

QUARTZLIMS

SEMICONDUCTOR & ELECTRONIC DEVICES



One **LIMS**
ALL Labs



**QUARTZ IMAGING
CORPORATION**
FOR A FASTER, SMARTER LAB

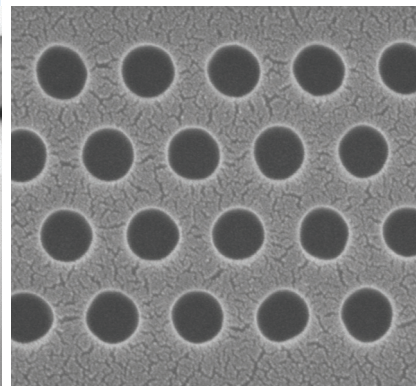
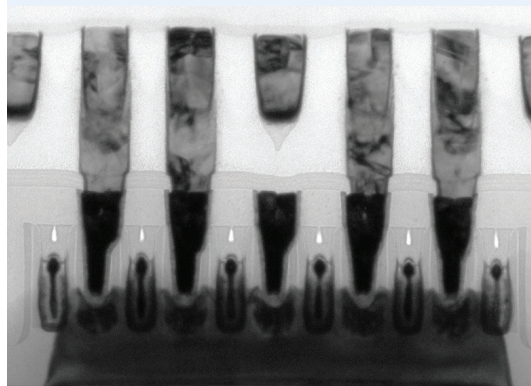
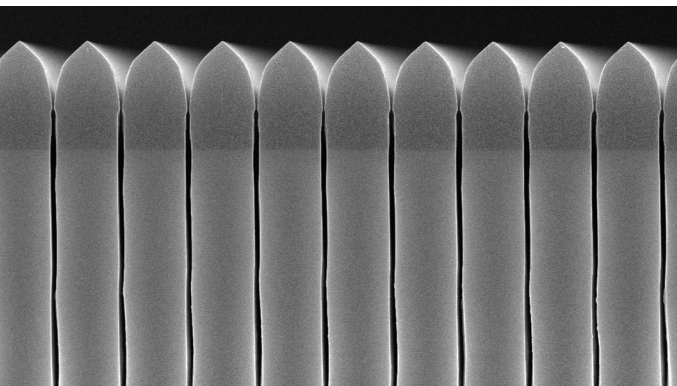
The Only LIMS Designed Specifically for High Technology Labs

Quartz has been providing software solutions to many of the leading companies in the Semiconductor & Electronic Device industries for more than 30 years.

We have gained a thorough understanding of the needs and challenges of laboratories within the Semiconductor & Electronic Device industries, and have leveraged that knowledge to expand our product line with solutions to help make your labs Faster & Smarter.

Quartz LIMS is a complete, configurable Laboratory Information Management System that supports all types of instrumentation, including microscopes and instruments for surface analysis and chemical analysis, as well as reliability testing equipment.

Quartz PCI is our software for microscopy applications that includes image processing, measurement, annotation and report generation. PCI-AM includes a powerful set of automated measurement tools that are designed for semiconductor features. We have integrated our instrument-based PCI software with our server-based Quartz LIMS software to create a LIMS system that will significantly increase lab productivity and is the only LIMS system that handles images as first-class passengers.



The Complete, Customized Analytical Laboratory Management Solution

Quartz LIMS is the only Laboratory Information Management System that handles images as first class passengers. We are also experts in providing highly configurable LIMS systems that can support many types of data, whether your lab works with individual samples or batches of samples.

How to Become a *Faster, Smarter Lab*

- ▲ Implement quota system on job requests.
- ▲ Automate routine tasks.
- ▲ Automatically enforce business rules and security.
- ▲ Ensure job requests are completed on time.
- ▲ Keep clients informed with automatic e-mails.
- ▲ Save data in the right place automatically.
- ▲ Keep samples and data organized and at your fingertips.
- ▲ Detailed views of work progress.
- ▲ Generate client and management reports automatically.
- ▲ Monitor KPIs. Identify bottlenecks. Establish best practices



Imagine not having to purchase new instruments in each of your labs over the next few years.

Imagine growing lab output and improving on-time performance without new hires.

The Quartz LIMS Family

Quartz LIMS can be configured to support all of your labs. It is architected so that there is tremendous flexibility in how Quartz LIMS is deployed throughout your organization.

Quartz LIMS is available with features bundled to meet the specific needs of failure analysis and materials characterization labs (Quartz FA-LIMS), reliability and quality assurance labs (Quartz RE-LIMS) and chemical analysis labs (Quartz CH-LIMS). Hybrid systems can also be configured using aspects of each for multi-functional labs. For example, your Quartz FA-LIMS deployment can include functionality to support chemical analysis.

A single Quartz LIMS deployment can also support all types of your labs and the functions available to any individual user would be based on that person's role and the Job Type that they are working on so as to optimize their Quartz LIMS experience.

QUARTZFA-LIMS FA & MATERIALS CHARACTERIZATION

- ▲ Handling Jobs where each sample is analyzed individually
- ▲ Treats image data as first-class passengers
- ▲ Marketed as FA & Materials Characterization labs but it can support any type of analytical lab such as Yield Enhancement, Physical FA, Process Development and more.

QUARTZRE-LIMS RELIABILITY & QUALITY ASSURANCE

- ▲ Handling Jobs where samples are analyzed in batches
- ▲ 'Gantt-chart' style view of all projects
 - ▲ take it off-line (sandbox mode) to make changes to a project and see how it impacts other projects
 - ▲ when you have it as you like, save it as the live project plan

QUARTZCH-LIMS CHEMICAL ANALYSIS

- ▲ Supports unique aspects of chemical analysis labs, including:
 - ▲ supports for multiple types of chemical analysis technique
 - ▲ imports data files from many types of instruments
 - ▲ supports results computation

Trust the Experts in LIMS for High Technology

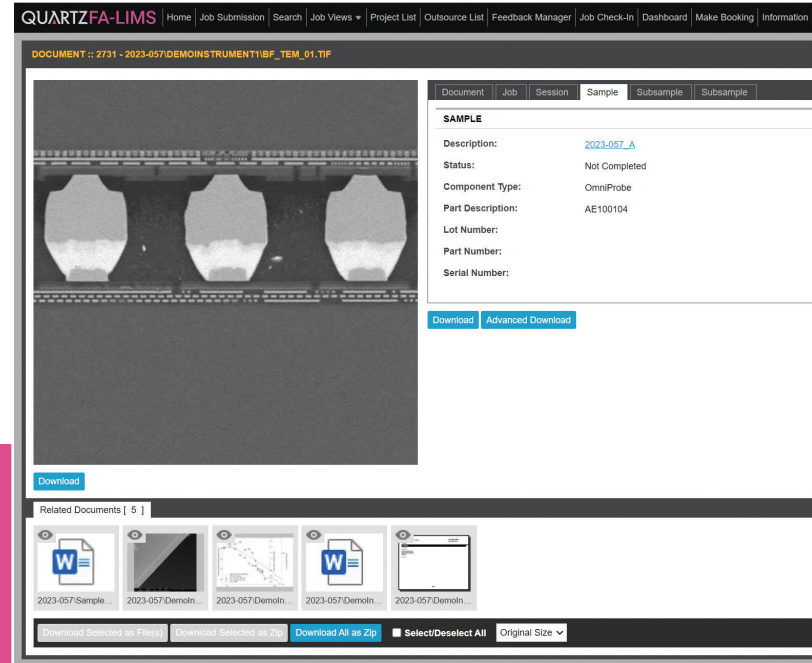
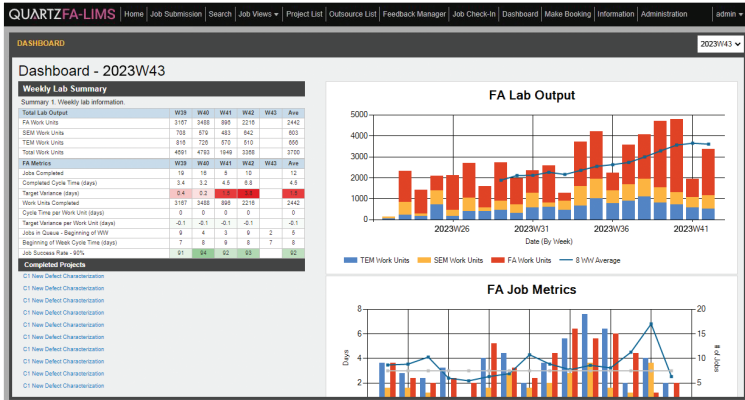
QUARTZFA-LIMS

Quartz FA-LIMS is a highly configurable Laboratory Information Management System that is designed for **Failure Analysis and Materials Characterization** labs. It will be configured to match the workflow and terminology needs of your lab. The server-based software is integrated with our PCI software to deliver performance and value that no other LIMS system can provide. Increase lab productivity by 20% or more.

The Powerful Integration of our PCI software with our server-based FA-LIMS system takes the concept of a LIMS system to another level of productivity.

Benefits of PCI Integration

- ▲ Easy, fast and accurate uploading of data into FA-LIMS
- ▲ Even more effective with barcode scanners at sample check-in and instruments
- ▲ Time Stamps - Tracks times by Job, Session, Sample, Analyst – provides metrics for FA-LIMS Lab Management Reports
- ▲ Powerful Job/Client Report Generator
- ▲ Key driver for productivity increase

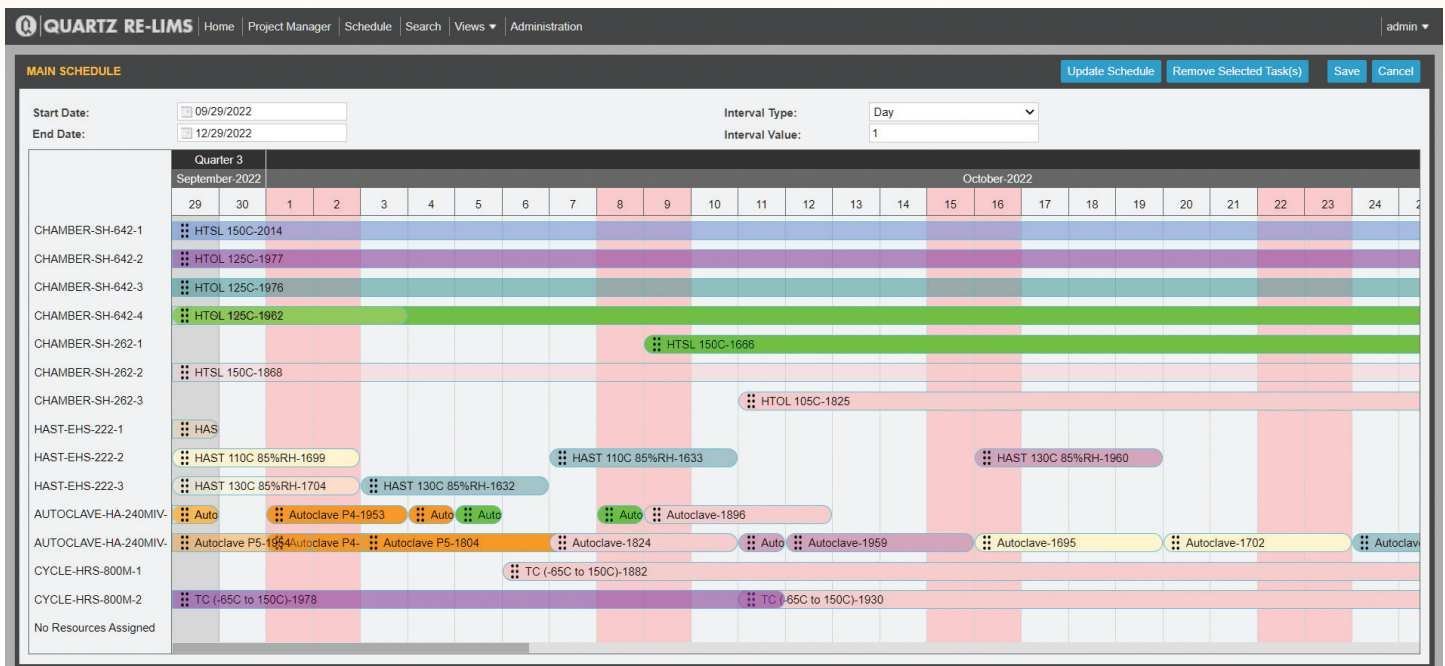


Quartz LIMS is the only 'Image Smart' LIMS system available

The integration of PCI with Quartz LIMS delivers performance and value that no other LIMS system can come close to.

QUARTZRE-LIMS

Designed specifically for Reliability and Quality Assurance labs, Quartz RE-LIMS is highly configurable so what we deliver to you will match your workflow and terminology needs. It features a 'Sandbox' mode that allows you to take your entire work plan 'offline'. You can make changes to one project/qual plan and see how it impacts the completion date of other plans. Once you have it the way you want, you can save it as your current work plan. Get the most out of your lab resources.



Quartz RE-LIMS Features

- ▲ Generate projects quickly
- ▲ Easy to use Job templates
- ▲ Track results for each Job
- ▲ Integrates with other databases
- ▲ Track dates and time for all Jobs & Projects
- ▲ Manage priorities and resources – Sandbox Mode
- ▲ Improve lab management
- ▲ Improve lab performance
- ▲ Increase lab productivity

The Sandbox feature alone makes RE-LIMS a game-changer

QUARTZCH-LIMS

Your Chemical Analysis labs or any of your other labs that are also doing chemical analysis can also benefit from the configurable Quartz LIMS. CH-LIMS supports multiple chemical analysis techniques. You can import data from many types of instruments and CH-LIMS will compute the results. CH-LIMS includes all of the features and functionality you would expect from a world class chemical lab LIMS system.

Quartz CH-LIMS Features

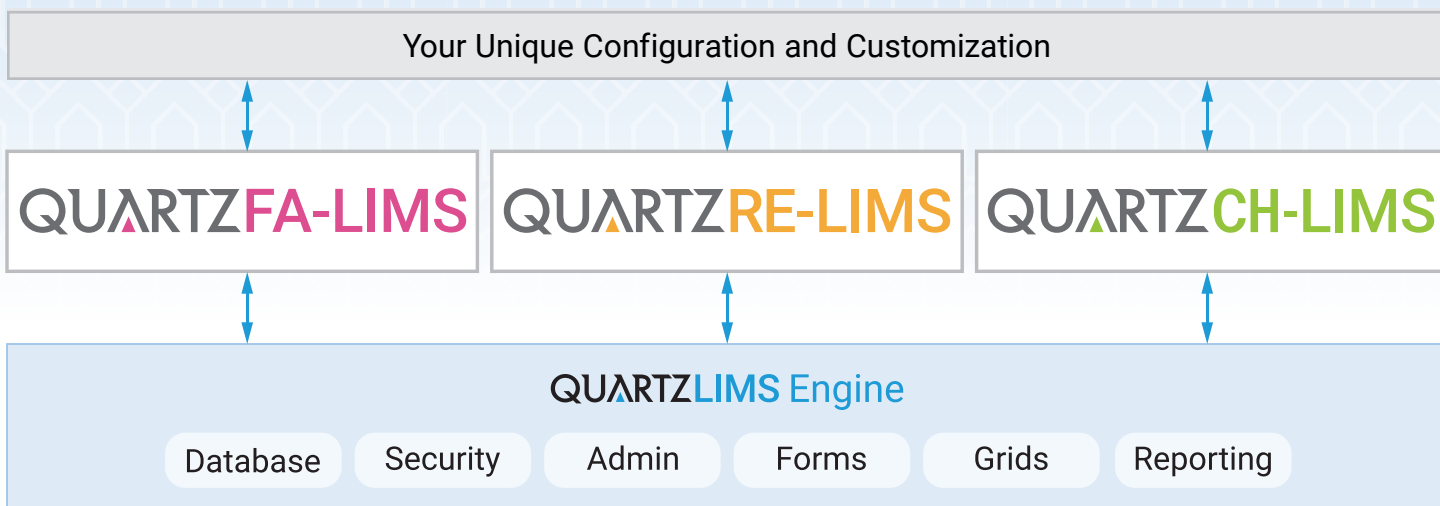
- ▲ Highly Configurable
- ▲ Supports Multiple Chemical Analysis Techniques, such as ICP-MS and IC
- ▲ Imports Data Files from Many Instruments
- ▲ Comprehensive Sample Data Review
- ▲ Supports Results Computation
- ▲ Select Results for Release
- ▲ Transpose Released Results into Final Format
- ▲ Chemical Data File Archiving

Job Number	Status	Requester	Area	Priority	City	Location	Analysis Techniq	Sample Name	System	Birth Date	ICP-MS Review
U220001	Completed	Admin	UPW	P3	Victoria	L1	ICP-MS,IC,SI	U220001_A	HUPIW	03/02/2022	Yes
								U220001_B	HUPIW	03/04/2022	Yes
U220005	Completed	Admin	UPW	P1	Vancouver	V1	IC,SI	U220005_A	HUPIW	03/05/2022	
								U220005_B	HUPIW	03/05/2022	
								U220005_C	HUPIW	03/05/2022	
U220008	Completed	Admin	UPW	P4	Chicago	West-X1	ICP-MS,IC,SI	U220008_A	UPW	03/05/2022	No
								U220008_B	UPW	03/05/2022	No
U220009	Completed	Admin	UPW	P4	Chicago	West-X2	ICP-MS	U220009_A	UPW	03/05/2022	No
								U220009_B	UPW	03/05/2022	No
U220010	Completed	Admin	UPW	P2	Vancouver	L1	ICP-MS,IC,SI	U220010_A	UPW	03/05/2022	
								U220010_B	UPW	03/05/2022	
U220011	Completed	Admin	UPW	P2	Seattle	F11S	IC	U220011_A	UPW	03/05/2022	
								U220011_B	UPW	03/05/2022	
U220012	Completed	Admin	UPW	P2	Seattle	F11S	ICP-MS,IC	U220012_A	UPW	03/05/2022	No
								U220012_B	UPW	03/05/2022	No
U220013	Completed	Admin	UPW	P1	Vancouver	L2-1	ICP-MS,IC,SI	U220013_A	UPW	03/05/2022	Yes
								U220013_B	UPW	03/05/2022	Yes
								U220013_C	Bottle Clean	03/05/2022	Yes
								U220013_D	Bottle Clean	03/18/2022	No
U220020	Completed	Admin	UPW	P2	San Diego	Midway	IC	U220020_A	UPW	03/07/2022	
								U220020_B	UPW	03/07/2022	

IDEAL LIMS FOR:

- ▲ Ultrapure Water
- ▲ Product Ecology & Safety
- ▲ Incoming Materials Inspection
- ▲ Prohibited Chemicals Certification

Quartz LIMS Architecture



- ▲ All of the Quartz LIMS components operate on the same database and they all use the same administration and security tools
- ▲ This allows for great flexibility on how Quartz LIMS can be deployed throughout your company's labs
- ▲ Quartz LIMS is the only LIMS system that handles images as first-class passengers
- ▲ We are experts in providing highly configurable LIMS systems that can support many types of data, whether your lab works with individual samples or batches of samples

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