



**VCU Minimum Lab Design Specifications**

<b>Laboratory Specification</b>	<b>LVL - 0 No hazardous emissions</b>	<b>LVL - 1 Standard chemical use</b>	<b>LVL - 2 High chemical use</b>	<b>LVL - 3** Specialty lab case by case</b>
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
<b>Laboratory Fume Hood Specification</b>	<b>Fume hood not required</b>	<b>Standard</b>	<b>High Chemical Use</b>	<b>LVL - 3** (i.e. BLS3 or clean rooms)</b>
<b>Fume Hood Face Velocity</b>	NA	80 - 120 fpm	100 - 120 fpm	TBD
<b>Cross Draft Velocity</b>	NA	< 30 fpm	< 30 fpm	TBD
<b>Minimum Fume Hood Exhaust with Sash Closed</b>	NA	> 250 FHACH	> 375 FHACH	TBD
<b>VAV Response Time</b>	NA	< 5 Secs.	< 5 Secs.	TBD
<b>VAV Stability (% Variation)</b>	NA	< 20%	< 20%	TBD
<b>ASHRAE 110 Tracer Gas Control Level (for new construction)</b>	NA	6 lpm AU < 0.05 ppm	8 lpm AU < 0.01 ppm	TBD
<b>Fume Hood Duct Velocity</b>	NA	>1,000 fpm	>2,000 fpm	TBD
<b>Local Fume Hood Alarm Monitor</b>	NA	Yes	Yes	Yes
<b>Local Exhaust Ventilation (LEV) Devices (snorkel vents, specialty hoods, equipment vents)</b>	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)