




MODEL 85U



CLASS I, DIVISION 1 GROUP D EXTRACTION BOOTH

DIMENSIONS	
INTERIOR SF	85 FT ²
EXTERIOR DIMENSIONS	10'0" W x 10'3" L x 8'5" H
INTERIOR DIMENSIONS	9'9" W x 8'9" L x 8'2" H
DOOR DIMENSIONS	3'0" W x 7'0" H
MAX HEIGHT W/ FAN	9'8" H
CONSTRUCTION	
PANELS (37)	18-ga powder coated steel. Meets NFPA 33 (2018) 5.3.2 construction requirements. Note: These panels do not have a fire rating.
DOOR (1)	90-min. fire-rated, 18-ga steel LHR door with 7"x22" window & panic bar.
ANCHORS (51)	1" Drop Anchors (460lbs Pullout, 490lbs Shear, estimated at 25% of ultimate value. 3 Anchors per panel.)
UTILITY PENETRATIONS	(2) 3/4", (4) 1 1/8", (8) 1 3/8", (2) 1 3/4" penetrations with fire-rated hole seals. (All penetrations shall be sealed in accordance with the NEC.)
ELECTRICAL	
ELECTRICAL SUPPLY	(1) 20-amp 208VAC, 60Hz, 1 PH circuit. (Circuit should exclusively provide power for booth. All system components are powered by Control Panel.)
FULL LOAD AMPERAGE	FLA @ Purge Air Flow Rate: 15 amps. FLA @ Base Air Flow Rate: 8 amps.
CONTROL PANEL (1)	UL-Listed, UL 508A, (2) 1 to 3 Phase Variable Speed Drives, Micro PLC. Control Panel outputs can be connected to HVAC control systems and building fire control panels as required by your AHJ.
CONTROL SETTINGS (3)	Off / Fan On / Fan and Lights On
GAS SENSOR (1)	UL Listed Infrared, Class I, Division 1 explosion-proof sensor
LIGHT FIXTURES (1)	UL Listed 2-tube, Class I, Division 1, Ceiling drop mount
EMERGENCY LIGHT (1)	UL Listed Infrared, Class I, Division 1, Ceiling mount, CFL, 120-277V
CONDUIT & FITTINGS	All hazardous location electrical conduit and sealing fittings for the booth components are provided. Conduit runs from the control panel to booth penetrations are provided by customer and can be of EMT construction.
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VENTILATION	
HVAC HARDWARE	(2) 12" Explosion-proof fan package. (Fans, motors, pulleys, and belts)
AIR FLOW RATES (2 Speeds)	Min. Base Air Flow Rate: 500 CFM, Min. Purge Air Flow Rate: 1500 CFM (Minimum flow rates ensure exhaust concentrations never exceed 25% LEL of flammable solvents)
PLENUM DESIGN	Supply and exhaust designed to place greatest amount of air movement near floor surface and working surfaces. (At Purge Air Flow Rate, the bottom 12" cross-section of the booth tests at over 100 linear feet per minute.)
ALARMS	
LIGHT ALARM (1)	Amber, rated for Class I, Division 2 hazardous locations
SOUND ALARM (1)	24V DC, 109 Db @ 1M, rated for unclassified locations
ALARM SET POINTS (2)	Base Air Flow Rate up to 10% of Lower Explosive Limit Amber Light Alarm + Purge Air Flow Rate at 10% of LEL Amber Light Alarm + Purge Air Flow Rate + Sound Alarm at 25% of LEL
OTHER	
FIRE SUPPRESSION	Available upon request at an additional price. Any Fire Suppression Systems installed on the HAL Extraction Booth must be an automatic stand-alone unit, listed for use in hazardous locations, or an automatic sprinkler system from the building.
ODOR MITIGATION	Not included
INSTALLATION AND ASSEMBLY	HAL Extraction does not provide installation. A licensed electrician is required to connect the booth to the building power supply and connect control panel to booth components. HAL Extraction recommends using a mechanical engineer to design ducting connected to a HAL Extraction Booth.
COMPLIANCE	
UL CERTIFICATION	Booth System certified by UL category code QMCV. File # E47776
ENGINEERING PEER REVIEW	Peer Reviewed by Pressure Safety Inspectors (PSI) licensed in AZ, CA, CO, FL, HI, MA, MD, ME, MI, NV, OH, OR, PA, WA
DESIGNED CODE COMPLIANCE	The HAL Extraction Booth is designed to comply with applicable codes in: NFPA 1 (2018); NFPA 30 (2018); NFPA 33 (2018); NFPA 58 (2017); NFPA 70E (2018); NFPA 91 (2015); AZ Fire Code 2016; CA Fire Code 2016; International Fire Code 2018; OR Fire Code 2014; WA Fire Code 2015
OTHER	Computational Fluid Dynamics Analysis Report available for submittal to AHJ. Seismic Calculations and Structural Analysis Report available for submittal to AHJ.

APPLICABLE BUILDING AND FIRE CODES MUST BE FOLLOWED FOR MAXIMUM ALLOWABLE QUANTITIES (MAQ) OF SOLVENT USED WITHIN THE HAL EXTRACTION BOOTH SYSTEM.

NOTE: NFPA 58 LIQUIFIED PETROLEUM GAS CODE TABLE 8.3.1(b) MAXIMUM ALLOWABLE STORAGE QUANTITIES OF LP-GAS IN INDUSTRIAL STORAGE OCCUPANCIES - EXCERPTS

LP-GAS MAXIMUM ALLOWABLE QUANTITIES (INCLUDES N-BUTANE, ISO-BUTANE, PROPANE)

OCCUPANCY	INDUSTRIAL
MAXIMUM ALLOWABLE QUANTITY (MAQ) STORAGE	300 POUNDS
MAXIMUM ALLOWABLE QUANTITY (MAQ) WITH 300 FEET SEPARATION	ADDITIONAL 300 POUNDS

NOTE: NFPA 30 TABLE 9.6.1 MAXIMUM ALLOWABLE QUANTITY OF FLAMMABLE AND COMBUSTIBLE LIQUIDS PER CONTROL AREA - EXCERPTS

MAXIMUM ALLOWABLE QUANTITY - GALLONS

CLASS/DESCRIPTION	SOLVENT	QUANTITY	NOTES
1A - FLAMMABLE LIQUID	PENTANE	30	1, 2
1B - FLAMMABLE LIQUID	ETHANOL, ISOPROPYL ALCOHOL	120	1, 2

1. Quantities are permitted to be increased 100 percent where stored in approved flammable liquids storage cabinets or in safety cans in accordance with the fire code. Where Note 2 also applies, the increase for both notes is permitted to be applied accumulatively.

2. Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13, Standard for Installation of Sprinkler Systems. Where Note 1 also applies, the increase for both notes is permitted to be applied accumulatively.

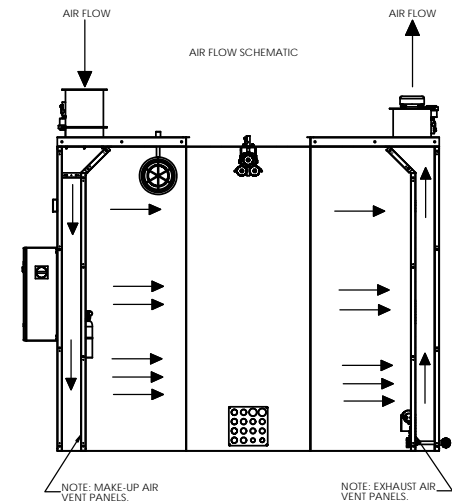
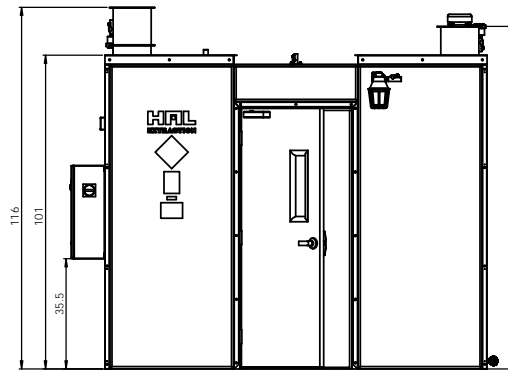
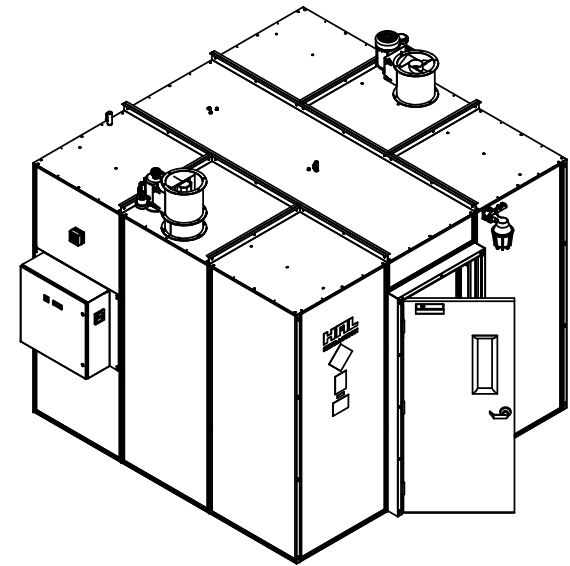
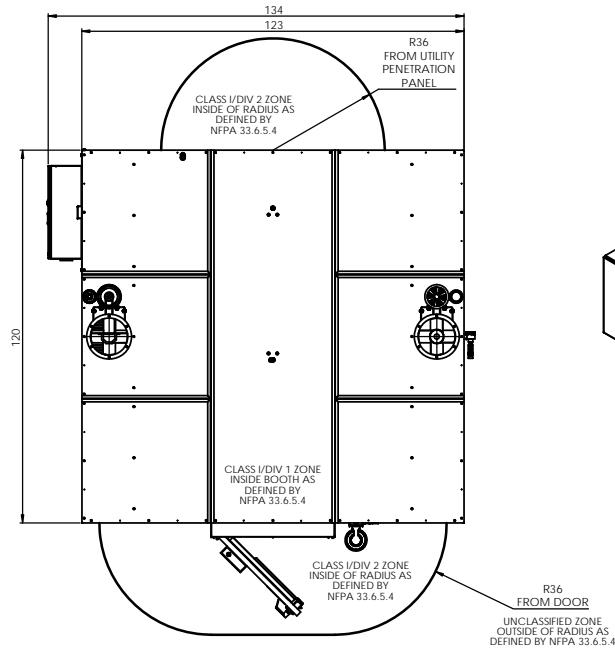
NOTE: 2016 CALIFORNIA FIRE CODE, TABLE 5003.1.1(1) MAXIMUM ALLOWABLE QUANTITY OF HAZARDOUS MATERIALS PER CONTROL AREA - EXCERPTS

MAXIMUM ALLOWABLE QUANTITY - GALLONS (POUNDS)

CLASS/DESCRIPTION	SOLVENT	STORAGE	USE - CLOSED SYSTEMS	USE - OPEN SYSTEMS
1 - FLAMMABLE GAS, GASEOUS LIQUIFIED	BUTANE, PROPANE	(150 ^{d,e})	(150 ^{d,e})	NOT APPLICABLE
1A - FLAMMABLE LIQUID	PENTANE	30 ^{d,e}	30 ^d	10 ^d
1B - FLAMMABLE LIQUID	ETHANOL, ISOPROPYL ALCOHOL	120 ^{d,e}	120 ^d	30 ^d

d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, exhausted enclosures, or listed safety cans. Listed safety cans shall be in accordance with Section 5003.9.10. Where Note d also applies, the increase for both notes shall be applied accumulatively.



HAL
EXTRACTION

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DESCRIPTION
Extraction Booth, Model 85, Make-Up Air Unit, Class I Division 1 (Explosion Proof), Patent Pending

ALL DIMENSIONS IN INCHES
WEIGHT 1944 lbs REVISION 2.3 SHEET 1 of 1

PART NUMBER
60111

FILE NAME: 60111 Cut Sheet Images