



**Quick Service Restaurant**



## System Type:

**Walk-In Freezer**

### Equipment Specification:

- Larkin Evaporator ECP678-2
- Copeland Compressor KALA016ETAC800
- X-STREAM<sup>®</sup> B Valve, Low Temp, R404

### Protocol:

- Temp/RH:
  - Temp Tale Temperature/RH sensors were used to monitor temperature/RH
  - 16,336 points monitored
- Power:
  - 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
  - 34,944 points monitored.

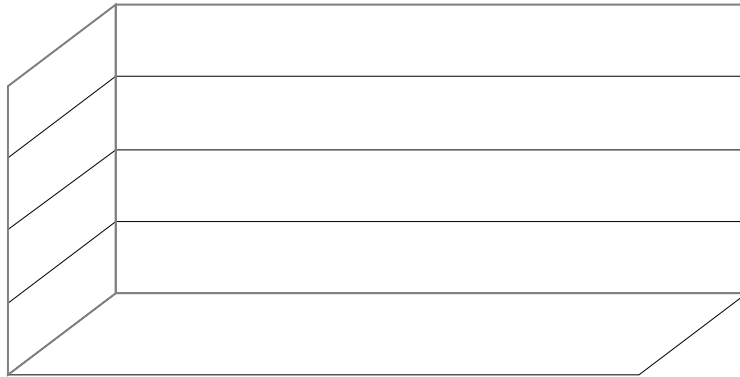
### Conventional Operation:

- Box temperature averaged -6.33 degrees C.
- Fluctuating box temperature due to frequent defrosts and slower return to set temperature after defrost cycles.
- Defrosts four times a day for 20 minutes each cycle.

### XDX<sup>®</sup> Benefits:

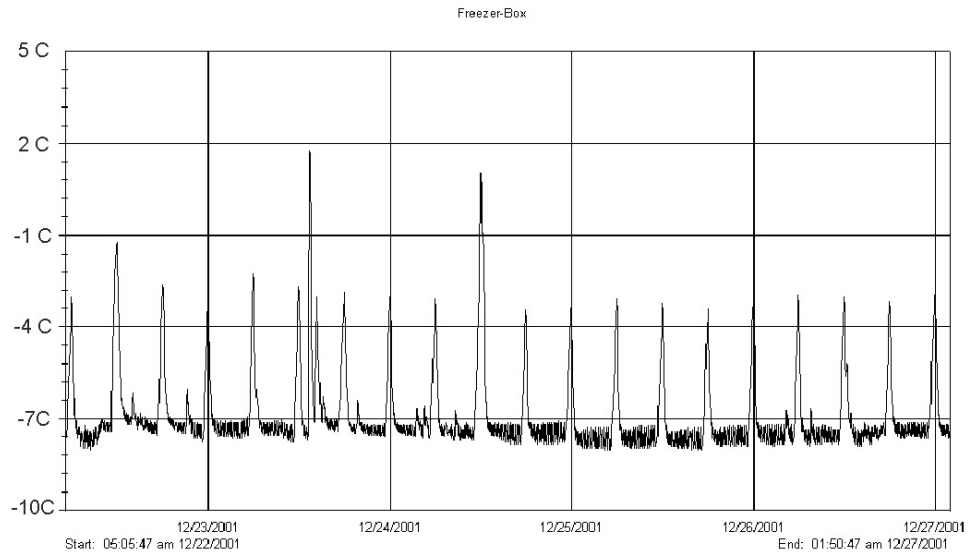
- Box temperature averaged -7.72 degrees C.
- Consistent box temperature and rapid return to desired temperature protects product quality.
- XDX<sup>®</sup> operates with a 19% decrease in kWh.
- Decrease to two defrosts per day at 20 minutes each cycle.
- XDX<sup>®</sup> achieved a 54.5% decrease in compressor run-time.



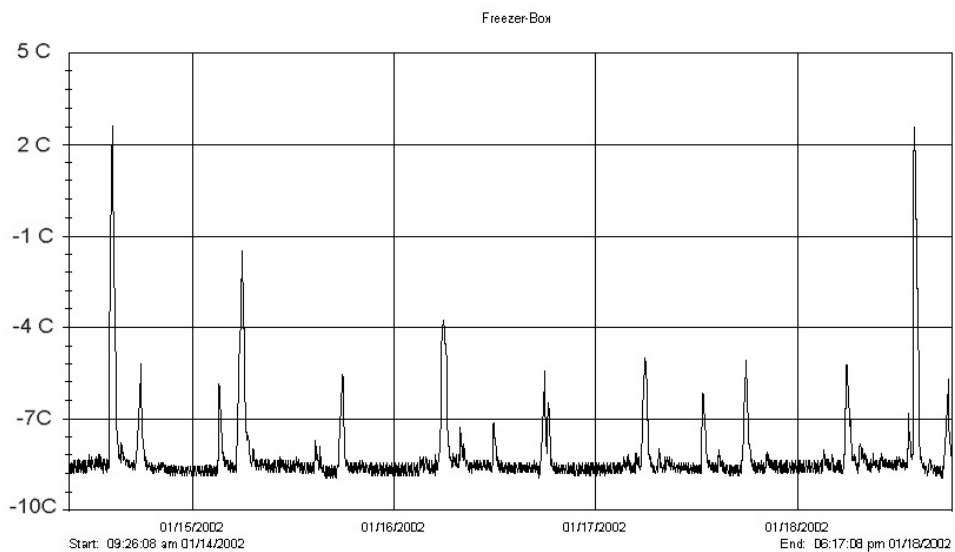




**Conventional Operation**  
**4 Defrost Cycles a Day**  
**Average Temperature: -6.33°C**

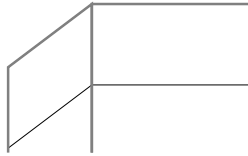


**XDX<sup>®</sup> Operation**  
**2 Defrost Cycles a Day**  
**Average Temperature: -7.72°C**





***54.5% Decrease in Compressor Run-Time***  
***\$553.80 (US) Saved Annually***





### **Savings Calculations:**

$$2,650 \text{ watts per hour} \div 1,000 = 2.65 \text{ kW per hour}$$

$$2.65 \text{ kW per hour} \div 60 \text{ minutes} = .044 \text{ kW per minute}$$

$$.044 \text{ kW per minute} \times 80 \text{ minutes of Conventional Defrost per day} = 3.52 \text{ kW of electricity used by defrost heaters of conventional system}$$

$$.044 \text{ kW per minute} \times 40 \text{ minutes of XDX}^{\text{®}} \text{ Defrost per day} = 1.76 \text{ kW of electricity used by defrost heaters of XDX}^{\text{®}} \text{ System}$$

### ***Facility Saves 1.76 kW Per Day on Defrost Heaters Alone***

$$1.76 \times .03 \times 365 = \$19.27$$

$$1.76 \times .04 \times 365 = \$25.69$$

$$1.76 \times .05 \times 365 = \$32.12$$

