

# LIMS

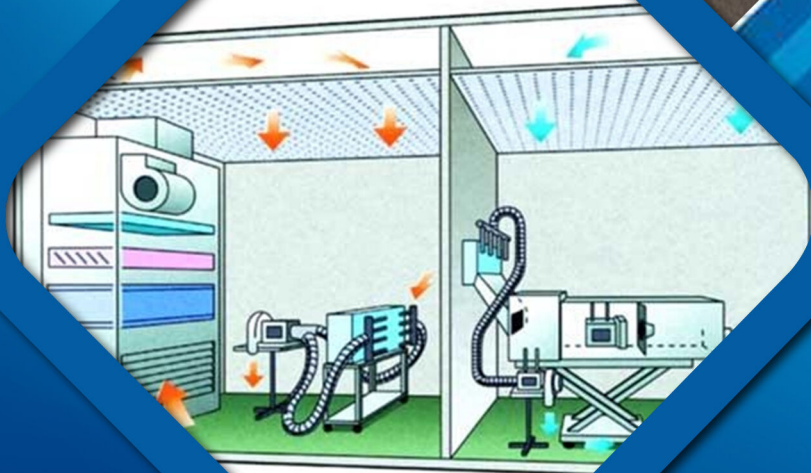
## For HVAC Lab

**LAB SOLS**

Software Solution for Laboratory



Laboratory Information  
Management System  
for Air Condition  
Laboratory



### Bit Wave Solutions

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**BIT WAVE SOLUTIONS**



## Description

Our AC LIMS is well equipped with the advanced feature and committed to support keeping in mind the stipulated time frame.

The test laboratory complying with the requirements. The technical area of Advanced AC Testing LIMS covers the **Sample Registration, Work Order creation, Test assign, Auto schedule, Result upload, multiple approvals, Document library, performance report and more.**

In addition to the AC LIMS, we have advance customer portal, mobile app supporting Android and iOS device and integration capability with instruments help us to provide a complete solution of the laboratory.

## The Industry

Air Condition testing and research laboratories faces wide array of challenges on day to day operations. The difficulty to increase compliance and effectiveness within this market is at an all time high.

The continuing evolution of quality requirements presents significant challenges for today's air condition laboratories. Where traceability was once the only basic requirement an air condition laboratory must adhere, there are now numerous accrediting bodies, quality programs, regulatory agencies and auditors to which the lab must satisfy.

As technological breakthroughs become the norm rather than the exception, the very science of measurement becomes more demanding. Simple sets of measurements are no longer adequate; Statistical Process Control, easy report access, easy test request, less human interferences and parametric data analysis are now requirements for many Air condition customers.

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## The Challenges

How does the air condition testing lab cope with juggling so many expectations and remain both viable and profitable? How can the lab's processes address such varied disciplines, answering the needs of its clients, management, and administration, air condition testing technicians, quality and engineering?

What method can be used to effectively collect and store the air condition testing data for historical parametric data analysis? How can the air condition testing lab analyze manage data of psychometric lab, noise lab, rain test chamber, vibration lab etc in a practical and profitable manner?

How to automate and above all traditional paper, manual and semi-automated tasks associated with the performance of routine testing, complex instruments resulting error? How to maximize the performance of lab? How smartly use and lab so the recourse doesn't sit idle?

Add to this the corporate demands for more productivity and higher profits, and any air condition testing facility, no matter how competent, must now prepare to address the myriad of challenges for higher quality and increased productivity. This is the how one air condition testing laboratory identified and solved these challenging issues.



## Complete Quality Montoring

AC LIMS is a comprehensive web-based air condition testing solution that monitors the air condition testing process every step of the way, recording and logging to meet the quality requirements necessary for accreditation and certification. It understands the ins and outs of how an air condition testing lab should operate by recording every activity on every job so that your laboratory runs like clockwork. AC LIMS captures the complete business process of an air condition testing lab.



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## The Solutions

Labsals introduced "AC LIMS" software for air condition testing industry with intelligent air condition testing management add-on to customer facing portal and mobile version extension. It automates all traditional paper, manual and semi-automated tasks associated with the performance of routine air condition testing and maintenance workflows for simple and complex instruments.

## The Process

It streamlines the laboratory into six basic processes: **receiving, lab, quality assurance, analytics, result, management, all completely traceable and track able.** It also automates many of the other key activities of reporting, documenting, issue logging and communication. Laboratories are able to reduce the administrative overhead surrounding instrument calibrations while increasing their confidence that data integrity will not be compromised by improperly calibrated instrumentation.



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## Key Benefits

**No manual numbering** – No manual numbering for Work Order, Lab Service Request, Instrument Number, ULR Number, and Certificate Number. All number formats are configurable and it continues based on the configuration.

**Multi Template** – Our AC LIMS Support multi template, You can configure separate template for each test. LIMS has multi certificate configuration option for Cooling Capacity, Max Operating, test for Split AC, Window AC and Inverter AC, Noise Test, Vibration Test, Push & Pull test etc.

**Auto Schedule** - Auto scheduler allow laboratory to seamlessly schedule technician in just a few clicks with the right lab. Then, the manager simply needs to approve the created schedule, saving hours on each scheduling process. The scheduler tool checks each lab availability and check job priority at the time scheduling. It eliminates manual scheduling process.

LSRF Id	Service Id	Service Name	Created On	Service Location	Technician Name	Schedule Date	Sc
90228	499	Cooling Capacity WAC	26/04/2021	PSY LAB-1	Mahesh Kumar	03-05-2021	15
				MANUAL LAB-1			
				MANUAL LAB-2			
				MANUAL LAB-3			
				MANUAL LAB-4			
				NOISE LAB-1			
				PSY LAB-1			
				PSY LAB-2			
				PSY LAB-3			
				Rain Test chamber			
				Reliability Lab 1			
				Reliability Lab 2			

Test	1	2	3	4	5	6	7	Average
ULF Capacity [W]	3442.9	3429.9	3427.7	3439.9	3440.9	3440.9	3440.9	3440.9
Indoor Sensible Capacity [W]	2894.4	2894.4	2897.5	2899.4	2897.5	2896.2	2896.7	2897.2
Indoor Latent Capacity [W]	547.5	544.9	540.7	550.6	543.2	544.2	544.7	542.7
ULF Power [kW]	1070.9	1071.3	1070.3	1071.0	1070.3	1071.1	1070.1	1070.7
ESD COP [kW/kW]	3.21	3.21	3.21	3.21	3.21	3.21	3.21	3.21
Indoor Enthalpy [kJ/kg]	788.1	788.1	788.2	788.2	788.2	788.2	788.2	788.2
Indoor Enthalpy [kJ/kg]	27.01	27.01	27.01	27.01	27.01	27.01	27.01	27.01
Indoor Enthalpy [kJ/kg]	19.02	19.02	19.02	19.02	19.02	19.02	19.02	19.02
Outdoor Enthalpy [kJ/kg]	24.02	24.02	24.02	24.02	24.02	24.02	24.02	24.02
Outdoor Enthalpy [kJ/kg]	24.02	24.02	24.02	24.02	24.02	24.02	24.02	24.02
Voltage [V]	230.00	230.00	230.00	230.00	230.00	230.00	230.00	230.00
Current [A]	4.718	4.718	4.718	4.718	4.718	4.718	4.718	4.718
Power [W]	1070.9	1071.3	1070.3	1071.0	1070.3	1071.1	1070.1	1070.7
Power Factor [ ]	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
Voltage Frequency [Hz]	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00

**Result Upload** – No need to enter result manually for Psychometric lab, just upload the result excel of psychometric lab. The complex excel data will be displayed in organized way. The system will keep the relevant data for test. Cooling Capacity, Max Operating, test for Split AC, Window AC and Inverter AC.

**Auto Certificate** – Don't need to create certificate manually, just fillip few detail and generate the certificate. Results data will be fetched from uploaded excel to the certificate. No matter whether the test is Cooling Capacity, Max Operating, and test for Split AC, Window AC and Inverter AC, The certificate will print only relevant and needed result data.

Report No: P121041638	Discipline: Electrical Testing
3. Test Conditions:	
a. Temperatures Setting :-	
Psychometric Air Temperatures, °C, Adjacent to Inlet of Test Unit	Rated
Indoor, Dry bulb(°C)	27.0 ±0.3
Indoor, Wet bulb(°C)	19.0 ±0.2
Outdoor, Dry bulb(°C)	35.0 ±0.3
Outdoor, Wet bulb(°C)	Not specified
b. Electrical Input :-	
Test voltage, volts	230.00 ±1%
Frequency, Hz	50.00 ±1%
Current [A]	7.10
Power Factor	0.985
Standard Cooling Capacity (W)	3440.9
Power consumption at standard Cooling capacity (W)	1090

LSRF No	UIT No	Client	Instrument Id	Manufacturer	Cal Date	Technician Name
LSR2110268	21051506	Amber Enterprises India Ltd	81394	Amber		Mahendra Singh
LSR2110268	21051301	Amber Enterprises India Ltd	81393	Amber		Abhishek kumar
LSR21090269	21051201	Amber Enterprises India Ltd	71393	Amber		Aishdeep Singh
LSR21090268	21010101	Daikin	71392	Daikin		Manish Kumar
LSR21090267	21042202	Amber Enterprises India Ltd	71391	Amber		Mahendra Singh

**Performance Report/Timesheet** – Generate performance report of technician. This report helps to understand trend of consume time of tests, which technician is taking less time, who is taking more time to complete the same job.



**Multi level result approve** – Up to three level approvals for final certificate for CSO, Technical Manager and Lab HOD. Each approve can approve or reject work order. Each approve will push one step toward report publish, each reject will push back one step.

**Lab Calendar** – See the lab occupancy based on the schedule job. The calendar shows which lab is free at what date and what shift. It helps to utilize the lab up to 100%

	Month: May - 2021				Week: 2021-05-10 to
	2021-05-10 Monday	2021-05-11 Tuesday	2021-05-12 Wednesday	2021-05-13 Thursday	
Abhishek kumar	Available	Available	Available	Available	
Aminder Singh	Available	Available	Available	Available	
Arshdeep Singh	Available	Available	Available	Available	

## Add On

**Mobile App** – Mobile app for Android and iOS app. User check status of LSRF/Work Order form the app. Download certificate of completed work order, download invoice from the app. Connecting Lab, Customer & Management Through smart phones and tablets! From anywhere, anytime!

**Accounting Integration** – Integration option with existing accounting system like QuickBooks, Xero, Sage etc

**Customer Portal** – Dedicated customer portal for the customers. Each customer can have unique user id and password. Customer can check status of LSRF/Work Order form the portal. Download certificate of completed work order, download invoice from the app.

**Business Intelligence** - Our BI solutions help laboratories to optimize their capabilities to leverage various types of data and make it into something the business can use to make better and more informed choices. With this solution, business data is used intelligently, enriched to support daily operations and statistical purposes and displayed with dynamic and visual end-user interfaces – all in few minutes.



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