temperatures as low as 4.5 K. We have found that it is much harder for crystals to hold on to their secrets at these temperatures!”

“What is dramatic about 5 K is the wealth of finer details that become visible.”

“We have now used the CRYOCOOL-LHE and it is quite nice. We are in the process of renewing our grant and would like to get an updated quote for another cooler of the same design.”

“The virtual removal of thermal motion at 5 K is a big thing for us when studying electron density distributions.”

“I get more and sharper details in structures at lHe temperature.”