Atmospheric Chamber Temperature Analysis
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Study #1
Cold Chamber with 22kW Lighting

- Bag Target Temperature = 4C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM
Configuration: Cold with 22kW Lighting

- Bag Target Temperature = 4C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM

Temperature Plots
North / South Sections
Configuration: Cold with 22kW Lighting

- Bag Target Temperature = 4°C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM

Temperature Plots
East / West Sections
Configuration: Cold with 22kW Lighting

- Bag Target Temperature = 4C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM
Configuration: Cold with 22kW Lighting

- Bag Target Temperature = 4°C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM

Full Lighting (22kW)
34°F / 1600 CFM to Chamber
34°F / 1000 CFM to Lighting

Temperature of 100°F and Higher

Air Temperature Inside Lighting Fixtures at 100°F and Higher
Configuration: Cold with 22kW Lighting

- Bag Target Temperature = 4°C [41°F]
- Chamber Supply Air = 34°F at 1600 CFM
- Lighting Supply Air = 34°F at 1000 CFM
Fluid Temperature in Fixture at Vertical Position
Chamber S12.SLDASM [34F1600 34F1000 22kW Gen12 (1)]
West Fixture Array

FluId Temperature in Fixture at Vertical Position
Study #2
Hot Chamber with 22kW Lighting

• Bag Target Temperature = 40°C [104°F]
• Chamber Supply Air = 108°F at 1200 CFM
• Lighting Supply Air = 60°F at 1400 CFM
Configuration: Hot with 22kW Lighting

- Bag Target Temperature = 40°C [104°F]
- Chamber Supply Air = 108°F at 1200 CFM
- Lighting Supply Air = 60°F at 1400 CFM

Temperature Plots
North / South Sections
Configuration: Hot with 22kW Lighting

- Bag Target Temperature = 40°C [104°F]
- Chamber Supply Air = 108°F at 1200 CFM
- Lighting Supply Air = 60°F at 1400 CFM

Temperature Plots
East / West Sections
**Configuration: Hot with 22kW Lighting**

- Bag Target Temperature = 40°C [104°F]
- Chamber Supply Air = 108°F at 1200 CFM
- Lighting Supply Air = 60°F at 1400 CFM

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**Temperature Plots – Air Inside Lighting Fixtures**

- **Avg. Temp (East)** = 86.97°F
- **Avg. Temp (North)** = 88.14°F
- **Avg. Temp (West)** = 96.14°F
- **Avg. Temp (South)** = 83.75°F
Configuration: Hot with 22kW Lighting

- Bag Target Temperature = 40C [104°F]
- Chamber Supply Air = 108°F at 1200 CFM
- Lighting Supply Air = 60°F at 1400 CFM
Configuration: Hot with 22kW Lighting

- Bag Target Temperature = 40°C [104°F]
- Chamber Supply Air = 108°F at 1200 CFM
- Lighting Supply Air = 60°F at 1400 CFM
Chamber S12.SLDASM [108F1200 60F1400 22kW Gen12]
North Lighting Array

Fluid Temperature in Fixture at Vertical Position
Fluid Temperature in Fixture at Vertical Position
Chamber S12.SLDASM [108F1200 60F1400 22kW Gen12]

East Lighting Array

Fluid Temperature in Fixture at Vertical Position
Fluid Temperature in Fixture at Vertical Position
Study #3
Chamber Bake with 22kW Lighting

• Bag Target Temperature = 60°C [140°F]
• Chamber Supply Air = 142°F at 1200 CFM
• Lighting Supply Air = 78°F at 1400 CFM
Configuration: Bake-Out with 22kW Lighting

- Bag Target Temperature = 60°C [140°F]
- Chamber Supply Air = 142°F at 1200 CFM
- Lighting Supply Air = 78°F at 1400 CFM

Temperature Plots
North / South Sections
Configuration: Bake-Out with 22kW Lighting

- Bag Target Temperature = 60°C [140°F]
- Chamber Supply Air = 142°F at 1200 CFM
- Lighting Supply Air = 78°F at 1400 CFM

Temperature Plots
East / West Sections
Configuration: Bake-Out with 22kW Lighting

- Bag Target Temperature = 60°C [140°F]
- Chamber Supply Air = 142°F at 1200 CFM
- Lighting Supply Air = 78°F at 1400 CFM

Full Lighting (22kW)
142°F / 1200 CFM to Chamber
78°F / 1400 CFM to Lighting
Fluid Temperature in Fixtures

Temperature Plots – Air Inside Lighting Fixtures

Avg. Temp (East) = 125.53°F
Avg. Temp (North) = 128.58°F
Avg. Temp (South) = 119.48°F
Avg. Temp (West) = 141.70°F
Configuration: Bake-Out with 22kW Lighting

- Bag Target Temperature = 60°C [140°F]
- Chamber Supply Air = 142°F at 1200 CFM
- Lighting Supply Air = 78°F at 1400 CFM