



Emergency Response Report [Example]

Client Name: GoodCare Hospital

Date: April 22, 2023

Data Center Location: Worcester, MA

Assessment Methodology: Purkay Labs Thermal Survey, AUDIT-BUDDY™

Executive Summary

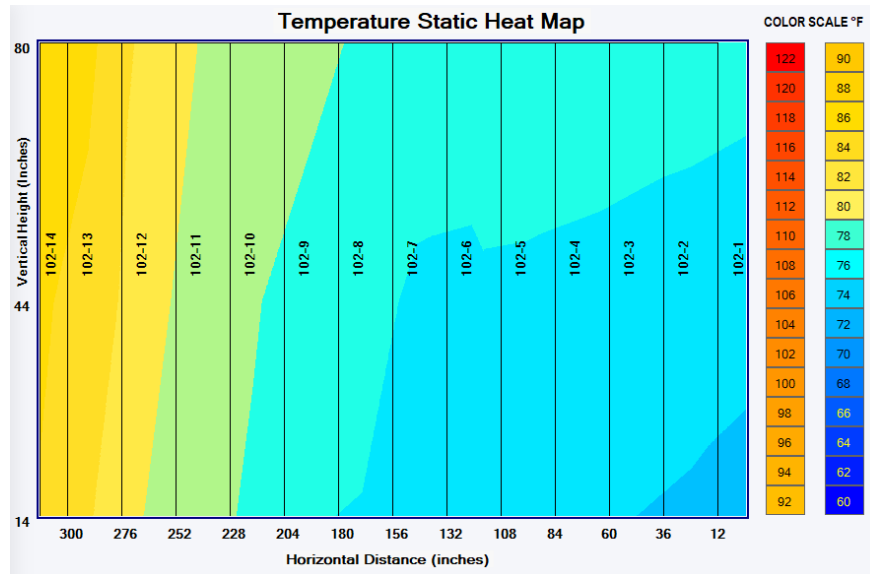
This assessment evaluates the thermal conditions at Aisle 102, and identifies potential areas for improvement. Purkay Labs collected temperature, humidity and dew point at three heights at each rack. This report contains a summary of the data results. Use the provided .CSV file to access the rack-level information and list of temperature outliers.

Key Results

Outlier Summary

Values	Target Range	Within Target Range	Notes
Temperature	60.4-80.6°F	No	8 Values above 80.6°F, with a max temp of 85.6°F
Humidity	8%RH – 70%RH	Yes	
Dewpoint	15.8°F to 59.0°F	Yes	

Temperature Distribution



This Static Temperature Map shows the temperature distribution of Aisle 102, which contains 14 racks. This map shows hot spots at Rack 102-14, Rack 102-13 and Rack 102-12, where temperatures exceed 80.6°F

Uniformity Metric:	3.23 - Needs Improvement
Average cold aisle temperature:	77.8 °F
Maximum temperature observed:	85.6 °F at Rack 102-14 at 80"
Minimum temperature observed:	73.6 °F at Rack 102-1 at 14"

➤ Purkay Labs uses the Uniformity Metric to evaluate the thermal conditions of the aisles. The Uniformity metric is a quantitative measurement used to assess the degree of uniformity or consistency across a specific area.

Uniformity Rating	Value
0 to .49	Very Good
.5 to .99	Good
1.0 to 1.49	Fair
Above 1.5	Needs Improvement

Data

Temperature Data

The following is a list of the collected temperature values in Aisle 102.

Red = Over Ashrae Limits

Orange = Within 3% of Ashrae Limits

Black = Normal

Seq	Rack #	Time of Sample	Top °F 80 "	Mid °F 44 "	Bot °F 14 "	Observation
1	102-1	4/22/23 2:08 PM	76.9	74.4	73.6	None Noted
2	102-2	4/22/23 2:09 PM	77.2	74.7	73.8	None Noted
3	102-3	4/22/23 2:10 PM	77.5	74.9	74.0	None Noted
4	102-4	4/22/23 2:11 PM	77.7	75.2	74.2	None Noted
5	102-5	4/22/23 2:12 PM	78.0	75.4	74.4	None Noted
6	102-6	4/22/23 2:13 PM	77.2	75.5	74.6	None Noted
7	102-7	4/22/23 2:14 PM	77.4	75.6	74.8	None Noted
8	102-8	4/22/23 2:15 PM	77.6	76.8	75.9	None Noted
9	102-9	4/22/23 2:16 PM	78.8	77.0	76.1	Within 3% of ASHRAE Limits
10	102-10	4/22/23 2:17 PM	79.0	78.2	77.7	Within 3% of ASHRAE Limits
11	102-11	4/22/23 2:18 PM	80.0	79.1	78.7	Within 3% of ASHRAE Limits
12	102-12	4/22/23 2:19 PM	81.5	80.9	80.0	Missing Blanking plates
13	102-13	4/22/23 2:20 PM	84.5	83.3	82.2	Missing Blanking plates
14	102-14	4/22/23 2:21 PM	85.6	84.4	84.0	Missing Blanking plates

Observations

During the assessment, Purkay Labs found that:

1. The voids in the racks allowed hot air to infiltrate into the cold aisle resulting in a hot spot between Rack 102-14 and Rack 101-12. “Hot Spots”.
2. Elimination of these voids should eliminate the “Hot Spots” thereby improving the cooling performance.

<u>On-Site Observations</u>	<u>What’s Happening? Explanation</u>
High Temperatures	Hot temperatures in the Data center environment can lead to one or more of the following: Equipment Failure and Downtime, Reduced Equipment Lifespan, Data Loss and Corruption, Performance Degradation, Inefficient Energy Usage, Ineffective Cooling, Increased Cooling Costs, Safety Risks, Non-Compliance with Standards, and Risk to Business Continuity.
High Uniformity Metric	A High Uniformity Metric indicates a variance of temperatures across the vertical plane of the aisle being measured. As a result not all servers are receiving the same air temperature at their inlet ports. This can lead to irregular performance and possible equipment failures. This is usually observed in an aisle without a containment solution.
Missing blanking plate(s)	Blanking panels play a vital role in controlling airflow within a data center. They help optimize airflow, reduce hot spots, enhance cooling efficiency, promote energy efficiency, prevent air short-circuiting, and improve the reliability of IT equipment—all of which are crucial for the smooth and efficient operation of a data center.

Next Steps

Based on the findings outlined in this report, we recommend the following steps to improve the thermal conditions in this aisle.

1. Install missing blanking plates to eliminate the voids in the racks between the hot and cold aisles.
2. Continue to monitor environmental conditions regularly to ensure ongoing optimization.



3. Schedule a follow-up assessment to track progress and validate the effectiveness of implemented changes.

Purkey Labs is committed to helping you achieve optimal thermal conditions in your data center. For further information, questions, or to schedule a follow-up assessment, please contact us at info@purkaylabs.com