



OEM Perspectives:  
Nextreme™ Value Chiller  
for **Mass Spectrometry**

# Introduction

Mass spectrometers are used to identify elements of a complex substance



Advanced thermal management is required to maintain sample integrity and ensure reliable operation

# Application Overview

Mass Spectrometers generate large amounts of heat during operation that must be quickly dissipated



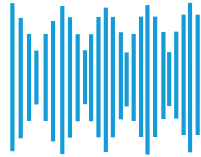
Compressor-based chillers provide precise cooling for mass spectrometers to ensure reliable operation

# Application Challenges



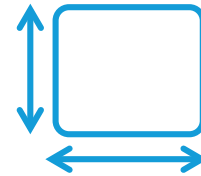
## HIGH TEMPERATURES

Heat must be dissipated away from thermally sensitive components



## NOISE & VIBRATION

Cooling systems must provide quiet operation with low pulsation



## SPACE CONSTRAINTS

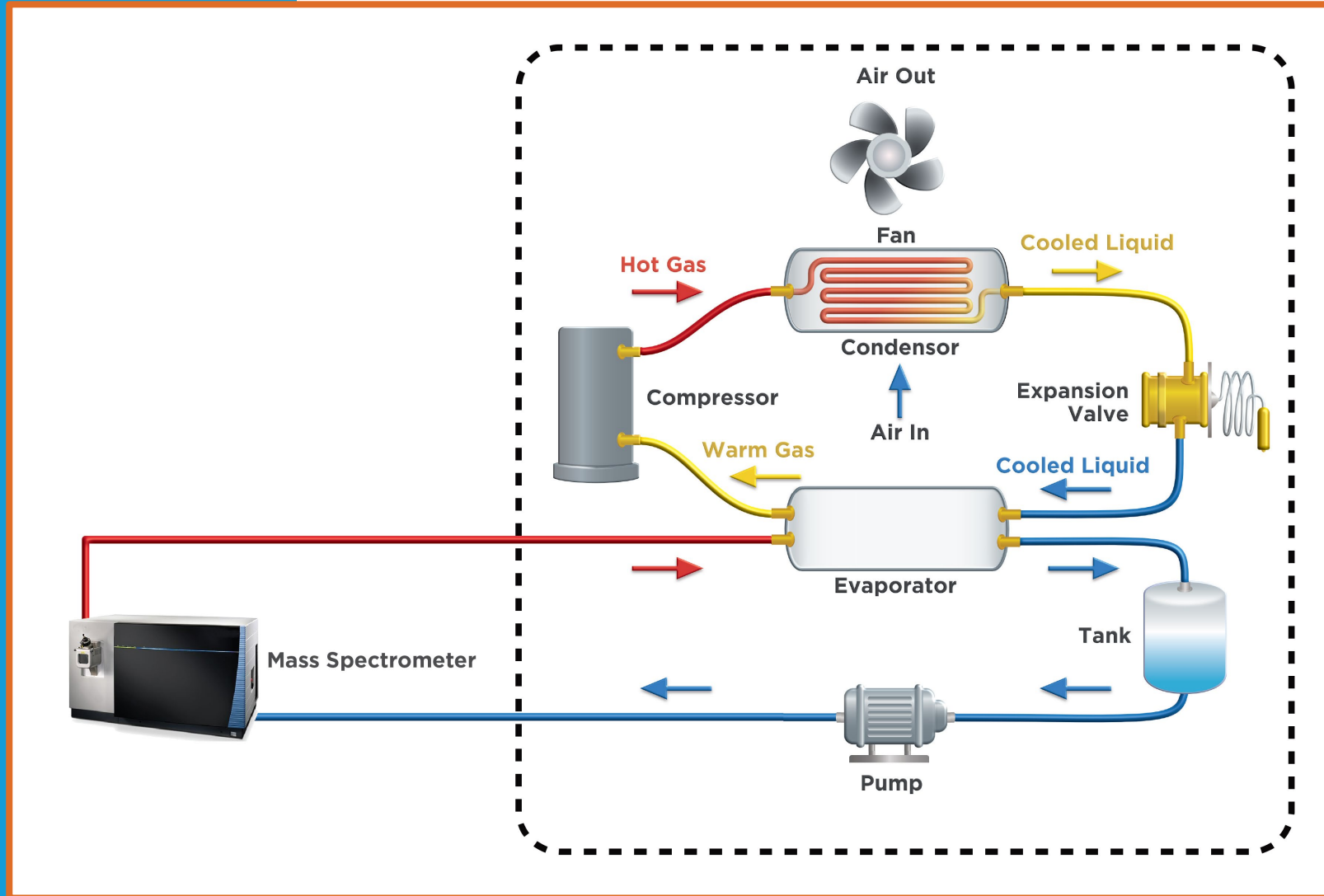
Miniaturization of equipment increases heat flux density



## ECO-FRIENDLINESS

Reduced Global Warming Potential

# Recirculating Chillers for Mass Spectrometers



Compressor-based chillers offer efficient **cooling below ambient** for mass spectrometry equipment

# Nextreme™ Value Chiller VRC2400

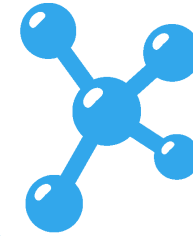
- Economical Cooling Solution for OEMs
- Temperature Stability  $\pm 0.5^{\circ}\text{C}$
- High COP
- Low Maintenance Features
- User-friendly LCD Display
- Environmentally Friendly



**50%**  
Reduced Global  
Warming  
Potential



# Conclusion



**Mass Spectrometers** are used to measure and analyze molecular structures

A **thermal solution** is required to dissipate **the large amount of heat** generated during operation

**Compressor-based chillers** offer advanced temperature control to **ensure accuracy** and **maximum uptime**

The Nextreme™ Value Chiller offers **high reliability, precise temperature control, low maintenance features** at a **low cost** for mass spectrometry OEMs.

# For More Information



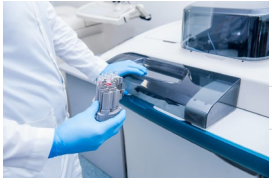
More information on the VRC2400 Nextreme™ Chiller can be found by visiting Laird Thermal Systems' [website](#).

Read more about thermal management solutions for mass spectrometry in our [application note](#).



# About Laird Thermal Systems

Laird Thermal Systems develops thermal management solutions for demanding applications



Medical



Analytical



Industrial



Transportation



Telecom

● **DIVERSE PRODUCT PORTFOLIO**  
Thermoelectric Coolers, Thermoelectric Cooler Assemblies, Temperature controllers and Liquid Cooling Systems

● **SOLVING COMPLEX ISSUES**  
Our engineers use advanced thermal modeling and management techniques to solve complex heat and temperature control problems

● **ACCELERATING TIME-TO-MARKET**  
We partner closely with our customers across the entire product development lifecycle.

● **MAXIMIZING PERFORMANCE**  
Our global manufacturing and support resources help customers maximize productivity, uptime, performance and product quality

Laird Thermal Systems is the optimum choice for standard or custom thermal solutions

Learn more by visiting  
[www.lairdthermal.com](http://www.lairdthermal.com)





Have a question or need more information about  
Laird Thermal Systems? Please contact us via the website at [www.lairdthermal.com](http://www.lairdthermal.com)



OEM-Perspectives-Value-Chiller-for-Mass-Spectrometry-Presentation-120621

© Copyright 2021 Laird Thermal Systems, Inc. All rights reserved. Laird™, the Laird Ring Logo, and Laird Thermal Systems™ are trademarks or registered trademarks of Laird Limited or its subsidiaries. Nextreme™ is a trademark of Laird Thermal Systems, Inc. All other marks are owned by their respective owners.