



PRODUCT & SERVICES BROCHURE



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ABOUT

Purkay Labs is a Massachusetts-based company focused on creating innovative hardware and services for independent validations of data center performance and efficiency. Our mission is to make simple, standalone, and cost-effective tools designed specifically for mission critical facilities.

- SIMPLE
- PORTABLE
- COST-EFFECTIVE

Our hardware, software and services are used in over four hundred facilities across the US, Canada, Europe and the Middle East.

CUSTOMER TESTIMONIALS



CLEAR INFORMATION

Our products continue to evolve due to positive customer feedback. Here is what some of them had to say:

- “We reduced PUE by 8% using temperature and CFM data.”
- “Used Audit-Buddy to benchmark environment during CRAC changes, and cut overall electricity bill by 5%.”
- “Presented data to senior management within hours of getting tool.”
- “It is a valuable tool. It acquires data periodically that is prohibitively expensive to monitor continuously. We have confidence in the cooling setup in our halls.”
- “We NOW have a solid method that is relatively inexpensive to deal with any suspected overheating conditions where our airflow and cooling capacity comes into question. We have now confidence in the cooling setup in our halls.”
- “AUDIT-BUDDY allowed EEC to reduce the amount of time required to get accurate readings compared to alternative methods and tools used in the past. The output reading enabled EEC to clearly detect potential problem areas and make simple adjustments, such as changes to perforated tiles and the addition of containment curtains, to reduce temperatures in a particularly dense aisle in the data center.”

AUDIT-BUDDY™

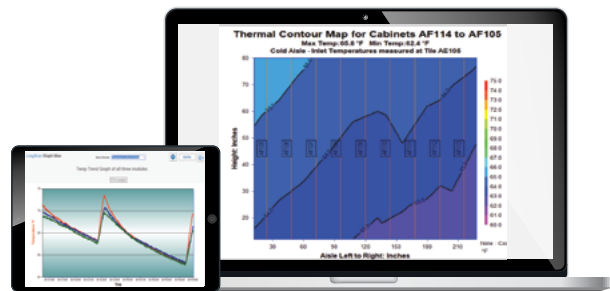
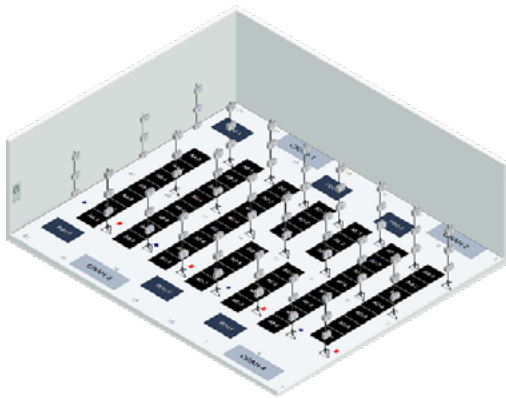
Part Number: [PLAB1](#), [PLAB2](#)

ABOUT

This portable temperature and humidity monitor records real-time and long-term environmental scans. Use to quickly pinpoint and diagnose hot spots and cooling issues in the most cost-effective method.

FEATURES

- Patented fan design
- Battery operated
- Built-In LCD display and LED indicators
- Custom scan modes
- Optional wireless streaming via Purkay Labs' wifi-adapter accessory



BENEFITS

- Get meaningful information, not thousands of data points
- No installation or permanent set-up
- Operational out of the box
- Scalable to cover the entire data hall

APPLICATIONS

- Spot check environment
- Quickly identify hot or cold spots
- Baseline cooling performance
- Airflow management
- Validate original CFD or SLA

WHAT'S IN THE BOX

HARDWARE

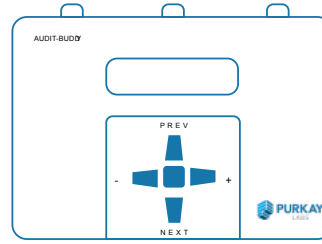
- 3 Temperature and Humidity Modules (TH1)
- 1 Carbon fiber rod

HARDWARE PER TH1 BOX

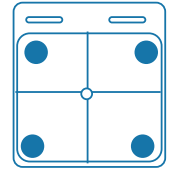
- 1 rod clamp
- 1 screw – .5 inch
- 1 magnetic mounting plate
- 3 AA Batteries
- USB Cable

USB STICK

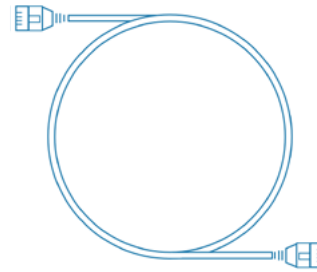
- Welcome Letter
- User Manual
- 1 Optimize Excel Macro
- DPLOT Installation Program



TH1 Module



Magnetic Plate



USB Cable



.5 Screw



3 AA Batteries

SPECIFICATIONS

Product Name	AUDIT-BUDDY™	
Part Number	PLAB1, PLAB2 (Wifi-enabled)	
Sensors	<i>Temperature</i>	<i>Humidity</i>
Type	Stable, solid state with band-gap reference – with 13 bit resolution (0.0625 °C)	Stable, solid state, laser trimmed thermoset polymer capacitive sensing element
Range	5-52°C	15-85%RH
Accuracy	± 0.5°C	± 3%RH

Scan Modes	<i>QuickScan</i>	<i>LongScan</i>	<i>delta-T</i>
Rate	3 seconds	Select: 1,5,10,15,30 or 60 minutes	1 Minute
Run Time	20 seconds	Select: 1,2,4,8,12,24,48 hours or 7 days	Select: 1,2,4,8,12,24,48 hours or 7 days
Accuracy	± 0.5°C		± 3%RH
Alarm	3 high visibility LED Indicators, 8 adjustable alarm/caution levels, visual display		
Power	3 AA alkaline batteries; expected life minimum 6 months with typical use		

Hardware	<i>TH1 Module</i>	<i>Carbon Fiber Rod</i>
Weight	0.5 lbs. (.225kg)	2.2 lbs. (1kg)
Dimensions	4.5" x 6.5" x 1" (11.4 x 16.5 x 2.5 cm)	42" to 84" (107 to 208 cm);
Mounts	Rod mount or independent magnetic, mechanical or Velcro hook mount	
Accessories	Option to add Wifi-adaptor (WIFI1) to stream data	

WIFI-ADAPTER

Part Number: **PLWIFI1**

ABOUT

Create a wireless AUDIT-BUDDY™ solution by attaching the Wi-Fi adapter to each TH1 Module. Stream unlimited real-time environmental data using a private (no Internet connection) network.



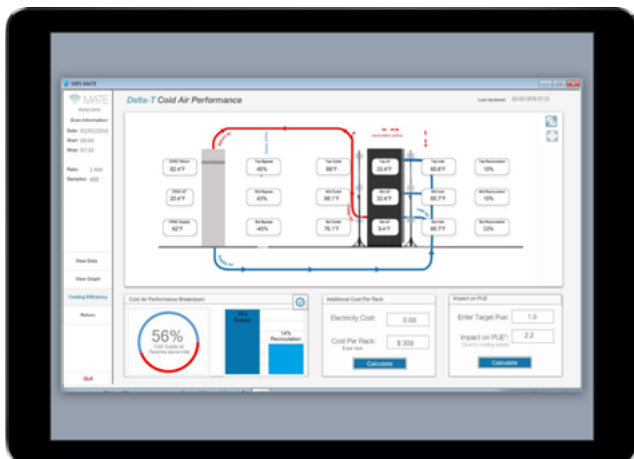
FEATURES

- Stream real-time data
- Adaptable hardware
- Enhanced analytics
- Serious security
- Use without connecting to the Internet

SECURITY

- 802.11 b/g/n 2.4 GHz WiFi
- DHCP enabled (Dynamic) and DHCP disabled (Static) IP Configuration
- Encrypted secure Wi-Fi authentication via WEP, WPA, PSK (TKIP) and WPA 2- PSK (AES)
- FCC certified adapters
- Router option creates temporary private encrypted network

SAMPLE SCREENS



Cool Air Performance Screen



QuickScan Aisle View

WHAT'S IN THE BOX

Hardware

- 1 Wi-Fi Adapter
- 1 Router
- 1 USB Stick
- Surface Tablet (seperate purchase)

Hardware per Wi-Fi Adapter Box

- 1 Wi-Fi Adapter
- 1 Screw – 1.5 inch
- 1 USB Cable
- 4 AA Batteries
- 1 Power Brick Adapter 100-240 VAC

USB Stick

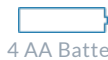
- Welcome Letter
- User Manual
- 1 WIFI-MATE program
- DPLOT Installation Program



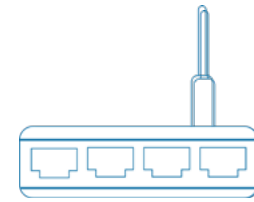
Wi-Fi Adapter



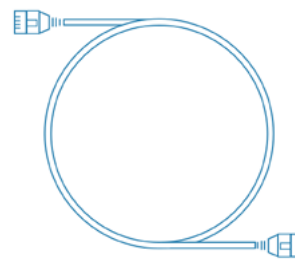
1.5 Screw



4 AA Batteries



Router (1 per set)



USB Cable



Power Brick Adapter 100-240 VAC

SPECIFICATIONS

Product Name	Wi-Fi Adapter
Part Number	PLWIFI1
Dimensions	4.5" x 3.5 " x 1"
Power	4 AA Alkaline batteries included
Certification	FFC Certified
Security	802.11 b/g 2.4GHz WIFI, Encrypted secure Wi-Fi authentications via WEP, WPA-PSK (TKIP) and WPA2-PSK (AEWS)
System Requirement	Windows 7, 8.1 or 10
Recommended	64-bit OS with at least 4 GB Ram and 100 MB of hard disk capability
Minimum Display	1200 x 800
Support Plan	1 Year Free Premium Purkay Labs Support



INTERACTIVE DATA HALL PROGRAM™

Part Number: **PLDH1**

ABOUT

This proprietary software program allows users to create an interactive and color coded map of key data center data. Quickly switch between a bird's eye view of the data center layout to cabinet level data to get a comprehensive overview of the data center's space, power and cooling.



FEATURES

- View bird's eye view of facility
- Filter data by custom or ASHRAE standards
- Drill down to cabinet-specific data
- Measured vs. Required CFM Analysis
- Export Cabinet, Aisle, delta-T and Contour Data Views

APPLICATIONS

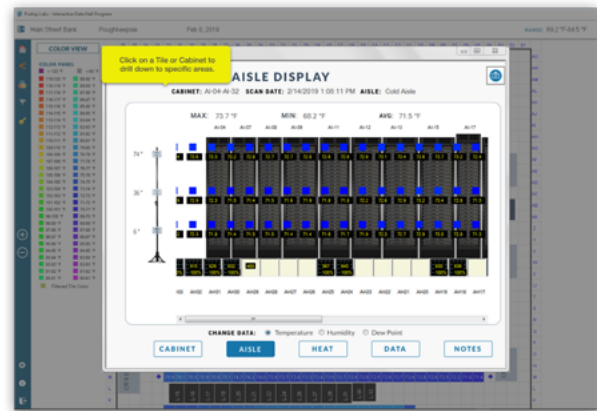
- Pinpoint hot or cold spots
- Store space, power and cooling information in one-spot
- Safely change CRAC set points
- Isolate airflow issues
- Benchmark changes
- Compare and contrast environments



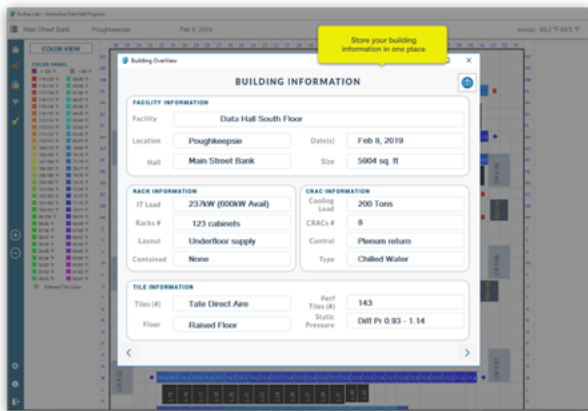
SAMPLE SCREENS



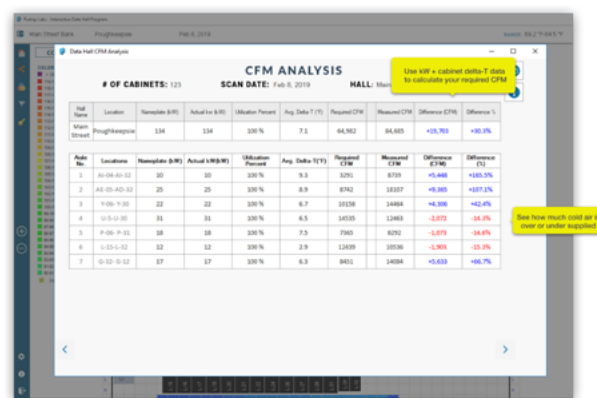
Main Data Hall View



Aisle Display



Building Information Screen



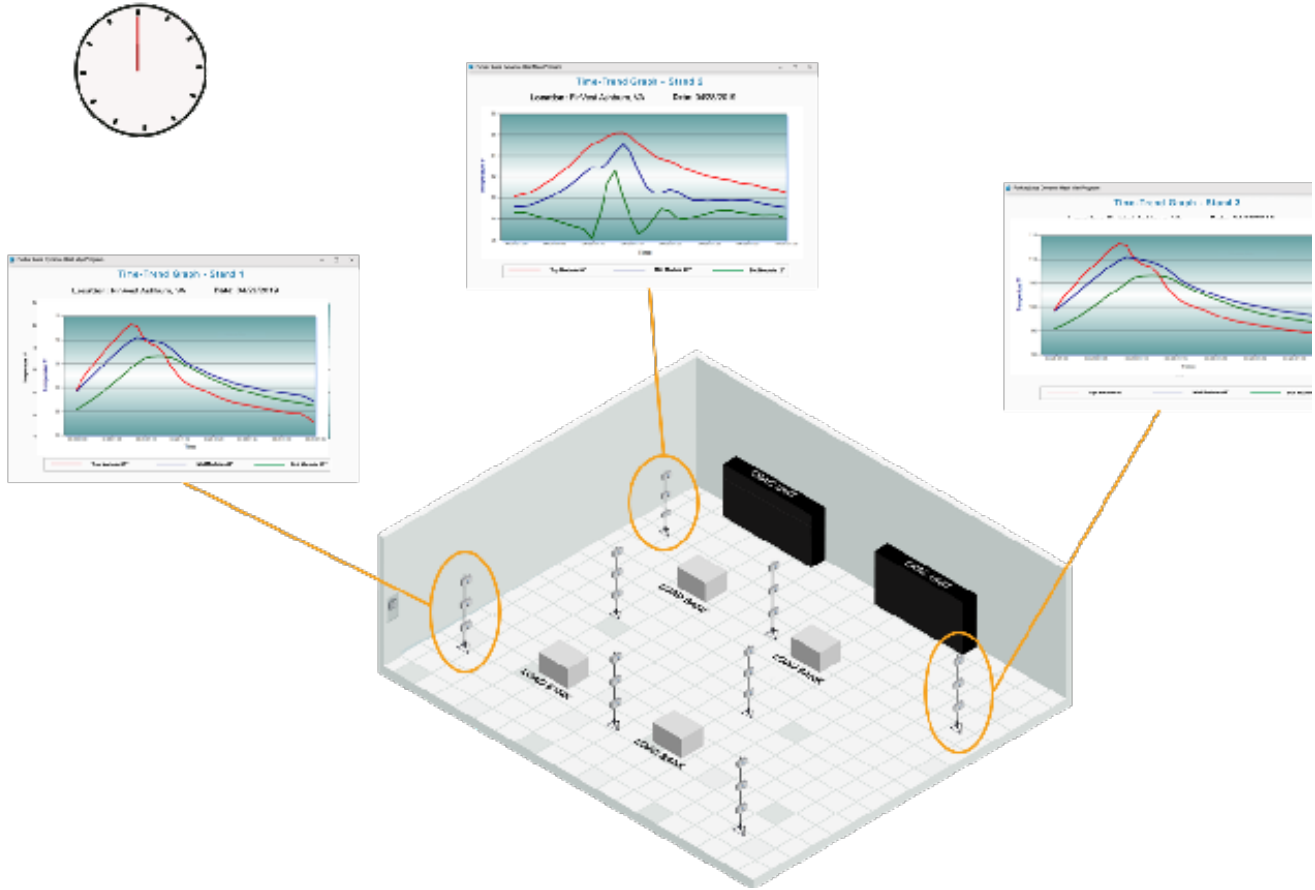
CFM Analysis Screen

SPECIFICATIONS

Product Name	Interactive Data Hall Program
Part Number	PLDH1
Availability	Standalone software or with On-Site Assessment Service
System Requirement	Windows 7, 8.1 or 10
Recommended	64-bit OS with at least 4 GB Ram and 100 MB of hard disk capability
Minimum Display	1200 x 800
Support Plan	1 Year Free Premium Purkay Labs Support

BASELINE RENTAL PACKAGE

Part Number: **PLBRP**



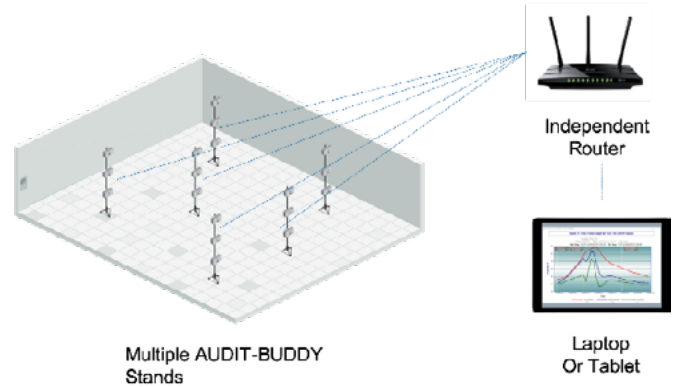
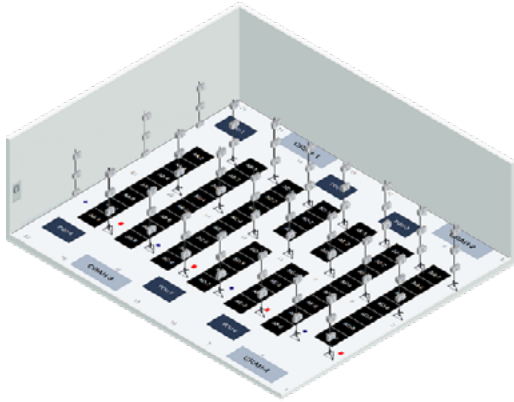
ABOUT

Use multiple AUDIT-BUDDY™ stands based on your data center square footage and/or number of cabinets to measure temperature, humidity and dew point at three different heights at multiple locations across a room a data hall. See real-time data being collected on cooling performance and get automatically generated time-trend graphs over your specified time period (one day to one month).

BENEFITS

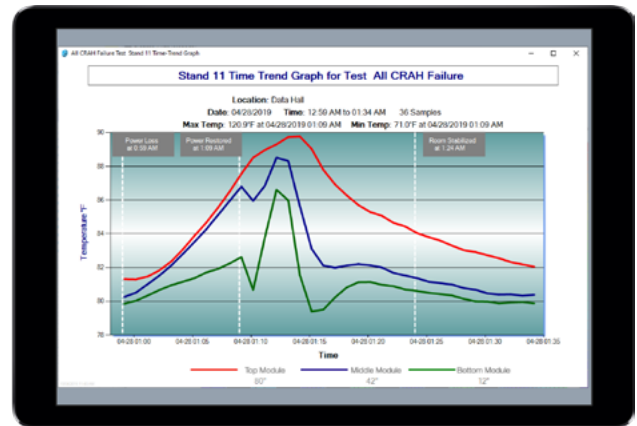
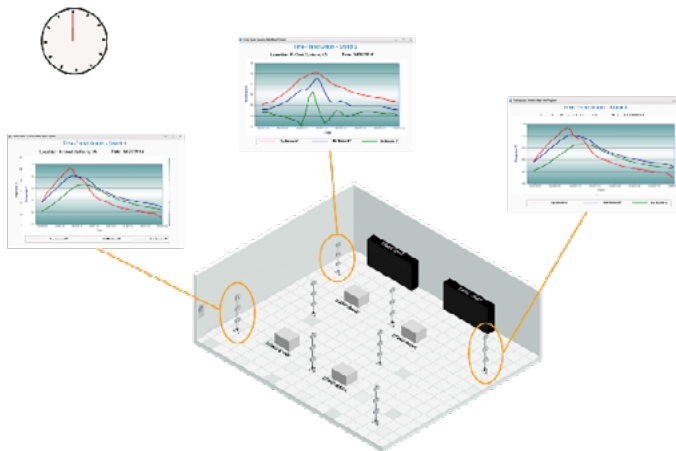
- Operational and ready to go out of the box with minimal assembly
- Automated and structured method of data collection
- Save total labor on data post-processing and stitching of information
- Validate load bank performance during IST testing
- Spot check environment and quickly identify hot or cold spots

HOW IT WORKS



Step 1: Set up multiple AUDIT-BUDDY stands across a room.

Step 2: Connect and synchronize all stands via private wireless network (no internet) connection.



Step 3: Trend information during scan to see what the environment is doing in real-time.

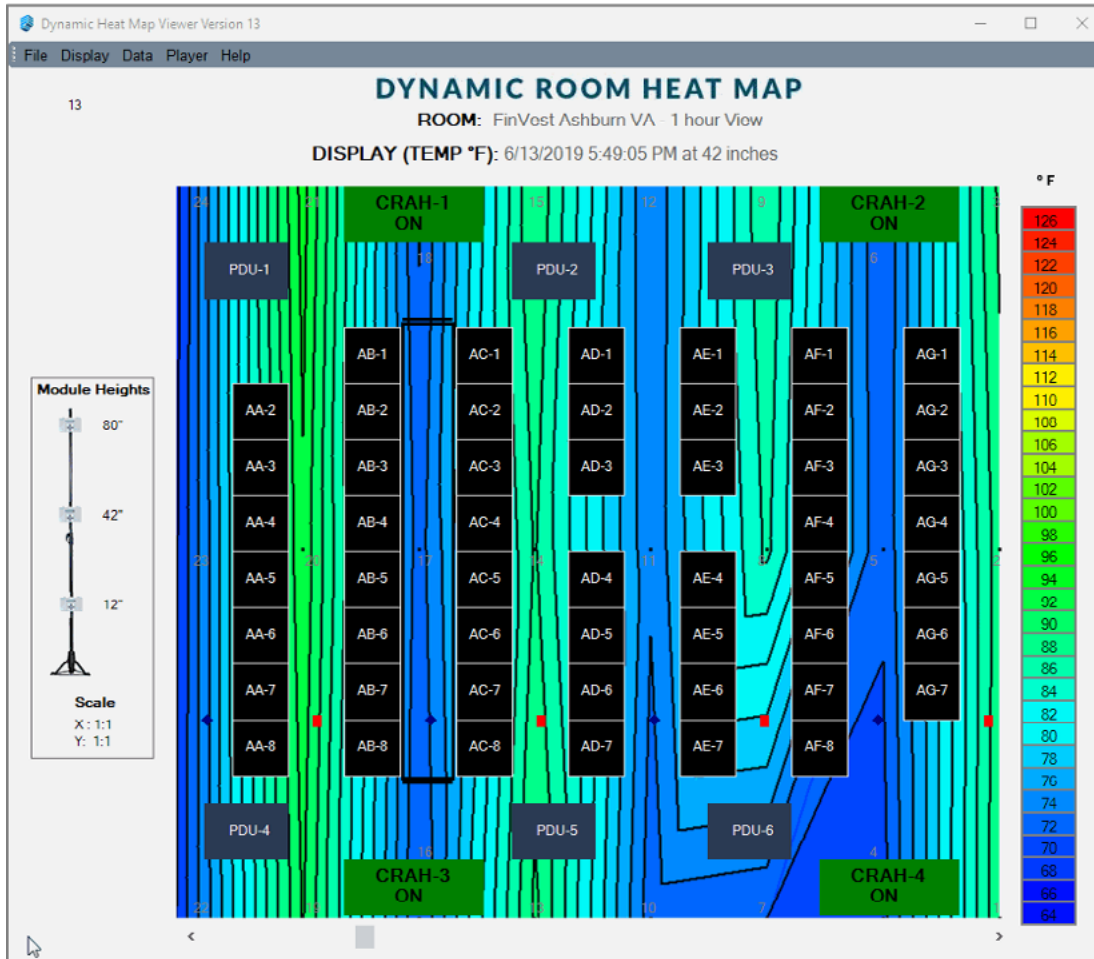
Step 4: Generate time-trend graph reports.

KEY FEATURES

Our baseline rental package is specifically designed to aid the final validation of the commissioning project. Whereas most engineers use data loggers hung from the ceiling or place sporadically through the testing location, Purkay Labs provides a structured method that captures air striations at three different heights simultaneously at multiple locations.

DYNAMIC HEAT MAP SERVICE

Part Number: [PLDHMS- R](#), [PLDHMS-V](#)



ABOUT

The Dynamic Heat Map uses real-time data to show the heat distribution in a given space. Quickly visualize the airflow in your room to pinpoint problem areas with this cost-effective solution.

The Dynamic Heat Map combines the best of Purkay Labs' environmental monitors and our cutting edge proprietary software to visualize your environment.

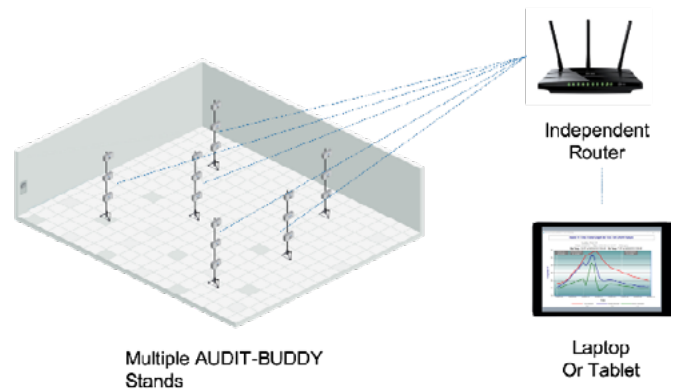
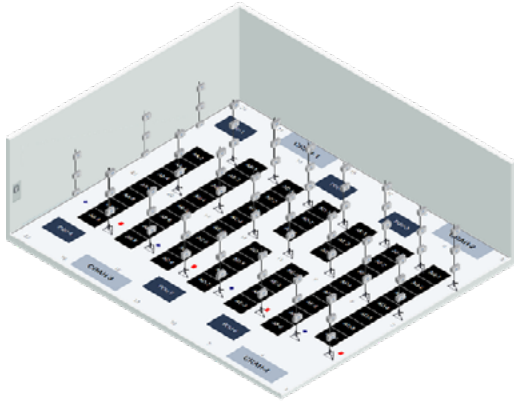
FEATURES

Whether you are in the commissioning stage or in a fully operational data center, the Dynamic Heat Map helps to identify how airflow will affect the room in real-time.

BENEFITS

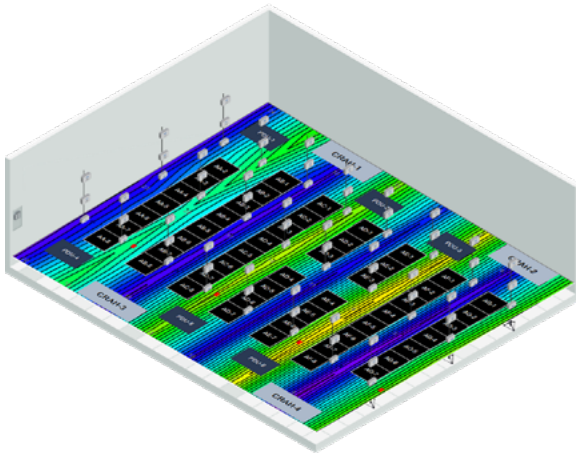
- All-in-one solution
- Validate original CFD or SLA
- Quickly identify hot or cold spots
- Baseline without investing in hundreds of sensors

HOW IT WORKS

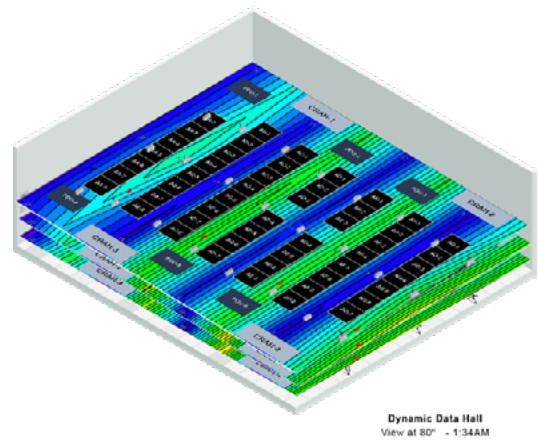


Step 1: Set up multiple AUDIT-BUDDY stands across a room.

Step 2: Connect and synchronize all stands via private wireless network (no Internet) connection.



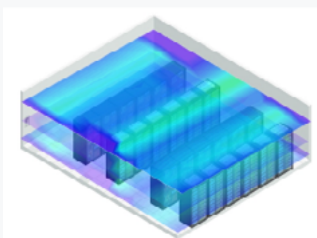
Step 3: Trend information during scan to see what the environment is doing in real-time.



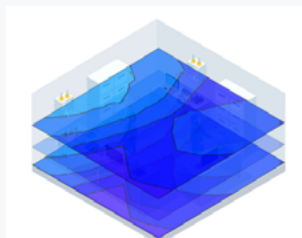
Step 4: Generate nine separate Dynamic Heat Maps© for temperature, humidity and dew point at three different measurement heights.

APPLICATIONS

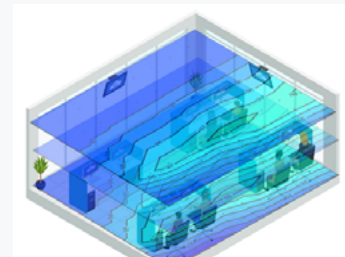
Dynamic Heat Map can be used in any facility, including in labs, trading floors and office spaces. Purkay Labs' Heat Maps can be quickly created any where and any time. There is no permanent installation or downtime required.



Data Centers



Labs



Office Buildings

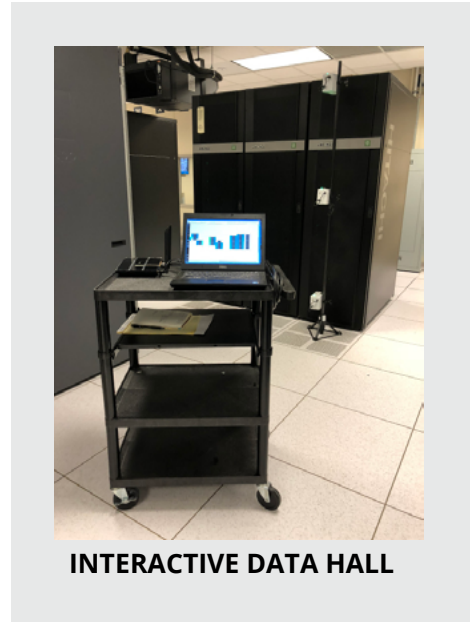


ASSESSMENT SERVICE

Part Number: **PLPS1**

ABOUT

Purkay Labs provides on-site data center facility assessment services wherever your data center is located. Our expert team of highly skilled technicians will perform a detailed audit of your facility’s layout, environment and airflow management and populate the collected data into our Interactive Data Hall Program. Purkay Labs will even provide on-going data center site visits to insure your facility stays up-to-date and establish trend reports for effective data center facility management. This information is streamed into the Interactive Data Hall Program. The full Interactive Data Hall program enables the user to add and edit the information while making changes to the facility.



INTERACTIVE DATA HALL

DELIVERABLES

After the assessment, Purkay Labs will provide:

- 1 Assessment Report
- 1 Interactive Data Hall Program
- 1 Review Session

In the Data Hall Program, users will be able to access:

- Accurate data center floor layouts
- Multi-height rack temperature, humidity and dew point data
- Tile placement and opening positions
- CRAC, PDU, and cabinet placements
- Time-trend information, if available
- Walk-through Airflow Management Recommendations

ADDITIONAL OPTIONS

Purkay Labs can provide additional support to:

- Incorporate basic assessment management information, such as Cabinet Space Capacity and Utilization, Cabinet Make & Model Information, PDU Information
- Train facility staff members to use AUDIT-BUDDY for environmental monitoring
- Create Dynamic Heat Maps of the room or vertical planes (like Aisles or CRAC Units).



TOOLS USED

Purkay Labs uses the following tools during their assessment:



AUDIT-BUDDY 2.0

Purkay Labs- PLWIFI1

The Purkay Labs' AUDIT-BUDDY system is a portable environmental monitor that collects temperature, humidity and dew point information at three heights simultaneously. This tool is used to manually spot check and diagnose environmental issues, such as hot and cold spots.

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INTERACTIVE DATA HALL

Purkay Labs' Interactive Data Hall Program allows users to create a complete floor plan of their facility, and store unlimited environmental, cabinet, tile, CFM, kW, CRAC and PDU information.

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ONE ALNOR BALOMETER

The TSI Alnor Balometer Capture Hood is an electronic multipurpose air balancing HVAC test instrument generally used to efficiency take readings of direct airflow volume at grilles and diffusers.

SAMPLE INTERACTIVE DATA HALL SCREENS

ENVIRONMENT REPORT

FACILITY INFORMATION

Hall: 9 West Location: 121 S. Dearborn St
 Date(s): September 6, 2018 Site: 1300 sq. ft.

COLD AISLE RANGE

Low Temp: 69.9 °F High Temp: 76.8 °F Avg. Temp: 73.6 °F Temp Difference: 6.9 °F
 Cold Spots: 64.4 Hot Spots: 80.6

HUMIDITY (RH%) OVERVIEW

Low RH%: 38.7 % High RH%: 48.4 %
 RH% Low: 40 RH% High: 60

DEW POINT OVERVIEW

Avg. Dew Point: 49.1 °F Highest Dew Point: 50.3 °F
 Dew Point Range: 15.8

Environment Report

CFM ANALYSIS

Hall Name	Location	Nameplate (kW)	Actual kW (kW)	Utilization Percent	Avg Delta-T (°F)	Required CFM	Measured CFM	Difference (CFM)	Difference %
Canary Place	Providence	149	149	100 %	12.8	38,006	39,000	+994	+2.6%

Aisle No.	Locations	Nameplate (kW)	Actual kW (kW)	Utilization Percent	Avg Delta-T (°F)	Required CFM	Measured CFM	Difference (CFM)	Difference (%)
1	A14-A01	21.0	21.0	100 %	11.2	5813	6,000	+187	+3.2%
2	B14-B01	21.9	21.9	100 %	10.8	6386	7,000	+714	+11.4%
3	C14-C01	24.8	24.8	100 %	16.2	4746	6,000	+1,254	+26.4%
4	D14-D02	20.2	20.2	100 %	15.1	4147	3,000	-1,147	-27.7%
5	H07-H01	23.8	23.8	100 %	10.0	7578	4,500	-2,878	-39.0%
6	G07-G01	12.3	12.3	100 %	11.2	3404	3,500	+96	+2.8%
7	F07-F01	15.0	15.0	100 %	12.1	3843	5,000	+1,157	+30.1%
8	E07-E01	10.0	10.0	100 %	14.2	2183	4,000	+1,817	+83.2%

CFM Analysis



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