



# STIRLING ULTRACOLD

GLOBAL COOLING • GLOBAL CONSERVATION



SCHOOL OF MEDICINE

CASE WESTERN RESERVE  
UNIVERSITY

# What We Believe

*It is possible to advance science and medicine while minimizing environmental impact.*



No compressors. No compromises.

# -80° C Product Line



SU780XLE  
27.5 cu. ft.  
780 liter

SU105U  
3.7 cu. ft.  
105 liter  
(shown stacked)

Shuttle™  
0.9 cu. ft.  
25 liter

# Stirling Field-Proven Technology

Trusted by over 70 research facilities and institutions including . . .

## Academic Research

Albert Einstein College of Medicine  
Duke University  
University of California (Davis & San Francisco)  
Case Western Reserve University

## Biorepositories

Asahi Life Science Co  
National Cancer Institute  
Fred Hutchinson Cancer Center  
Masy Systems

## BioPharma

Roche Diagnostics  
GlaxoSmithKline  
Boehringer Ingelheim Pharmaceuticals  
AbbVie Bioresearch Center  
Eli Lilly & Co.

# EPA ENERGY STAR® Final Test Method

## Stirling Ultracold SU780XLE EPA Final Test Method Results (independently tested)

- 7.86 kWh: 75° C – 24-hour test period
- 6.86 kWh: 75° C – steady state period

### Test Results

Test Condition (°C)	-80	-70
Door Test Cabinet Temperature (°C)	-80.2	-69.6
Energy Test Cabinet Temperature (°C)	-80.4	-69.6
Ambient Temperature (°C) – dry bulb (T <sub>a</sub> , T <sub>b</sub> ) <sup>a</sup>	(24.0, 23.7)	(24.2, 24.0)
Ambient Temperature (°C) – wet bulb (T <sub>a</sub> , T <sub>b</sub> )	(18.5, 17.7)	(18.4, 17.9)
Energy Consumption including 6 door openings (kWh/day)	8.72	6.96
Energy Consumption without door openings (kWh/day)	7.58	6.14
Weighted Average Energy Consumption	at -75°C	
<b>Including 6 door openings (kWh/day)</b>	<b>7.86</b>	
<b>Without door openings (kWh/day)</b>	<b>6.86</b>	

<sup>a</sup>T<sub>a</sub> is at a height of 85.0 inches above the ground and T<sub>b</sub> is at a height of 37.5 inches above the ground.

# \$3,000 Rebate on Stirling Freezer

## Replace Your Ultra-Low Temperature Freezer



*Upgrade your -80°C Freezer  
and get a \$3000 rebate.*

Facilities Services is pleased to support choosing an efficient upgrade for an aging freezer by offering a rebate for the purchase of a new Stirling Ultracold SU780UE ULT freezer.

### Benefits of the Stirling freezer:

- Lowest energy use \*
- High sample integrity (-1°C @ -80°C) \*
- Low waste heat
- Seven-year warranty on Stirling engine
- Lowest cost of ownership



### How to participate:

- Complete and submit the ULT Freezer Upgrade Preapproval Form. Get preapproval from Facilities Services to confirm the purchase meets program guidelines at: <http://www.case.edu/cpfacilities/energymanagement.html>
- Work with your Business Manager or Buyer to create a purchase order and guarantee pricing provided by Global Cooling, manufacturer of the Stirling SU780UE.
- Complete and submit ULT Freezer Rebate Request Form. After receipt and installation of freezer is confirmed by Facilities Services, rebate will be credited.

For more info about the rebate program, contact:

Erika Welicko, Energy Manager, CWRU, 216-368-1935, [erw3@case.edu](mailto:erw3@case.edu)

For more info about the Stirling Ultracold SU780UE, contact:

Kevin Dunleavy, Account Manager, 740-517-1544, [kdunleavy@stirlingultracold.com](mailto:kdunleavy@stirlingultracold.com)

CWRU Scientific Instrument Repair Center:

William M. Frank, Scientific Instrument Repair Center Manager,  
School of Medicine Pm. R-811H, 216-365-3225, [wmf3@case.edu](mailto:wmf3@case.edu)

\*Documented and published results performed according to ENERGY STAR Final Test Method.  
This Efficiency Program is available on a limited basis. Obtain preapproval.



# Advantages Across the Organization



# A Reliable Answer to Compressor Failure

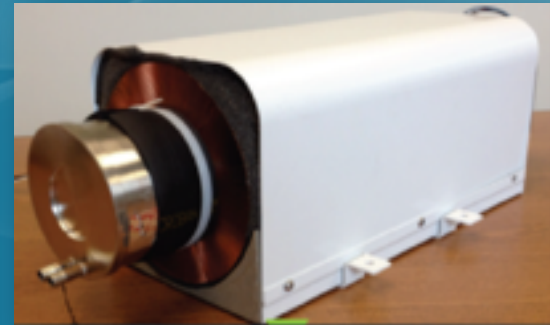
## Why Compressors Fail

Moving parts wear out  
Up to 24 moving parts to fail  
Oil lubrication management  
Compressor valves  
Stop-start operation  
adaptive control  
On-off operation – surge  
currents



## Stirling Solution

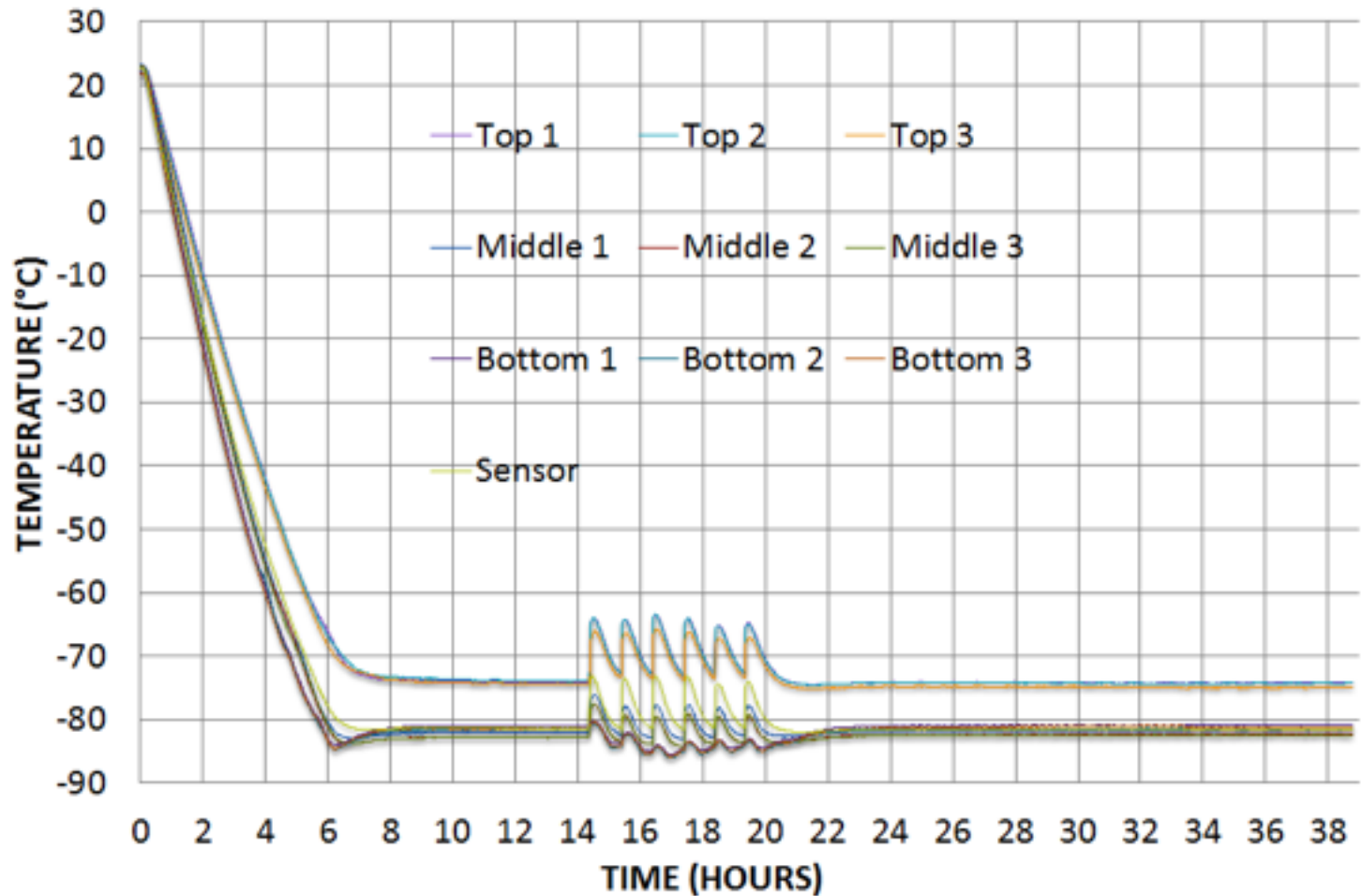
No wear out – gas bearings  
Only 2 moving parts  
No oil  
No valves  
Continuous operation with 100%  
  
No surge currents





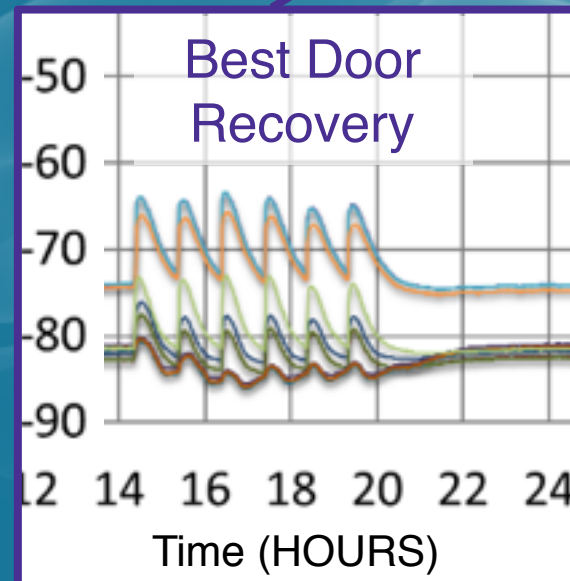
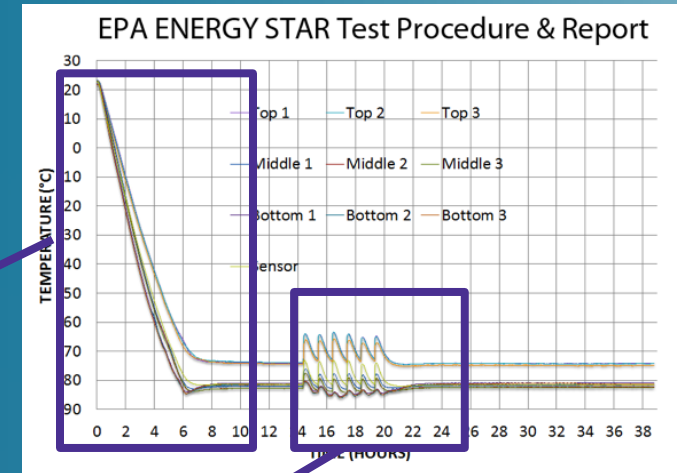
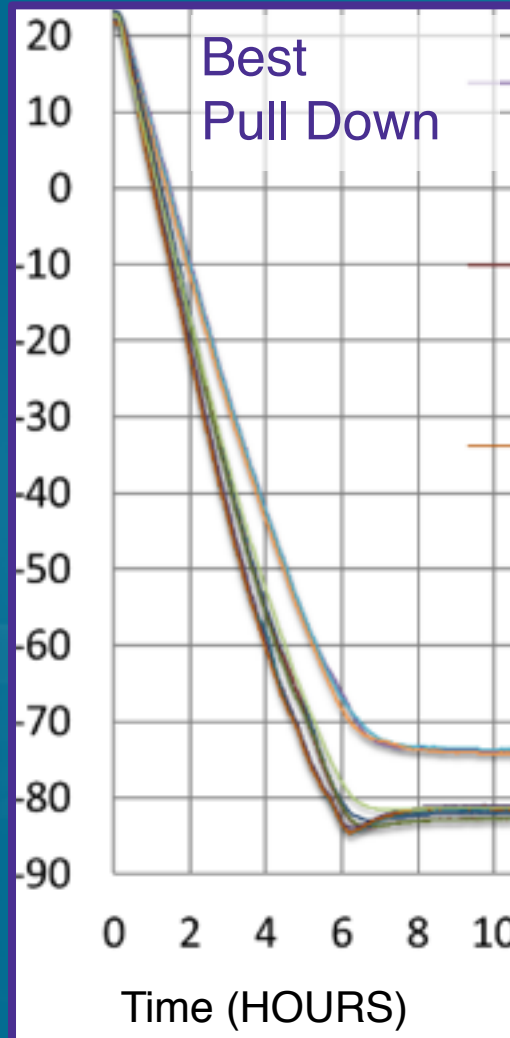
# Best Temperature Uniformity & Stability

## EPA ENERGY STAR Test Procedure & Report



Time (HOURS)

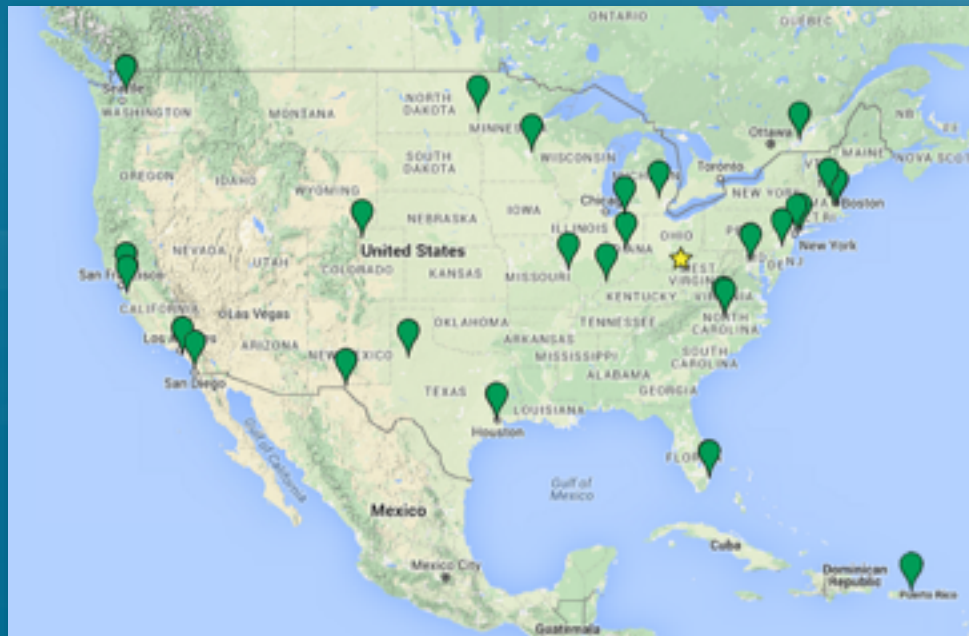
# Best Pull Down & Door Recovery



6 door  
openings  
@ 1 hour  
intervals

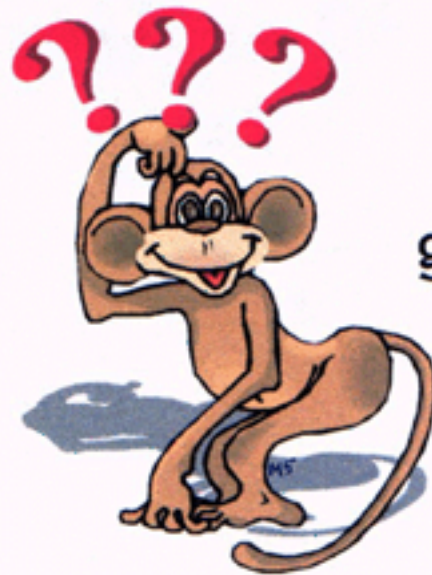
# Industry-Leading Warranty

- 7-Year Warranty on the Stirling engine and thermosiphon
- Factory-authorized network of service centers





STIRLING  
ULTRACOLD  
RESEARCH, EDUCATION & BUSINESS COMMUNITIES



Questions  
are  
guaranteed in  
life;  
Answers  
aren't.