

C02 Supermarket System

Case Study of a Warm Climate C02 Booster System



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Hillphoenix

A DOVER COMPANY

Case Study of a Warm Climate CO2 Booster System

Topics:

- **A Sprouts Farmers Market Store and the Advansor CO2 Booster System Installed There**
 - **Elimination of HFCs and Reduce the Carbon Footprint**
 - **Energy Comparison With the Customer's Traditional R407A System for That Location**
 - ***The Adiabatic Condenser applied to the system***

Sprouts Farmers Market

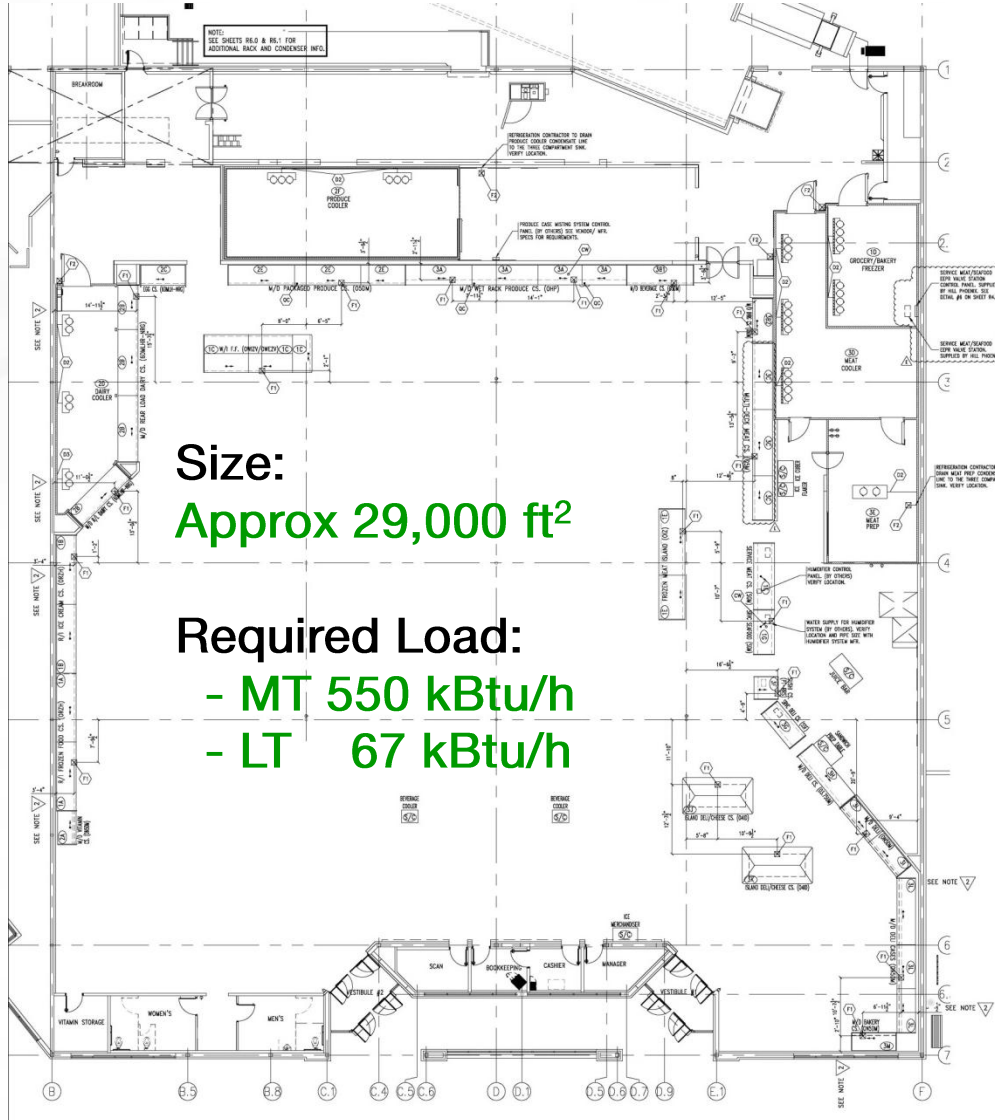


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Location – Dunwoody GA
Opening Date – July 16, 2014

Sprouts Farmers Market

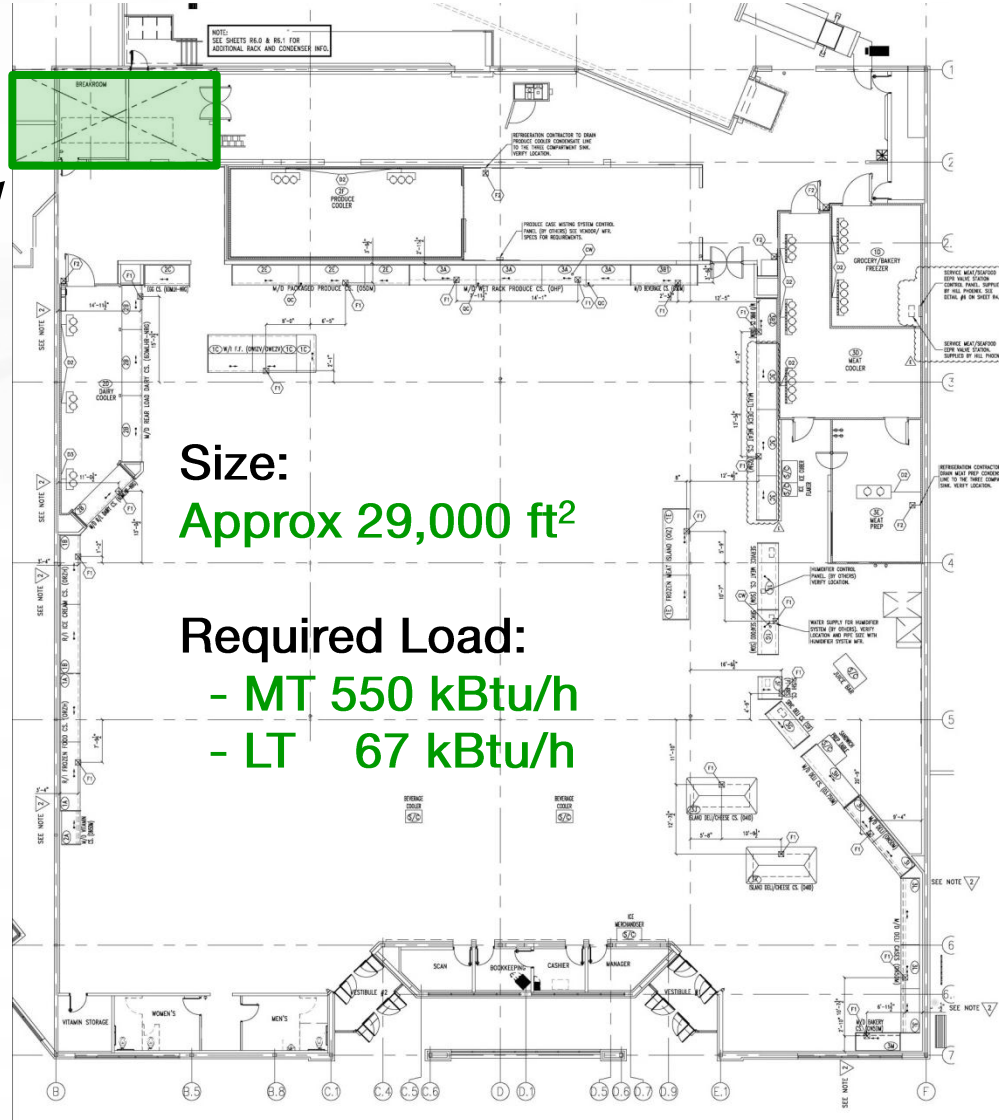
Dunwoody GA



Sprouts Farmers Market

Dunwoody GA

Equipment Room
On Mezzanine



Size:
Approx 29,000 ft²

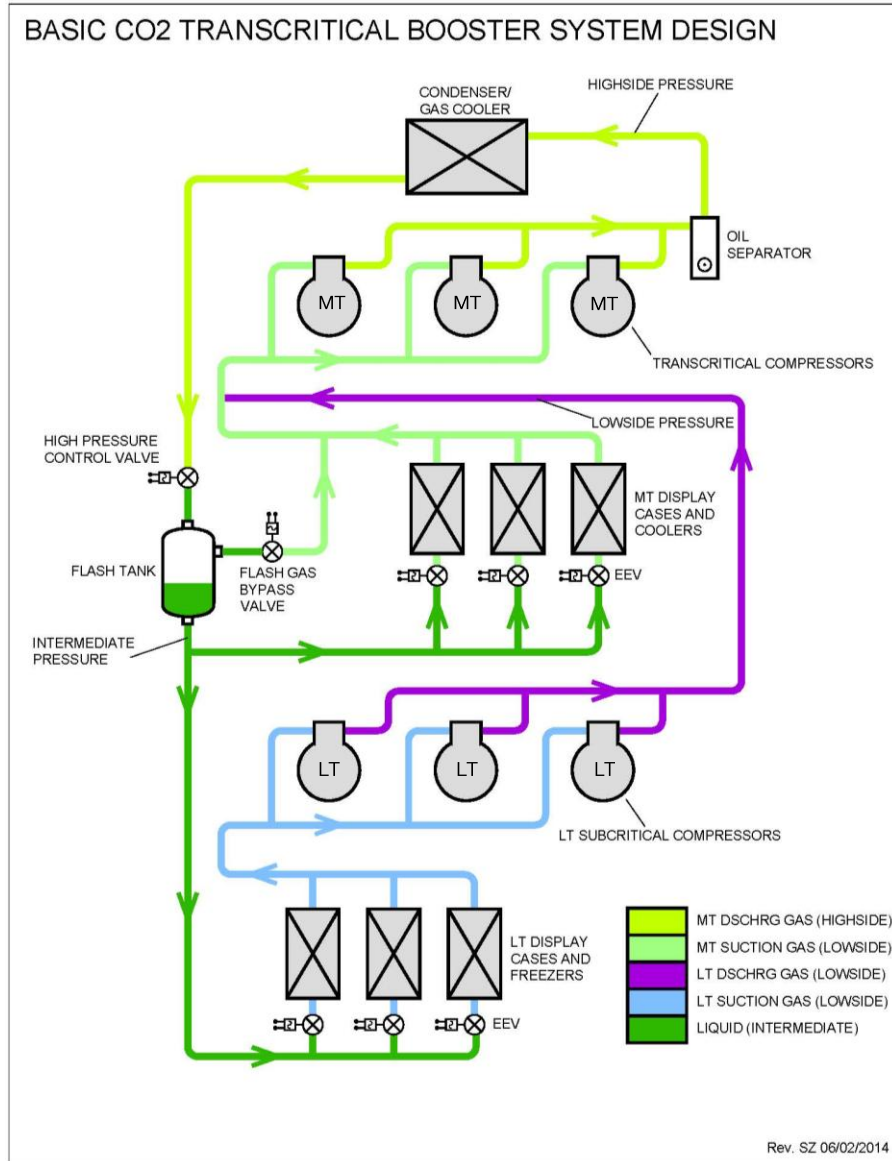
Required Load:
- MT 550 kBtu/h
- LT 67 kBtu/h

Advansor System



- Standard Advansor CO2 System
- 4 MT x 3 LT Compressors
- System is Currently Operational
 - No Product in Store
 - Night Curtains Being Used

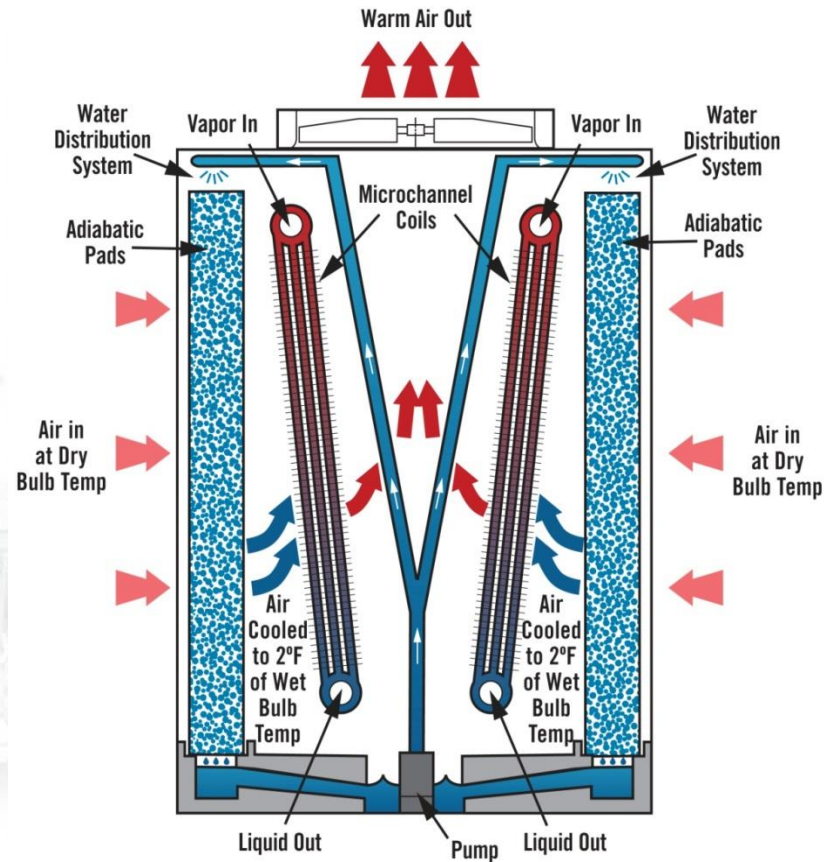
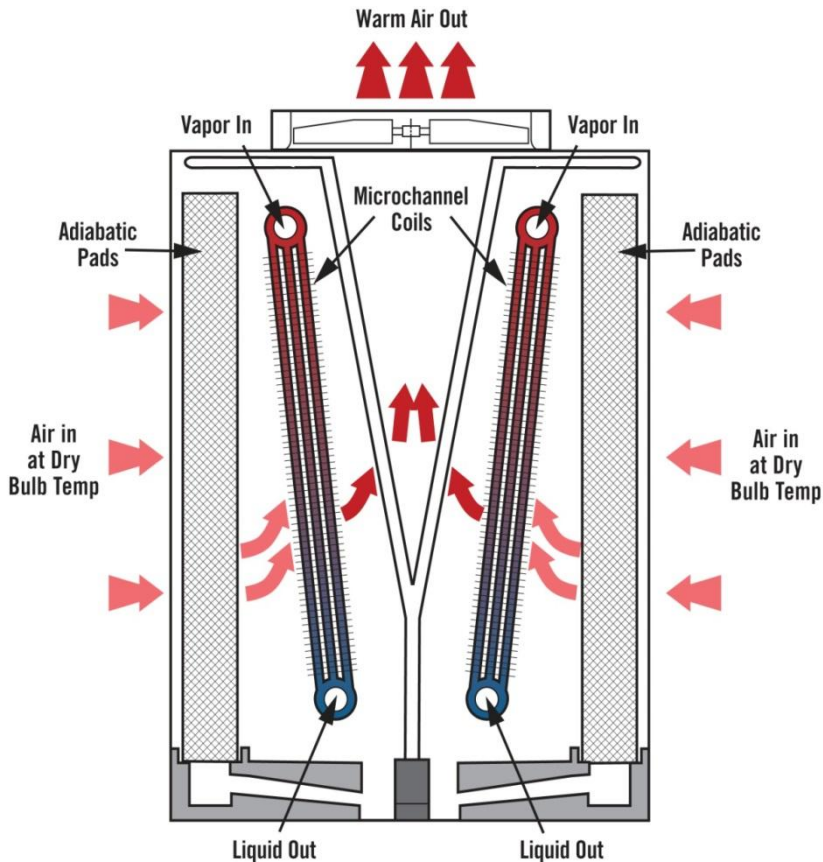
Standard Advansor System



Adiabatic Gas Cooler

Operated Dry in Cooler Weather

Operated With Wet Adiabatic Pads to Pre-Cool the Air in Warmer Weather

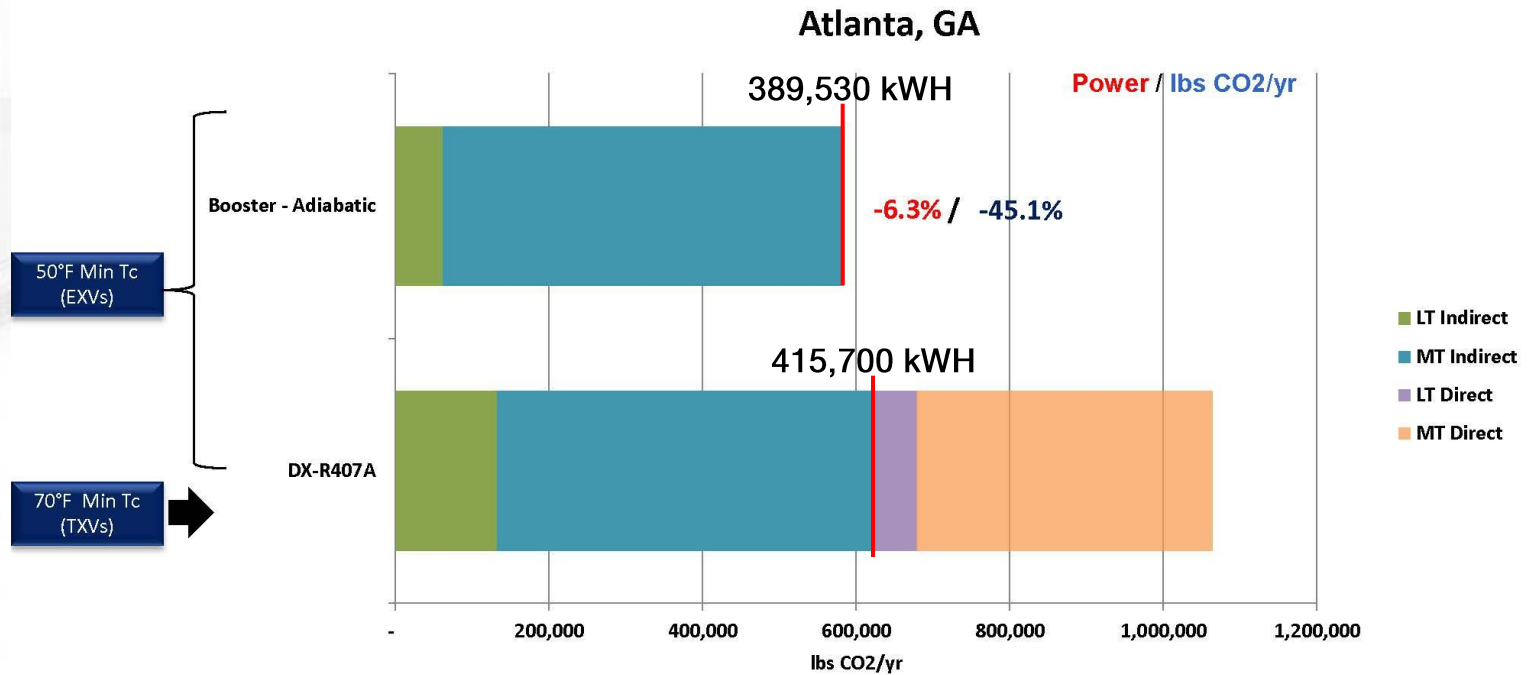


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Adiabatic Gas Cooler At Sprouts



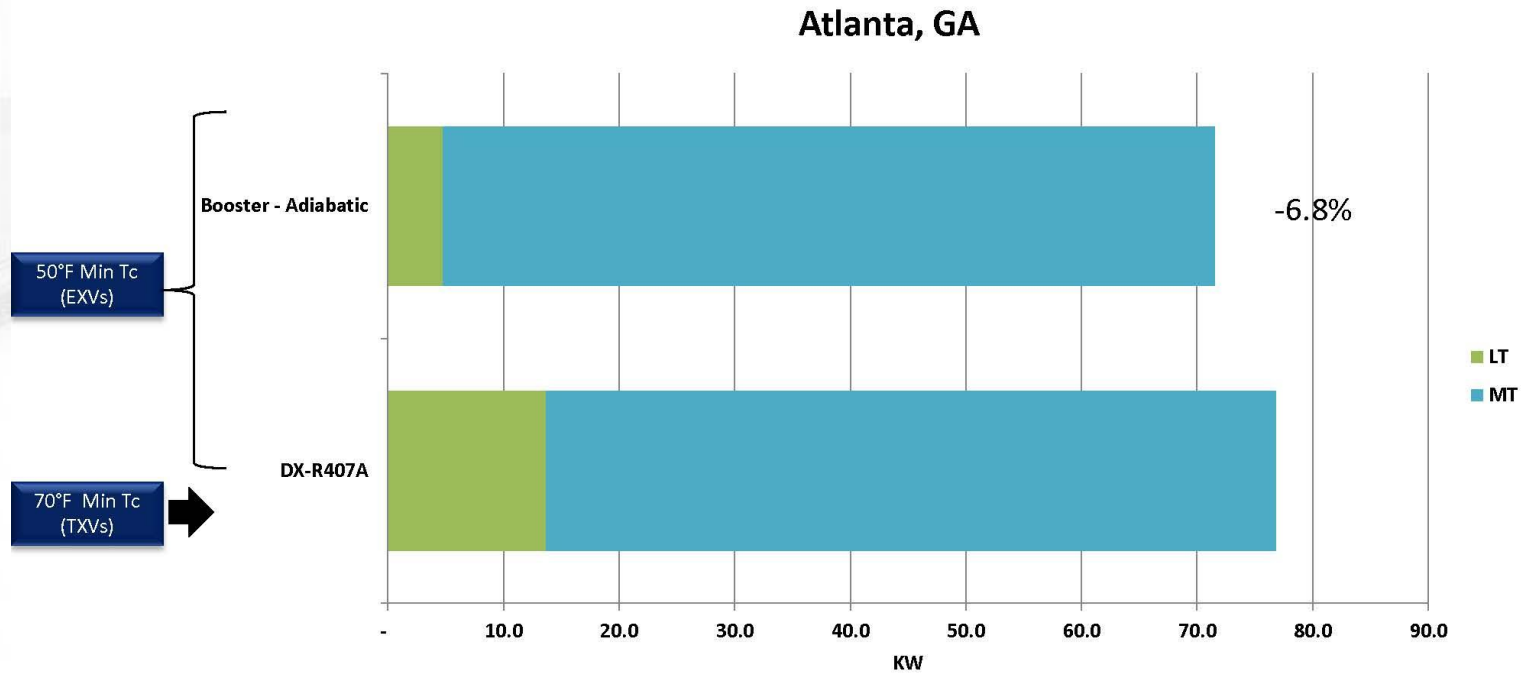
Annual Comparison – Atlanta, GA



Analysis Only – Actual Performance In A System Could Be Different

The advice and conclusions by Emerson Climate represents Emerson Climate's best judgment under the circumstances, but such advice given and or conclusions made or results obtained shall be deemed used at your own risk.

Peak Power – Atlanta, GA



Analysis Only – Actual Performance In A System Could Be Different

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Emerson Confidential

Analysis was performed by Emerson using Emerson's model based on inputs from Hillphoenix.

BAC Adiabatic Gas Cooler

- Water On Only When Required
- No Water Treatment Required
 - Water Bleed 2 minutes Every 2 hours
 - Complete Sump Flush 1 per day
- Annual Consumption for Atlanta apprx 146,000 gal/yr
(about 1/3 that of a traditional evaporative condenser)



Sprouts' Future Study



- **Sprouts will Validate Power Consumption**
 - They Have Installed Current Transformers at Dunwoody GA Store and at Snellville GA store.
- **Ready for GreenChill Platinum Certification**



ATMO
sphere

business case

natural refrigerants

June 18-19, 2014 - San Francisco

Thank you very much!