



 SMARTSASH™

INTELLIGENT BY DESIGN.
TRANSPARENCY, BUILT IN.



SMARTSASH.CA

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WELCOME TO SMARTSASH

A CLEARER STANDARD FOR LABORATORY SAFETY

SmartSash is a Vancouver-based technology platform designed to improve safety, accountability, and energy efficiency in modern laboratory environments. By transforming traditional fume hoods into smart, connected systems, SmartSash bridges the gap between physical lab safety and digital management.

Our intelligent sash integrates RFID authentication, real-time behaviour monitoring, and safety training verification. By ensuring that only authorized personnel can access hazardous equipment, SmartSash helps laboratories maintain compliance while reducing operational risk.

SmartSash also supports sustainability by encouraging better laboratory habits. Real-time onscreen prompts remind users to close the sash, helping reduce energy consumption through behavioural change rather than relying on additional hardware. The platform is also compatible with third-party automatic sash closure systems where required by local regulations.

Connected through the SmartSash Portal and our proprietary Sash IQ™ scoring system, SmartSash transforms everyday lab activity into meaningful insights that support safer, more efficient operations. Transparency for your lab starts here.





SECURITY & SYSTEM MODES

FUME HOOD SASH CLOSED & LOCKED

To ensure operational clarity, our system differentiates between two distinct types of locking mechanisms:

- **SOFTWARE LOCK**

The system restricts digital access via software. Only the original active user can resume their session, or a new user can start a fresh session by scanning their RFID card.

- **MECHANICAL LOCK**

The physical sash is securely locked in the closed position by the hardware mechanism.

LOGOUT MODE

When a logged-in user explicitly chooses to end their session at the fume hood, the system initiates Logout Mode:

- The user triggers the logout process via an intuitive on-screen button.
- An automated prompt requests the user to fully close the sash before proceeding.
- Once sash closure is confirmed, the system immediately applies both a **mechanical lock** and a **software lock**.
- The active session is terminated, stopping all user-attributed data logging, and making the fume hood instantly available for the next user login.

ACCESS CONTROL & THE PORTAL

RFID LOGIN WITH INDIVIDUAL SETTINGS & FILE ACCESS

SECURE AUTHENTICATION

Integrated RFID user authentication verifies user access before hazardous laboratory equipment can be used, helping laboratories strengthen security and maintain compliance.

PERSONALIZED PROFILES

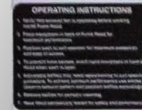
Scanning an RFID card instantly logs the user into their personal profile, loading individualized system settings, active workflows, and direct file access.

COMPLIANCE & VERIFICATION

The login portal serves as a critical safety checkpoint, cross-referencing user credentials with safety training verification databases before granting equipment access to maintain institutional compliance and reduce operational risk.

THE SMARTSASH PORTAL & SASH IQ™

Authentication serves as the gateway to The SmartSash Portal, our central backend hub. It's where all the data lives for both users and lab managers. The system tracks Sash IQ™, a built-in safety intelligence score (0–100) that turns daily habits into clear trends, helping institutions stay compliant and proactive.




 Tara Reynolds
  23.5 C°
  56 %
  134 FPM

 Periodic Table

1 H Hydrogen																
3 Li Lithium	4 Be Beryllium															
11 Na Sodium	12 Mg Magnesium															
19 K Potassium	20 Ca Calcium		21 Sc Scandium		22 Ti Titanium		23 V Vanadium		24 Cr Chromium		25 Mn Manganese					
37 Rb Rubidium	38 Sr Strontium		39 Y Yttrium		40 Zr Zirconium		41 Nb Niobium		42 Mo Molybdenum		43 Tc Technetium					
55 Cs Caesium	56 Ba Barium		57 La Lanthanum		72 Hf Hafnium		73 Ta Tantalum		74 W Tungsten		75 Re Rhenium					
87 Fr Francium	88 Ra Radium		89 Ac Actinium		90 Rf Rutherfordium		91 Db Dubnium		92 Sg Seaborgium		93 Bh Bohrium					
☐ Reactive non-metals					☐ Alkali metals											
☐ Metalloids					☐ Noble gases											

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DATA-DRIVEN SAFETY & EFFICIENCY

USER TRACKING FOR AIRFLOW & SASH HEIGHT MONITORING

- Sash Height Tracking
- User Activity Insights
- Energy Efficiency Optimization

POWERFUL DATA INSIGHTS: INTRODUCING SASH IQ™

Sash IQ™ turns everyday fume hood habits into a clear, single score for total visibility over lab safety and energy performance.

DATA THAT DRIVES BETTER DECISIONS

Sash IQ™ is SmartSash's built-in safety intelligence engine. Every user receives a personal score from 0 to 100 based on their real-time habits, including proper sash height, timely closure, and long-term consistency.

Instead of waiting for an incident to reveal a safety gap, lab managers get instant visibility. The system highlights where safety habits are strong, pinpoints where coaching is needed, and tracks institutional trends over time.





INTEGRATED DIGITAL WHITEBOARD

NOTE TAKING

Turn the transparent sash into an active digital workspace. Jot down immediate observations, record chemical mixtures, and log experimental variations directly on the glass screen without stepping away from the hood.

FORMULA WRITING

Work out complex equations and chemistry formulas effortlessly. The digital interface allows you to save, export, or share sketches directly to your connected laboratory files.

ANNOTATING & MARKING UP PHOTOS

Capture high-resolution visual data from your experiment and mark up specific details in real time. Highlight critical color changes, structural variances, or anomalies right on the screen image.



BUILT-IN VIDEO LEARNING

SAFETY VIDEOS

Access an integrated library of mandatory safety protocols directly at the workspace. SmartSash verifies that training content has been reviewed before unlocking hazardous equipment, ensuring a proactive approach to lab risk mitigation.

LESSON PLANS

Seamlessly integrate specific educational modules into academic laboratory sessions. Instructors can pre-load required operational steps, ensuring students follow standard operating procedures precisely.

TEACHING AIDS AND Q&A

Features interactive quiz modules and Q&A verification panels directly on the sash display. Test user comprehension on specific chemical hazards, spill protocols, and safety maneuvers before practical tasks begin.





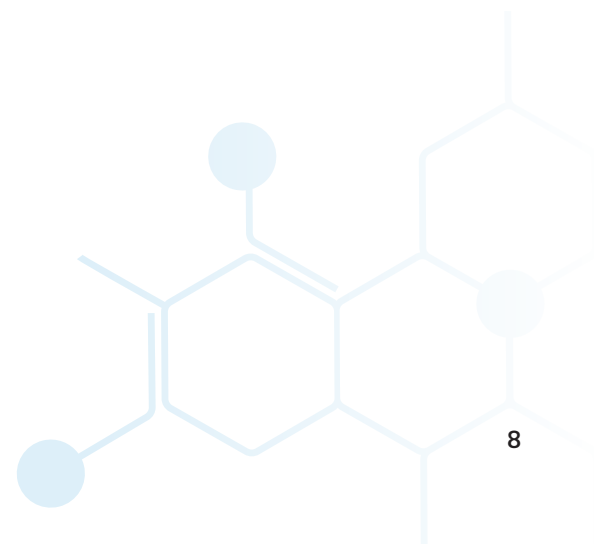
REAL-TIME TEACHING MODE

BROADCAST EXPERIMENTS IN REAL TIME

Monitor laboratory processes live through the SmartSash Portal or securely share video with other SmartSash-equipped fume hoods. Whether supporting collaboration across a facility or connecting with remote laboratories, SmartSash makes it easy to view experiments without compromising safety containment.

FIXED OVERHEAD CAMERA

The integrated overhead camera provides a clear, top-down view of activity inside the fume hood, making it easy to observe reactions, measurements, and procedures without disrupting the experiment.



WIDGETS



PERIODIC TABLE

Instant on-screen access to element properties, atomic masses, and reactivity data.



SCIENTIFIC CALCULATOR

Execute molarity calculations, unit conversions, and algebraic formulas directly on the sash.



TIMER

Track multiple steps simultaneously with independent, precise countdowns.



REMINDERS

Receive instant audio-visual alerts for critical experiment and operational deadlines.



CALENDAR

View daily hood bookings, team scheduling, and upcoming deadlines instantly.



MAINTENANCE

Track annual fume hood certifications automatically while setting custom upkeep reminders for other lab equipment across your facility.



WORKFLOW FLEXIBILITY

AWAY MODE

Designed for situations where an authenticated user temporarily steps away from the fume hood without ending their active session. The session remains active, and data such as sash position, temperature, humidity, and airflow measurements continues to be recorded under the authenticated user.

USER-INITIATED AWAY MODE

The user taps the Away button and receives an onscreen reminder to close the sash before stepping away.

PRESENCE SENSOR-TRIGGERED AWAY MODE

If the presence sensor detects that the user has left the fume hood area for a set period of time, SmartSash enters Away Mode and prompts the user to close the sash. This helps reinforce good laboratory habits and supports stronger Sash IQ™ performance by reducing unnecessary energy loss from open sashes.

Note: Presence sensor-triggered events are logged for lab managers, making it easy to identify situations where a sash was left open while the user was away.

PRIVACY MODE

Designed to help protect proprietary, sensitive, or confidential research. When activated, Privacy Mode obscures the workspace and limits onscreen interaction until the authenticated user returns.

- The transparent display turns solid white, concealing application data and the interior workspace from view.
- The internal chamber lights dim to reduce visibility inside the hood.
- To prevent bypass tampering, all on-screen navigation is disabled. The session can only be restored by the original user scanning their verified RFID card.

SCREEN STATE REFERENCE MATRIX

- **Logout & Away Modes:** Display a clean white background featuring a high-contrast black logo.
- **Privacy Mode:** Displays a solid white screen with no logos, text elements, or graphics.



Discover how SmartSash is transforming laboratory safety, accountability, and energy efficiency. Scan the QR code to book a virtual demo and explore the future of intelligent fume hood technology.



info@smartsash.ca | 1-888-710-7274 | smartsash.ca

Patent-pending technology • Proudly designed and manufactured in British Columbia, Canada
linkedin.com/company/smartsash-inc/