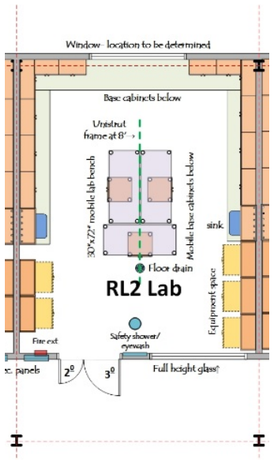
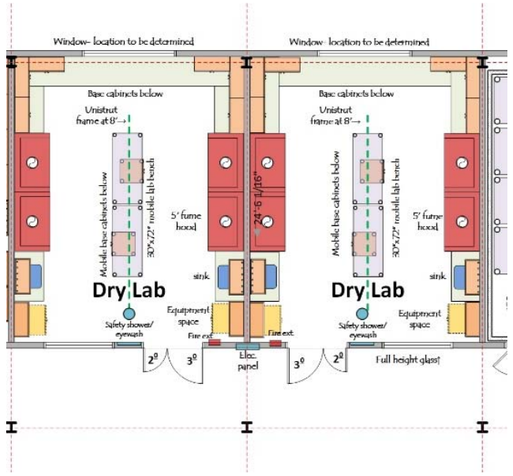
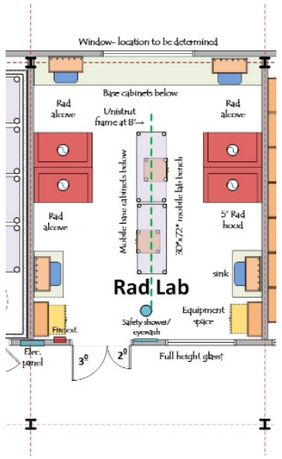
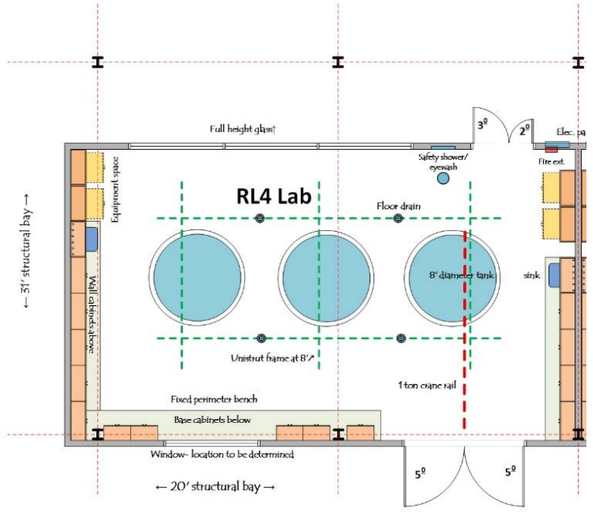
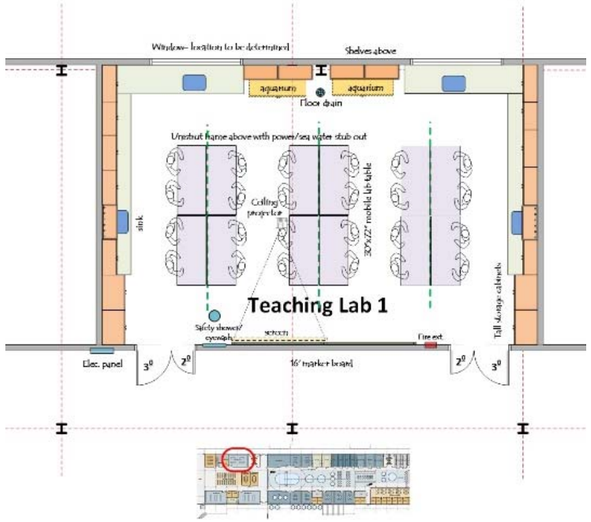
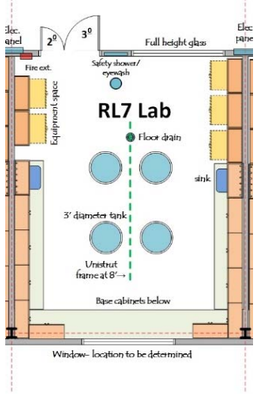


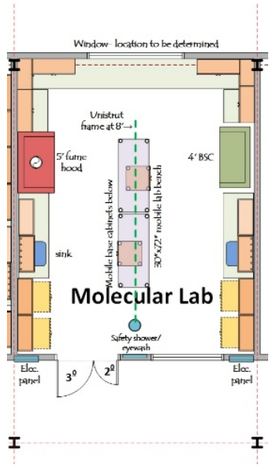










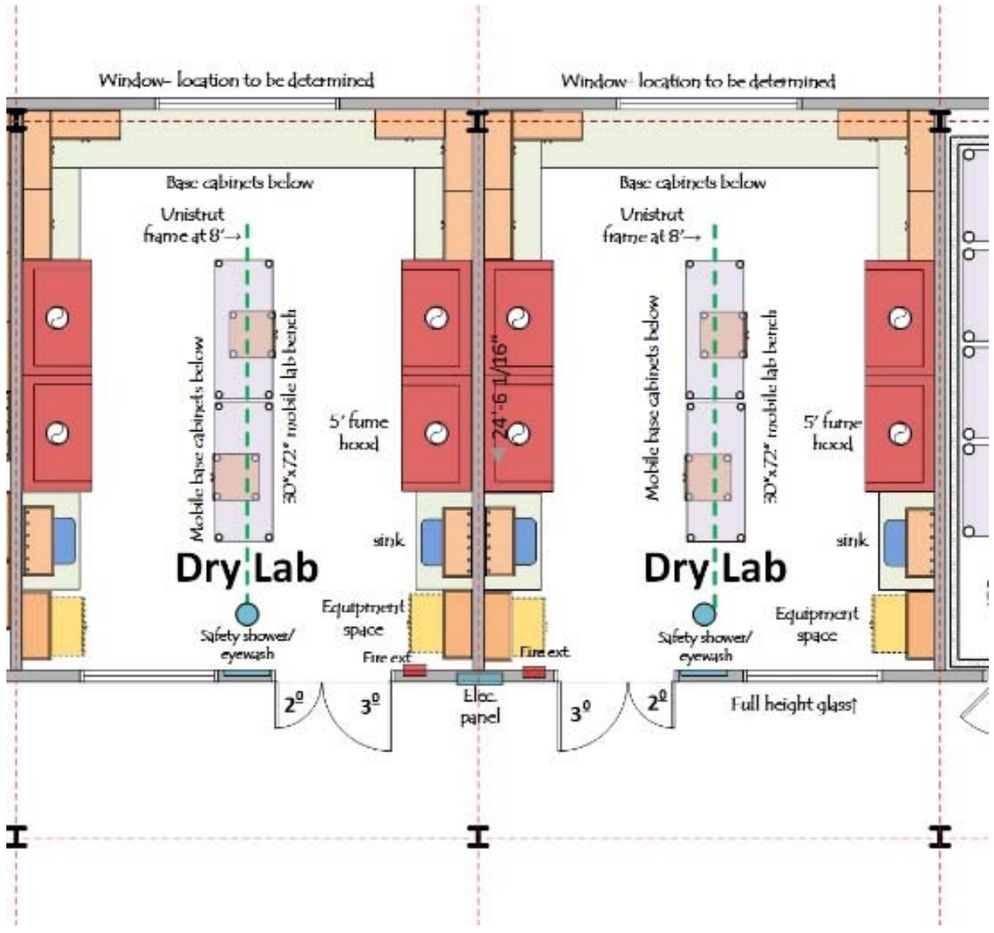


LAB SCHEMATIC DESIGN

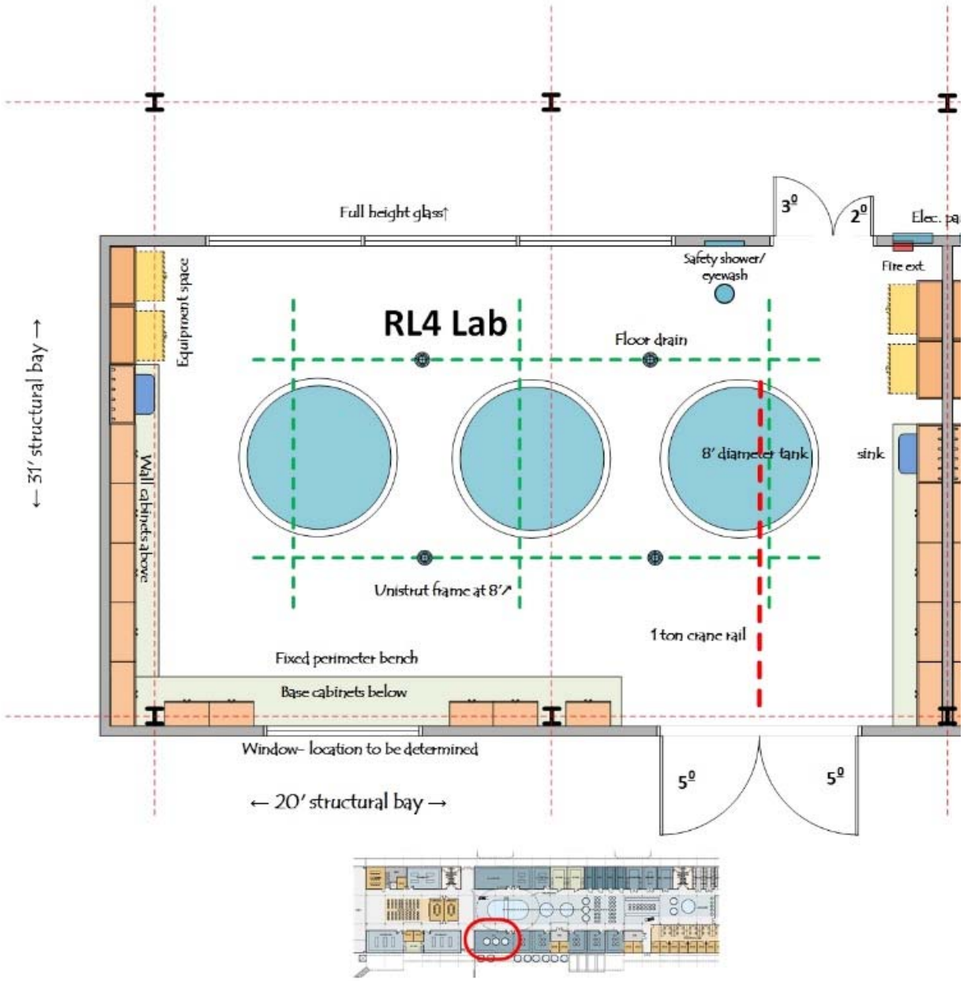
SCMI Berth 57 Alta Sea Project

2015 June 18

DESIGN for SCIENCE



CONTENTS



INTRODUCTION

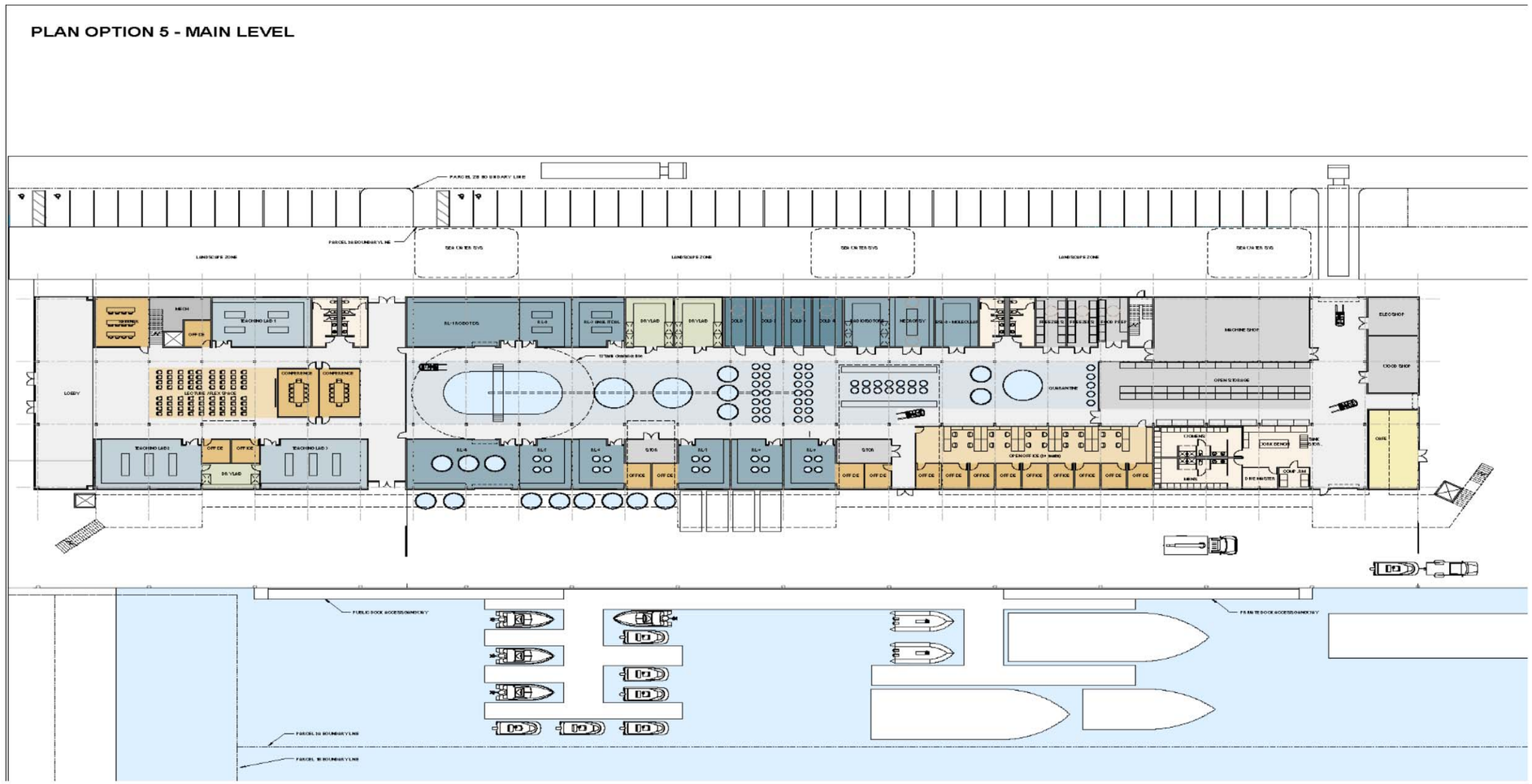
This report provides a summary of the schematic design requirements for new laboratory space to accommodate the research and teaching labs at the Berth 57 Building, Alta Sea Project in Los Angeles, California. The information contained herein provides a basis of design only, and is not intended to provide all necessary information in order to complete the construction. It is understood that this report will be used to develop a building renovation design, consisting of architectural and engineering drawings and specifications, and eventually construction documents which will be provided to a general contractor in order to complete the construction of the new research and teaching laboratories.

This first draft contains lab programming and concept design information.

Glen Berry, AIA
Laboratory Planning Consultant
designforscience@icloud.com

COMPOSITE FLOOR PLAN

←North



LAB EQUIPMENT SYMBOL LEGEND

Lab bench- fixed
33" deep at wall bench, peninsula bench
36" deep at island benches

Sink (stainless steel) with shelf/drying rack above

Wall cabinet
16" deep x 36" long typical

Wall shelf
16" deep x 36" long typical

Tall storage cabinet
24" deep x 36" long x 96" high typical

Equipment space with shelves above

5' Chemical fume hood- VAV

Rad

5' Radioisotope fume hood- VAV

Biological safety cabinet- Class II Type A
No external exhaust

Safety shower/eyewash with floor drain

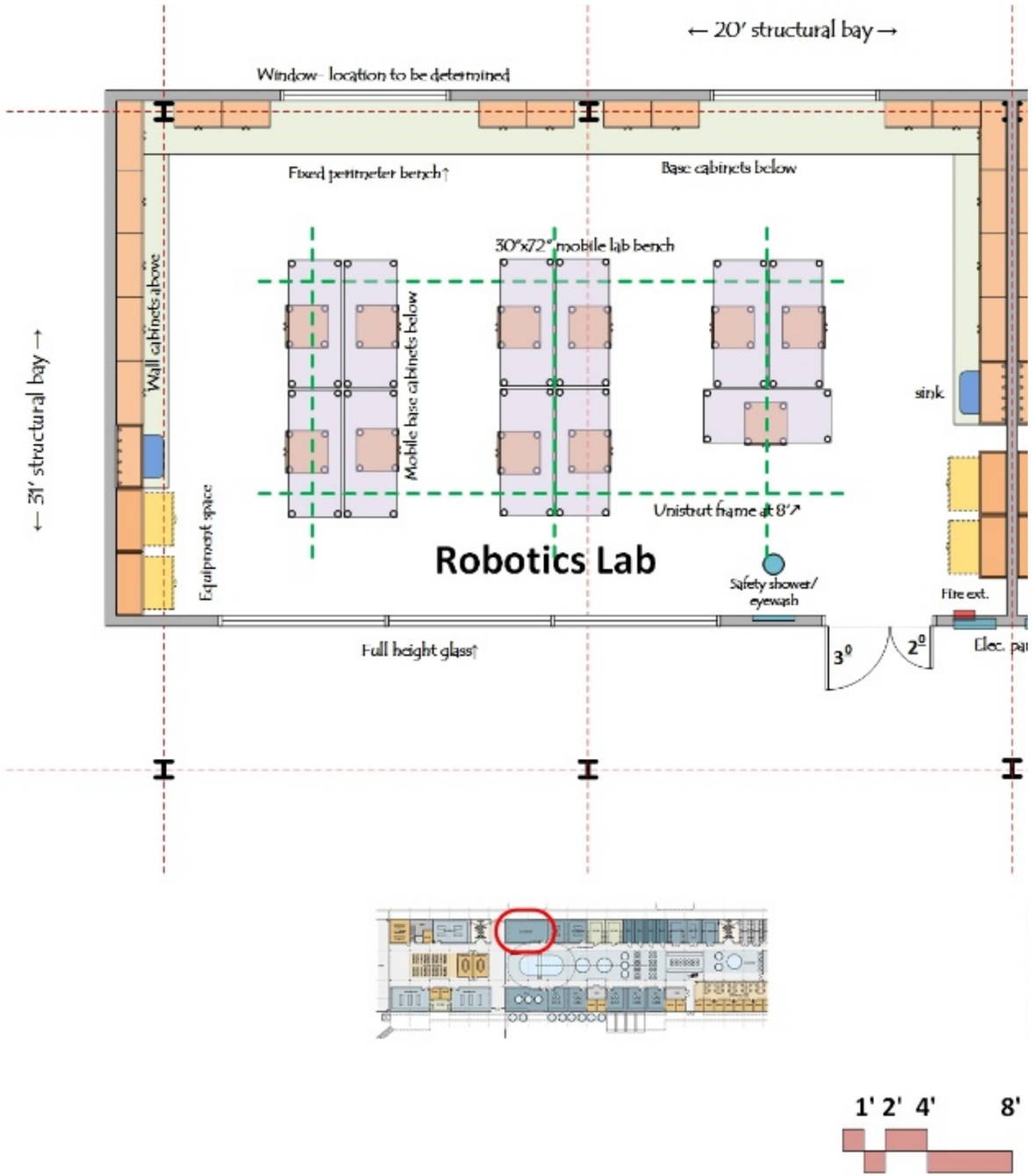
Floor drain

Fire extinquisher

30"x72" mobile lab table on heavy duty casters

24"x48" metro shelf unit with heavy duty casters

Mechanical	Electrical	Plumbing
▪ 100% exhaust for labs at east side - no recirculation of air. ▪ Natural ventilation for research labs at west side. ▪ Labs to be negative pressure to corridor. ▪ Standard air change rate is 6 air changes per hour-occupied. ▪ Unoccupied air change rate can be reduced to 4 air changes per hour- Owner to determine what defines "unoccupied"- it may be 10 pm to 6 am, plus weekends, plus holidays; or it may be based on occupancy sensor. ▪ All labs on individual thermostat control- one thermostat per lab. ▪ Individual offices on separate thermostat control- one thermostat for each office. ▪ Lab supply air and office supply air to be pre-filtered at 30% and 95% efficiency. ▪ Heat gain in labs: varies from 25 btuh/sf to 50 btuh/sf. ▪ Fume hood exhaust system on emergency power. ▪ Equipment on emergency power (refrigerators, incubators, Rnv. Rooms, etc.). ▪ All fume hoods to be variable air volume (VAV) with sash sensor controls. ▪ Radioisotope fume hoods require dedicated stainless steel exhaust with Pre/HEPA/Carbon filters ▪ N+1 redundancy for all HVAC equipment. ▪ ~40% diversity factor for connected loads. ▪ ~20% spare capacity for air supply and exhaust.	▪ Maximum of four duplex or two fourplex power outlets on same circuit anywhere in lab areas. ▪ Power outlets at equipment space on dedicated circuits (each duplex, or fourplex, or 208v outlet dedicated). ▪ Under counter washers require 208v power. ▪ Limited number of equipment space power outlets on 208v power. ▪ Lighting control switches to be located at each lab door. ▪ Lighting to be direct/indirect LED at 650 LUX. ▪ Dimmable or stepped lighting in labs. ▪ Aluminum raceways (single compartment) at lab walls where there are long runs of bench. ▪ GFI outlets where outlets are near sinks, as required by code. ▪ N+1 redundancy for all Electrical equipment. ▪ ~40% diversity factor for connected loads. ▪ ~20% spare capacity for electrical loads. ▪ Electrical panels for labs are indicated at ground floor near labs. Consider relocating elec panels to mezzanine level to avoid potential water/elec panel problems.	▪ Industrial water for hot and cold or vacuum breakers at each sink faucet. ▪ Pure water to be distributed to sinks on a recirculating loop with unpigmented polypropylene piping. ▪ Piped services include hot water, cold water, pure water, air, and seawater. ▪ Hard drain connection in wall for emergency eyewash stations with floor drains below safety showers. ▪ N+1 redundancy for all plumbing equipment (pumps, etc.). ▪ ~40% diversity factor for connected loads.



ROBOTICS LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

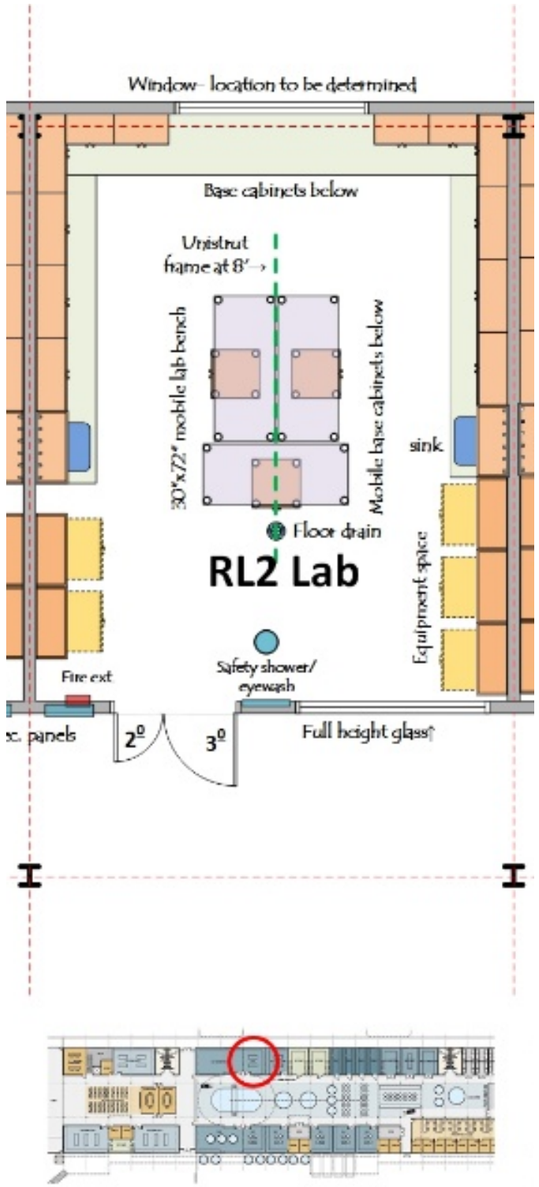
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubouts at unistrut frame
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Robotics instrumentation
UPS power back-up at instruments



1' 2' 4' 8'

RL2 LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

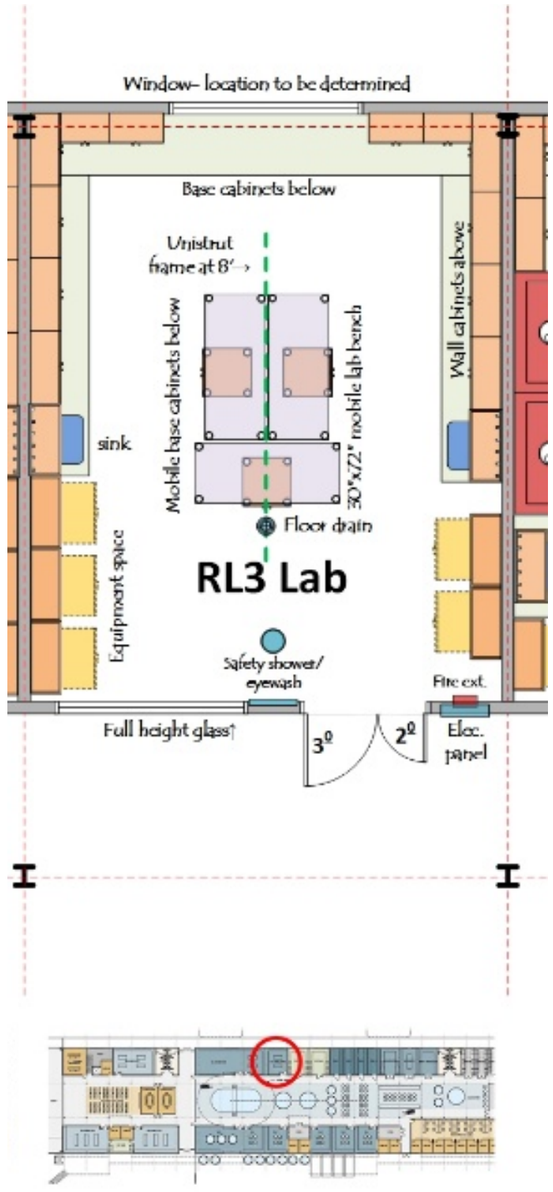
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubouts at unistrut frame
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
UPS power back-up at instruments



RL3 LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0x8^0$ pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

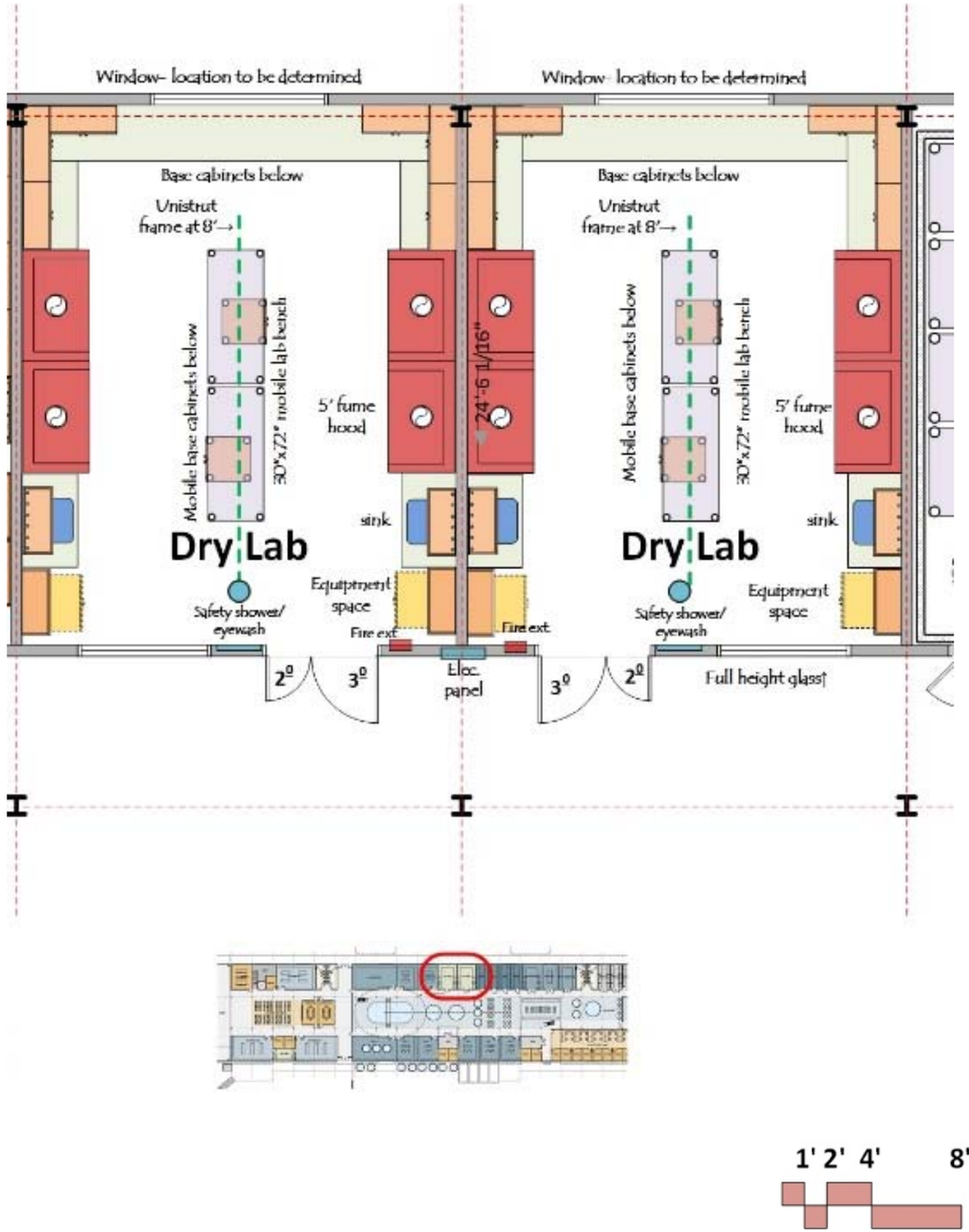
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubouts at unistrut frame
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
UPS power back-up at instruments



DRY LABS

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

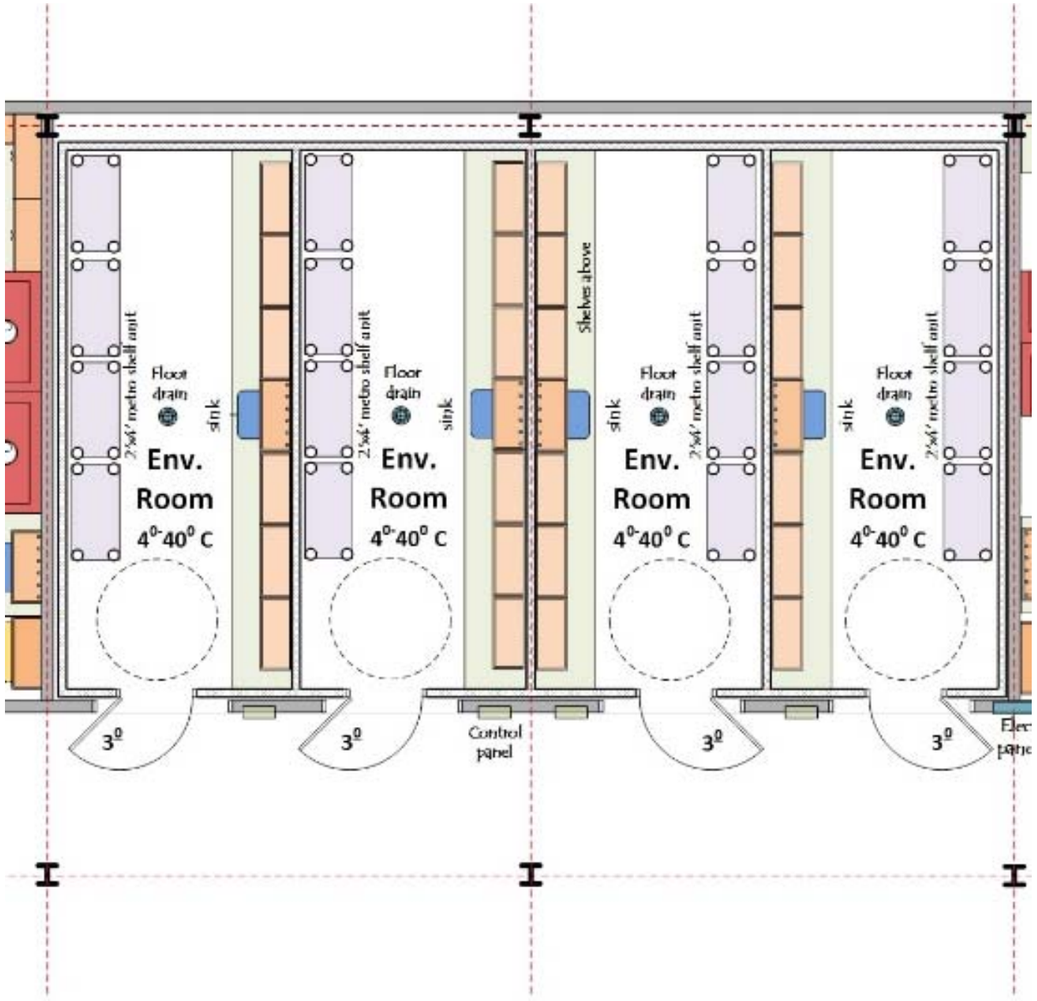
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf
1,000 c.f.m exhaust (VAV) at each 5' fume hood

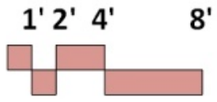
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Chemical fume hoods

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments





ENVIRONMENTAL ROOMS

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base over insulated panel; recess floor panel to be flush with corridor
Walls: 4" insulated panesl with epoxy powder coat
Ceiling: Egg crate at 8' above floor
Doors: 3^0/x7^0 full height triple pane glass panel
Windows: None
Daylight attenuation: None
Acoustic Attenuation: NC 40 or less
Security: None

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

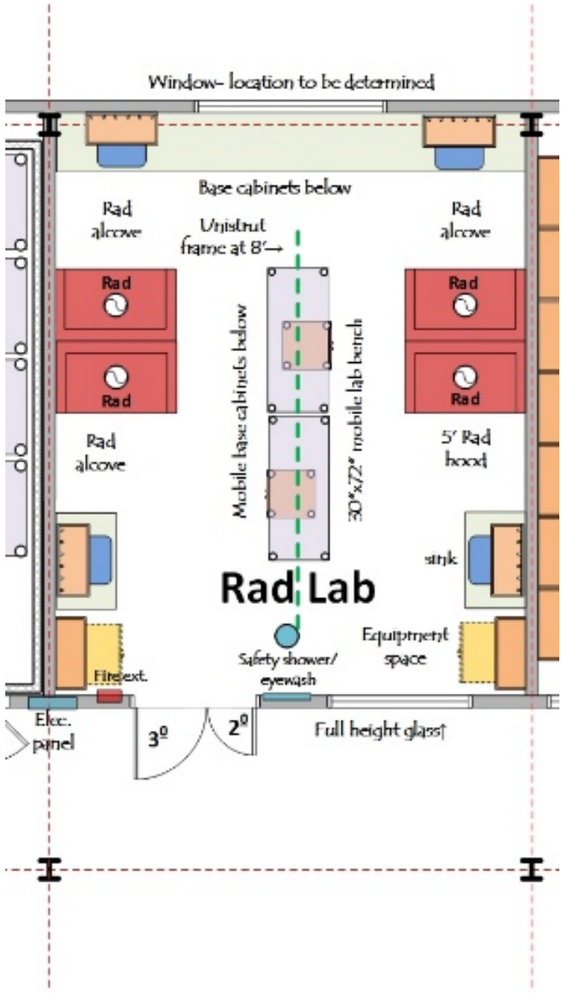
MECHANICAL
Hours of operation: 24/7; Temperature: 4-40 deg. C, +/- 1 deg. C
50 c.f.m. supply air to each room
Pressure: positive to corridor
Humidity: Ambient; Equipment Heat Gain: 25 btuh/sf

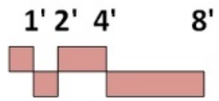
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Provide light switches at door
Emergency power

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Sediment traps at sinks
Compressed air
Sea water stub out in each room
Fresh water stub out in each room
Floor drain

CONTRACTOR FURNISHED EQUIPMENT
316L stainless steel casework, sinks, tops
316L stainless steel casework hardware
Faucets & fittings
Metro shelves on heavy duty casters

OWNER FURNISHED EQUIPMENT
Benchtop analytical instruments





RADIOISOTOPE LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

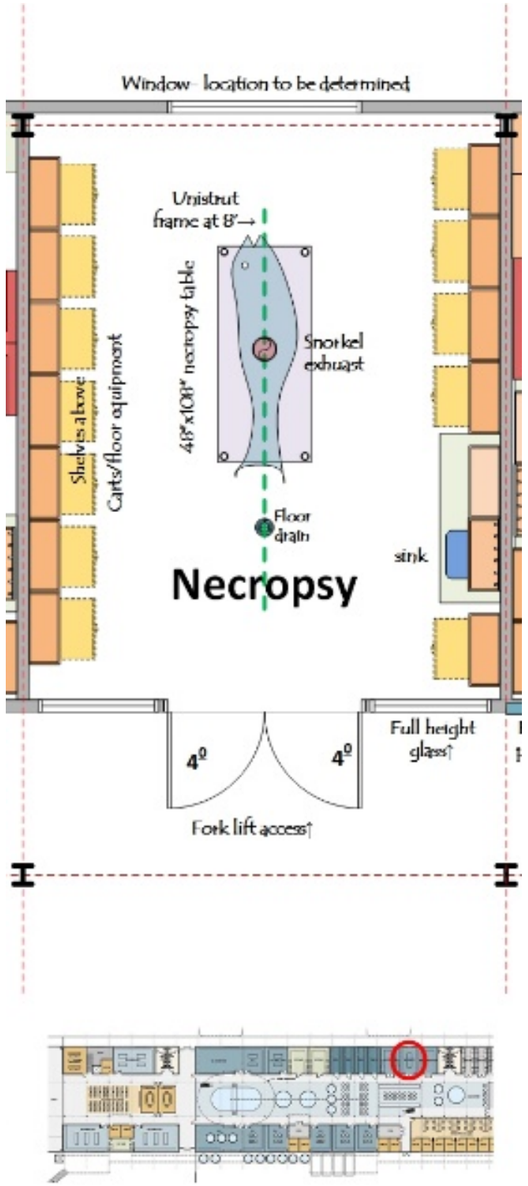
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf
Dedicated stainless steel exhaut at each radioisotope hood with bag-in/bag-out pre/carbon/HEPA/ filters on exhaust accessible from mezzanine above

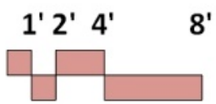
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
316L stainless steel casework - base cabinets, wall cabinets, tall cabinets
316L stainless steel tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Radioisotope fume hoods- live load of 200 lbs. per s.f. inside fume hood (lead bricks used to shield radioisotopes)

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
UPS power back-up at instruments
Radioisotopes: Phosphorus 32, Sulphur 35, Carbon 14, tritium, Calcium 47, Iodine 125





NECROPSY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and epoxy paint
Ceiling: 12'-0"' mylar acoustic tile
Doors: $4^0/4^0x10^0$ pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less
Floor/door threshhold shall accommodate fork lift access

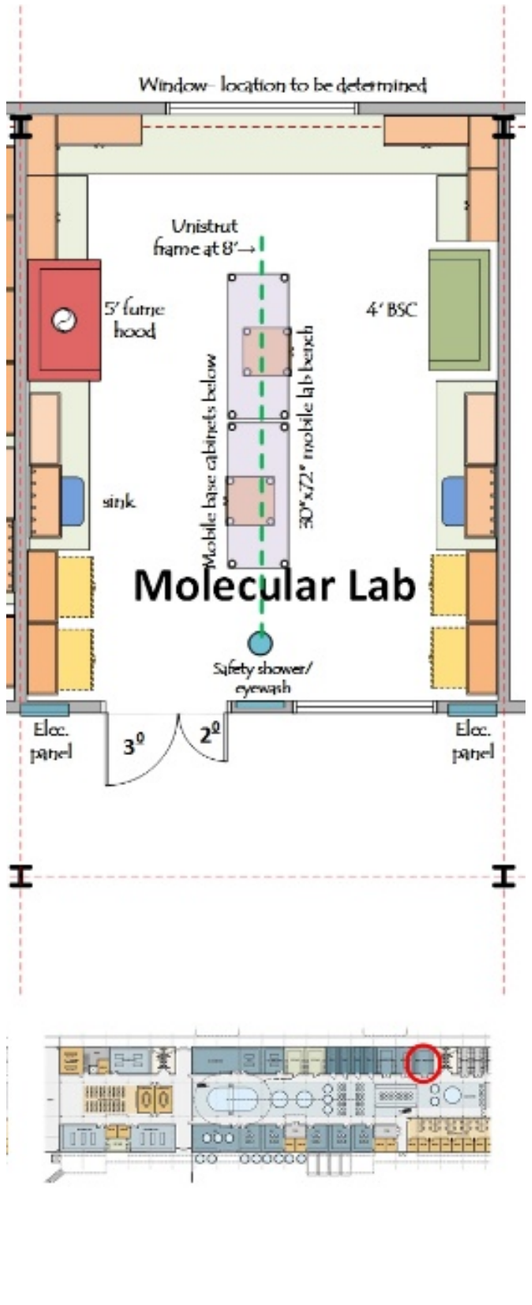
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air

CONTRACTOR FURNISHED EQUIPMENT
316L stainless steel casework - base cabinets, wall cabinets
316L stainless steel tops and sinks
316L stainless steel casework hardware
Faucets & fittings
48"x108" stainless steel necropsy table
Unistrut frame at 8' above floor

OWNER FURNISHED EQUIPMENT
Scientific equipment
Necropsy equipment
Fork lift



MOLECULAR LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

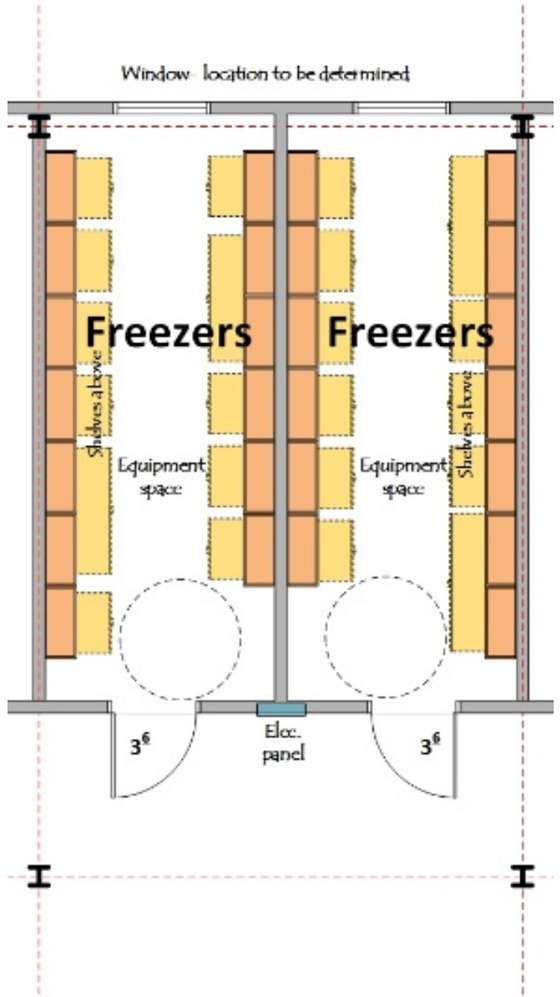
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 50 btuh/sf

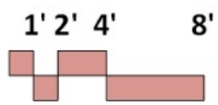
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
5' chemical fume hood- 1000 cfm exhaust
Biological Safety Cabinet (BSC)- Class II type A- no external exhaust

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
UPS power back-up at instruments





FREEZER ROOMS

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: 10'-0"' acoustic tile
Doors: 3^6x8^0 framed glass
Windows: new windows at east exterior wall
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

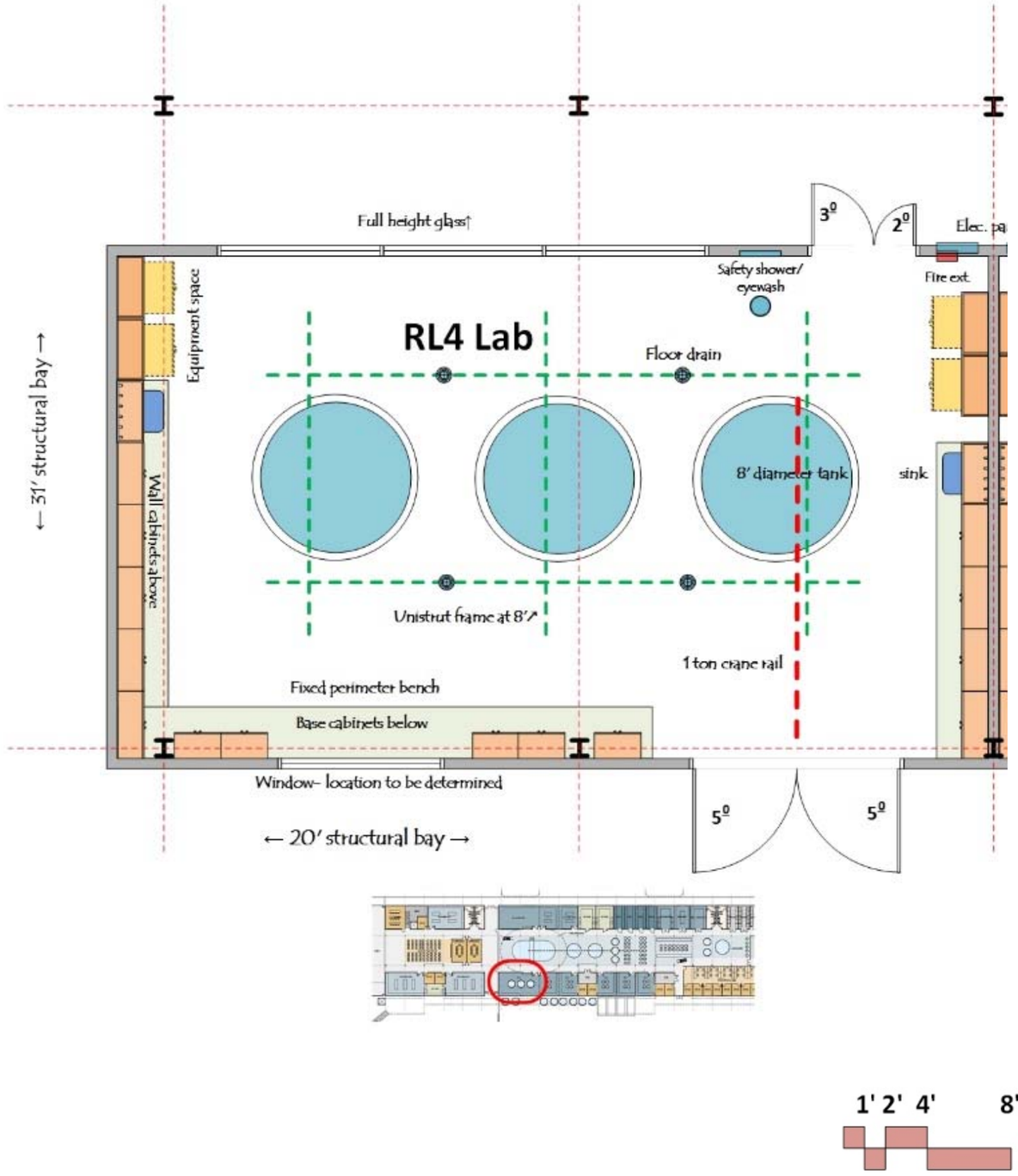
MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(6) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 100 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Provide light switches at door
Emergency power at equipment

PLUMBING
None

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework – shelves above equipment space
316L stainless steel casework hardware

OWNER FURNISHED EQUIPMENT
Freezers



RL4 LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0x8^0$ pair framed glass; $5^0/5^0x12^0$ pair framed glass at exterior
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

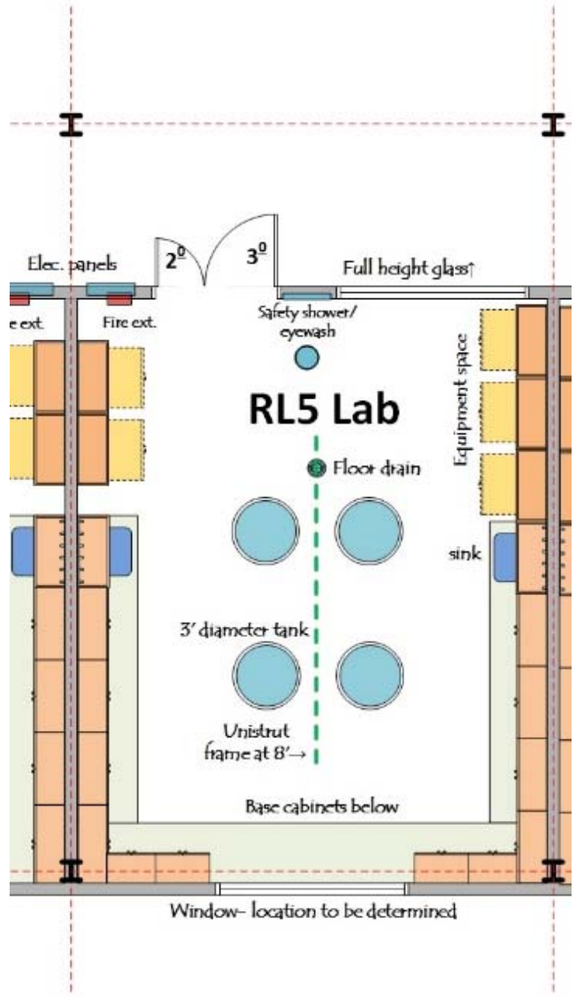
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64 - 78 deg F
Radiant heating/cooling at floor
Natural ventilation
Humidity: Ambient

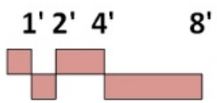
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubouts at unistrut frame
Domestic water and drain at safety shower/eyewash
Large floor drains with 8" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Unistrut frame
1 tone crane and rail

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks





RL5 LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to ceiling
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

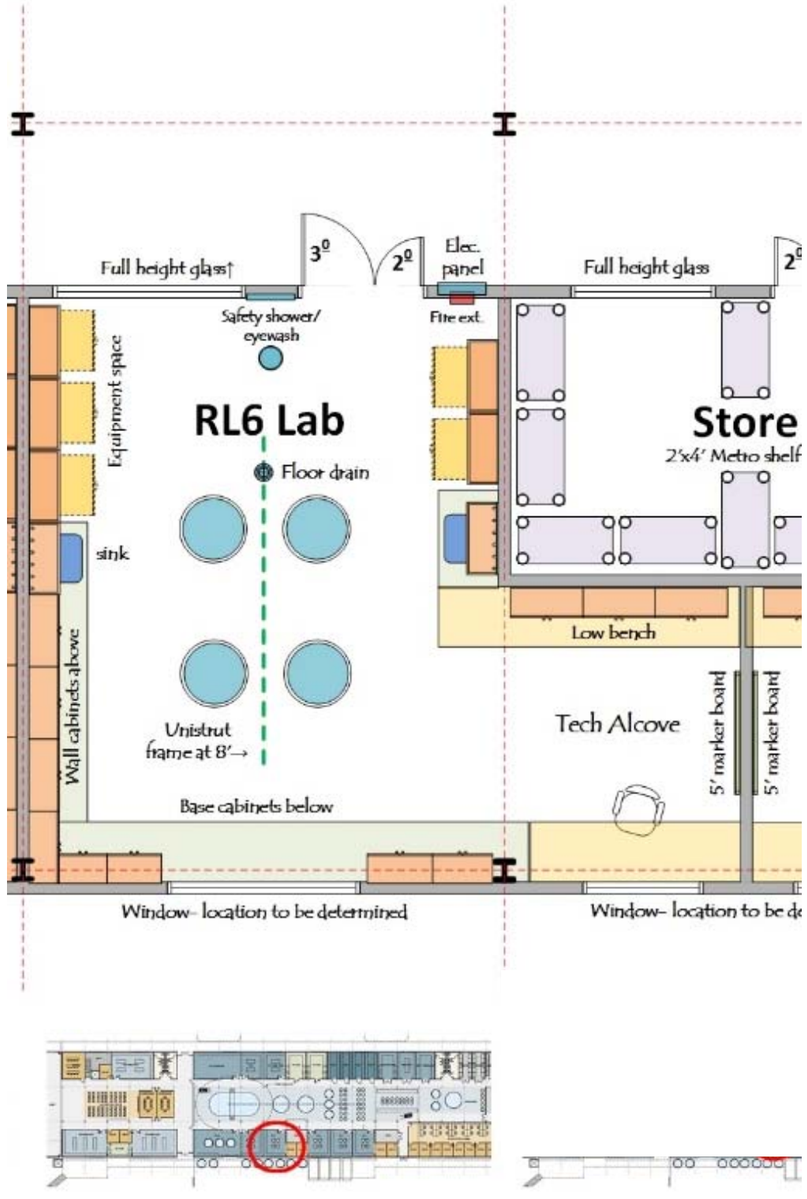
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64 - 78 deg F
Radiant heating/cooling at floor
Natural ventilation
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks



RL6 LABORATORY

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

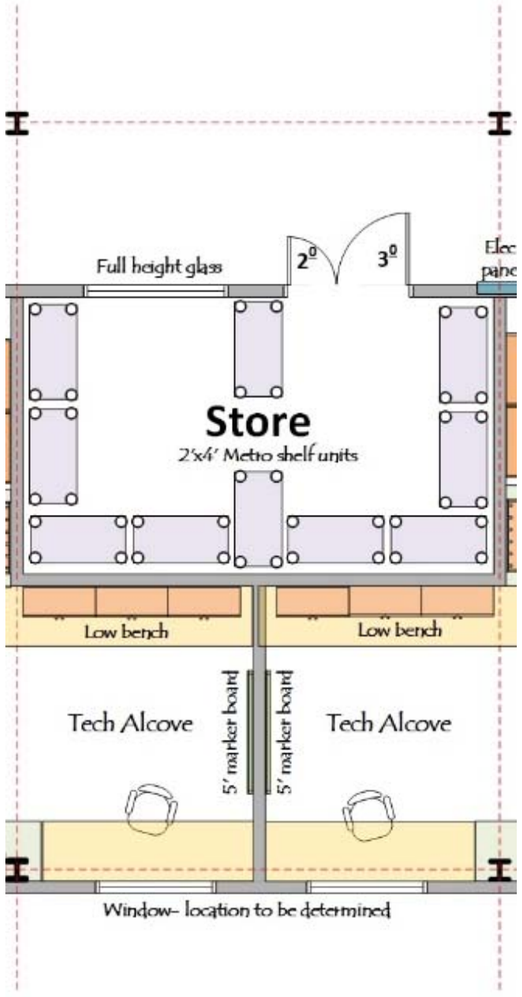
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64 - 78 deg F
Radiant heating/cooling at floor
Natural ventilation
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash
Large floor drain with 8" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Large floor drain with 8" line
Unistrut frame

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks



STORE

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

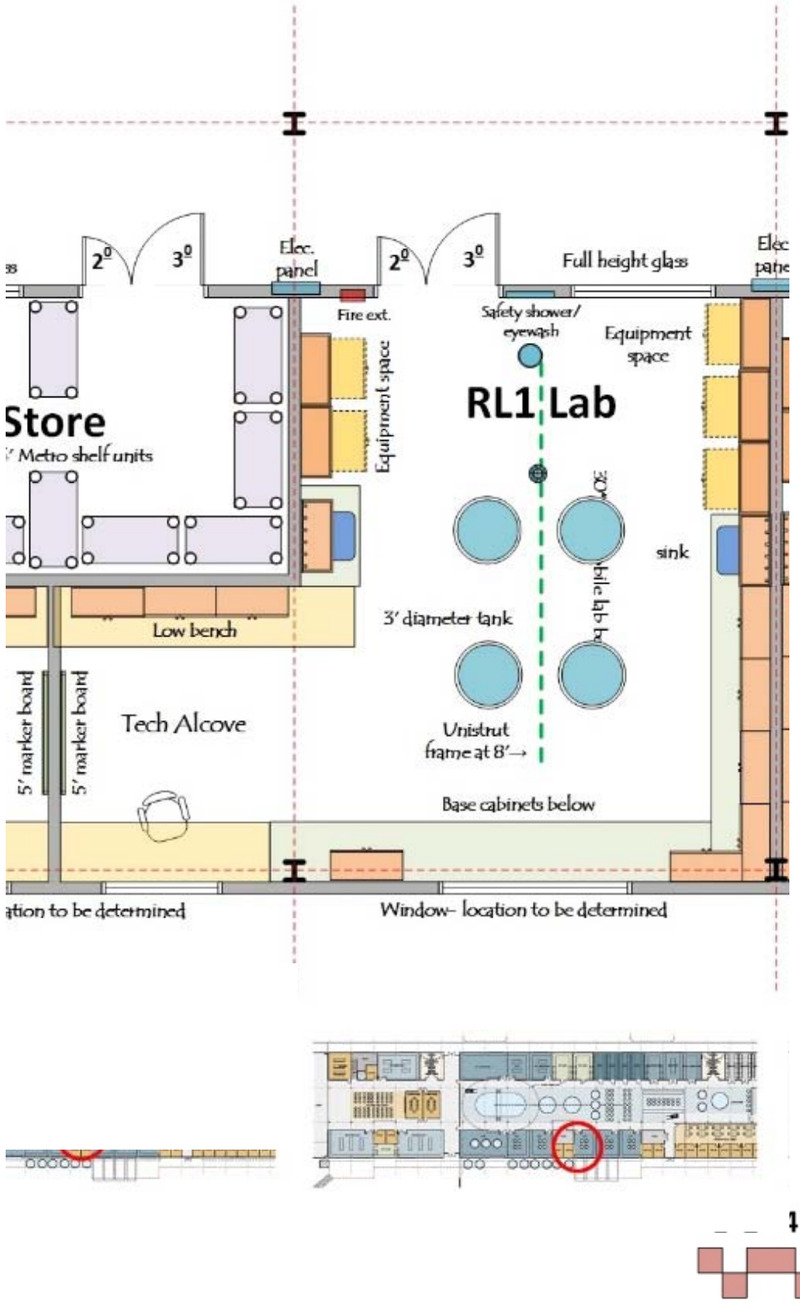
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64-78 deg. F
Radiant heating/cooling at floor
Natural ventilation
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Provide light switches at door

PLUMBING
None

CONTRACTOR FURNISHED EQUIPMENT
Metro shelf units

OWNER FURNISHED EQUIPMENT
Supplies



RL1 LAB

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

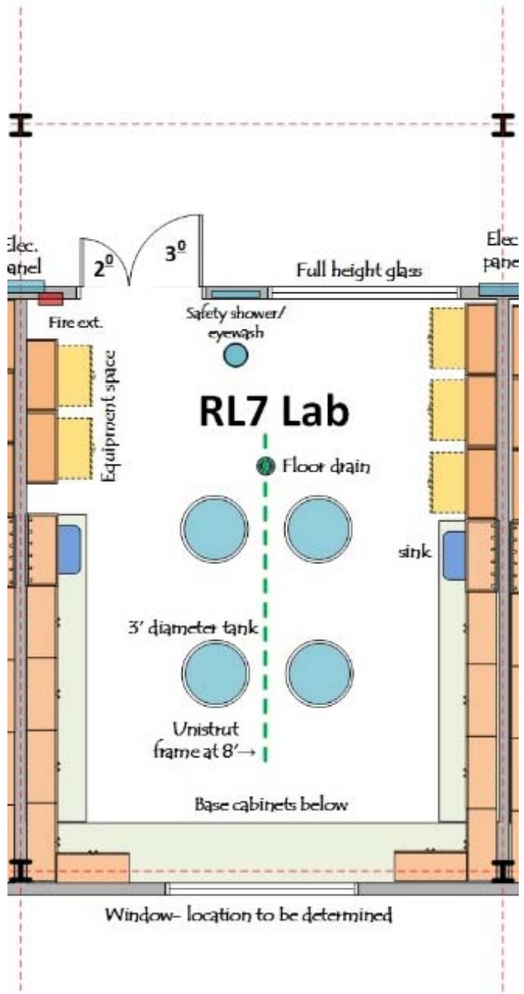
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64 - 78 deg. F
Radiant heating/cooling at floor
Humidity: Ambient

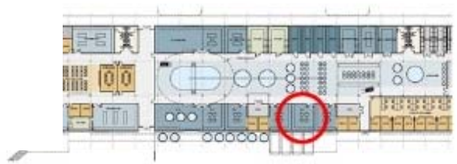
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash
Large floor drain with 8" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Unistrut frame

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks





1' 2' 4' 8'

RL7 LAB

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

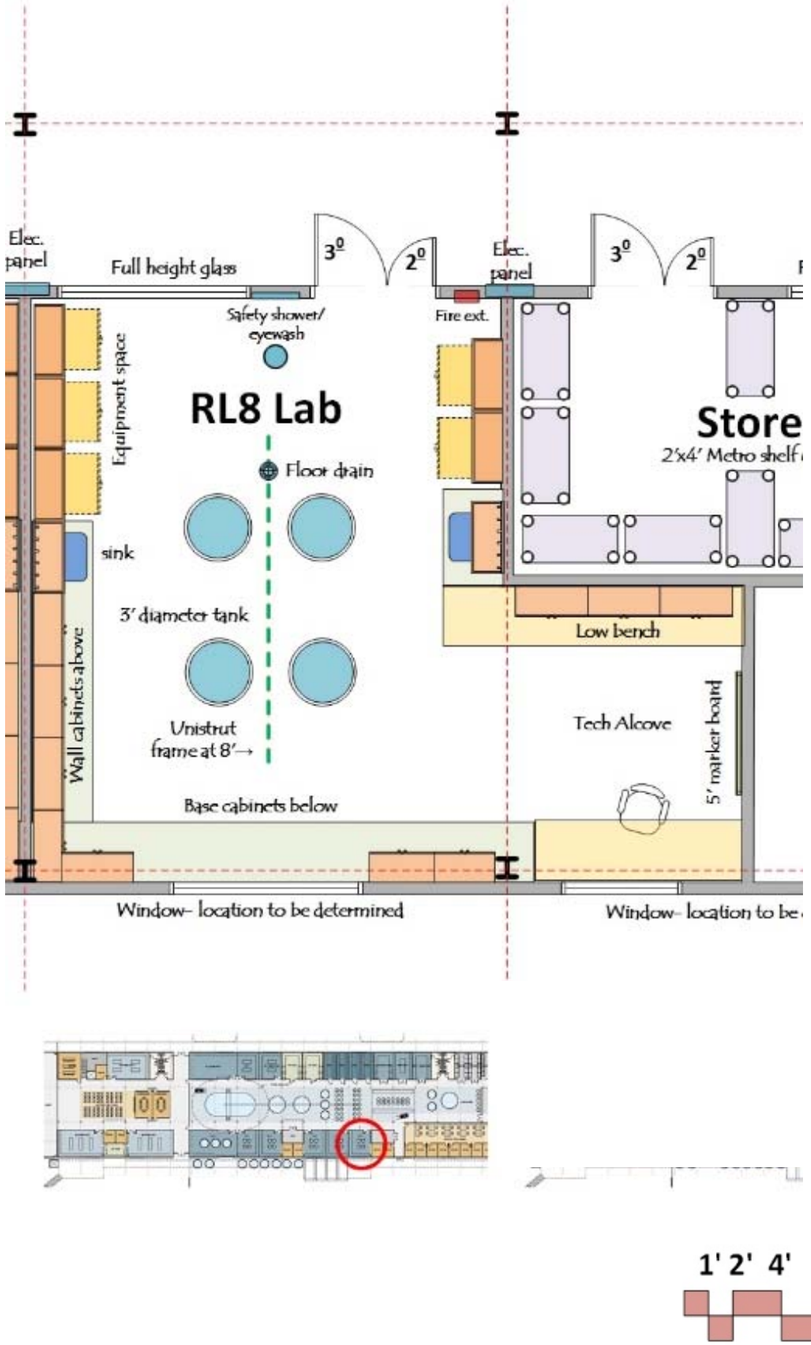
MECHANICAL
Hours of operation: 6 am to 10 pm
Temperature: 64- 78 deg F.
Radiant heating/cooling at floor
Natural Ventilation
Humidity: Ambient

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash
Large floor drain with 8" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Unistrut frame

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks



RL8 LAB

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: sealed concrete
Walls: gypsum board and enamel paint
Ceiling: open to structure
Doors: $3^0/2^0x8^0$ pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

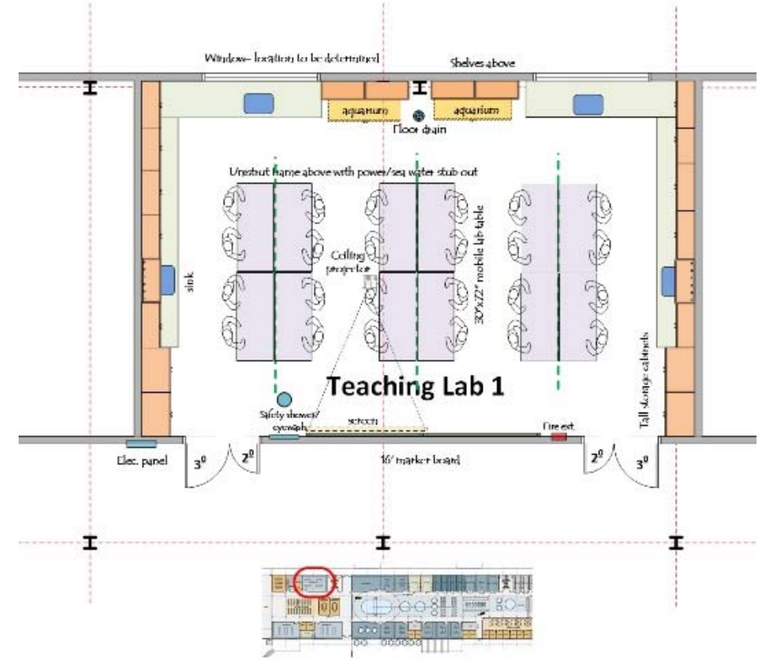
MECHANICAL
Hours of operation: 6 am to 10 pm;
Temperature: 64 – 78 deg. F
Radiant heating/cooling at floor
Natural Ventilation
Humidity: Ambient

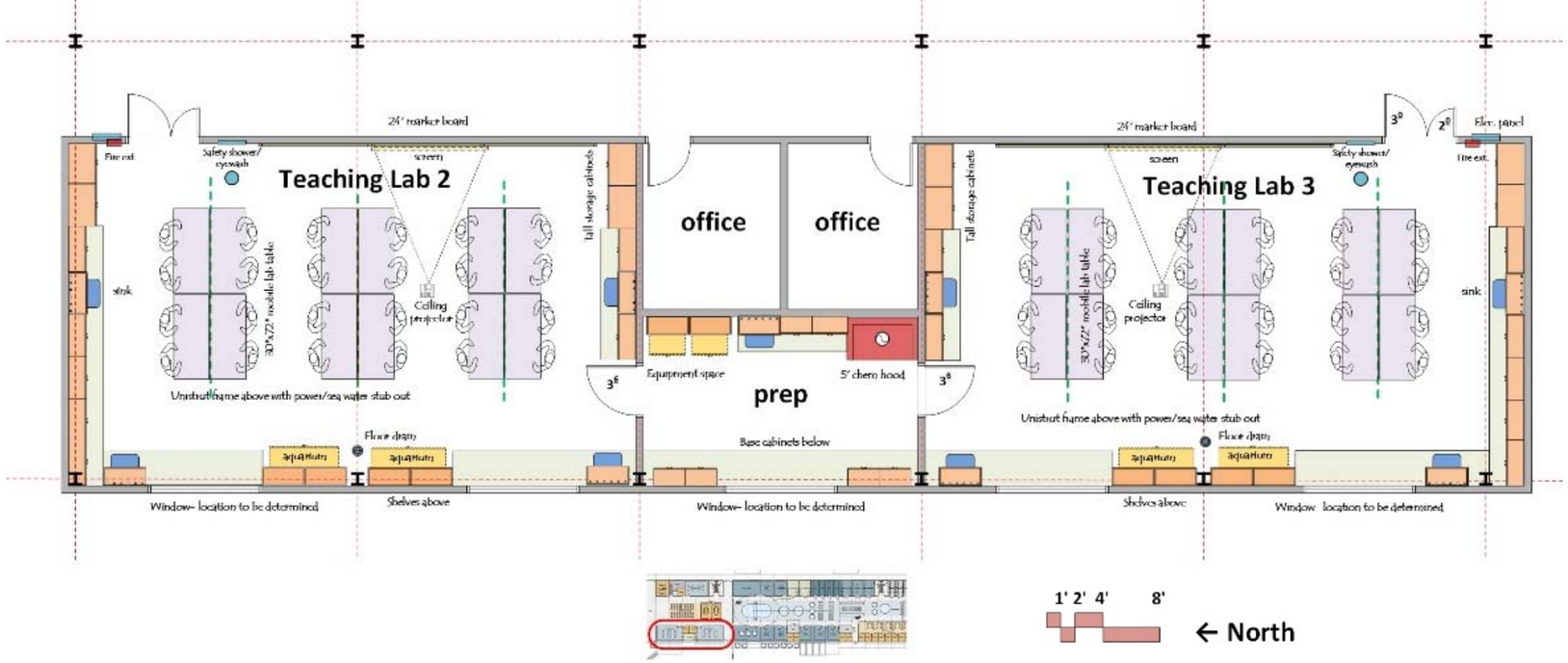
ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash
Large floor drain with 8" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Unistrut frame
Marker board at Tech Alcove

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Water tanks





TEACHING LABS

Program Requirements

ARCHITECTURAL
Occupancy: B
Floor: methyl methacrylate (MMA) with integral coved base
Walls: gypsum board and enamel paint
Ceiling: 10' acoustic tile
Doors: $3^0/2^0$x8^0 pair framed glass
Windows: new windows at east exterior wall
New windows at interior corridor
Daylight attenuation: vertical perforated aluminum blinds at windows
Acoustic Attenuation: NC 40 or less
Security: card reader access

STRUCTURAL
Vibration attenuation: 2,000 microinches per second or less

MECHANICAL
Hours of operation: 6 am to 10 pm; Temperature: 66-74 deg. F, +/- 2 deg. F
100% exhaust- no recirculation of air; Exhaust on emergency power supply
(6) air changes per hour minimum occupied (air change rate may be higher due to equipment heat gain)
(4) air changes per hour unoccupied
Pressure: Lab negative to corridor
Humidity: Ambient; Equipment Heat Gain: 25 btuh/sf

ELECTRICAL
110v fourplex and duplex outlets (maximum of four duplex per circuit)
208v 30 amp single phase outlets
Data & Wireless data
Lighting: indirect fluorescent @ 650 LUX with multi-level switching
Task lights below wall cabinets
Provide light switches at door
Emergency power at equipment

PLUMBING
Hot/Cold water (HW/CW) at sinks with vacuum breakers
Pure water at sinks
Compressed air
Seawater stubout at unistrut frame
Domestic water and drain at safety shower/eyewash
floor drain with 4" line

CONTRACTOR FURNISHED EQUIPMENT
Phenolic resin casework - base cabinets, wall cabinets, tall cabinets
Epoxy resin tops and sinks
316L stainless steel casework hardware
Faucets & fittings
Safety shower/eyewash; Fire Extinguisher
Unistrut frame
Ceiling projector and screen
Chemical Fume hood in Prep Room

OWNER FURNISHED EQUIPMENT
Chairs
Benchtop analytical instruments
Aquaria

Protector® XStream™ Laboratory Hoods

Protector XStream Laboratory Hood 9840600 is shown with SpillStopper Work Surface 9849800, Protector Acid Storage Cabinet 9901100 and Protector Standard Storage Cabinet 9900100. Blower, ductwork, work surface and base cabinets must be ordered separately.

All models feature:

- Modified by-pass airflow design.
- Ergonomic air foil with aerodynamic Clean-Sweep* airflow openings.
- Upper Dilution Air Supply.*
- Glacier white, dry powder epoxy-coated steel exterior.
- Chemical-resistant, fiberglass-reinforced, composite panel liner and pre-set Rear Downflow Dual Baffle System* with flame spread less than 25 per ASTM E-84
- 3/16" thick tempered safety glass vertical-rising sash with epoxy-coated aluminum sash handle with large radius and perforations.*
- Removable front and side panels and front and interior service access panels for access to plumbing and electrical wiring.
- Pre-wired T8 fluorescent lighting, ADA-compliant light and blower switches for 115 volt, 60 Hz operation.
- Sash stop located at 18" sash opening position.
- Epoxy-coated stainless steel, 12.81" ID exhaust connection(s).

*Contact Labconco at **800-821-5525** or **816-333-8811** for ordering information on explosion-proof lighting and other sash configurations and for blower sizing assistance.*

All models conform to the following regulations and standards:

- SEFA 1-2002
- NFPA 45-2000
- ASTM E84-01
- ASHRAE 110-95
- ANSI Z9.5-1993
- UL 3101-1/61010-1
- CAN/CSA C22.2 No. 1010.1
- UL 1805
- CE Conformity Marking (230 volt models)†

Fixtured models feature:

- Two pre-plumbed service fixtures with forged brass valves, lower right side with brass tubing for gas and lower left side with copper tubing for cold water. Components for converting either or both fixtures to air and vacuum are provided. **Inlet tubing is not provided.**
- One pre-wired 115 volt, 20 amp electrical duplex receptacle on lower right side.

All models require (not included):

- ***Remote Blower.*** See back pocket.
- ***Ductwork.*** See back pocket.
- ***Work Surface.*** See pages 92-95.
- ***Base Cabinet or Stand.*** See pages 96-106.

Optional accessories for on-site installation include:

- ***Service Fixture Kits.*** See page 107.
- ***Electrical Duplex Kits.*** See page 108.
- ***Guardian Jr. and Digital Airflow Monitor Kits.*** See page 108.
- ***Distillation Grid Kits.*** See page 110.
- ***Sash Stop Kits.*** See page 108.
- ***Snuffer Fire Extinguishers.*** See page 110.
- ***Ceiling Enclosure and Rear Finish Panel Kits.*** See page 109.

** U.S. Patent No. 6,461,233*

† pending

Heights of switches, electrical receptacle and service fixtures meet requirements of ADA.

■ *Exclusive Feature*

Ordering Information

Protector® XStream™ Laboratory Hoods

ASHRAE 110-95 tests show less than 0.05 ppm leak rate when tested at 4.0 lpm; at OSHA-approved 60, 80, and 100 fpm face velocity and sash positions of 18" and 28". To ensure performance at 60 fpm, Labconco engineers challenged the Protector XStream Hood at less than ideal conditions such as 30 fpm cross drafts, modified ASHRAE test procedures and average face velocities lower than 60 fpm. Contact Labconco for a technical paper with complete ASHRAE test data.

Total Exhaust CFM and Static Pressure @ 18" Sash Opening (60% open)

Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	470	0.11`	380	0.07`	280	0.04`	190	$760
5 feet	610	0.13`	490	0.08`	370	0.05`	240	$960
6 feet	750	0.15`	600	0.10`	450	0.06`	300	$1200
8 feet	1060	0.12`	850	0.08`	640	0.04`	420	$1680

Total Exhaust CFM and Static Pressure @ 28" Sash Opening (100% open)

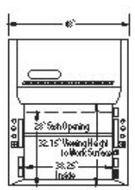
Nominal Width	100 fpm	s.p.	80 fpm	s.p.	60 fpm	s.p.	CFM Savings at 60 fpm vs. 100 fpm	Total Average Annual Dollar Savings at 60 fpm vs. 100 fpm*
4 feet	730	0.25`	590	0.13`	440	0.08`	290	$1160
5 feet	960	0.30`	770	0.19`	580	0.11`	380	$1520
6 feet	1180	0.36`	940	0.23`	710	0.13`	470	$1880
8 feet	1660	0.28`	1330	0.18`	1000	0.10`	660	$2640

**Based on average annual dollars per CFM usage of $4.00; fume hood operating 24 hours a day and 5 days per week (6240 hours per year).*

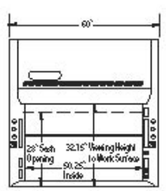
Catalog Number	Nominal Width	Electrical Requirements	Exterior Depth	Interior Working Depth	Fluorescent Lamps	Service Fixtures	Electrical Duplex	Exhaust Collar(s)	Shipping Wt. lbs./kg
9840400	4 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 25 watt	None	None	12.81` ID	400/181
9840401	4 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 25 watt	2	1	12.81` ID	400/181
9840402**	4 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 25 watt	None	None	12.81` ID	400/181
9840403**	4 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 25 watt	2	None	12.81` ID	400/181
9840500	5 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	460/209
9840501	5 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	2	1	12.81` ID	460/209
9840502**	5 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	460/209
9840503**	5 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	2	None	12.81` ID	460/209
9840600	6 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	520/236
9840601	6 feet	115 volts, 60 Hz	39.20`	27.3`	(2) 32 watt	2	1	12.81` ID	520/236
9840602**	6 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	None	None	12.81` ID	520/236
9840603**	6 feet	230 volts, 50 Hz	39.20`	27.3`	(2) 32 watt	2	None	12.81` ID	520/236
9840800	8 feet	115 volts, 60 Hz	39.20`	27.3`	(4) 25 watt	None	None	(2) 12.81` ID	700/318
9840801	8 feet	115 volts, 60 Hz	39.20`	27.3`	(4) 25 watt	2	1	(2) 12.81` ID	700/318
9840802**	8 feet	230 volts, 50 Hz	39.20`	27.3`	(4) 25 watt	None	None	(2) 12.81` ID	700/318
9840803**	8 feet	230 volts, 50 Hz	39.20`	27.3`	(4) 25 watt	2	None	(2) 12.81` ID	700/318

***International electrical configuration*

4 Feet
98404 Series

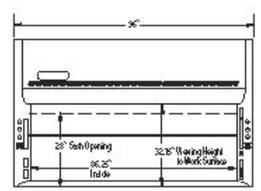


5 Feet
98405 Series

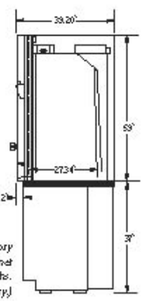


6 Feet
98406 Series

8 Feet
98408 Series



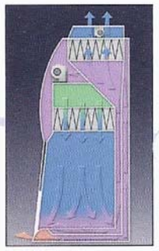
Side View/
All Models



(Side view shown with accessory work surface and base cabinet available for all hood widths. Height can vary.)

PURIFIER® AXIOM™

CLASS II BIOSAFETY CABINETS



Side View: Airflow Diagram

Performance Features

NEW Two operation modes: Type A mode for standard microbiological use and Type B mode for connection to exhaust system when handling hazardous chemical vapors or radionuclides

NEW Dual Electronically Commutated Motors (ECM)

Constant Airflow Profile™ (CAP) Technology airflow monitoring system that provides constant and precise volume of air as required and automatically adjusts as filter load without relying on airflow or pressure sensors

- Low static pressure and volumetric rate exhaust requirements when in Type B mode. No dedicated exhaust system per BSC required as compared to contemporary Class II, Type B biosafety cabinets.

Air-Wave™ Entry System*

Contain-Air™ Negative Pressure Channel*

- MyLogic™ Operating System that controls Smart-Start™ System for allowing the user to program start up and shut down operations and Night-Smart™ System for idling the blower when the sash is fully closed (Night-Smart operational in Type A mode only)
- Built-in interval or elapsed timer for experiment monitoring, fluorescent light or UV light control (on models with UV light)
- Digital clock
- Bright, 90-150 footcandle, glare-free fluorescent lighting located outside the contaminated work area
- Five year warranty

Safety Features

LCD information center with "Filter Life Remaining" bar graph for each HEPA filter, status line for alarm conditions and alerts to warn when filter life diminishes to 20% and 0%

NEW Active Protection Protocol that maintains negative pressure ensuring user safety during normal shut down and exhaust failure (when connected to exhaust in Type B mode).**

- Electronic security lock (optional activation) that requires code to operate the cabinet
- Two electrical duplex receptacles, (single outlets on 230 volt models), located one on each side (GFCI on 115 volt models only)
- Intrinsically safe negative pressure design
- Fully-closing, clear 1/4" tempered safety glass sash
- Stainless steel inlet grille with Reserve-Air™ Secondary Airflow Slots*
- Supply and exhaust 99.99+% efficient HEPA filters. Contact Labconco for optional 99.999% efficient ULPA filters.
- Leak-tight stainless steel interior

Comfort Features

Interior-mounted, line-of-sight, full color LCD information center with easy-to-understand MyLogic™ programming

NEW 22.6" (58 cm) maximum sash opening height and 27.0" (69 cm) viewing height

Waterfall design curved inlet grille forearm support*

NEW Removable, type 304 stainless steel 3-piece work surface (including 2 flat sides and 1 dished center) with lift out knobs and clearly delineated working area (when handling chemicals)**

NEW Catch latch to hold center dished Chem-Zone™ work surface in upright position for easy cleaning of catch pan and sump area

- 10° Angled sash with counterbalanced, anti-racking mechanism for ease of lifting

ADA-compliant touchpad control on right-hand side post for manual activation of blower, light(s), timer, electrical receptacles, audible alarm mute and menu selection

Flush-mounted stainless steel electrical receptacle covers with dampened hinges

NEW Two operational ADA-compliant sash heights. BSC can be programmed on location to have either 8" or 10" sash height.

Specifications

NEW Chem-Zone™ work area with dedicated direct exhaust for use with hazardous vapors or radionuclides**

- Nominal inflow velocity of 105 feet per minute (fpm) (0.53 m/sec)
- Nominal downflow velocity of 65 fpm (0.33 m/sec)
- Powder-coated steel exterior
- NSF International-Listed† and modified ASHRAE 110 compliant
- ETL listed†
- CE conformity marking† (230 volt models)
- Class 5 conditions per ISO 14644-1 and -2 (formerly Class 100)

Options

- Unassembled, NSF-Approved, powder-coated steel telescoping base stand with fixed feet
- Accessory Package: 254 nm UV lamp, ADA-compliant service fixture(s) with ball-type valve(s), and NSF-Approved Vacu-Pass™ Cord & Cable Portal
- 10" diameter stainless steel air-tight manual damper (recommended if connected to exhaust in Type B mode)
- Bag-In Bag-Out Exhaust Filter for use with radionuclides or harmful pharmaceutical compounding ingredients

Required Accessory

- Supporting base if unassembled stand option is not selected

NSF ETL CE

*U.S. Patent No. 6,368,206 **Patent pending †Pending

Exclusive Labconco feature

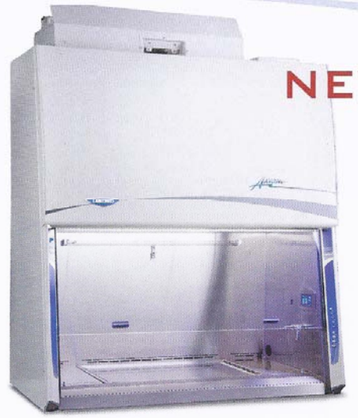
Complies with Americans with Disabilities Act Standard for height of controls and receptacles

Protecting your laboratory environment
LABCONCO

PURIFIER® AXIOM™ CLASS II BIOSAFETY CABINETS

CATALOG NUMBER CONFIGURATOR

Use this key to configure the **nine digit catalog number** to order your Purifier Axiom Class II Biosafety Cabinet. For example, a 304411100 is a 4' Purifier Axiom Class II Biosafety Cabinet with 10" sash opening, service fixture, UV lamp, Vacu-Pass Portal, unassembled base stand and North America, 115 volt electrical receptacle and plug.



STEP 1: Select the width of your cabinet. This number is the fourth digit of your catalog number.

4 = 4' (Actual width = 54.3"/138 cm)

6 = 6' (Actual width = 78.3"/199 cm)

STEP 2: Select the sash opening height. This number is the fifth digit of your catalog number.

1 = 10" (25.4 cm)

8 = 8" (20.3 cm)

3 0 4

STEP 3: Select the Accessory Package option: service fixture(s), UV lamp and Vacu-Pass™ Cord & Cable Portal. This number is the sixth digit of your catalog number.

0 = None

1 = Includes a right-side mounted factory-installed service fixture (two on 6' models, one on each side), UV lamp with timer, and right-side wall Vacu-Pass Portal.

STEP 4: Select non-welded telescoping base stand option. This number is the seventh digit of your catalog number.

0 = None

1 = Includes an non-welded telescoping base stand shipped with the cabinet.

STEP 5: Select the electrical receptacle and plug type. This number is the eighth and ninth digits of your catalog number.

00 = North America, 115 volts, 20 amps

10 = North America, 230 volts

20 = Japan, 100 volts, 20 amps

30 = Schuko, 230 volts

40 = China/Australia, 230 volts

50 = British (UK), 230 volts

70 = India, 230 volts

Technical Specifications

Nominal Width	4'	6'
Actual Width	54.2" (138 cm)	78.2" (199 cm)
Depth	32.0" (81 cm)	32.6" (83 cm)
Height	68.9" (175 cm)	68.9" (175 cm)
Shipping Weight (Cabinet only)	750 lbs. (340 kg)	1075 lbs. (488 kg)
Shipping Weight (Cabinet with Base Stand)	835 lbs. (379 kg)	1175 lbs. (533 kg)
Power Consumption	200 watts	325 watts
Exhaust Volume, 10" Sash Opening	480 CFM @ 0.3" s.p.	684 CFM @ 0.3" s.p.
Exhaust Volume, 8" Sash Opening	387 CFM @ 0.3" s.p.	556 CFM @ 0.3" s.p.

Protecting your laboratory environment
LABCONCO

LABCONCO CORPORATION • 8811 Prospect Avenue • Kansas City, MO 64132
800-821-5525 • 816-333-8811 • www.labconco.com

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2-17-8/20/14

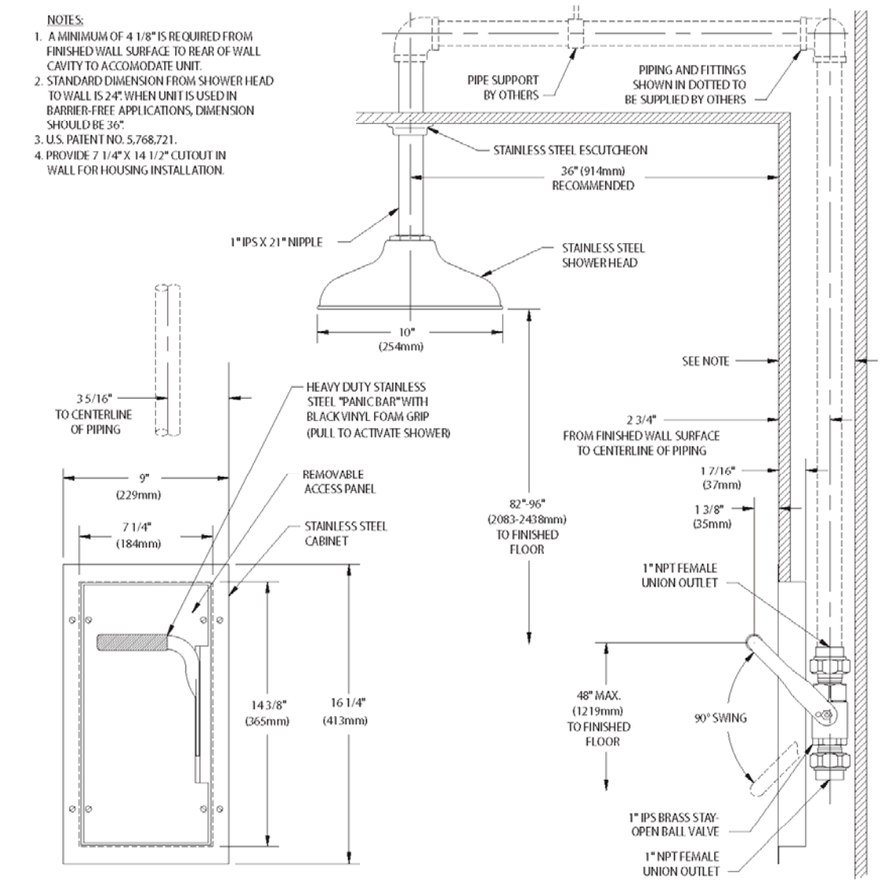
SAFETY SHOWER CUT SHEET

Requires drain connection at eyewash inside wall cavity
Provide floor drain below each eyewash

WaterSaver

Recessed Laboratory Units

ESBF670 Recessed Emergency Shower, Exposed Shower Head



Sign Included

THIS SPACE FOR ARCHITECT/ENGINEER APPROVAL

Due to continuing product improvement, the information contained in this document is subject to change without notice. All dimensions are ± 1/4" (6mm). rev. 0913

WaterSaver
701 W Erie St
Chicago IL 60654

312 666 5500 TELEPHONE
312 666 5501 FACSIMILE
wsflab.com

Listed 8116. Units have been tested to and comply with ANSI Z358.1-2009 and the Uniform Plumbing Code.

ETL Listed 101496. Units have been tested to and comply with ANSI Z358.1-2009.

WaterSaver

Recessed Laboratory Units

ESBF670 Recessed Emergency Shower, Exposed Shower Head

Application: Recessed emergency shower with ceiling mounted exposed shower head. Recessed shower conserves valuable floor space, while eliminating the clutter and obstruction created by conventional shower equipment. Unit can be installed in either a corridor or a lab room, close to where accidents might occur.

ADA Compliance: When installed at recommended mounting heights, unit complies with ADA requirements for accessibility by handicapped persons.

Shower Head: 10" diameter stainless steel. Furnished with vertical supply pipe and ceiling escutcheon for mounting shower head at desired height below finished ceiling.

Valve: 1" IPS brass stay-open ball valve with stainless steel "panic bar." Pulling bar down activates shower; shower remains in operation until bar is returned to original closed position. Furnished with stainless steel access panel and 1" IPS unions for valve.

Pipe and Fittings: Exposed pipe and escutcheon are brushed stainless steel.

Supply: 1" NPT female inlet.

Sign: ANSI-compliant identification sign.

U.S. Patent 5,768,721

Available Options

- **FC20** Regulates shower flow rate to 20 GPM.
- **AP250-065 Modesty Curtain**
  Modesty curtain for wall mounting.
- **AP280-235 Electric Light and Alarm Horn**
  Flashing light/alarm horn unit is recess mounted in finished wall. Light is illuminated and horn sounds when shower is activated. Includes additional leads for remote monitoring.
- **TMV** AP3800 thermostatic mixing valve precisely blends hot and cold water to deliver tepid water as required by ANSI Z358.1-2009.

Note: Shown with optional AP280-235 electric light and alarm horn unit (sold separately).

HOT/COLD WATER FAUCET CUT SHEET

Faucet operates as hands free with infrared sensor or manually with blade handles.

Requires duplex power outlet below each sink.

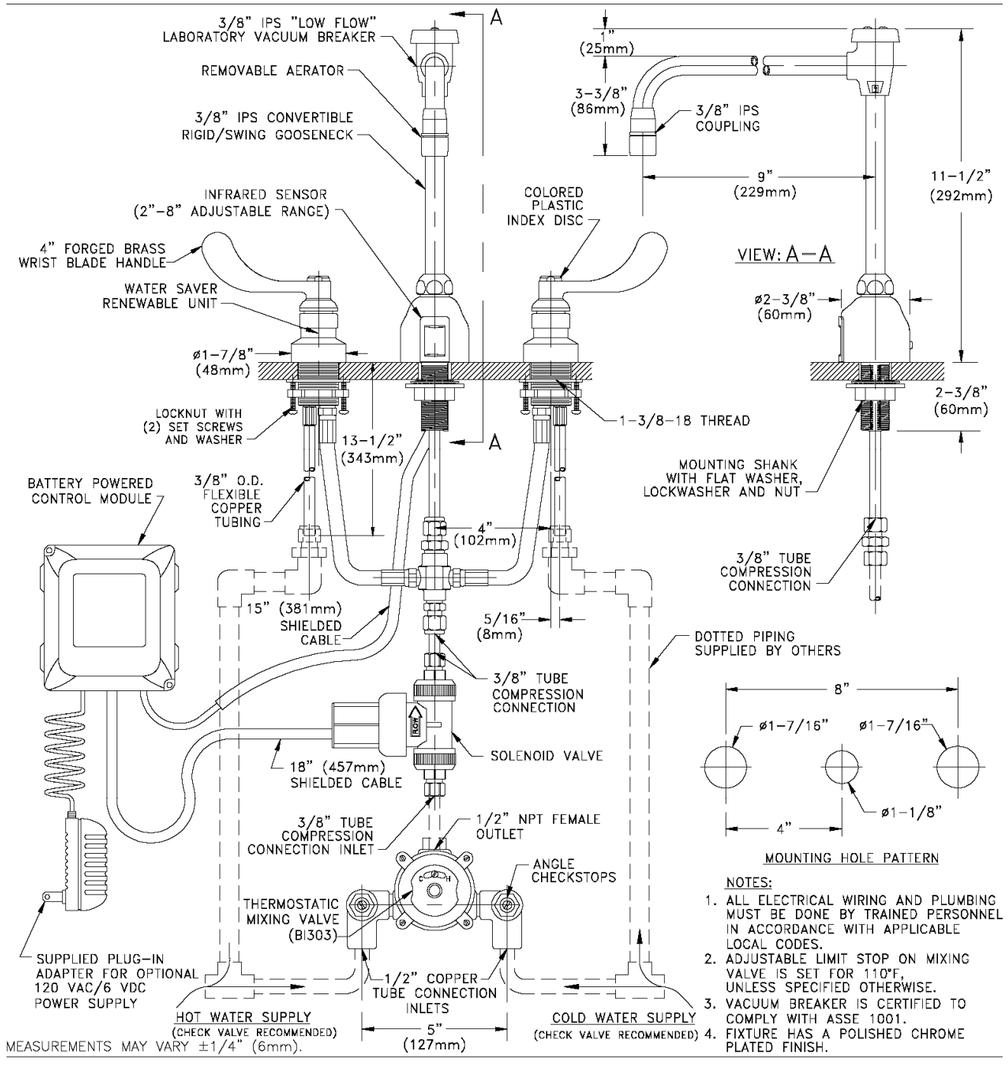
WaterSaver
INNOVATIVE PRODUCTS FOR RESEARCH

WaterSaver Faucet
701 W Erie St
Chicago, IL 60654

312 666 5500 TELEPHONE
312 666 5501 FACSIMILE
wsflab.com

L4544-9VB55BH303

DUAL ACTIVATION FAUCET, DECK MOUNTED, 9" RIGID/SWING VACUUM BREAKER GOOSENECK, OPTIONAL BATTERY OR PLUG-IN ADAPTER POWER SUPPLY, WRIST BLADE HANDLES, AERATOR, THERMOSTATIC MIXING VALVE



Drawing Number: _____ Revision Number: 101514-KJS

HOT/COLD WATER SPRAY FAUCET CUT SHEET

WaterSaver
INNOVATIVE PRODUCTS FOR RESEARCH

WaterSaver Faucet
701 W Erie St
Chicago, IL 60654

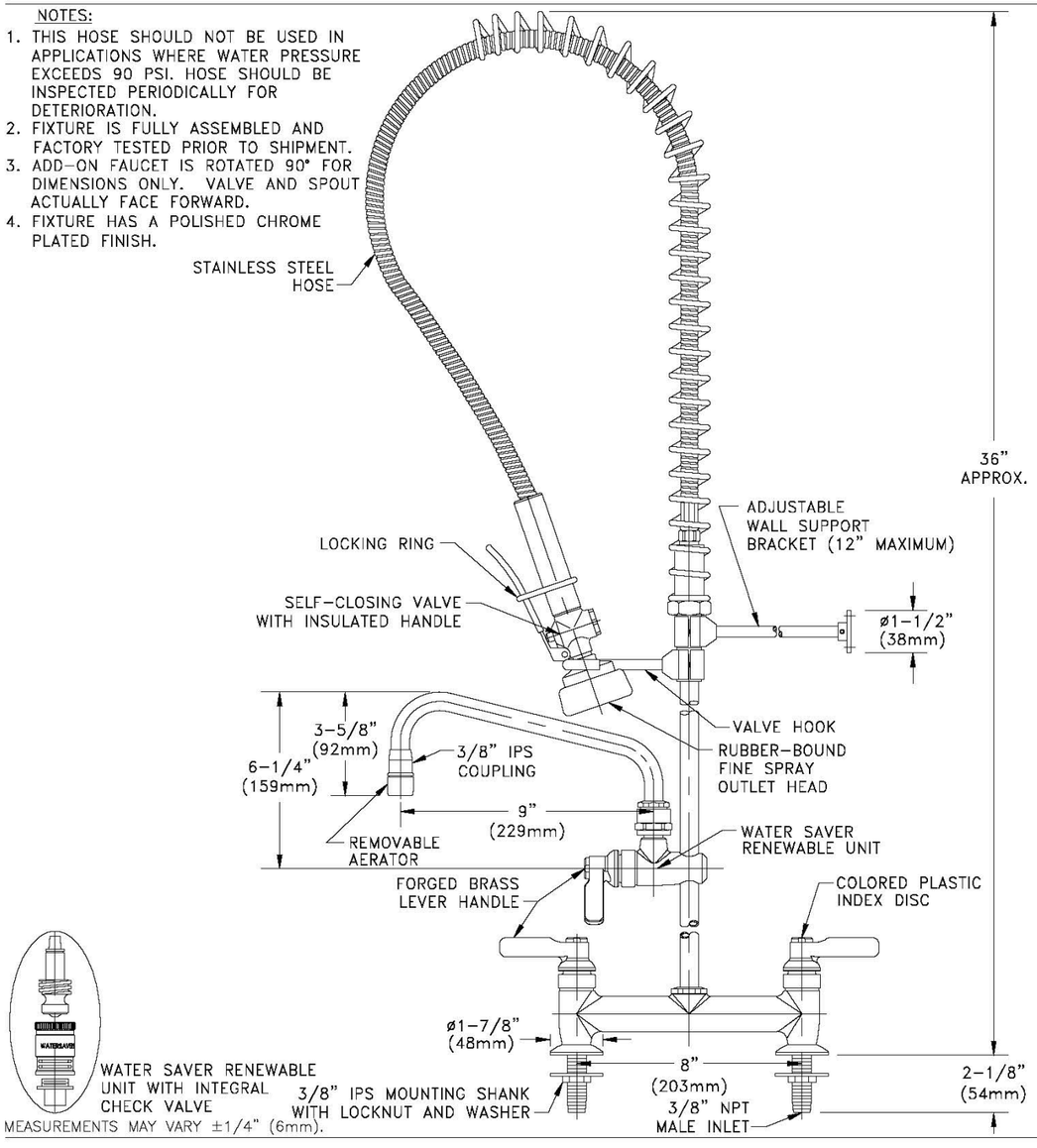
312 666 5500 TELEPHONE
312 666 5501 FACSIMILE
wsflab.com

PR1511AOF–LE–WSA

PRE–RINSE UNIT, HOT AND COLD WATER, DECK MOUNTED, ADD–ON FAUCET, 9" SWING SPOUT, LEVER HANDLES

NOTES:

1. THIS HOSE SHOULD NOT BE USED IN APPLICATIONS WHERE WATER PRESSURE EXCEEDS 90 PSI. HOSE SHOULD BE INSPECTED PERIODICALLY FOR DETERIORATION.
2. FIXTURE IS FULLY ASSEMBLED AND FACTORY TESTED PRIOR TO SHIPMENT.
3. ADD–ON FAUCET IS ROTATED 90° FOR DIMENSIONS ONLY. VALVE AND SPOUT ACTUALLY FACE FORWARD.
4. FIXTURE HAS A POLISHED CHROME PLATED FINISH.



MEASUREMENTS MAY VARY ±1/4" (6mm).

Drawing Number: _____ Revision Number: 042213–TEC

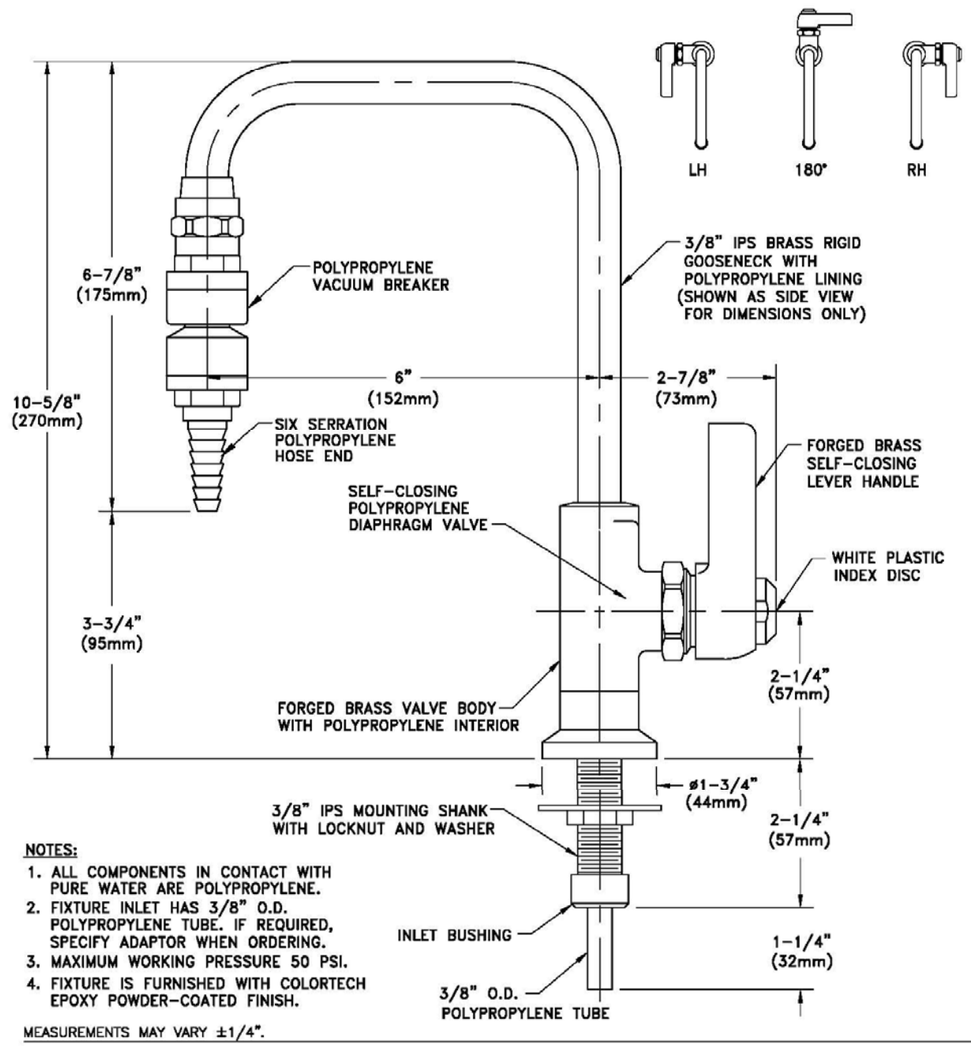
COLORTECH

701 West Erie Street Phone 312 666 5500
Chicago, Illinois 60610 Fax 312 666 8597

Laboratory Service Fixtures by
WaterSaver Faucet Co.

CT7853SC-7110-LE

DECK MOUNTED FIXTURE FOR DISTILLED, DEIONIZED AND ULTRA-PURE WATER WITH ALL-POLYPROPYLENE INTERIOR LINING, 6" RIGID GOOSENECK, SELF-CLOSING OPERATION, POLYPROPYLENE VACUUM BREAKER AND LEVER HANDLE



NOTES:

1. ALL COMPONENTS IN CONTACT WITH PURE WATER ARE POLYPROPYLENE.
2. FIXTURE INLET HAS 3/8" O.D. POLYPROPYLENE TUBE. IF REQUIRED, SPECIFY ADAPTOR WHEN ORDERING.
3. MAXIMUM WORKING PRESSURE 50 PSI.
4. FIXTURE IS FURNISHED WITH COLORTECH EPOXY POWDER-COATED FINISH.

MEASUREMENTS MAY VARY ±1/4".

Drawing Number: _____ Revision Number: 090497-WK

UNDERCOUNTER WASHER CUT SHEET

Requires 208v power
Location: to be determined

SteamScrubber® Laboratory Glassware Washers

SPECIFICATIONS & ORDERING INFORMATION

SteamScrubber Laboratory Glassware Washer 4400330 is shown with 48-Pin Insert 4591601, Petri Dish Insert 4589701, Bulk Tube Insert 4542100, Utensil Holder 4542500 and BOD Bottle Insert 4589201.

All models feature:

- Upper and lower standard open racks of Type 304 stainless steel
- LCD information center, Display button, Run/Cancel button, scroll buttons and selection buttons to program and monitor cycles
- Pump to recirculate 96 gal/min (363 liters) when operated on 115 Volts, 60 Hz and 230 Volts, 50 Hz and 112 gal/min (424 liters/min) on 230 Volts, 60 Hz
- Drain pump to evacuate over 7 gal/min (26 liters/min)
- Purified water pump to bring non-pressurized or pressurized purified water into the tank for up to six pure water rinses
- Steam generator that produces hot vapor before the WASH 2 cycle (RINSE ONLY and PLASTIC programs excluded)
- Aluminum-backed insulation and fiberglass blanket for thermal and sound insulation
- Operation at 58 decibels
- Manual-fill detergent dispenser for powder or liquid detergent
- Manual-fill rinse aid solution dispenser
- Forced air drying programmable up to 99 minutes and from 38-70°C (100-158° F)
- Seven factory-set cycle programs: RINSE ONLY, PLASTIC, GLASS, GLASS PLUS, SCIENCE, SCIENCE PLUS, and DRY ONLY. All 208/230 Volt models have three additional programs for a total of ten: INTENSE, INTENSE PLUS and EXTREME.
- Two user-set cycle programs
- Alarms with display for HOT GLASS, PLEASE WAIT, WATER LOW, WATER HIGH, OVERFLOW, LIQ DETER, RINSE AID DRAIN FAIL and LOW TEMP. Audible alarms self cancel after one minute.
- User-set delayed start (up to 8 hours)
- Type 304 stainless steel top, door, tank, upper, middle and lower wash arms. Freestanding models also have stainless steel exterior sides and top.
- One-piece, stainless steel, fine mesh particle drain filter
- Four leveling feet
- 3/8" Female NPT inlet fitting for hot tap water connection
- Factory-installed drain hose and band clamp
- Two year warranty on parts and labor
- Made in the U.S.A.
- IQ/OQ available. Visit www.labconco.com or call 800-821-5525.

All models conform to:

- UL 3101-1/61010-1
- CAN/CSA C22.2 No. 1010-1
- CE Conformity Marking (208/230 Volt models only)

All models require:

- Minimum inlet water temperature 49° C (120° F)
- Recommended inlet water temperature 60° C (140° F)
- Minimum purified water pressure 0 psi
- Water consumption per fill 3.4 gallons (13 liters)
- Hot tap water pressure at the washer 20-120 psi (138-827 KPa)
- Hot tap water flow rate 1.25 gallons (4.7 liters) per minute
- 3/8" OD copper tubing for connection to the water inlet valve
- Purified water with supply piping minimum 3/8" ID to permit at least 0.9 gallon (3.4 liters) per minute flow

Options include:

- Freestanding and undercounter styles
- Water temperature to 82° C (180° F) on 115 Volt models and 93° C (199° F) on 230 Volt models
- Clear tempered safety glass viewing window and 25-watt interior light that illuminates when door is latched

Optional accessories and companion products on pages 18 - 22 include:

- Base Stand
- Upper and Lower Spindle Racks
- Baskets and Inserts
- Freestanding-to-Mobile Conversion Kits
- Drain Water Cooling Kit
- LabSolutions Detergents and Rinse
- ScrubberMate Cart, Glassware Carts and Carboy Caddy
- WaterPro RO Stations and accessories

Catalog #	Style	Electrical Requirements	Maximum Internal Water Temperature	Viewing Window and Light	Overall Dimensions with Door Closed	Shipping Weight
4400320	Undercounter	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	No	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400321	Undercounter	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	No	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400330	Undercounter	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	Yes	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400331	Undercounter	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	Yes	24.1" w x 27.4" d x 34.1-36.1" h	206 lbs. (93 kg)
4400420	Freestanding	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	No	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400421	Freestanding	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	No	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400430	Freestanding	115 Volts, 60 Hz, 16 Amps	82° C (180° F)	Yes	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)
4400431	Freestanding	208/230 Volts, 50/60 Hz, 12 Amps	93° C (199° F)	Yes	24.2" w x 27.5" d x 34.2-36.2" h	235 lbs. (107 kg)

Exclusive Labconco feature

SteamScrubber® Laboratory Glassware Washers

FEATURES & BENEFITS

For washing and drying primarily beakers and other wide-mouth or specialized glassware.

Steam generator. Produces hot vapor to penetrate and soften dried contaminants for more effective cleaning.

Forced air drying system. Hot air is blown into the tank to dry glassware. No separate dryer or oven is needed.

Dual pumps, one for washing and one for draining, reduce the potential for cross contamination.

Powerful pump recirculates water at a high rate to dislodge dried contaminants for thorough cleaning. Water recirculates at 96 gal/min (363 liters/min) on 115 Volt, 60 Hz and 230 Volt, 50 Hz models and 112 gal/min (424 liters/min) on 230 Volt, 60 Hz models.

Versatile rack options. The standard open racks are interchangeable with optional upper and lower spindle racks. Additional racks are sold separately. See page 18.

User-set delayed start (up to 8 hours) may be programmed so that the washer operates during off-peak hours when electricity may be less expensive and more plentiful.

Up to 6 pure water rinses may be programmed. A built-in purified water pump draws from a storage tank or pressurized source for final rinses.

360° rotating upper, middle and lower wash arms distribute water and detergent.

Full two year warranty. Is provided against defects in materials and workmanship.

Attractive and durable Type 304 stainless steel door and tank. Free-standing models also have stainless steel sides and top.

INCLUDES Upper and lower stainless steel standard open racks. Accommodate a variety of accessory inserts holding the broadest range of glassware. Inserts are sold separately. See pages 18 and 19.

Detergent dispenser for powder or liquid detergent. Releases a manually premeasured amount ensuring clean labware.

Sanitizing high heat. Water temperature reaches 93° C (199° F) on 230 Volt models to sanitize glassware and for enhanced washing, rinsing and faster drying.

Quiet, energy-efficient operation at 58 decibels. Aluminum-backed, sound-deadening insulation and fiberglass blanket absorb noise and optimize internal tank temperature to conserve energy.

Rinse solution dispenser. Allows manual addition of mildly acidic rinse to alter pH and eliminate alkaline detergent carry-over. The dispenser holds approximately 170 milliliters, enough for 40 or more cycles.

Alarms sound and/or display on the LCD to alert the user to abnormal or unsafe events such as HOT GLASS and OVERFLOW.

Optional clear tempered safety glass viewing window with 25-watt interior light allows observation of the cycle in progress. Available standard on some models.

ETL-listed. Washers carry the ETL mark signifying they are certified to UL Standard 3101-1/61010-1 and CAN/CSA C22.2 No. 1010.1.

CE Mark. Washers conform to the CE (European Community) requirements for electrical safety and electromagnetic compatibility.

Made in U.S.A.

Exclusive Labconco feature

LOCAL EXTRACTOR

TERFU

Local extractor with friction joint for worksites where great flexibility is important, in 2" and 3" diameter

TERFU is a local extractor with friction joints designed for use in worksites where great flexibility is required, e.g. laboratories and the electronics industry.

The friction joints with ball bearings make positioning convenient and simple.

The TERFU is a very flexible local extractor that stays in position when adjusted, due to the easily adjustable joints, 360° swivel, brackets and support springs.

All necessary adjustments of joints etc. can easily be made with one hand. The smooth aluminum tubes and easily dismantled plastic joints facilitate cleaning the inside of the suction tubes. Should it be necessary, the complete extractor can easily be dismantled.

The standard TERFU is supplied with an air tight damper and delivered with white plastic joints & anodised aluminum tubes, for table, ceiling or wall mounting.

TERFU Ø3" diameter is available with recyclable polypropylene (PP) tubes. For the PP-design, all metal components that will be in contact with the air flow are made of stainless steel.

TERFU is also available in ESD design with ESD approval according to EN 100015-1.

Movex also offers a range of fans, accessories and automatic control devices for our local extractors

MOVEX®
EXTRACTORS

SNORKEL EXHAUST CUT SHEET

Locate above necropsy table

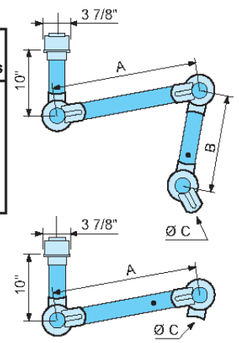
TERFU for ceiling mounting

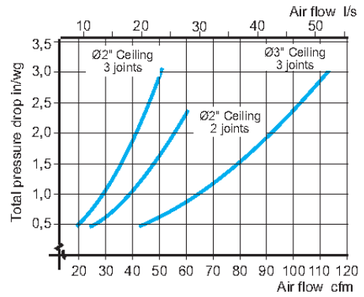
3 joints

Part			Measure inch			Max
Standard	PP	ESD	A	B	Ø C	radius
T 1000-50	-	ESD	16"	12"	2"	40"
T 1300-50	-	ESD	22"	18"	2"	51"
T 1500-50	-	ESD	30"	18"	2"	60"
T 1000-75	PP	ESD	16"	12"	3"	40"
T 1300-75	PP	ESD	22"	18"	3"	51"
T 1500-75	PP	ESD	30"	18"	3"	60"
T 2000-75	PP	ESD	40"	26"	3"	80"

2 joints

Part		Measure inch		Max
Standard	ESD	A	Ø C	radius
T 650-50	ESD	12"	2"	28"
T 750-50	ESD	18"	2"	34"





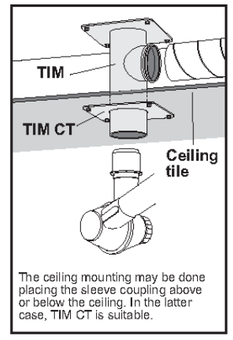
Delivery design
Assembled without hood or suction nozzle.
Ceiling bracket is ordered separately, see below.

Ceiling bracket TIM

Designed for ceiling mounting, suitable for Ø2" and Ø3" arm, 5 standard lengths with side connection to duct Ø4". Standard design: powder-coated sheet steel. Also available in ESD-design and stainless steel. Adapted lengths and duct connections available on request.

Part			Measure
Standard	Stainless	ESD	L inches
TIM 250	RF	ESD	10"
TIM 500	RF	ESD	20"
TIM 750	RF	ESD	30"
TIM 1000	RF	ESD	40"
TIM 1500	RF	ESD	60"

Other information
Material ..... Powder-coated sheet steel, white or stainless sheet steel 304 grade
Weight ..... 4,4-7 lb
Connection .... Ø4"



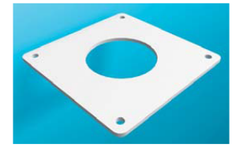
The ceiling mounting may be done placing the sleeve coupling above or below the ceiling. In the latter case, TIM CT is suitable.

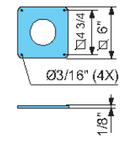
Escutcheon plate TIM CT

Escutcheon plate, used with ceiling mounting TIM for stability and to cover the ceiling tile hole. Made of polypropylene.

Part TIM CT

Other information
Material ..... white polypropylene
Weight ..... 1,5 oz



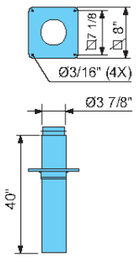


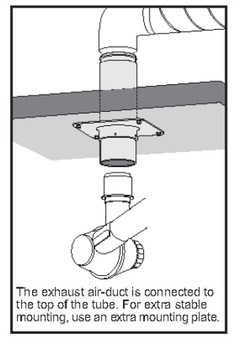
Ceiling bracket TIF 1000

Designed for ceiling mounting, suitable for Ø2" and Ø3" arm, for extracting exhaust air vertically. Mounting plate and pipes delivered unassembled to facilitate adjusting final assembly height. Standard design: powder-coated sheet steel. Also available in ESD-design and stainless steel.

Part		
Standard	Stainless	ESD
TIF 1000	RF	ESD

Other information
Material ..... Powder-coated sheet steel, white or stainless sheet steel 304 grade
Weight ..... 6,5 lb
Connection .... Ø4"





The exhaust air-duct is connected to the top of the tube. For extra stable mounting, use an extra mounting plate.