



Pizzeria Restaurant
May 14, 2002



Type: **Walk-In Freezer**
Walk-In Cooler

Customer: **Pizzeria Chain Restaurant**

Equipment Specification:

Freezer:

- Bohn Evaporator LET0901F, Serial No. D94K01464, 9,000 BTU's
- Copeland Compressor AH55RT-169-P2
- XSTREAM[®] B Valve, Low Temp, R404

Cooler:

- Bohn Evaporator ADT090AJ, Serial No. D95C08340, 9,000 BTU's
- Copeland Compressor REY3-0175-TFC-950, Serial No, 96D06612
- XSTREAM[®] B Valve, Med Temp, R22

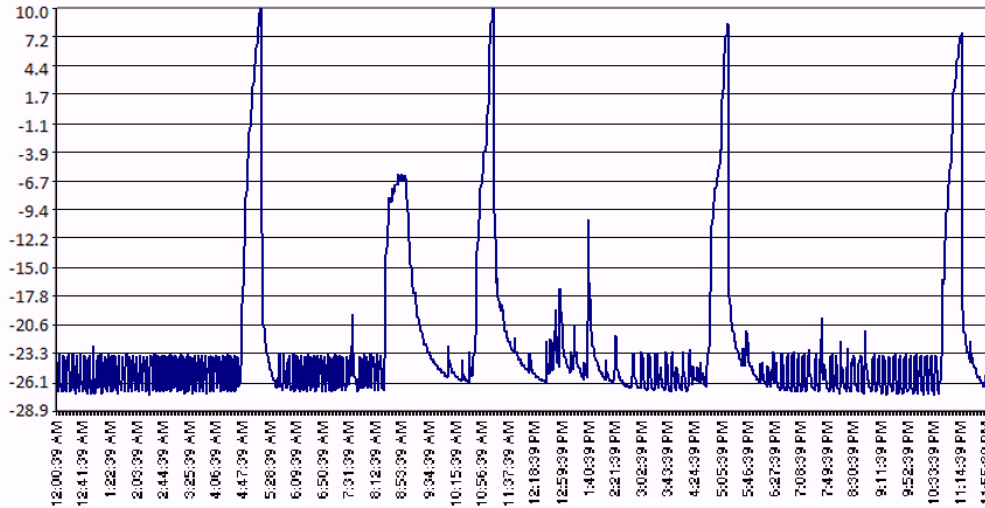
Protocol:

- Temp/RH:
 - Temp Tale Temperature/RH sensors were used to monitor temperature/RH
 - 14,148 points monitored
- Power (freezer only):
 - E Server was used to monitor: kWh, kW, KVA, PF, Volts AB, Volts AC, Volts BC, Amps A, Amps B, Amps C, kW Average, kW Minimum, and kW Maximum
 - 56,000 points monitored

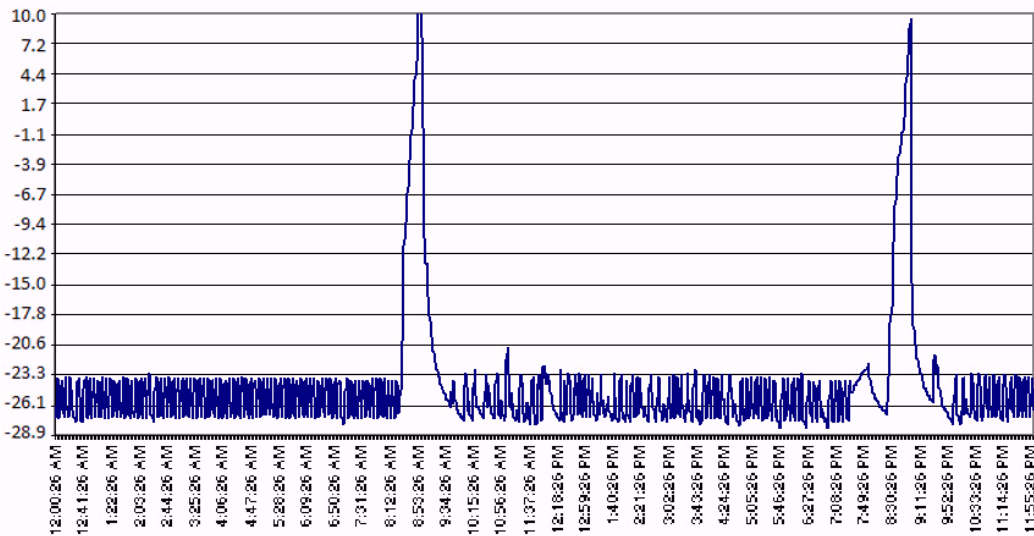


FREEZER BENEFITS

Conventional Freezer Operation
4 Defrosts a Day



XDX[®] Freezer Operation
2 Defrosts a Day with Lower Average Temperatures

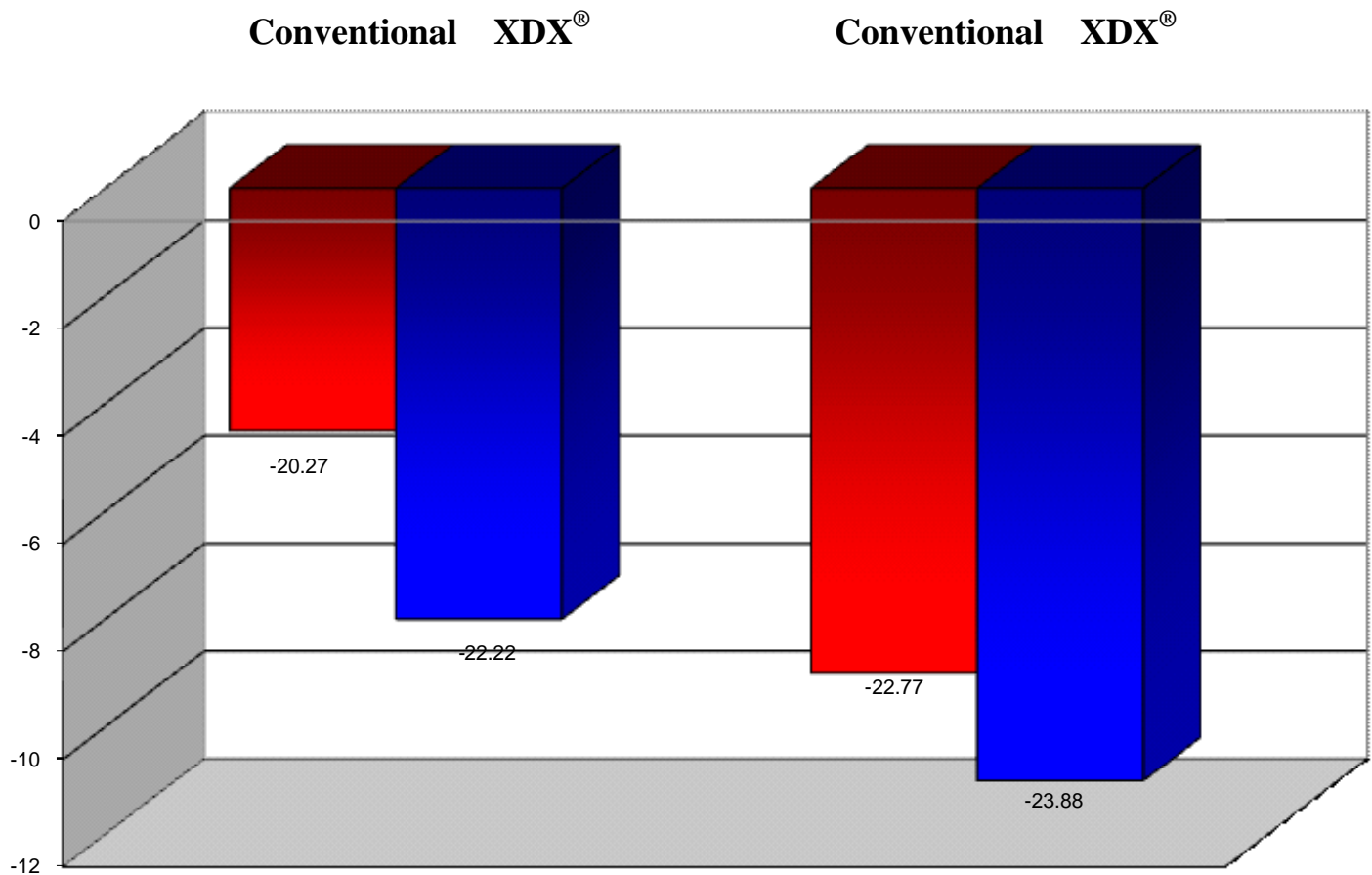


PHONE 847.398.0250 • TOLL-FREE 800.XDX.0250 • FAX 800.XDX.9656
3176 NORTH KENNICOTT AVE • ARLINGTON HTS, ILLINOIS • 60004

WWW.XDXUSA.COM



XDX[®] maintains 78% colder average temperature & reaches 22% lower temperature in freezer

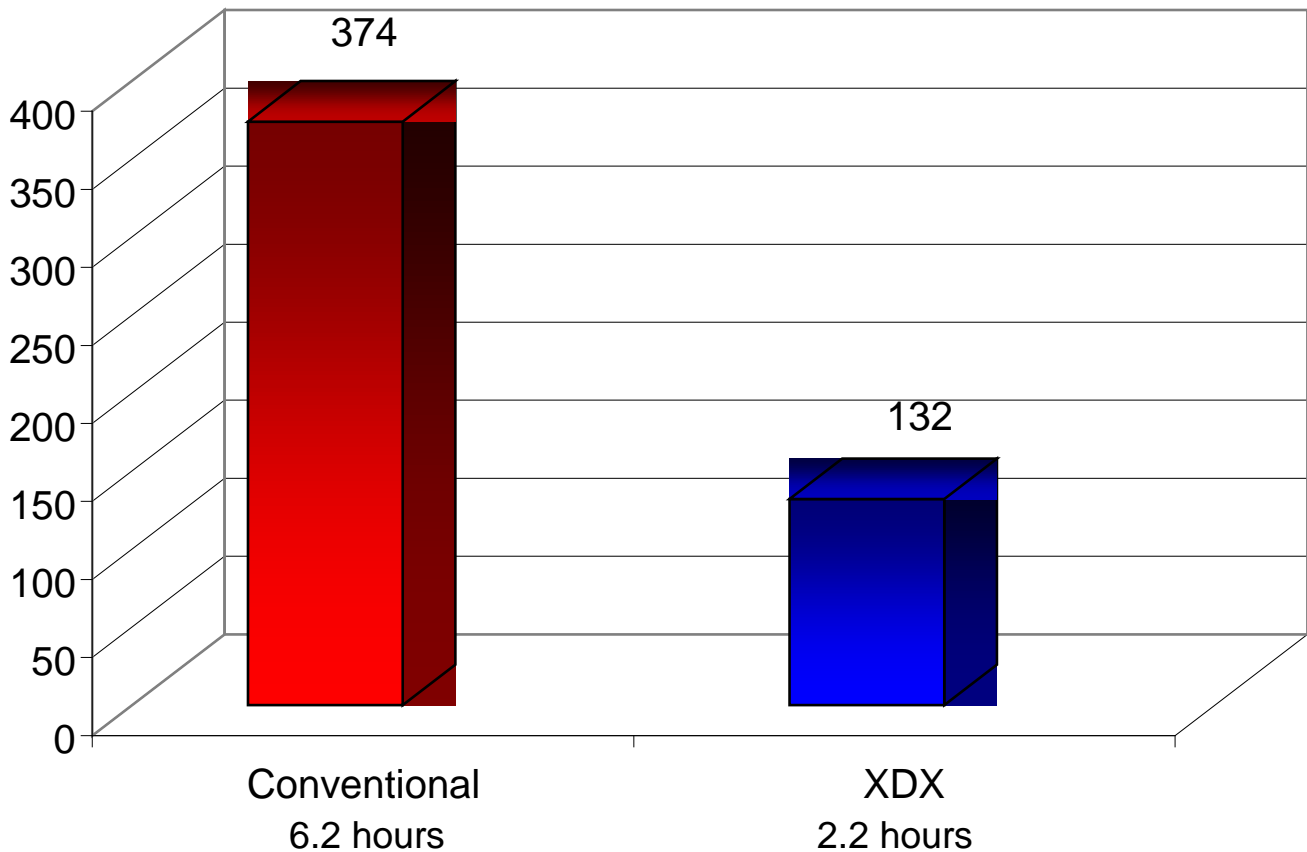


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Freezer Total Defrost Duration XDX[®] Decreased Defrost Time by **64%** 24 Hour Sample



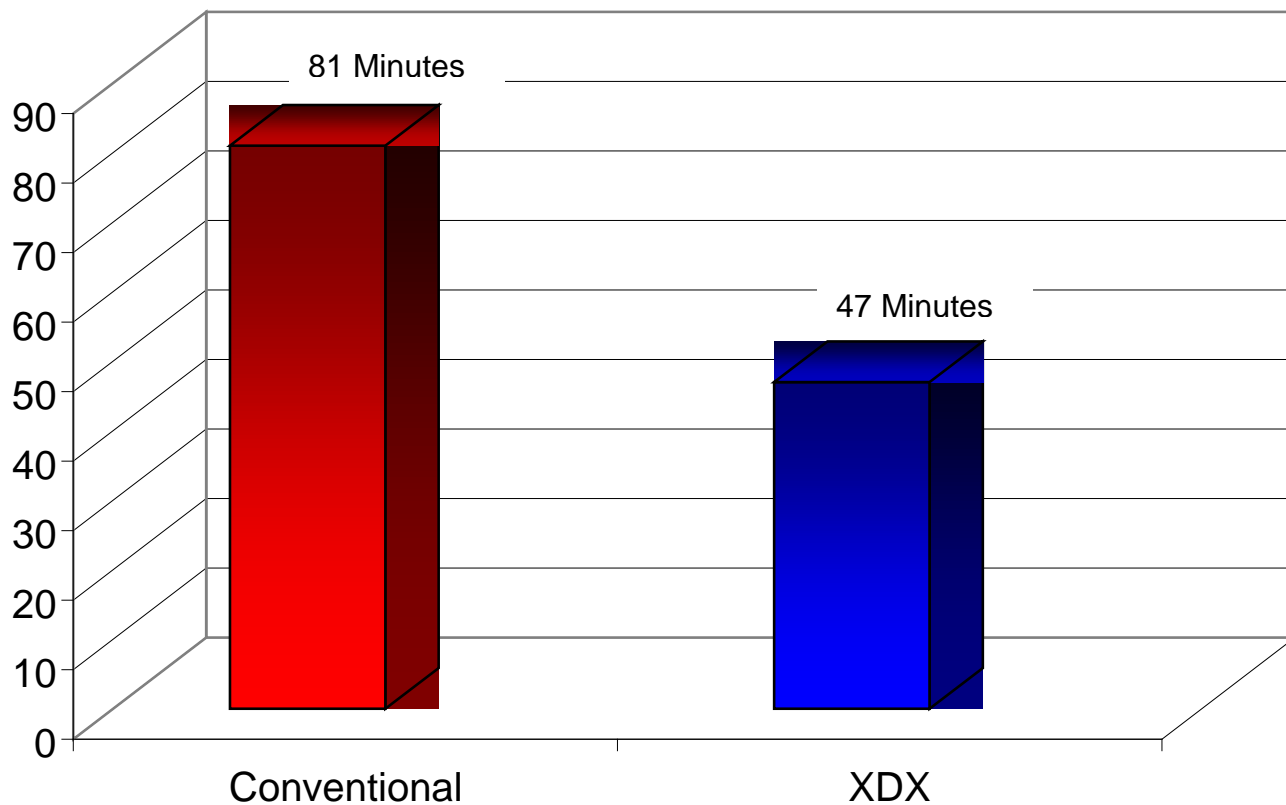
Conventional Operation: 374 minutes/24 hours
XDX[®] Operation: 132 minutes/24 hours



Freezer Pull-Down

XDX[®] Decreased Pull-Down Time by **42%**

Single Defrost Pull-Down



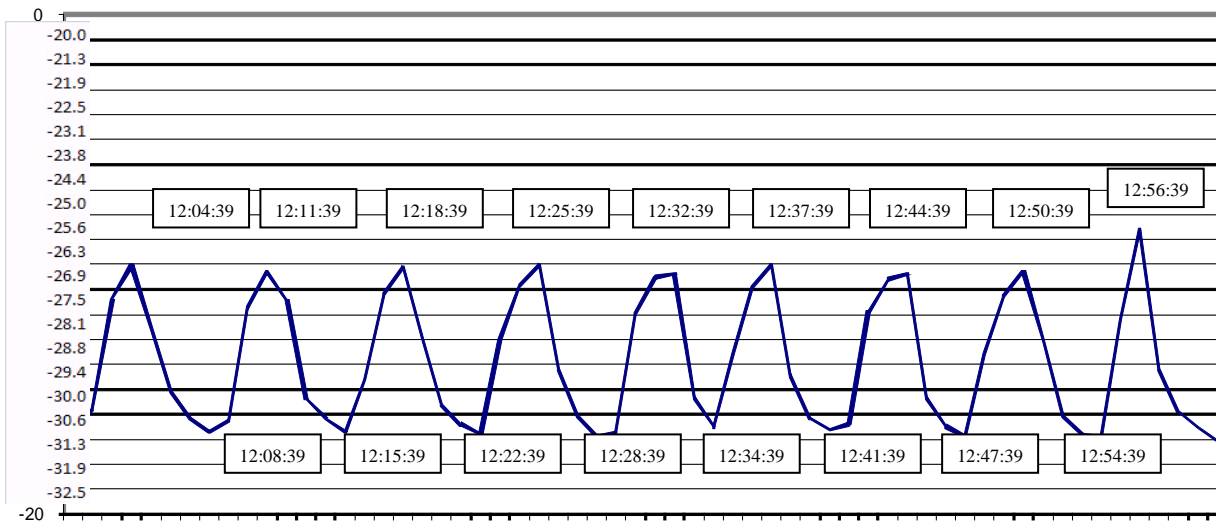
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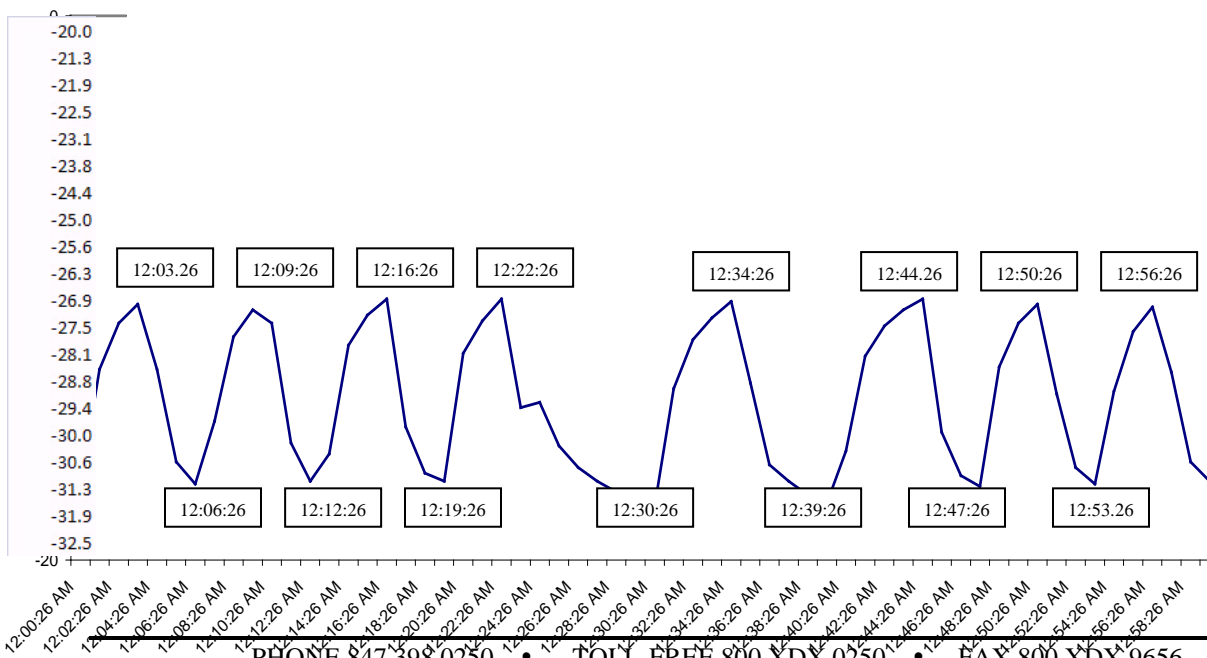


Freezer Run-time Decreased **25%** with XDX[®]

Freezer Conventional Operation - 4-minute Run Cycle



XDX[®] Freezer Operation - 3-Minute Run Cycle



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COOLER BENEFITS

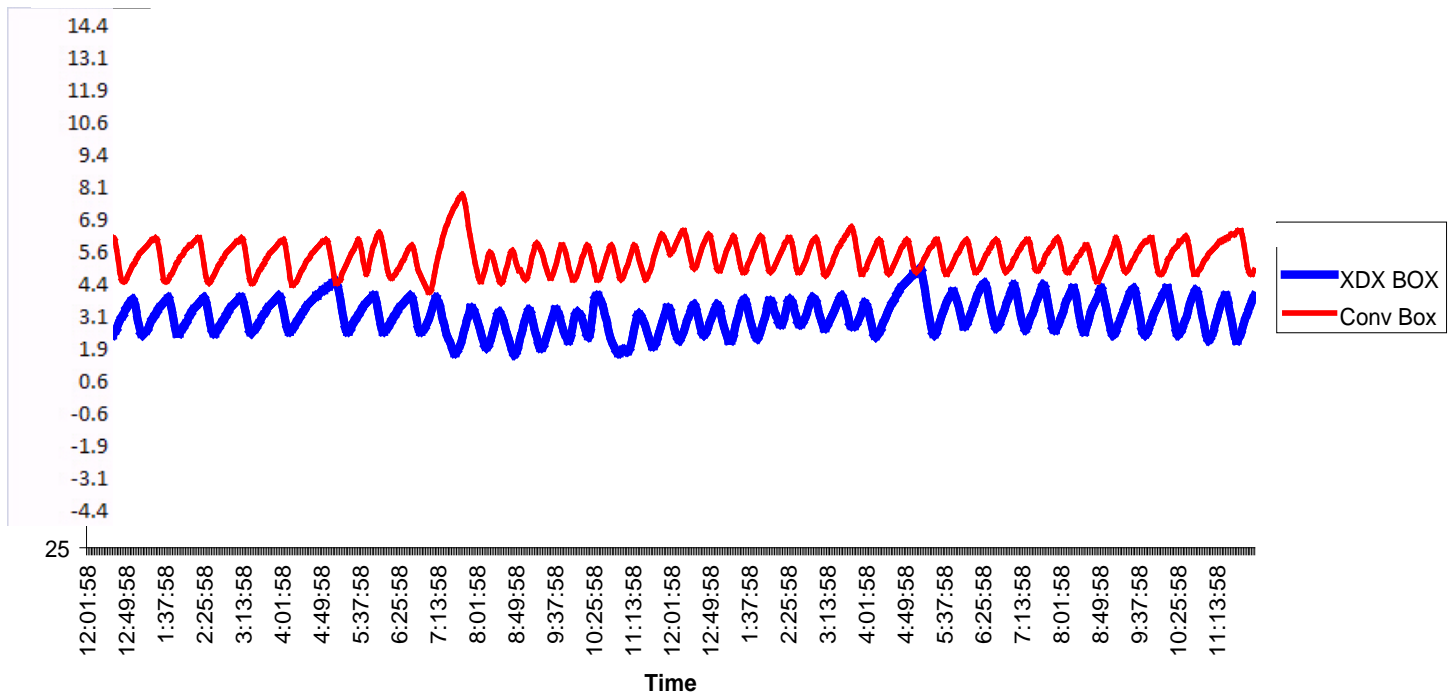
XDX[®] Maintains an Average Temperature of 3.27°C

vs.

Conventional Operation which Averaged 5.11°C

XDX and Conventional Box temperature for a walk-in cooler during a 24 hr sample

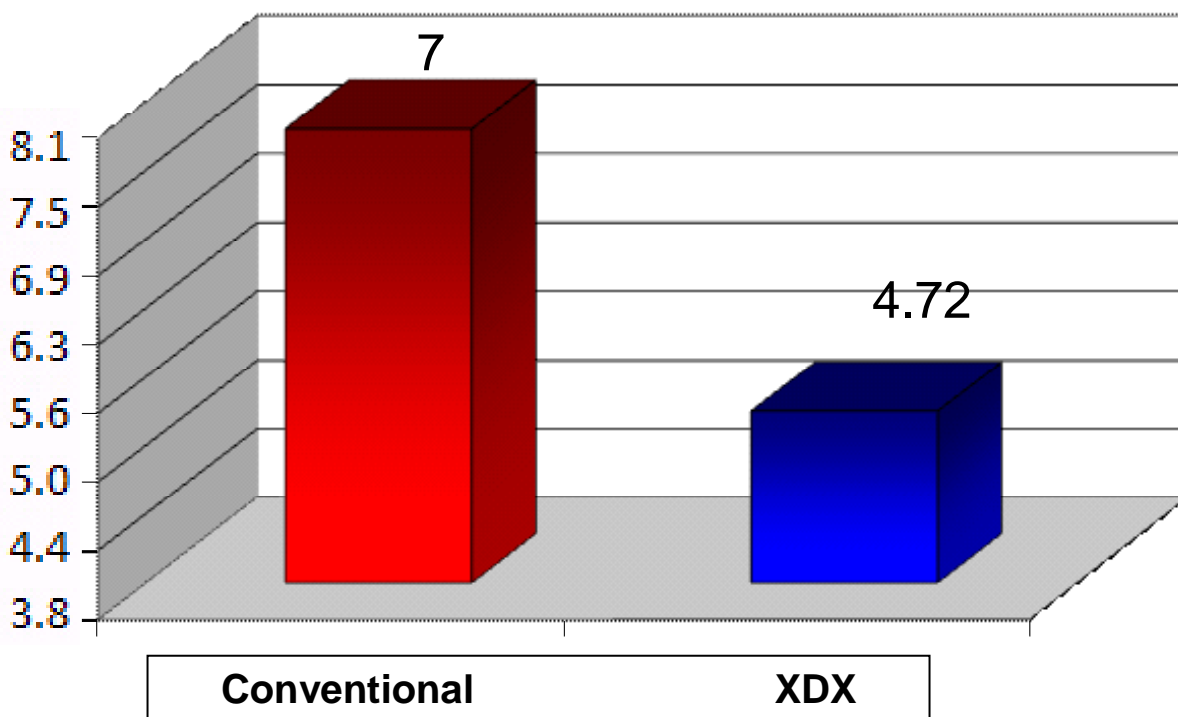
XDX and Conventional Box temperature for a walk-in cooler during a 24 hr sample





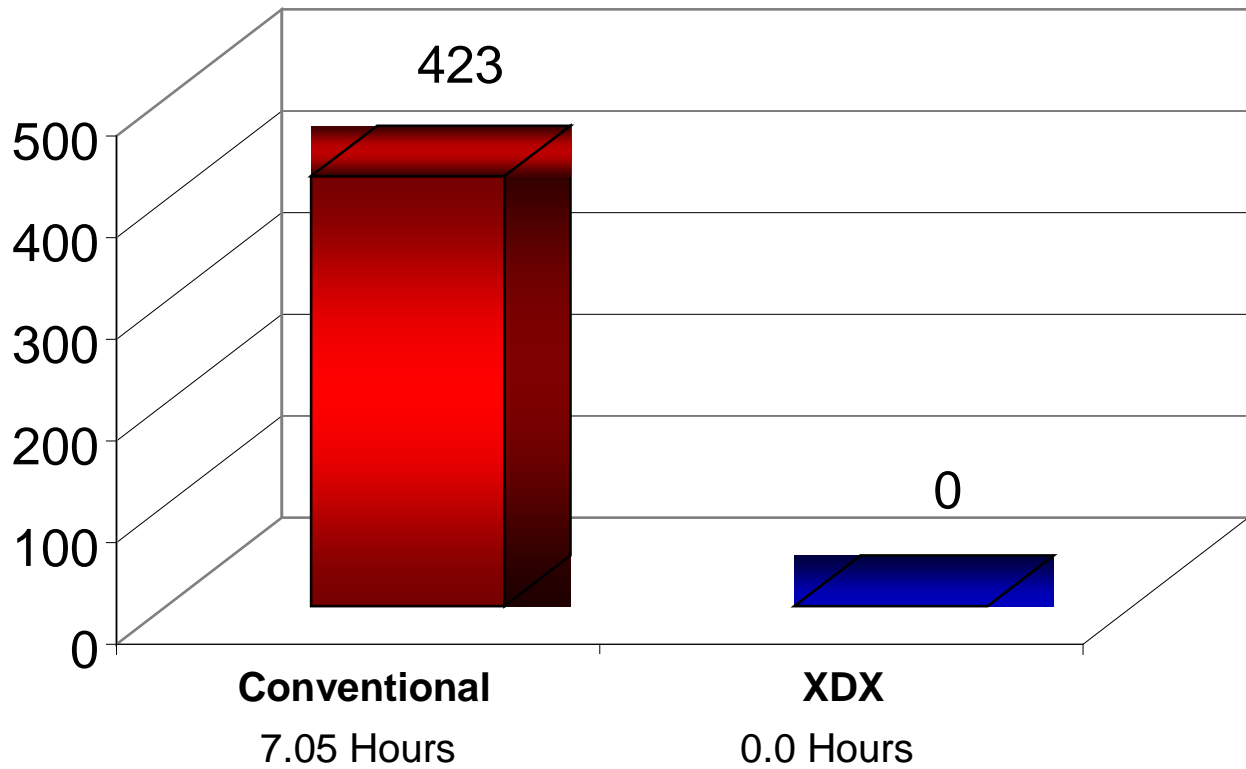
**Conventional Maximum Cooler Case
Temperature 7°C**

**XDX[®] Maximum Cooler Case
Temperature 4.72°C**





Conventional Cooler Operated 423 Minutes over 5°C
XDX[®] Never Operated over 5°C
24-Hour Sample



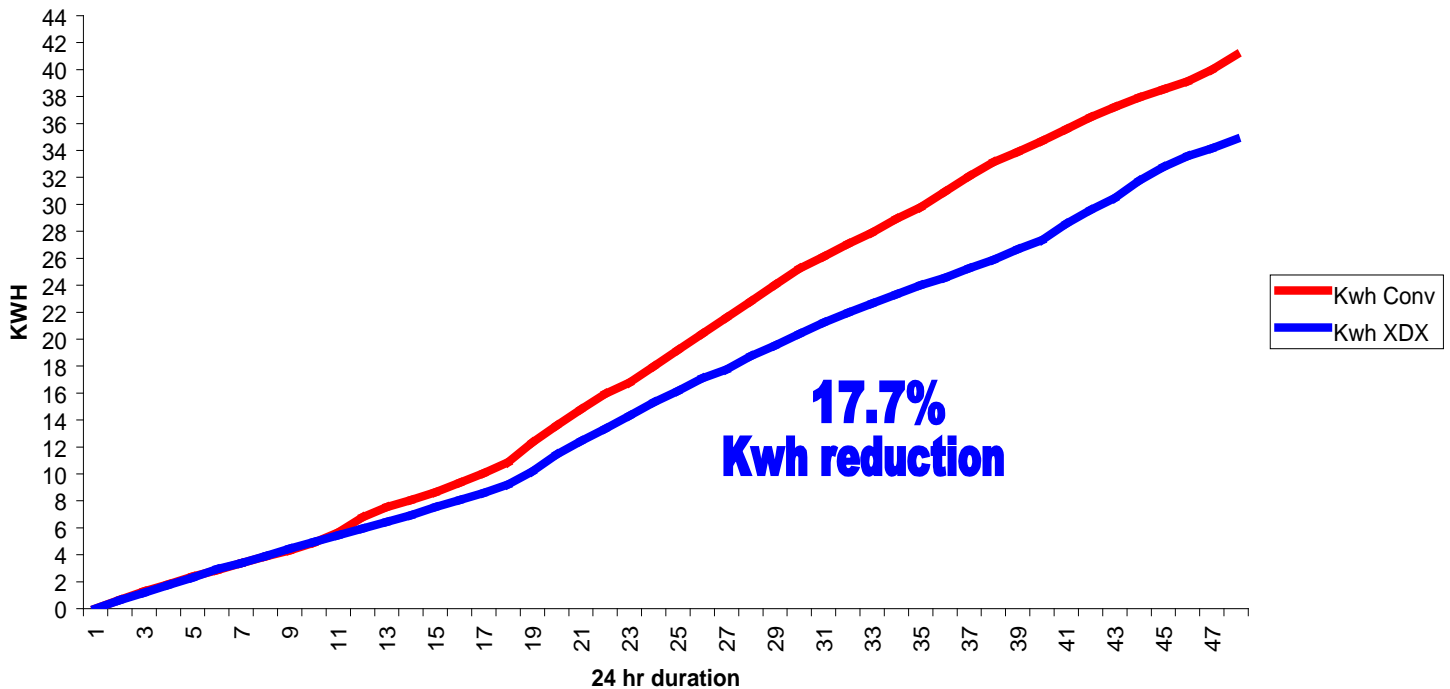
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kWh Comparison Conventional vs. XDX[®] Power Consumption Decreased 17.7%

Conventional and XDX KWH comparison during a 24 hr period on the walk-in freezer-1L16
Conventional and XDX KWH comparison during a 24 hr period



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XDX[®] Energy Savings Benefit

3,394.60 kWh Annually

2,640.00 kWh Freezer

754.60 kWh Walk-In Cooler

3,394.60 x .074¢

\$251.20

Reduction in kW during demand .5 kW @ \$5.56

\$ 66.72

\$ 317.92 (US)

Future Replacement

Current 1 ¾ hp

Change Out 1 hp

= \$ 75.00 reduction

\$392.92(US)



FREEZER

Conventional Operation:

- Defrosted four times a day, thirty-five minutes each
- System operated at an average temperature of -20.2°C
- Conventional system reached lowest temperature of -22.7°C
- System defrost duration in a 24-hour period is 6.2 hours
- System pull-down after defrost took 81 minutes
- Operated with an average 4-minute run-time cycle

XDX[®] Benefits:

- Decrease to *two* defrosts a day, thirty-five minutes each, a **50%** decrease
- XDX[®] system maintains **78%** colder average temperature, averaging -22.2°C
- System reaches **22%** lower temperature of -23.8°F
- XDX[®] defrost duration in a 24-hour period is 2.2 hours, a reduction of **64%**
- System pull-down after defrost is 47 minutes, a **42%** decrease
- Operates with a **25%** decrease in run-time, averaging 3-minutes per cycle

COOLER

Conventional Operation:

- System operated at an average temperature of 5.11°C
- Conventional system operated over 5°C over 7 hours
- Defrosted 3 times a day, 40 minutes each

XDX[®] Benefits:

- XDX[®] maintains an average temperature of **3.27°C**
- System never operated over **5°C**
- Decrease to *two* defrosts a day, forty minutes each, a **33%** decrease

XDX[®] ENERGY BENEFITS

- Overall kWh reduction of 17.7%
- \$317.92 (US) annual savings in kWh