



VCU Minimum Lab Design Specifications

Laboratory Specification	CSL- 1 LOW	CSL - 2 Standard chemical use	CSL - 3 High chemical use	CSL - 4** Specialty lab case by case
Minimum Occupied Lab ACH	per ASHRAE 62.1	6	10	TBD
Minimum Unoccupied Lab ACH	per ASHRAE 62.1	4	6	TBD
Recirculation of Lab Air*	Yes	No	No	No
Lab Pressurization "w.g.	NA	> or = -0.05	> -0.05	TBD
Fume hood exhaust diversity	NA	>75%	> 90%	100%
Energy recovery wheels	per ASHRAE 62.1	Not permitted	Not permitted	Not permitted
Laboratory Fume Hood Specification	Fume hood not required	Standard	High Chemical Use	CSL - 4** (i.e. BLS3 or clean rooms
Fume Hood Face Velocity	NA	80 - 120 fpm	100 - 120 fpm	TBD
Cross Draft Velocity	NA	< 30 fpm	< 30 fpm	TBD
Minimum Fume Hood Exhaust with Sash Closed	NA	> 250 FHACH	> 375 FHACH	TBD
VAV Response Time	NA	< 5 Secs.	< 5 Secs.	TBD
VAV Stability (% Variation)	NA	< 20%	< 20%	TBD
ASHRAE 110 Tracer Gas Control Level (for new construction)	NA	6 lpm AU < 0.05 ppm	8 lpm AU < 0.01 ppm	TBD
Fume Hood Duct Velocity	NA	>1,000 fpm	>2,000 fpm	TBD
Local Fume Hood Alarm Monitor	NA	Yes	Yes	Yes
Local Exhaust Ventilation (LEV) Devices (snorkel vents, specialty hoods, equipment vents)	Exhaust devices designed to protect workers, the public, or the environment should be designed per ANSI/AIHA Z9.2 and the ACGIH Industrial Ventilation: A Manual of Recommended Practice to ensure capture and containment of the emissions. Each LEV shall have its design specifications (opening size, total CFM, FPM face velocity) clearly printed on a label affixed to the exhaust inlet or hood face to enable commissioning and certification.			

* Air must not be recirculated to spaces outside of the lab or suite, air should be supplied to the laboratory and then exhausted directly outside. Lab air recirculated within the space does not constitute air changes.

** An architect/engineer with experience in design/cost estimation/construction and operation of high-risk specialty facilities should be contracted (i.e. BSL3 labs or toxic gas cabinet installation)