

**GENERAL NOTES:**

THIS SYSTEM SHALL BE  
INSTALLED IN ACCORDANCE  
WITH:

-- NFPA 17A

--THE LOUISIANA STATE FIRE  
MARSHAL'S OFFICE

--THE MANUFACTURER'S  
SPECIFICATIONS

--ALL NOZZLES PROVIDED WITH  
NOZZLE CAPS

--HOOD CANOPY BY ACCUREX

--DRAWING NOT TO SCALE

--UTILIZING 19 OF 20 FLOW  
POINTS

--ALL SUPPLY LINE TO BE 3/8"   
BLACK SCHEDULE 40 PIPE

--ALL BRANCH LINE TO BE 3/8"   
STAINLESS SCHEDULE 40 PIPE

**BUCKEYE  
BFR 10+10  
WET CHEMICAL  
UL 300 LISTED**

**SYSTEM  
DETAIL**

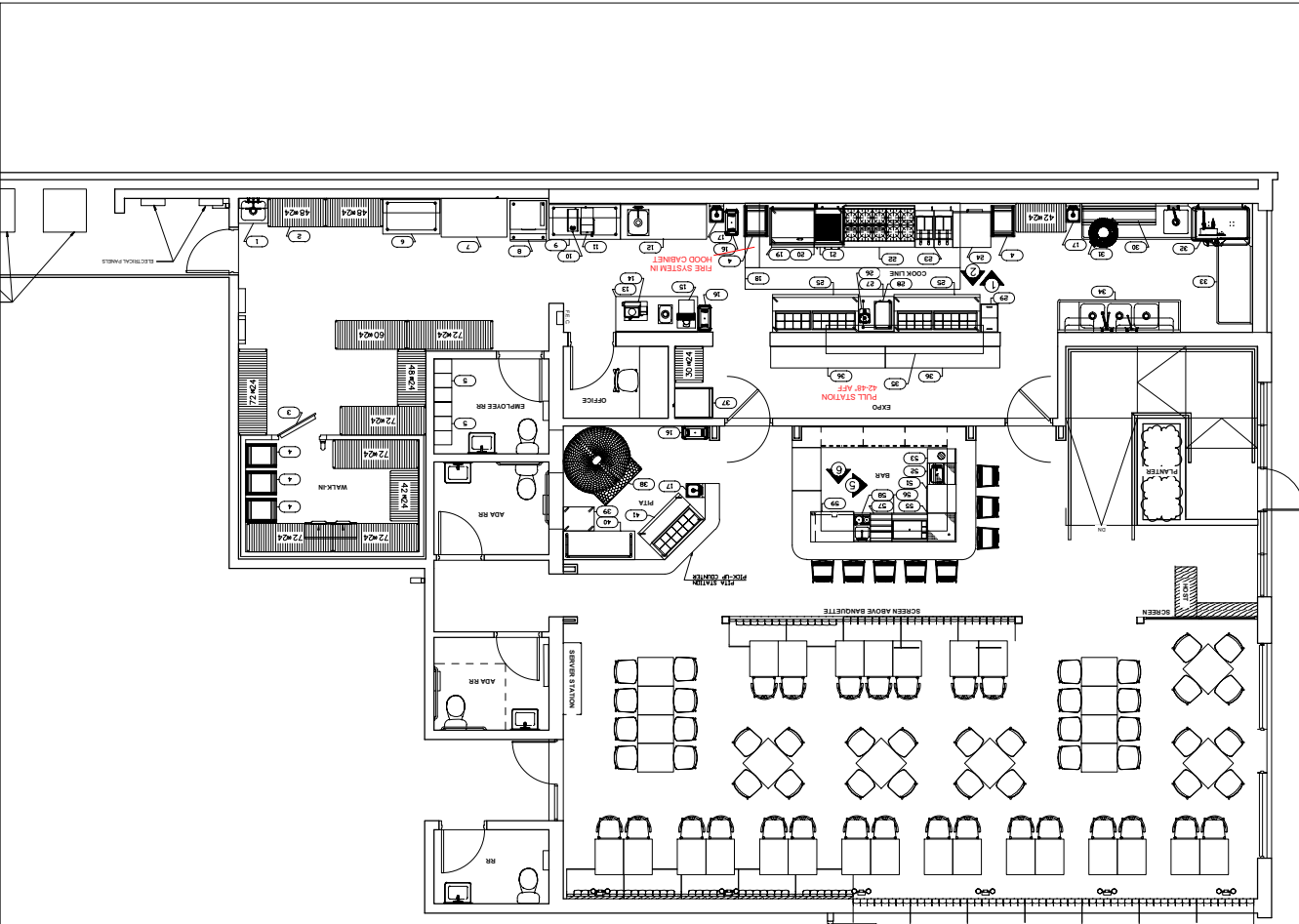
**BILL OF MATERIALS**

- QTY. NAME
- 2 N-IHP PLENUM 12 FT LENGTH
  - 3 N-2LP RGE 24" X 24" @ 35" - 40"
  - 1 N-ILP BRD 30" X 48" @ 30" - 43"
  - 2 N-2HP FRY 20 1/4" X 24" @ 24" - 45"
  - 1 N-ILP SALAMANDER 36" X 24"
  - 1 FUSIBLE LINK BRACKET
  - 5 FUSIBLE LINK HANGER
  - 2 BFR-10 CYLINDER
  - 1 AC-S CARTRIDGE
  - 1 SYSTEM RELEASING MODULE
  - 1 GAS SHUT-OFF VALVE
  - 1 MANUAL PULL STATION
  - 2 2W DUCT 150" PERIMETER

**SHAYA RESTAURANT  
332 N NEW HAMPSHIRE ST.  
COVINGTON, LA 70433**



**FIRE AND SAFETY  
COMMODITIES, INC**  
245 WOODLAND DR  
LAPLACE, LA 70068  
OFFICE: (504) 465-5994  
FAX: (504) 465-5998  
E-MAIL:  
SAGE@FIRESAFETYINC.NET  
FRIM: F58  
LIC. #: E379

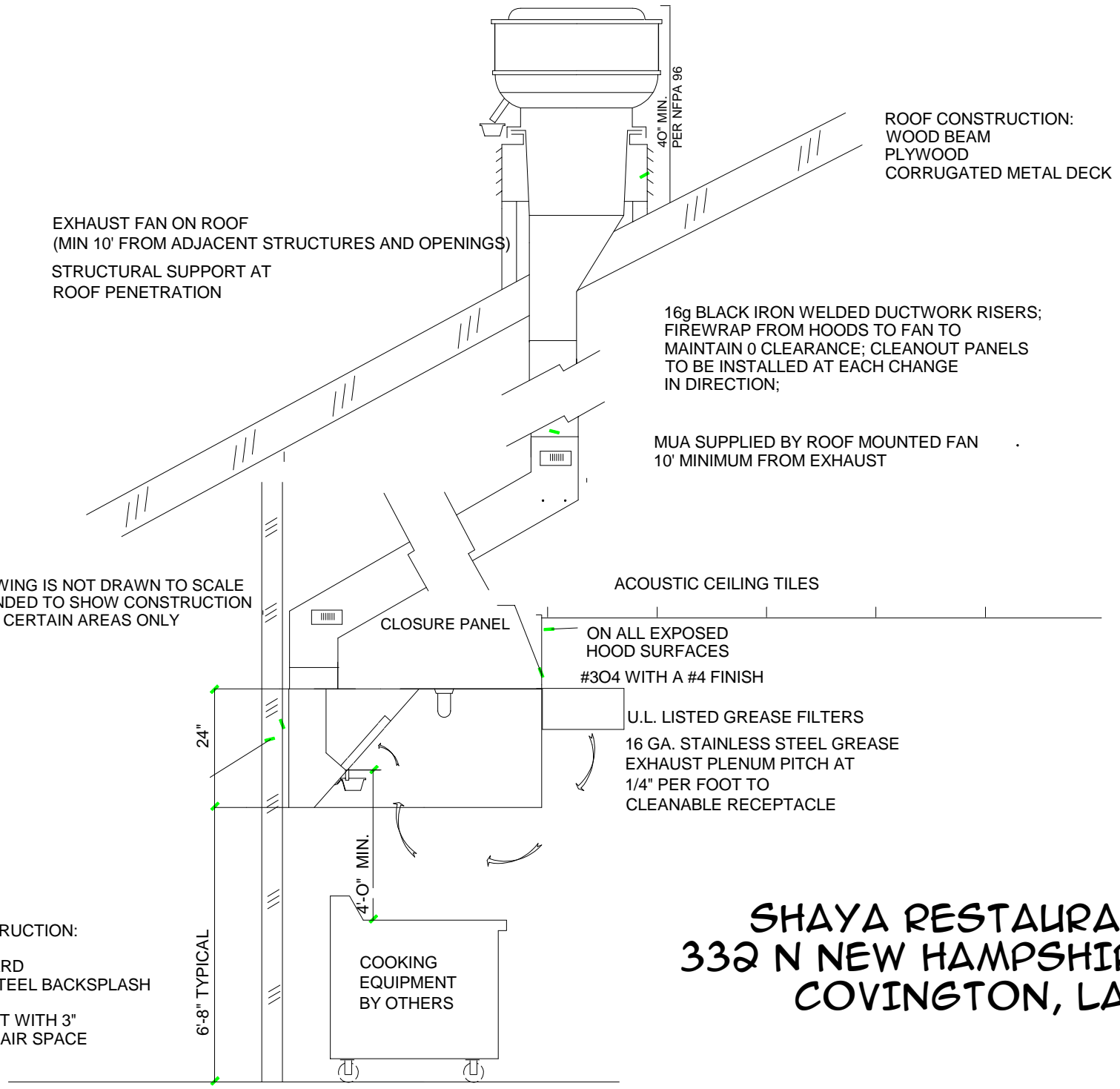


**General Foodservice Notes**

1. Condensing Unit Locations and Exhaust Fan Locations TBD.
2. Required Roof/Wall Penetrations and Sealing of Same by O/C.
3. Final Connections by Appropriate Trades
4. Exhaust Hoods to be Hung by Fire & Safety Commodities. Mechanical Contractor to Test and Balance Exhaust System.
5. Refrigeration System for Walk-in Cooler, Walk-in Freezer & Ice Maker to be Provided and Installed by FSEC. All Reqd. Electrical, including Control Wiring, by Electrical Contractor.

Item No.	Quantity	Category	Description
59	1	Special	Black Bar Cabinet Refrigerated
58	1	Special	Exhaust Hood
57	1	Special	Exhaust Hood
56	1	Special	Ice Bin
55	1	Special	Comer Anyez Filter
54	1	Special	Space Heater
53	1	Special	Upright Adv Chl Unit
52	1	Special	Walk In Cooler
51	1	Special	Dishwasher, Undercounter
42-50	1	Special	Space Heater
41	1	Special	Pizza Freezer
40	1	Special	Walk In Cooler
39	1	Special	Makeup Work Top For Kiosk
38	1	Special	Flat Oven
37	1	Special	Refrigerator
36	2	Special	Dish Cabinet
35	1	Special	Advance Table
34	1	Special	Advance Table
33	1	Special	Advance Table
32	1	Special	Advance Table
31	1	Special	Advance Table
30	1	Special	Advance Table
29	1	Special	Advance Table
28	1	Special	Advance Table
27	1	Special	Advance Table
26	1	Special	Advance Table
25	2	Special	Advance Table
24	1	Special	Advance Table
23	2	Special	Advance Table
22	1	Special	Advance Table
21	1	Special	Advance Table
20	1	Special	Advance Table
19	1	Special	Advance Table
18	1	Special	Advance Table
17	3	Special	Advance Table
16	3	Special	Advance Table
15	1	Special	Advance Table
14	1	Special	Advance Table
13	1	Special	Advance Table
12	1	Special	Advance Table
11	1	Special	Advance Table
10	1	Special	Advance Table
9	1	Special	Advance Table
8	1	Special	Advance Table
7	1	Special	Advance Table
6	1	Special	Advance Table
5	2	Special	Advance Table
4	5	Special	Advance Table
3	1	Special	Advance Table
2	1	Special	Advance Table
1	1	Special	Advance Table

NO.	DATE	REVISIONS



EXHAUST FAN ON ROOF  
 (MIN 10' FROM ADJACENT STRUCTURES AND OPENINGS)  
 STRUCTURAL SUPPORT AT  
 ROOF PENETRATION

ROOF CONSTRUCTION:  
 WOOD BEAM  
 PLYWOOD  
 CORRUGATED METAL DECK

16g BLACK IRON WELDED DUCTWORK RISERS;  
 FIREWRAP FROM HOODS TO FAN TO  
 MAINTAIN 0 CLEARANCE; CLEANOUT PANELS  
 TO BE INSTALLED AT EACH CHANGE  
 IN DIRECTION;

MUA SUPPLIED BY ROOF MOUNTED FAN  
 10' MINIMUM FROM EXHAUST

THIS DRAWING IS NOT DRAWN TO SCALE  
 IT IS INTENDED TO SHOW CONSTRUCTION  
 TYPES OF CERTAIN AREAS ONLY

ACOUSTIC CEILING TILES

CLOSURE PANEL

ON ALL EXPOSED  
 HOOD SURFACES  
 #304 WITH A #4 FINISH

U.L. LISTED GREASE FILTERS  
 16 GA. STAINLESS STEEL GREASE  
 EXHAUST PLENUM PITCH AT  
 1/4" PER FOOT TO  
 CLEANABLE RECEPTACLE

24"

4'-0" MIN.

6'-8" TYPICAL

COOKING  
 EQUIPMENT  
 BY OTHERS

WALL CONSTRUCTION:  
 METAL STUD  
 GYPSUM BOARD  
 STAINLESS STEEL BACKSPLASH

HOOD IS BUILT WITH 3"  
 INTEGRATED AIR SPACE

**SHAYA RESTAURANT**  
**332 N NEW HAMPSHIRE ST.**  
**COVINGTON, LA**

## XBEW Type 1, Baffle Filter Single Wall - Exhaust Only Wall Canopy

Model	Hood Length (in.)	Width (in.)	Bottom Width (in.)	Height (in.)		Exhaust Volume (CFM)	Exhaust Rate (CFM)	Exhaust SP (in. w.g.)	Double Island
				Front	Back				
XBEW	168	54	54	24	24	3500	250	0.485	No

### Selected Options & Accessories:

Option or Accessory	Description
Mounting Height	80 in. off Finished Floor.
Integral Air Space	Factory Mounted on Back - 3" wide 45 lbs
Filter Type	Stainless Steel Baffle Filters 46 lbs

**Material:** 430 SS Where Exposed  
**UL Listing:** UL 710 w/out Exhaust Fire Damper

**Features:**  
 Performance Enhancing Lip (PEL)  
 Standing Seam Construction for Superior Strength  
 Stainless Steel Finish for Higher Corrosion Resistance

**Hood End Conditions:**  
 Back Wall - Limited Combustible

### Section Data:

Section Num.	Length (in.)	Volume (CFM)	SP (in. wg)	Filter Qty		Filter Ht. (in.)	Cooking Load	Light Qty	Light Type	Foot Candles	Drain Location	Hood Weight (LBS)
				16" W	20" W							
1	168	3500	0.485	8	2	20	Heavy	8	Incandescent / CFL	53.81	Left/Right	390.87

### Exhaust Collar Data:

Section Num.	Collar Num.	Collar Size (LxW) in. or Diameter (in.)	Pos. Off Left (in.)	Pos Off Back (in.)	Velocity (fpm)	Mounting Option
1	1	17 x 9	42	6.5	1647	Shipped Loose Exhaust Collar(s)
1	2	17 x 9	126	6.5	1647	Shipped Loose Exhaust Collar(s)

### External Supply Plenum Data:

Supply: 3000 CFM

MUA: 3000 CFM

AC: 0 CFM

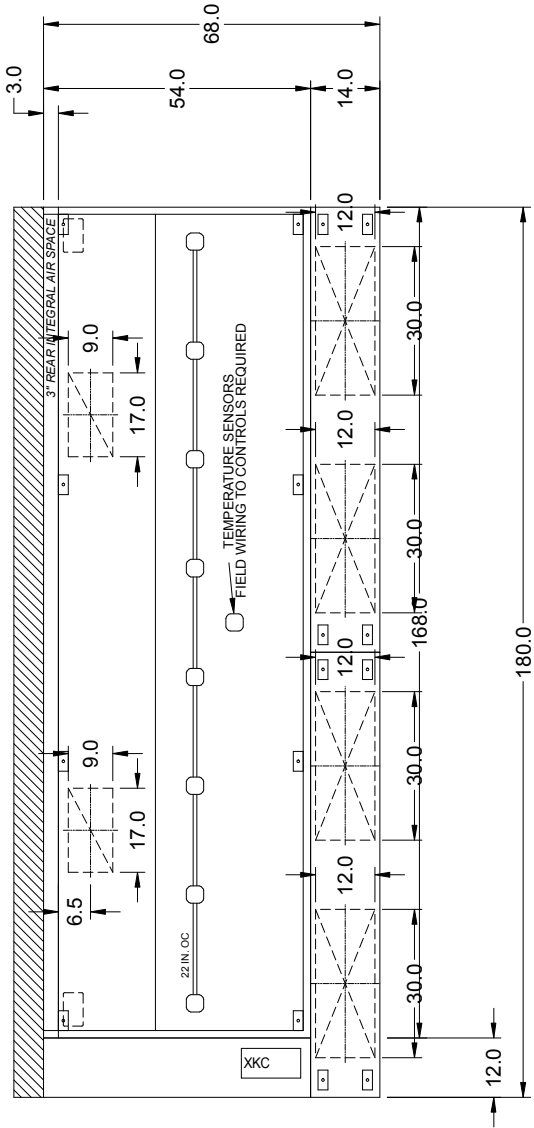
Section Num.	Plenum Num.	Side	Type	Length (in.)	Width (in.)	Height (in.)	Volume (CFM)	SP (in. wg)	Insulated	MBD	LED Lights
1	1	Front	Air Curtain Supply (ASP)	90	14	10	1500	0.18	Yes	Yes	No
1	2	Front	Air Curtain Supply (ASP)	90	14	10	1500	0.18	Yes	Yes	No

### External Supply Collar Data:

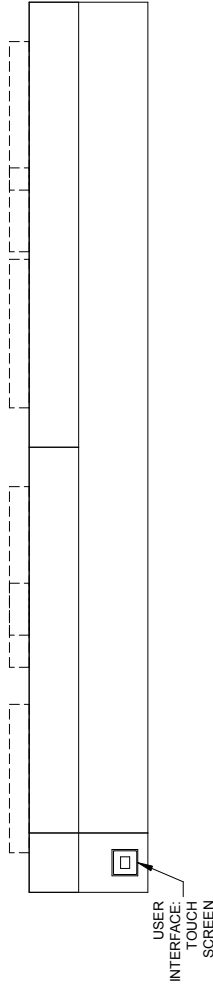
Section Num.	Plenum Num.	Side	Collar Num.	Collar Size (LxW) in. or Diameter (in.)	Pos. Off Left (in.)	Pos. Off Front (in.)	Velocity (fpm)	Mounting Option
1	1	Front	1	30 x 12	23	7	300	Shipped Loose Supply Collar(s)
1	1	Front	2	30 x 12	67	7	300	Shipped Loose Supply Collar(s)
1	2	Front	1	30 x 12	23	7	300	Shipped Loose Supply Collar(s)
1	2	Front	2	30 x 12	67	7	300	Shipped Loose Supply Collar(s)

### Utility Cabinet Data:

Descripton	Length (in.)	Width (in.)	Height (in.)	Weight (lbs)
Left Utility Cabinet	54	12	24	65



MARK: Kh-1 - SECTION 1  
 PLAN VIEW



MARK: Kh-1 - SECTION 1  
 ELEVATION VIEW

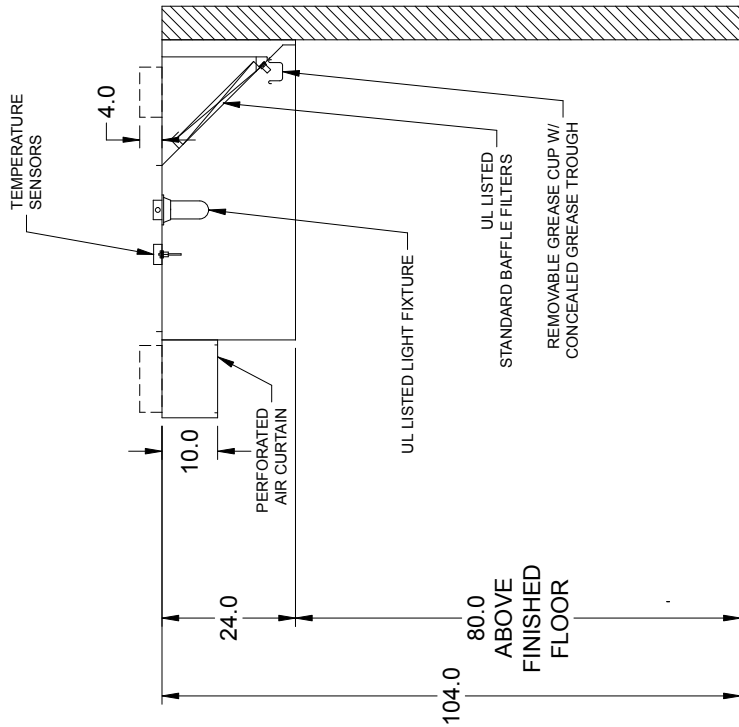
NOTE: All dimensions are in units of in.



Hanger Bracket Locations			
Sec #	Brkt #	Distance Off Left (in)	Distance Off Front (in)
1	1	3.50	2.50
1	2	55.94	2.50
1	3	111.89	2.50
1	4	164.50	2.50
1	5	3.50	50.00
1	6	55.94	50.00
1	7	111.89	50.00
1	8	164.50	50.00

Bracket Mounting Position for an 8 Bracket Hood			
5	6	7	8
BACK		FRONT	
1	2	3	4



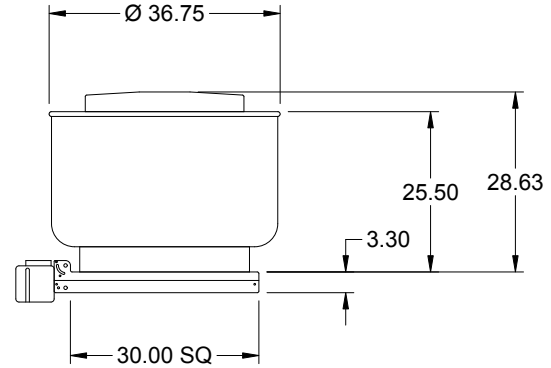
MARK: Kh-1

NOTE: All dimensions are in units of in.



## Model: XCUBE-180-20

### Belt Drive Upblast Centrifugal Roof Exhaust Fan



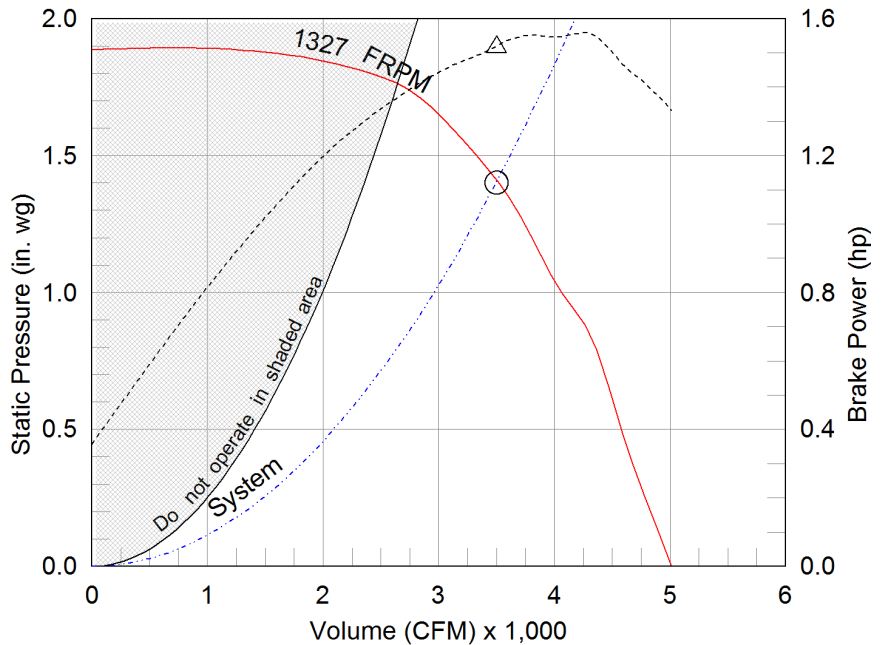
Dimensional	
Quantity	1
Weight w/o Acc's (lb)	115
Weight w/ Acc's (lb)	136
Max T Motor Frame Size	184
Standard Curb Cap Size (in.)	30 x 30
Roof Opening (in.)	20.5 x 20.5

Performance	
Requested Volume (CFM)	3,500
Actual Volume (CFM)	3,500
Total External SP (in. wg)	1.4
Fan RPM	1327
Operating Power (hp)	1.52
Elevation (ft)	10
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Drive Loss (%)	5.3
Tip Speed (ft/min)	6,428
Static Eff. (%)	54

Misc Fan Data	
Fan Eff. Index (FEI)	1.22
Outlet Velocity (ft/min)	1,199
FEI based on default motor calculation showing lowest efficiency option, for motor specific calculations please contact factory.	

Motor	
Motor Mounted	Yes
Size (hp)	2
Voltage/Cycle/Phase	208/60/3
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	Standard
Windings	1
NEC FLA* (Amps)	7.5
Min. Circuit Ampacity (MCA)	9.38
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

#### Notes:

All dimensions shown are in units of in.  
 \*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.  
 MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).  
 LwA - A weighted sound power level, based on ANSI S1.4  
 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International  
 Sones - calculated using ANSI/AMCA 301 at 5 ft  
 The motor provided on this fan is inverter ready and meets NEMA MG1 Part 31.4.4.2

#### Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	78	81	86	77	72	70	66	62	81	69	17.9



## Model: XCUBE-180-20

### Belt Drive Upblast Centrifugal Roof Exhaust Fan

#### Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Curb cap with prepunched mounting holes - Motor and drives isolated on shock mounts - Drain trough - Ball bearing motors - Adjustable motor pulley - Adjustable motor plate - Fan shaft mounted in ball bearing pillow blocks - Bearings meet or exceed temperature rating of fan - Static resistant belts - Corrosion resistant fasteners - Internal lifting lugs

#### Selected Options & Accessories:

Motor VFD Rated without Shaft Grounding Protection  
Standard Curb Cap Size - 30 Square  
UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"  
Switch, NEMA-3R, Toggle, Shipped with Unit  
Junction Box Mounted & Wired  
Hinge, Factory Installed  
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)  
Grease Trap (PN 475538)  
Heat Baffle (Attached)  
Bearings with Grease Fittings, L10 life of 100,000 hrs (L50 avg. life 500,000 hrs)  
Unit Warranty: 1 Yr (Standard)

## XMSX-110-H12-5

### Unit Performance

Design Conditions					
Elevation (ft)	Summer		Winter (°F)	Supply (CFM)	Outdoor Air (CFM)
	DB (°F)	WB (°F)			
10	93.0	81.0	35.0	2,800	2,800

Unit Specifications					
Qty	Weight (lb)	Cooling Type	Heating Type	Unit Installation	Unit ETL Listing
1	1,237 (+/- 5%)	Packaged DX	None	Outdoor/Indoor	UL / cUL 1995

Configuration				
Unit Orientation	Unit Configuration	Outdoor Air Intake	Return Air Intake	Supply Air Discharge
Horizontal	Constant Volume 100% OA	End	-	Bottom

Cooling Specifications								
Type	Refrigerant	Capacity (MBH)		Lead Compressor Type	EER		Performance (DB/WB)	
		Total	Sensible		Condensing Section	Design Condition	EAT (°F)	LAT (°F)
Packaged DX	R-410a	74.7	40.7	Standard Scroll	13.3	17.4	93.0 / 81.0	79.9 / 75.2

Air Performance									
Type	Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Fan			
						Qty	Type	Size (in.)	Drive-Type
Supply	2,800	0.4	0.851	1088	1.25	1	Forward Curve	10	Belt-Drive

Motor Specifications					
Motor	Qty	Size (HP)	Enclosure	Efficiency	RPM
Supply Fan Motor	1	1-1/2	ODP	NEMA Premium	1725

Electrical Specifications				
Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	SCCR
Unit	208/60/3	28.9	45	5kA



### CONSTRUCTION FEATURES AND ACCESSORIES

Unit	
Unit Installation - Outdoor	Std
Unit Construction - Double Wall	X
Wall Insulation - 1in. fiberglass - Tempering on	X
Base Insulation - 1in. fiberglass - entire unit base pan	Std
Paneled Bottom - Sheet metal liner for base insulation	
Corrosion Resistant Fasteners	Std
Access and Connections - Right side when facing intake	X
Service Access - Removable lift off panels	X
Unit Finish - G90 Galvanized	X
Finish Color	
Supply Fan - Belt-drive, forward-curved	X
Supply Fan and Motor Vibration isolation - Neoprene	X
Controls	
Unit Controls - Terminal strip	X
Remote Panel	
BMS Communication	
BMS Protocol	
Temperature Control	
Supply Fan Control	
Unoccupied Mode (Night Setback)	
Control Accessories	
Remote display	
Heating Inlet Air Sensor	
Cooling Inlet Air Sensor	X
Dirty Filter Switch	
Fire Stat Type III (Ships loose)	
120V/24V Smoke Detector (Ships loose)	
Inlet Damper End Switch	
External Cooling Lockout Relay	
Freeze Protection (Supply Air Low Limit)	
Auxiliary Supply Starter Contacts	
Auxiliary Exhaust Starter Contacts	
Heating Coil Freeze Protection	
Airflow Proving Monitoring Contact	

Accessories	
Factory Installed, Lockable, NEMA 3R Disconnect	Std
Weatherhood - Aluminum Mesh filtered	X
Supply Air Filters	
Outdoor Air Inlet Damper - Low leakage	X
Supply Air Outlet Damper	
Return Air Damper	
Diffuser	
Roof Curb	
Combination Curb	
Electrofin Coil Coating	
Fan Bearing Extended Lube Lines	
Inlet Damper Module	
Spare Belts	
Spare Filters	
Motor with Shaft Grounding	
Service Outlet	
Service Lights	
Warranty Options	
Unit Warranty - 1 Year	X
5 Year Compressor Warranty	X

Standard Option	Std
Not Included	
Included	X

#### Notes

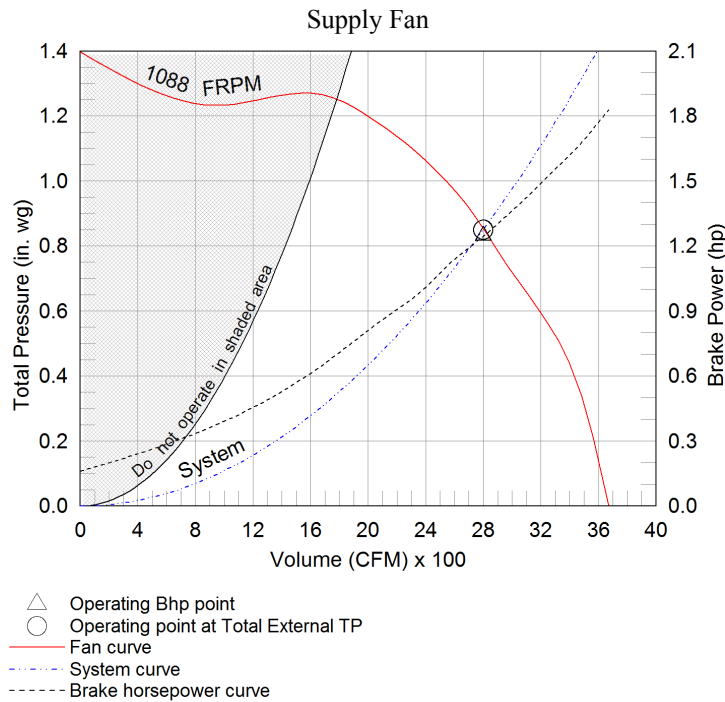
Damper(s) supplied are low leakage, motorized VCD-23 (leakage rate of 3 CFM/ft<sup>2</sup> @ 1 in.wg), Class 1A

## Fan Charts And Performance

Supply Fan Performance									
Total Volume (CFM)	External SP (in. wg)	Total SP (in. wg)	RPM	Operating Power (hp)	Motor		Fan		
					Qty	Size (HP)	Qty	Type	Drive-Type
2,800	0.4	0.851	1088	1.25	1	1-1/2	1	Forward Curve	Belt

Pressure Drop (in. wg)							
Diffuser	Weatherhood	Filter	Damper	Cooling	Heating	External	Total
-	0.097	-	0.065	0.289	-	0.4	0.851

Sound Performance in Accordance with AMCA										
Sound Power by Octave Band								Lwa	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
99	97	85	76	74	72	70	65	84	73	23



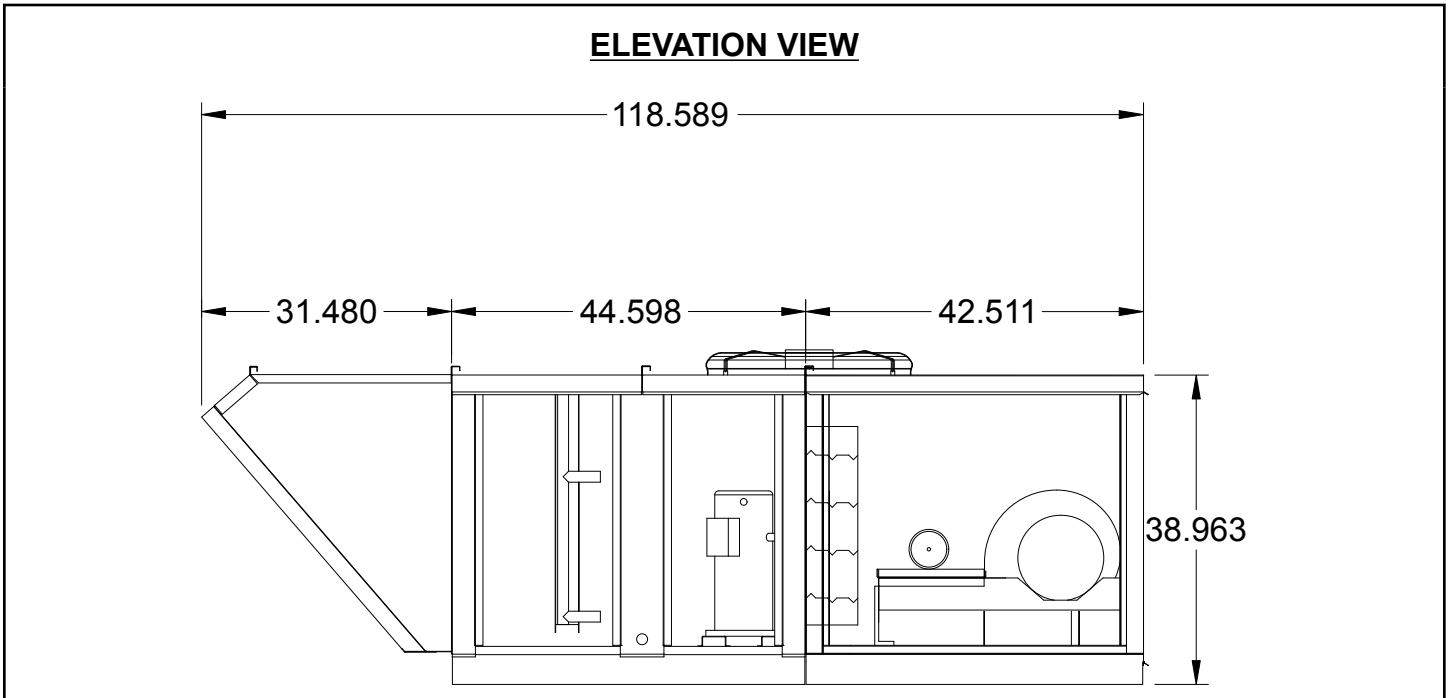
### Cooling Specifications

Cooling Performance								
Type	Refrigerant	Capacity (MBH)		Lead Compressor Type	EER		Performance (DB/WB)	
		Total	Sensible		Condensing Section	Design Condition	EAT (°F)	LAT (°F)
Packaged DX	R-410a	74.7	40.7	Standard Scroll	13.3	17.4	93.0 / 81.0	79.9 / 75.2

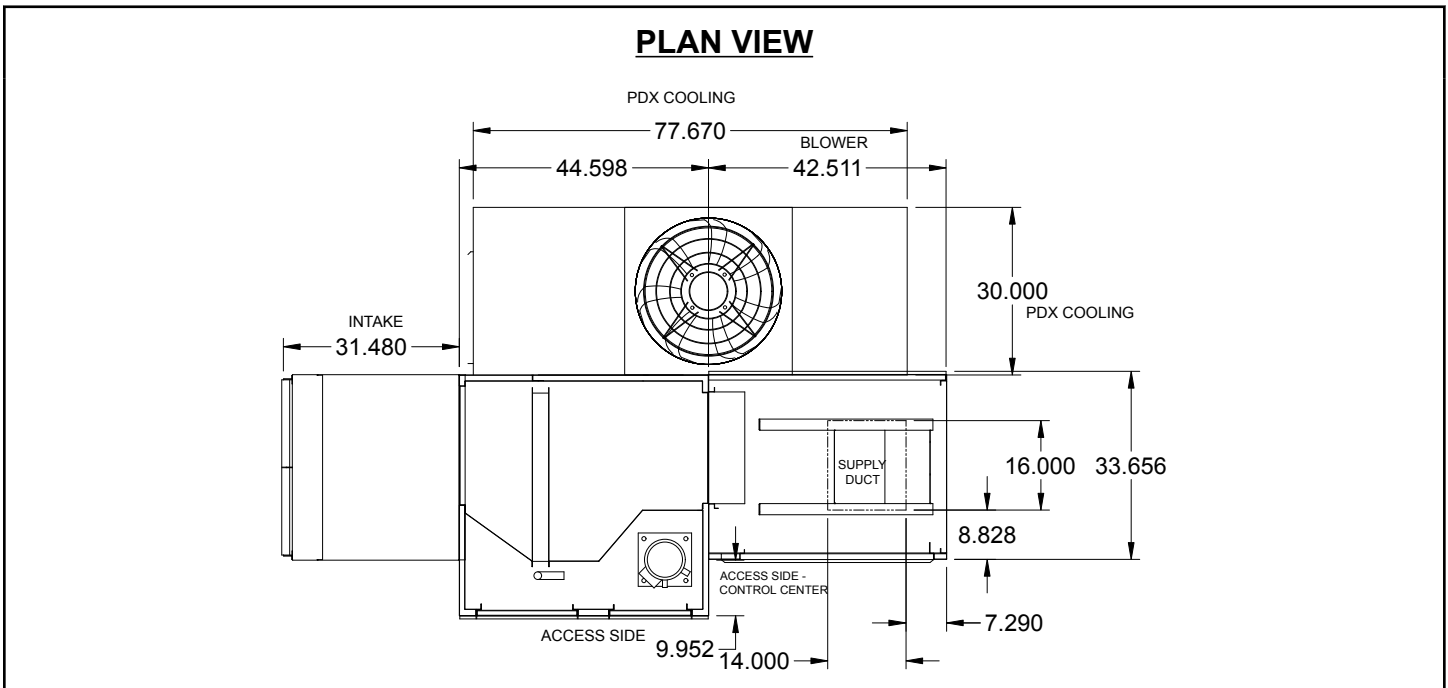
Coil Information						
PDX Coil Model	Fins Per Inch	Rows Deep	Suction Temp. (°F)	Face Velocity (ft/min)	Refrigerant Velocity (ft/min)	
DX38S02S10-30x30	10	2	58.3	448	1,332	

Unit Details
Refrigerant charges provided by the factory are approximate and may require field adjustment
Refrigeration components servicable without affecting airflow
Hermetic scroll type compressor(s)
Compressor(s) mounted on neoprene vibration isolation
Crankcase heater on compressor(s)
Liquid-line filter drier
Moisture-indicating sight glass

Thermal expansion valve
Refrigerant low pressure switch (auto reset)
Refrigerant high pressure switch (manual reset)
Service/charging valves
Low sound, direct drive condensing fans
Insulated, double sloped, stainless steel drain pan
Copper tube, aluminum fin coil construction

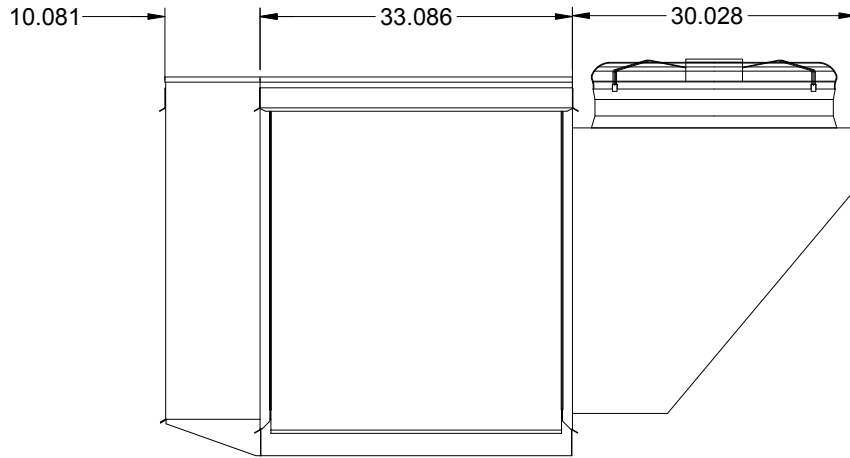


**Notes - Elevation View**  
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.  
 Order of unit sections is from intake of unit to discharge of unit.  
 Sections included on this unit: Weatherhood Section, Cooling Section, Blower Section  
 Insulation: Double Wall, from Cooling Section through end of unit.



**Notes - Plan View**  
 Standard configuration for unit access is on the right-hand side, when looking into the unit intake in the direction of airflow.

## END VIEW

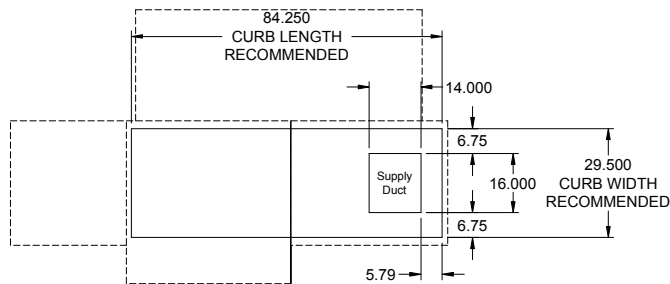


## FOOTPRINT VIEW

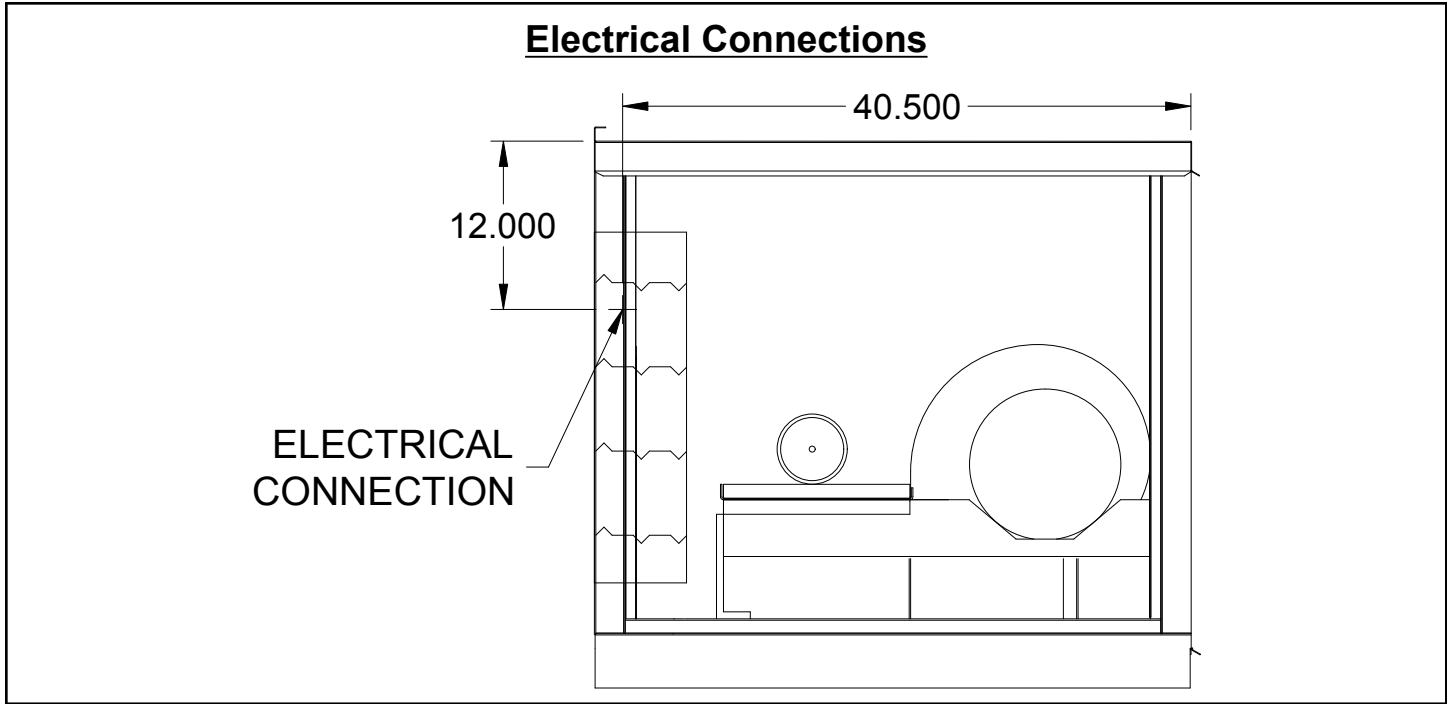
**NOTE: Roof Opening Requirements:**

**Minimum Roof Opening:** The minimum roof opening size is the illustrated duct diameter plus 0.25 in. on all sides.  
 For example: If the duct size is 14 x 14 in. square, the minimum roof opening size is 14.5 x 14.5 in. square.

**Maximum Roof Opening:** There must be a minimum perimeter of 1.75 in. between the roof opening and the roof curb.  
 For example: If the roof curb is 75 x 30 in. square, the maximum roof opening is 71.5 x 26.5 in. inches square.



**NOTE:** The weatherhood and filter sections of the make-up air unit extend beyond the curb. This is by design, to prevent water infiltration.



EQUIPMENT SCHEDULE										
Tempered Make-Up Air Unit								Mark: Ksf-1		
Qty	Accurex Model	Volume	External SP	Total SP	FRPM	Operating Power		Weight		
1	XMSX-110-H12-5	2,800 CFM	0.4 in. wg	0.851 in. wg	1088	1.25 hp		1,237 lb		
Motor Information						MCA	MOP			
Size	V/C/P	Enclosure	Motor with Shaft Grounding	Motor RPM	Windings					
1 1/2 hp	208/60/3	ODP	No	1725	1	28.9	45			
Cooling										
Cooling Type		Coil Model		Rows Deep	Fins Per Inch	Face Velocity	Total Energy	Sensible Energy	Leaving Dry Bulb	Leaving Wet Bulb
Packaged DX		DX38S02S10-30x30		2	10	448 ft/min	74.7 MBH	40.7 MBH	79.9 F	75.2 F
Coil SP	Refrigerant	Suction Temp	Liquid Temp	Super Heat	Code 18/19			Suction Conn Qty / Size	Liquid Conn Qty / Size	
NA	R-410a	58.3 F	110 F	8 F	0			NA	NA	
Outlet Sound Power By Octave Band								LwA	dBA	Sones
62.5	125	250	500	1000	2000	4000	8000			
98.6	96.7	84.8	76.3	74.2	71.6	70.3	65.1	84.4	73.4	23.4
<ul style="list-style-type: none"> <li>LwA - A weighted sound power level based on ANSI S1.4</li> <li>dBA - A weighted sound pressure level base on 11.5 dB attenuation per octave band at 5.0 ft.</li> <li>Noise Criteria (NC) based on an average attenuation of 11.5 dB per octave band at 5.0 ft.</li> </ul>										
OPTIONS AND ACCESSORIES										
Extended Compressor Warranty: 5 years Air Flow Arrangement: Outdoor Air Only Weatherhood: Aluminum Mesh, 16x20x2 - (4) Damper: Inlet Outdoor Air Intake Position: End Discharge Position: Bottom Coating: Galvanized Cooling Coil Coating - None Insulation: Double Wall - Tempering On Access Side: Right-Hand Control Center Cool Inlet Air Sensor Unit Controls: Terminal Strip Temperature Control: None Terminal Strip Unit Warranty: 1 Yr (Standard)										

### Clearance Specifications

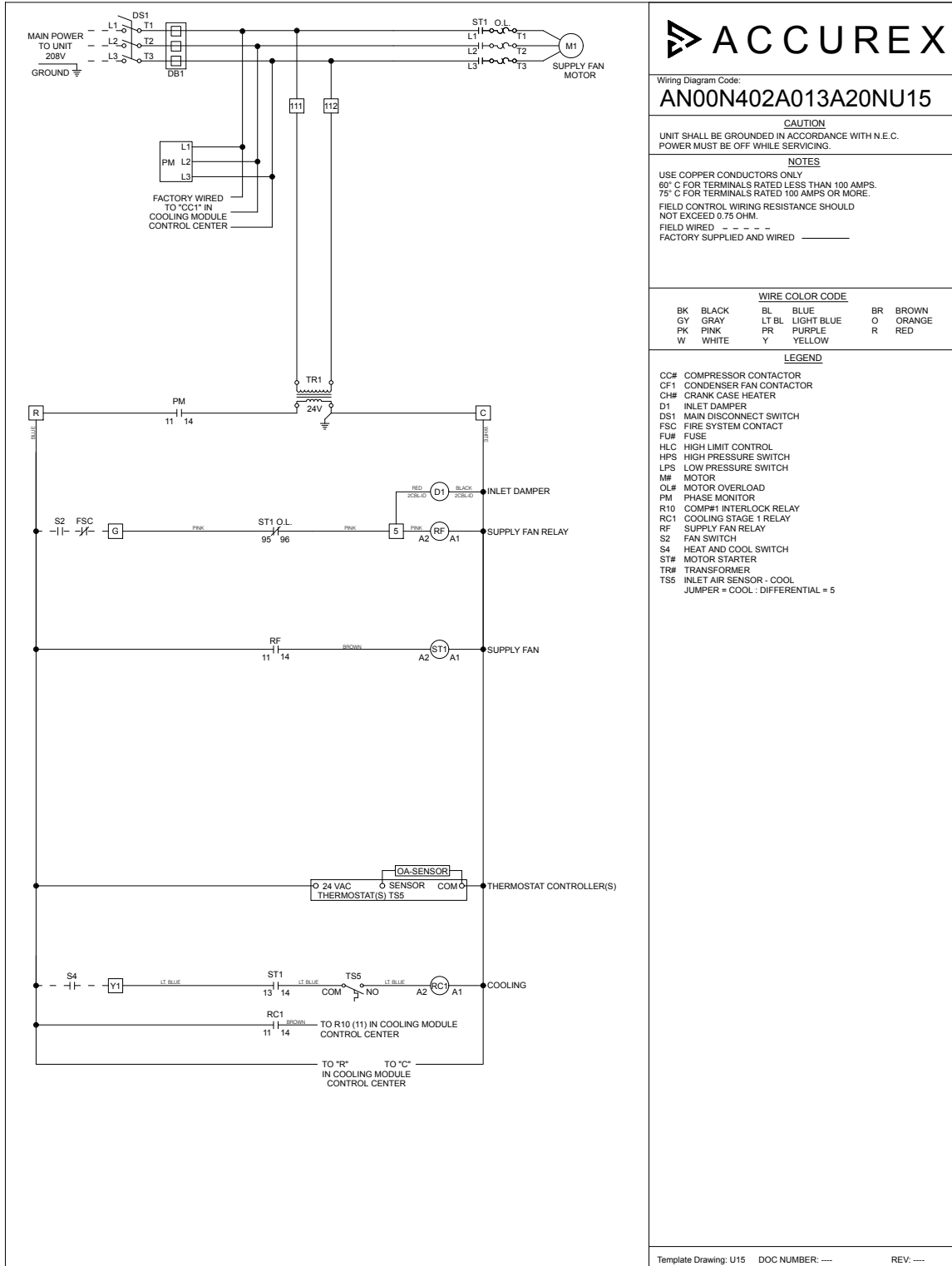
Recommended Minimum Combustible Clearances				
	Floor (in.)	Top (in.)	Sides (in.)	Ends (in.)
Insulated Units	0	0	0	0
Non-Insulated Units	0	6	6	6

**Notes - Combustible Clearances**  
 Clearance to combustibles is defined as the minimum distance required between the heating source and the adjacent combustible surfaces to ensure the adjacent surface's temperature does not exceed 90 F above the ambient temperature.

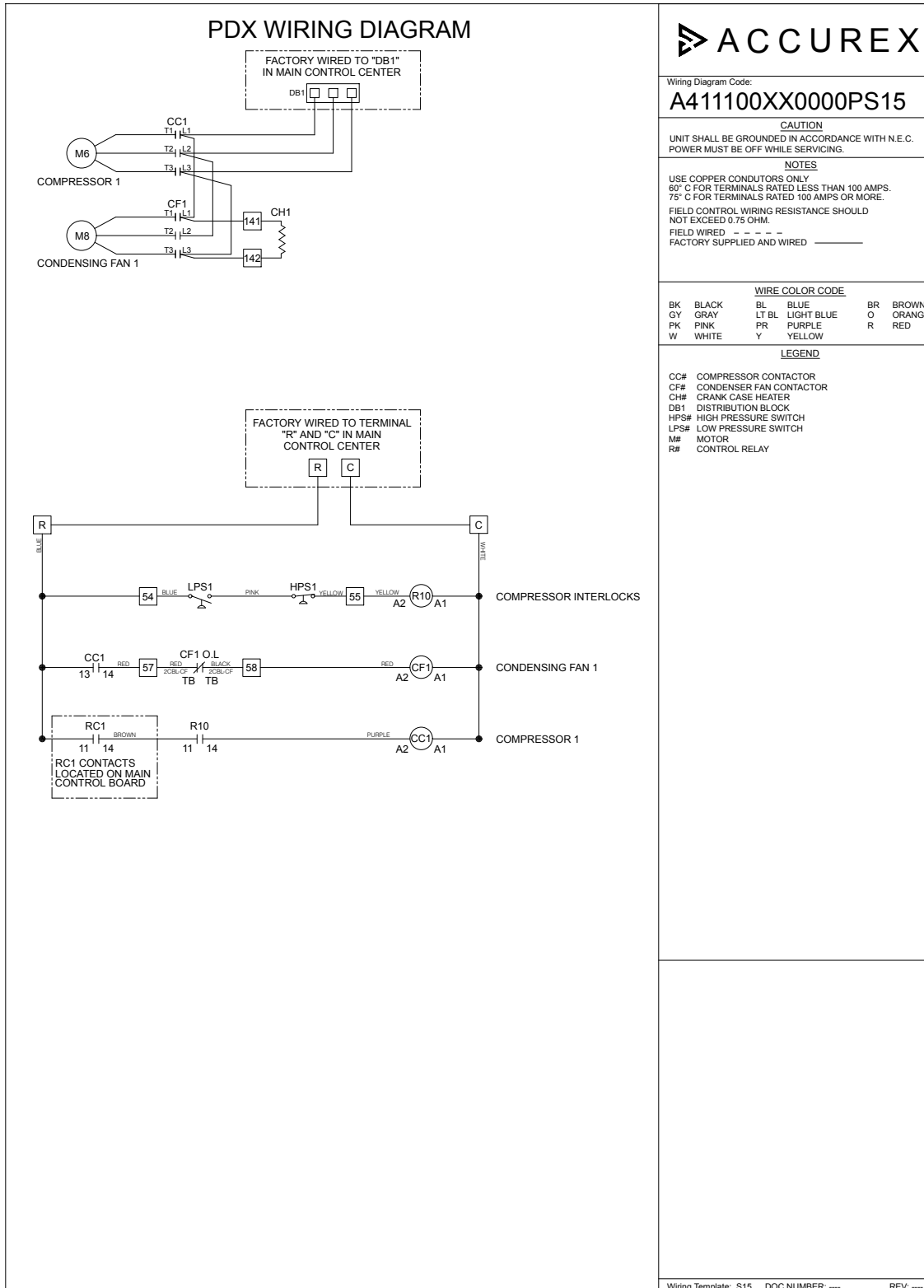
Recommended Minimum Service Clearances	
Housing 32 and less (in.)	Housing 35 and higher (in.)
42 on the controls side of the unit	48 on the controls side of the unit

**Notes - Service Clearances**  
 To ensure ample space for component removal (evaporative cooling media, coils, filters, etc.), service clearances should be 6 in. wider than the width of the module itself.  
 Reference the PDX Service Clearance guidelines (PDX IOM)

## Wiring Diagram

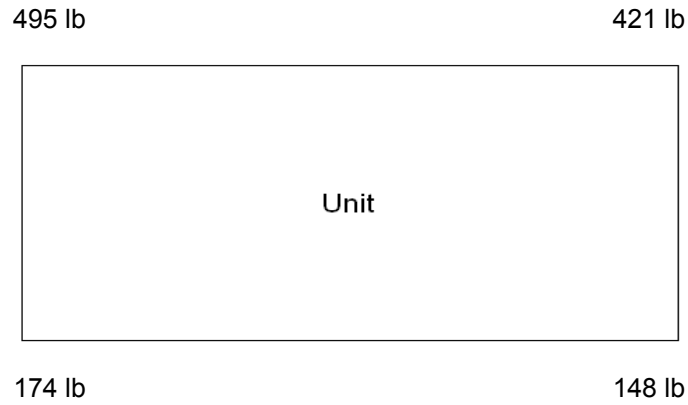


Manufacturer reserves the right to change, modify, or improve this product at anytime



**Manufacturer reserves right to change, alter, or improve this product at any time.**

**Corner Weights**



## SEQUENCE OF OPERATIONS

### Unit Controls

The unit shall be provided from the factory with:

- 24VAC Transformer
- Terminal Strip
- Factory mounted and wired outdoor air inlet damper with actuator
- Phase Monitor

### Field Provided Control Requirements

The following field provided control signals must be provided for proper operation of the unit (Reference the unit wiring diagram for additional information):

- Supply fan enable – Contact closure between R and G (24VAC)
- Cooling enable – Contact closure between R and Y1 (24VAC) \*Factory installed jumper allows heating to be enabled automatically by outside air temperature - remove jumper for field provided control.

### Unit Start-Up Sequence

- Supply Fan Enable Is Received
- Outdoor air inlet damper actuator is energized
- Supply Fan Is Enabled

### Cooling Control

A cooling enable signal must be present and the supply fan must be enabled before the unit will enable cooling.

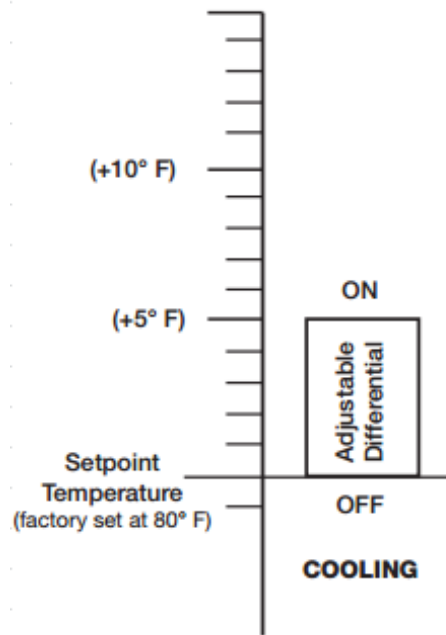
#### Cooling Inlet Air Sensor (Cooling Lockout)

The cooling will be locked out when the outside air temperature is below the cooling inlet air sensor set point (typical 80 F, adj.)

#### Packaged DX Cooling

The packaged DX cooling system is provided with a single standard scroll compressor. Cooling is staged on and off based upon the outside air temperature:

- Stage 1 is enabled at 85 F (adj.)
- Stage 1 is disabled at 80 F (adj.)



## Warranty Statement for Make-Up Air

### Unit Warranty

Accurex warrants the equipment to be free from defects in material and workmanship for a period of 1 year (standard) from the shipment date.

### Compressor Extended Warranty

Accurex warrants the refrigerant compressor(s) to be free from defects in material and workmanship for a period of 5 years from the shipment date.

### Warranty Notes

Any component which proves defective during the warranty period will be repaired or replaced at Accurex's sole option when returned to our factory, transportation prepaid. All warranties do not include labor costs associated with troubleshooting, removal, or installation. Accurex will not be liable for any consequential, punitive, or incidental damages resulting from use, repair, or operation of any Accurex product. These warranties are exclusive and are in lieu of all other warranties, whether written, oral, or implied, including the warranty of merchantability and the warranty of fitness for a particular purpose. No person (including any agent or salesperson) has authority to expand Seller's obligation beyond the terms of this warranty, or to state that the performance of the product is other than that published by Seller.

*As a result of our commitment to continuous improvement, Accurex reserves the right to change specifications without notice.*

## Constant Volume

Accurex Kitchen Controls

### Standard Construction Features:

Includes control system, Fan Starters (unless otherwise stated), Temperature Sensors, Touchscreen. IMC 507.2.1.1 compliant.

### Options & Accessories:

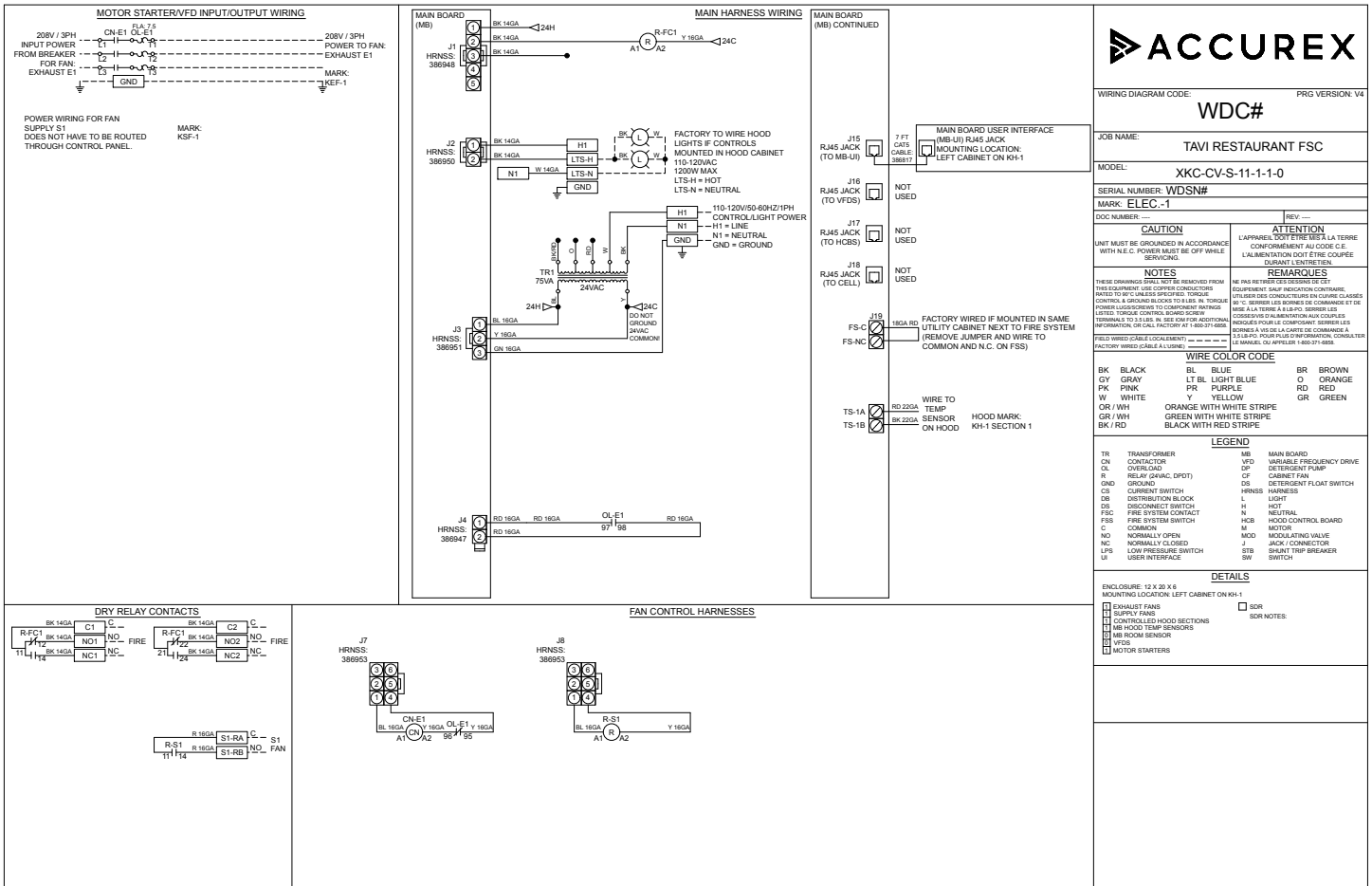
Mounting Option	Left Cabinet on Kh-1
Exhaust Fan Quantity	1
Supply Fan Quantity	1
Hood Light Control	Yes
User Interface	Full Color Touchscreen
Touchscreen Mounting Location	Utility Cabinet - Left End of Hood - Left Cabinet on Kh-1
Additional Fire Contacts	Additional set of dry contacts (2 NO, 2 NC Total)
Exhaust During Fire	Exhaust fans will run at max speed when in fire mode

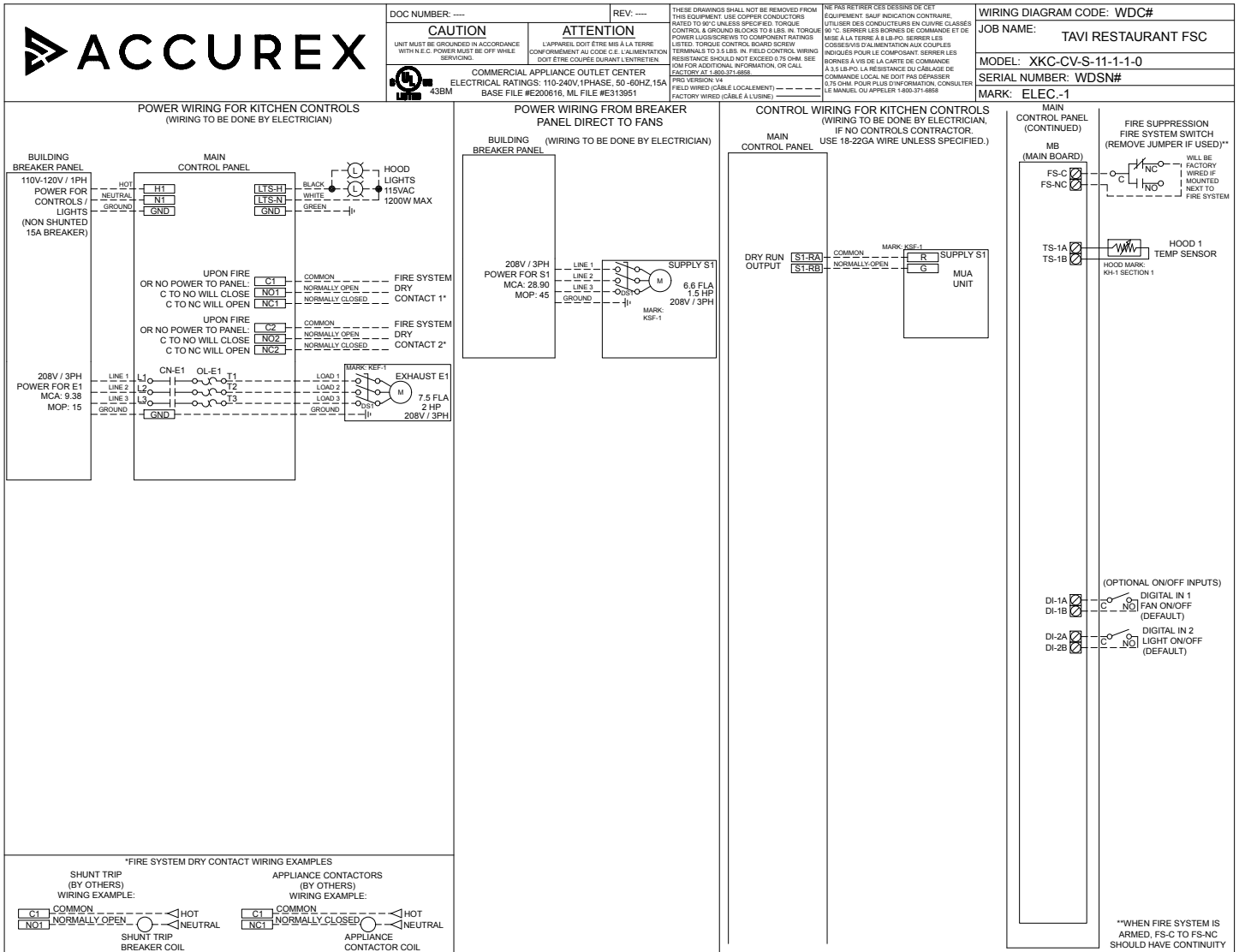
### Controlled Fans:

Fan Mark	Fan Type	Supplied By	Phase	HP	Voltage	NEC FLA	Starter/VFD Required	Starter/VFD Provided
Kef-1	Exhaust	Manufacturer	3	2	208	7.5	Yes	Yes
Ksf-1	Supply	Manufacturer	3	1.5	208	6.6	Yes	No

### Controlled Hood Sections and Fan Relationships:

Kh-1 Section - Number of Sensors = 1	
	Exhaust Fan Name - Kef-1
	Supply Fan Name - Ksf-1



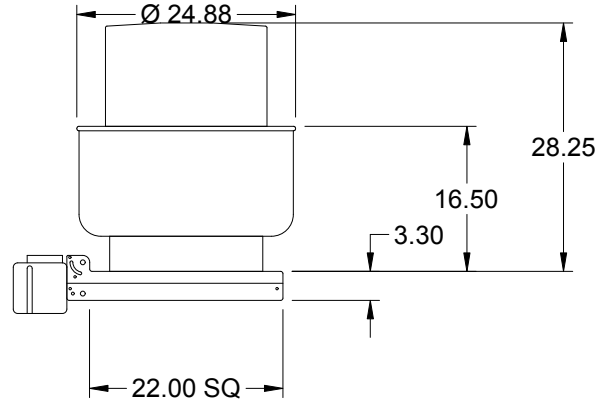


## Model: XCUE-100-VG

Direct Drive Upblast Centrifugal Roof Exhaust Fan

Previously: No Change

Dimensional	
Quantity	1
Weight w/o Acc's (lb)	45
Weight w/ Acc's (lb)	61
Standard Curb Cap Size (in.)	22 x 22
Roof Opening (in.)	14.5 x 14.5

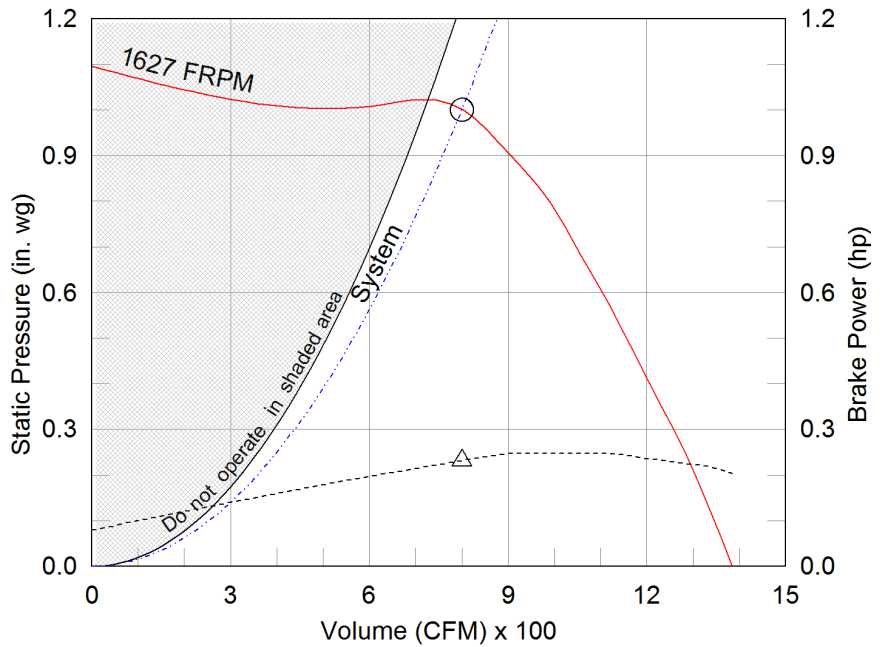


Performance	
Requested Volume (CFM)	800
Actual Volume (CFM)	800
Total External SP (in. wg)	1
Fan RPM	1627
Operating Power (hp)	0.23
Elevation (ft)	10
Airstream Temp.(F)	70
Air Density (lb/ft3)	0.075
Tip Speed (ft/min)	4,739
Static Eff. (%)	54

Misc Fan Data	
Fan Eff. Index (FEI)	-
Outlet Velocity (ft/min)	625

Motor	
Motor Mounted	Yes
Size (hp)	1/4
Voltage/Cycle/Phase	115/60/1
Enclosure	ODP
Motor RPM	1725
Efficiency Rating	High
Windings	1
FLA (Amps)	3.5
Min. Circuit Ampacity (MCA)	4
Max. Overcurrent Protection (MOP)	15
Short Circuit Current Rtg (SCCR)	5 kA

OVERALL HEIGHT MAY BE GREATER DEPENDING ON MOTOR, ADAPTER, AND/OR HINGE BASE.



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

### Notes:

All dimensions shown are in units of in.  
 \*NEC FLA, MCA and MOP are for reference only – based on tables 430.248 or 430.25 of National Electric Code 2020. Actual motor FLA may vary, for sizing thermal overload, consult factory.  
 MCA and MOP values shown only account for the motor, not accessories (damper actuator, field supplied VFD, etc).  
 LwA - A weighted sound power level, based on ANSI S1.4 dBA - A weighted sound pressure level, based on 11.5 dB attenuation per Octave band at 5 ft - dBA levels are not licensed by AMCA International  
 Sones - calculated using ANSI/AMCA 301 at 5 ft

### Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	75	72	74	65	60	59	54	50	69	58	9.3



## Model: XCUE-100-VG

Direct Drive Upblast Centrifugal Roof Exhaust Fan

### Standard Construction Features:

- Aluminum housing - Backward inclined aluminum wheel - Aluminum curb cap with prepunched mounting holes - Drain trough - Ball bearing motors (sizes 85-300 and all Vari Green), sleeve bearing motors (sizes 60-80) - Motor isolated on shock mounts - Corrosion resistant fasteners

### Selected Options & Accessories:

Motor - Vari-Green EC motor  
Control - Dial for balancing  
Larger Curb Cap Size - 22 Square  
UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"  
Switch, NEMA-3R, Toggle, Shipped with Unit  
Junction Box Mounted & Wired  
Hinge, Factory Installed  
High Temp Curb Seal Rated for Continuous Duty at 1500 F (Factory Attached)  
Grease Trap (PN 475538)  
Unit Warranty: 1 Yr (Standard)

***The Vari-Green Motor included in this order has a 'Multi-Voltage' ability. The red wire on the motor is called a 'Voltage Doubler', and when it is connected the motor can be powered by 115V.***

***If the Red wire is disconnected, then the motor can be powered with 208-230/277V. The motor will leave the factory with the voltage doubler wired per the order.***

## Vari-Green Motor & Control Options

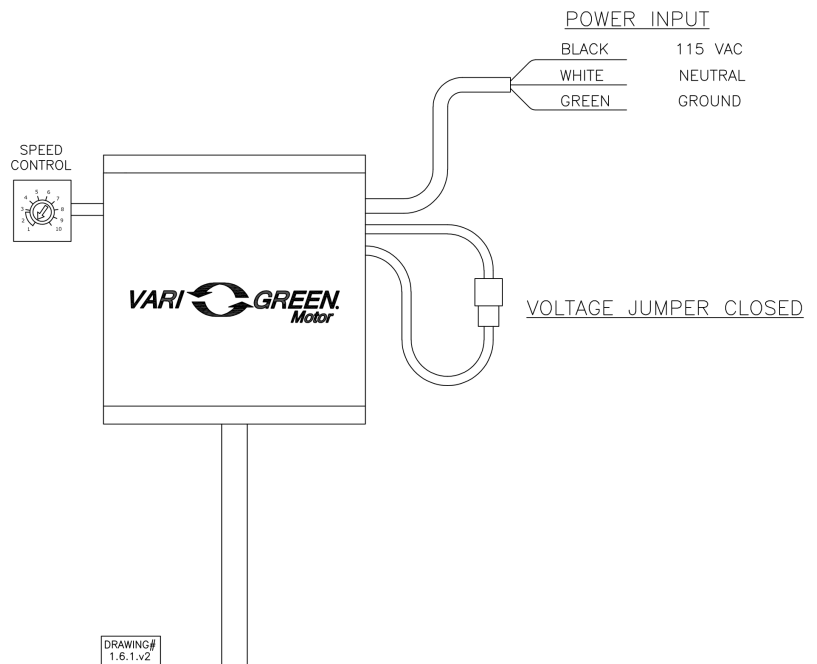
An EC motor that uses AC input power and internally converts it to DC power. Potentiometer (dial) mounted on the motor enclosure adjusts the speed (RPM) down 80%. Vari-Green motors feature a soft-start and inherent thermal and current protection built into each unit. Inrush current at start up is eliminated and the motor will automatically reduce speed or turn off if overloaded or it becomes too hot.

### Motor Configuration

Input Voltage: 115  
 Speed Reference: Dial on Motor  
 Permanent Dial: Yes

### Control Configuration

Control Type: N/A  
 Transformer: None



## GPIP Pitched Roof Curb

### STANDARD CONSTRUCTION FEATURES

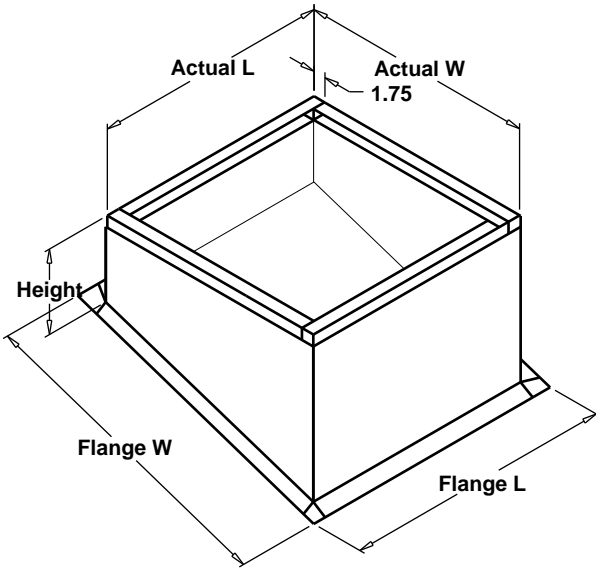
- Welded Aluminum (0.064 in.) or galvanized (18 ga) construction
- Straight sided
- 2 in. mounting flange
- 1 in. 3# density insulation
- Wood nailer.

Roof Opening - The Maximum roof opening dimension should not be greater than the "Actual" top outside dimension minus 2 in.. With dampers, the Minimum roof opening dimension should be at least 2.5 in. more than the damper dimension.

**NOTES:**

\* The Roof Opening Dimension may NOT be the Structural Opening Dimension.

\* Height - Available from 12 in. to 24 in. as specified in 0.5 in. increments. Please note that the drawing shown is for Short Pitch Run. If Long Pitch Run is selected, the Actual W & L and Flange W & L on the curb drawing would be reversed.



NOTES: All dimensions shown are in units of inches

Mark	Qty.	Cap W x L	Actual W x L	Flange W x L	Height	Damper Tray W x L	Pitch	Pitch Run
Ksf-1	1	0 x 0	-1.5 x -1.5	2.5 x 2.5	0		0	N/A

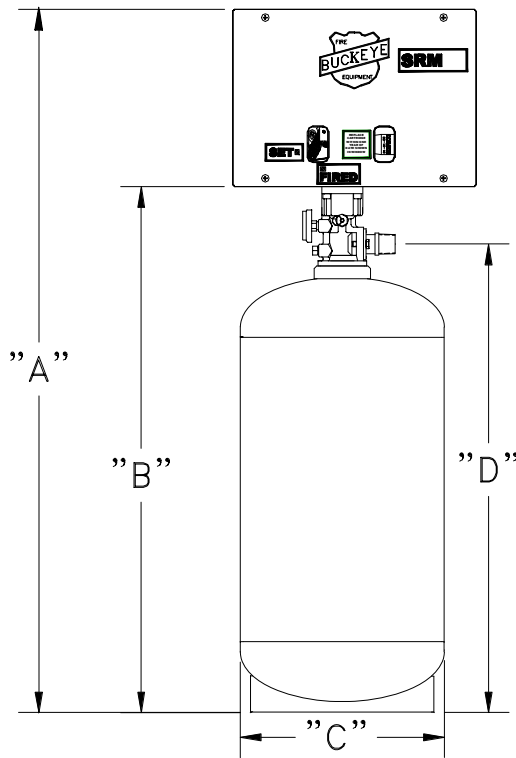


# Chapter 2 System Components

## Cylinder Sizes

The Buckeye Fire Equipment *Kitchen Mister* Fire Suppression System has available four (4) cylinder sizes; the **Model BFR-5** (5 flow points), **Model BFR-10** (10 flow points), **Model BFR-15** (15 flow points), and **Model BFR-20** (20 flow points). Cylinder sizes are based on the flow point capacity of the cylinder, for example, the BFR-5 is capable of supporting a maximum of five (5) flow points. All cylinders are manufactured, marked, and tested in accordance with DOT 4BW240. Each cylinder is shipped pre-filled with extinguishing agent, and charged with dry nitrogen to a pressure of 195 psig (1344 KPa) @ 70° F (21° C). Cylinder and valve assembly dimensions are shown in **Figure 2-1**.

**Note:** Cylinders shall always be stored in an upright position.



**Figure 2-1.**  
**Cylinder and Valve Assembly Dimensions.**

Model Number	A inches (cm)	B inches (cm)	C inches (cm)	D inches (cm)	Max. Flow Points	Weight lbs. (kg)	Mounting Bracket
BFR-5	24.8 (63)	16.2 (41)	10 (25)	13.4 (34)	5	42 lbs. (19)	MB-1
X2 BFR-10	34.4 (87)	25.8 (66)	10 (25)	23 (58)	10	74 lbs. (33)	MB-2
BFR-15	44.8 (114)	36.2 (92)	10 (25)	33.4 (85)	15	107 lbs. (48)	MB-2
BFR-20	42.4 (108)	33.8 (86)	12 (31)	31 (79)	20	130 lbs. (60)	MB-2



# Chapter 3 System Design

## OVERVIEW OF SYSTEM DESIGN

The following chapter will cover the proper design of the Buckeye Fire Equipment *Kitchen Mister* Fire Suppression System. It is divided into three sections:

1. Nozzle Coverages and Placements
2. Piping Limitations
3. Detector Placement

Design of the *Kitchen Mister* System must be in compliance with the parameters set forth in this manual and be performed by a factory trained, Authorized Buckeye Fire Equipment Dealer. Buckeye Fire Equipment is not responsible for systems installed or maintained by personnel that are not factory trained and Authorized.

## NOZZLE COVERAGE, PLACEMENT, AND AIMING

This section will give detailed guidelines for determining nozzle type, positioning, and aim point for appliance, plenum, and duct protection.

### Duct Protection

It is not necessary to shut down or damper the exhaust fan for the system to function properly. It is recommended that the exhaust fan be left on during system discharge to help distribute the extinguishing agent throughout the ductwork.

### Ducts - 50" (127 cm) Maximum Perimeter

**Nozzle:** N-1LP (1 Flow Point)

**Coverage:** Unlimited length with:  
50" (127 cm) Maximum Perimeter with a longest side of 16-3/4" (43 cm) for rectangular ducts and 12-1/2" (32 cm) for square ducts

**or**

50" (127 cm) Maximum Circumference (maximum diameter of 16" (41 cm)) for round ducts.

**Placement:** Centered in duct opening, from 1-6" (2.5-15 cm) into the duct opening.

**Aim point:** Center of duct.

The **Model N-1LP** nozzle is a one flow point nozzle that can protect a square or rectangular duct with a maximum 50" (127 cm) perimeter and a maximum one

side length of 12-1/2" (32 cm) (square) and 16-3/4" (43 cm) (rectangular) respectively. It can also protect a round duct with a maximum circumference of 50" (127 cm) [16" (41 cm) maximum diameter]. See **Figure 3-1 & 3-2**.

### Ducts - 150" (381 cm) Maximum Perimeter

**Nozzle:** N-2W (2 Flow Point) X2

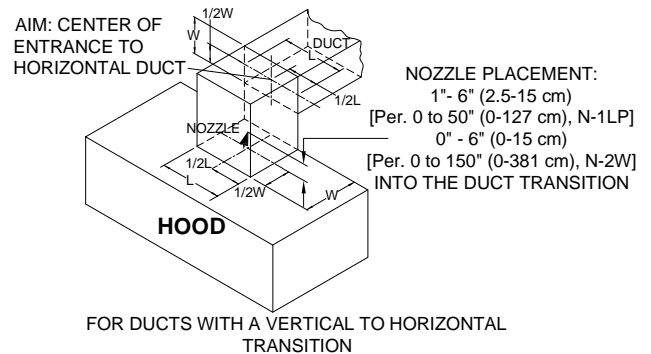
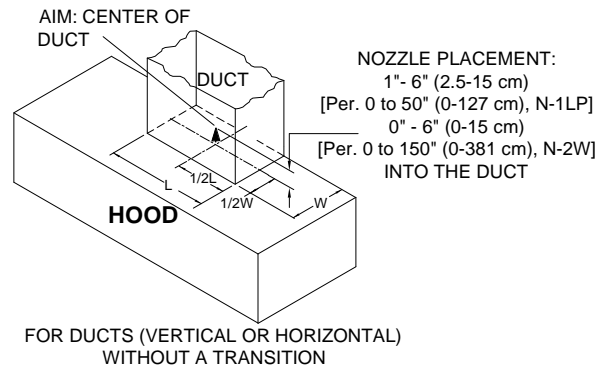
**Coverage:** Unlimited length with:  
150" (381 cm) Maximum Perimeter with a longest side of 50" (127 cm) for rectangular ducts and 37-1/2" (95 cm) for square ducts

**or**

150" (381 cm) Maximum Circumference [maximum diameter of 47-1/2" (121 cm)] for round ducts.

**Placement:** Centered in duct opening, from 0-6" (0-15 cm) into the duct opening.

**Aim point:** Center of duct.



**Figure 3-1.**  
**Proper Duct Nozzle Placement**



### Plenum Protection

X2

**Nozzle:** N-1HP (1 Flow Point)

**Coverage:** Length: 12 feet (3.7 m) max.  
Width: 4 feet (1.2 m) max.

**Placement:** See Figure 3.7.

**Aim point:** See Figure 3.7.

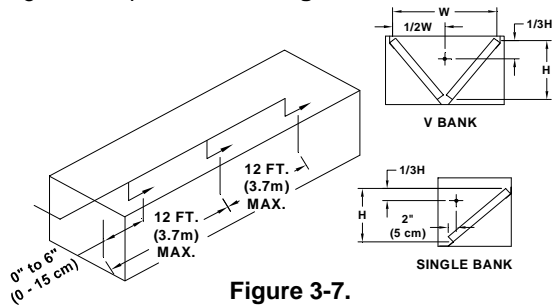
The **Model N-1HP** nozzle is a one (1) flow point nozzle that can protect a plenum (either single bank or V-bank) of 12 feet (3.7 m) in length and 4 feet (1.2 m) in width per nozzle. Larger plenums must be divided into 12 foot (3.7 m) sections, with each section protected with a separate nozzle. See **Figure 3-7**.

#### Plenum: V-bank Nozzle Placement

The nozzle must be located at the center of the V-bank width and down 1/3 of the vertical height, within 6 inches (15 cm) of the end of the plenum or plenum module and aimed down the length of the plenum. See **Figure 3-7**.

#### Plenum: Single Filter Bank Nozzle Placement

The nozzle must be located at a point that is 2" (5.1 cm) from the back edge of the **filter** and 1/3 of the vertical height of the **filter**, within 6 inches (15 cm) off the end of the plenum or plenum module and aimed down the length of the plenum. See **Figure 3-7**.



**Figure 3-7.**  
**Model N-1HP**  
**Plenum Nozzle Placement and Aiming**

**Note:** These examples are typical and do not represent every acceptable nozzle configuration, only a representative sample of them.

#### Designer Note

For plenums that exceed 12 feet (3.7 m) in length and therefore require multiple nozzles, it is recommended that the total length be divided into equally sized protection zones and protected accordingly. So a 16 foot (4.9 m) long plenum should be divided into two 8 foot (2.4 m) zones, with a nozzle protecting each, as opposed to a 12 foot (3.7 m) zone and a 4 foot (1.2 m) zone.

### APPLIANCE PROTECTION

Each different appliance must be protected in a specific manner with regard to nozzle selection, placement, and aiming. No deviations from these parameters are allowed and failure to comply completely with these requirements will void the UL Listing of the system and may render the system ineffective.

In order to properly understand this section, several key terms need to be defined in advance.

#### DESIGN TERMINOLOGY

**Nozzle Height:** The distance from the tip of the discharge nozzle to the top surface of the appliance (except for woks, in which case the bottom of the wok is used).

**Hazard Area:** All nozzle coverages include the maximum size of the hazard area they can protect. **Hazard area is NOT the overall size of the appliance being protected**, but rather the actual size of the portion of the appliance used for cooking.

#### Appliances Requiring Multiple Nozzles

Some appliances may need to be protected by multiple nozzles because of their size. If the size of an appliance is larger than the approved coverage for that appliance, multiple nozzles must be used. This is accomplished by dividing the hazard area into individual zones that comply with the parameters of the listing for that appliance. In this case, each zone will be protected as an individual appliance with respect to nozzle placement and aiming.

### RANGE PROTECTION

#### Two (2) Burner Range – LOW Proximity

**Nozzle:** N-1LP (1 Flow Point)

**Coverage:** 12" (30.5 cm) x 24" (61 cm) Maximum (measured burner edge to burner edge)

**Nozzle Ht:** 16" (41 cm) – 30" (76 cm)

**Placement:** 3" (7.6 cm) from either edge of appliance, on appliance's long centerline.

**Aim point:** 6" (15 cm) from opposite edge of appliance, on appliance's long centerline.

The **Model N-1LP** nozzle is a one (1) flow point nozzle that can protect a range cooking area of 12" (30.5 cm) wide by 24" (61 cm) deep. The nozzle must be located 16" (41 cm) to 30" (76 cm) above the cooking surface and positioned on the appliance's long centerline within



### Deep Fat Fryer Protection

X2

**Nozzle:** N-2HP (2 Flow Point)

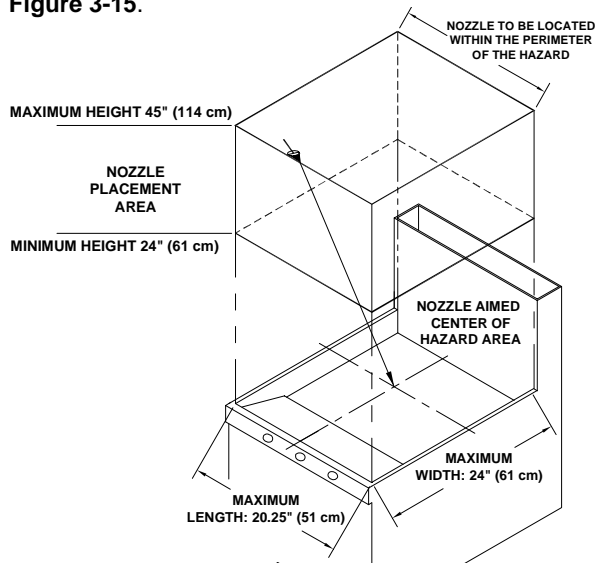
**Coverage:** 20.25" (51 cm) x 24" (61 cm)

**Nozzle Ht:** 24" (61 cm) – 45" (114 cm)

**Placement:** Anywhere over the surface of the appliance cooking area.

**Aim point:** Center of appliance.

The **Model N-2HP** nozzle is a two (2) flow point nozzle that can protect a deep fat fryer with a maximum cooking area of 20.25" (51 cm) wide by 24" (61 cm) deep. The nozzle must be located 24" (61 cm) to 45" (114 cm) above the cooking surface and located anywhere over the appliance cooking area. The nozzle must be aimed at the center of the cooking area. See **Figure 3-15**.



**Figure 3-15.**  
20.25" (cm) x 24" (cm) Deep Fat Fryer  
Model N-2HP Nozzle

### Fryers Requiring Multiple Nozzles

Fryers that exceed the coverage of a single nozzle can be protected with multiple nozzles. The fryer must be divided into equal sized modules, so that each module does not exceed the maximum coverage allowed for a single nozzle.

**CAUTION**

The maximum size fryer that can be modularized is 864 square inches (5,574 sq. cm).

### Tilting Brazing Skillet Protection

**Nozzle:** N-2HP (2 Flow Point)

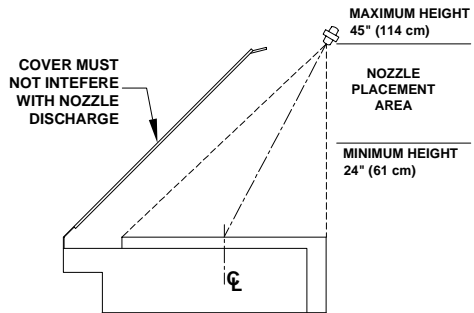
**Coverage:** 20.25" (51 cm) x 24" (61 cm) per nozzle

**Nozzle Ht:** 24" (61 cm) – 45" (114 cm)

**Placement:** Anywhere over the surface of the appliance cooking area.

**Aim Point:** Center of the protected zone.

The **Model N-2HP** nozzle is a two (2) flow point nozzle that can protect a tilting brazing pan / skillet with a maximum cooking area of 20.25" (51 cm) wide by 24" (61 cm) deep per nozzle. The nozzle must be located 24" (61 cm) to 45" (114 cm) above the cooking surface and located anywhere over the appliance cooking area. The nozzle must be aimed at the center of the cooking area. See **Figure 3-16**.



**Figure 3-16.**  
Tilting Skillet / Brazing Pan  
Model N-2HP Nozzle

### GRIDDLE PROTECTION

#### Standard Griddle: 42" (107 cm) x 30" (76 cm)

**Nozzle:** N-1LP (1 Flow Point)

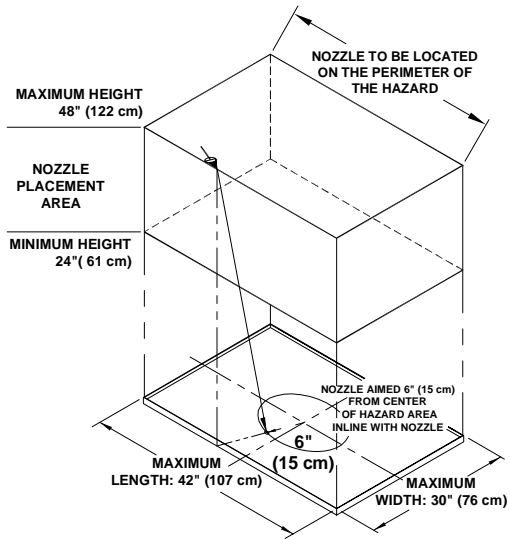
**Coverage:** 42" (107 cm) x 30" (76 cm) Maximum

**Nozzle Ht:** 24" (61 cm) – 48" (122 cm)

**Placement:** Directly over the edge of the cooking area.

**Aim Point:** 6" (15 cm) from center of appliance in-line with the nozzle.

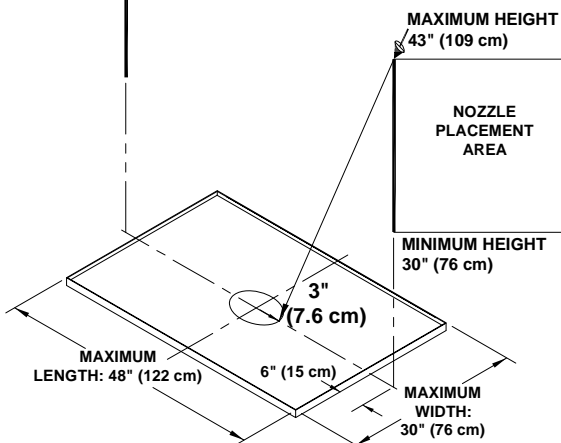
The **Model N-1LP** nozzle is a one (1) flow point nozzle that can protect a griddle with a maximum cooking area of 42" (107 cm) wide by 30" (76 cm) deep. The nozzle must be located 24" (61 cm) to 48" (122 cm) above the cooking surface and positioned directly above the edge of the cooking area. The nozzle must be aimed 6" (15 cm) from the center of the cooking area in-line with the nozzle. See **Figure 3-17**.



**Figure 3-17.**  
**Standard Griddle: 42" (107 cm) x 30" (76 cm)**  
**Model N-1LP Nozzle**

**Large Griddle - 48" (122 cm) x 30" (76 cm)**

- X1 **Nozzle:** N-1LP (1 Flow Point)
- Coverage:** 48" (122 cm) x 30" (76 cm) Maximum
- Nozzle Ht:** 30" (76 cm) – 43" (109 cm)
- Placement:** On the centerline of the appliance, 6" (15 cm) off the short edge.
- Aim Point:** 3" (7.6 cm) from center of appliance in-line with the nozzle.



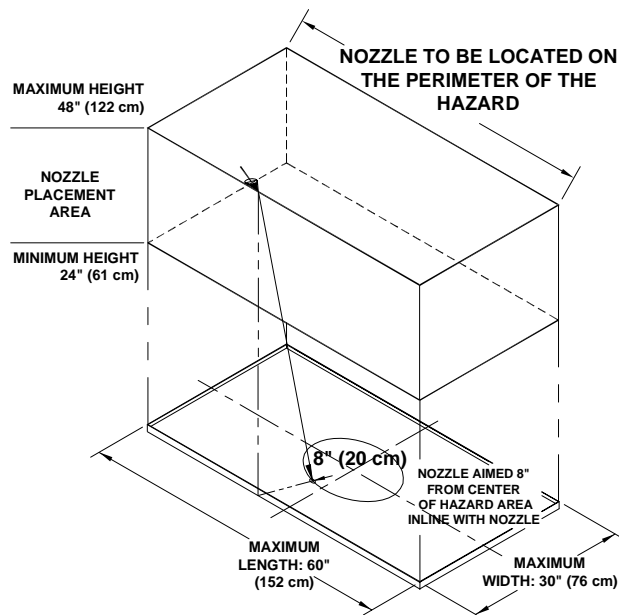
**Figure 3-18.**  
**Large Griddle: 48" (122 cm) x 30" (76 cm)**  
**Model N-1LP Nozzle**

The **Model N-1LP** nozzle is a one (1) flow point nozzle that can protect a griddle with a maximum cooking area of 48" (122 cm) wide by 30" (76 cm) deep. The nozzle must be located 30" (76 cm) to 43" (109 cm) above the cooking surface, on the centerline of the appliance and 6" (15 cm) off the either short edge. The nozzle must be aimed 3" (7.6 cm) from the center of the cooking area in-line with the nozzle. See **Figure 3-18**.

**Extra Large Griddle - 60" (152 cm) x 30" (76 cm)**

- Nozzle:** N-2LP (2 Flow Point)
- Coverage:** 60" (152 cm) x 30" (76 cm) Maximum
- Nozzle Ht:** 24" (61 cm) – 48" (122 cm)
- Placement:** Directly over the edge of the cooking area.
- Aim Point:** 8" (20 cm) from center of appliance in-line with the nozzle.

The **Model N-2LP** nozzle is a two (2) flow point nozzle that can protect a griddle with a maximum cooking area of 60" (152 cm) wide by 30" (76 cm) deep. The nozzle must be located 24" (61 cm) to 48" (122 cm) above the cooking surface and positioned directly above the edge of the cooking area. The nozzle must be aimed 8" (20 cm) from the center of the cooking area in-line with the nozzle. See **Figure 3-19**.



**Figure 3-19.**  
**Extra Large Griddle: 60" (152 cm) x 30" (76 cm)**  
**Model N-2LP Nozzle**



### CHARBROILER PROTECTION

#### Radiant Charbroiler

**Nozzle:** N-1HP (1 Flow Point) X1

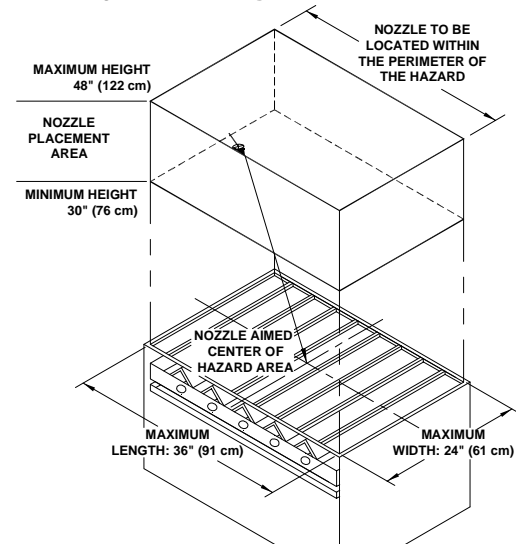
**Coverage:** 36" (91 cm) x 24" (61 cm) Maximum

**Nozzle Ht:** 30" (76 cm) – 48" (122 cm)

**Placement:** Anywhere over the surface of the appliance.

**Aim Point:** Center of appliance.

The **Model N-1HP** nozzle is a one (1) flow point nozzle that can protect a radiant charbroiler with a cooking area of 36" (91 cm) wide by 24" (61 cm) deep. The nozzle must be located 30" (76 cm) to 48" (122 cm) above the cooking surface and positioned anywhere over the cooking area. The nozzle must be aimed at the center of the cooking area. See **Figure 3-20**.



**Figure 3-20.**  
**Radiant Charbroiler**  
**Model N-1HP Nozzle**

#### Lava Rock Charbroiler Protection

**Nozzle:** N-2HP (2 Flow Point)

**Coverage:** 24" (61 cm) x 24" (61 cm) Maximum

**Nozzle Ht:** 24" (61 cm) – 40" (102 cm)

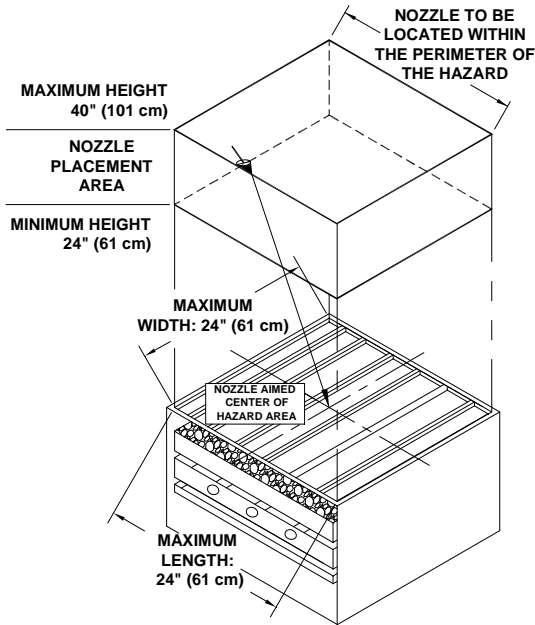
**Placement:** Anywhere over the surface of the appliance.

**Aim Point:** Center of appliance.

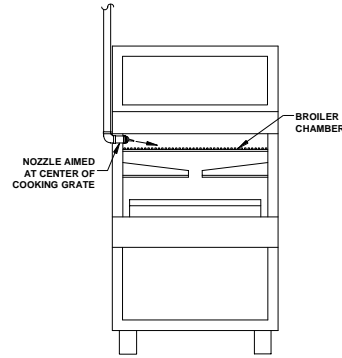
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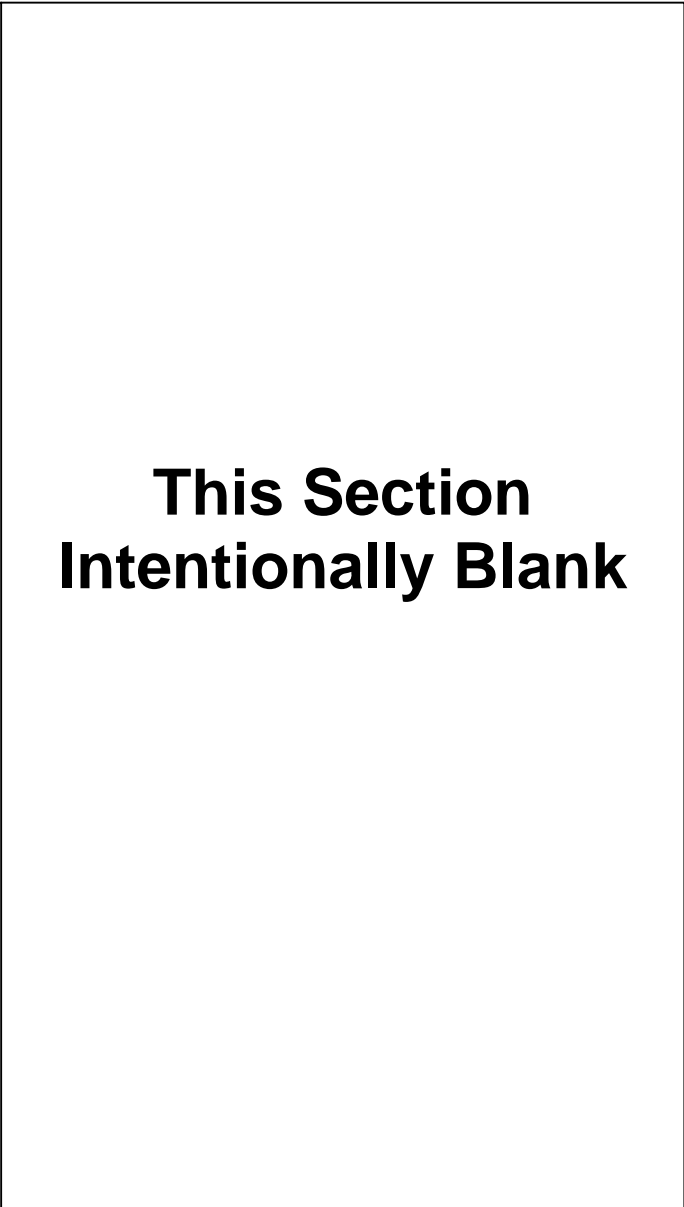
The **Model N-2HP** nozzle is a two (2) flow point nozzle that can protect a lava rock charbroiler with a cooking area of 24" (61 cm) wide by 24" (61 cm) deep. The nozzle must be located 24" (61 cm) to 40" (102 cm) above the cooking surface and positioned anywhere over the cooking area. The nozzle must be aimed at the center of the cooking area. See **Figure 3-21**.



**Figure 3-21.**  
Lava Rock Charbroiler  
Model N-2HP Nozzle



**Figure 3-22.**  
Upright Broiler 36" (91 cm) x 24" (61 cm)  
Model N-1LP Nozzle



**Upright Broiler Protection**

X1

**Nozzle:** N-1LP (1 Flow Point)

**Coverage:** 36" (91 cm) x 24" (61 cm) Maximum

**Nozzle Ht:** Upper corner of broiling chamber.

**Placement:** Positioned in the corner of the front opening of the appliance.

**Aim Point:** Center of cooking grate.

The **Model N-1LP** nozzle is a one (1) flow point nozzle that can protect an upright broiler (salamander broiler) with a cooking area of 36" (91 cm) wide by 24" (61 cm) deep. The nozzle must be located in the top front corner of the broiler and aimed at the center of the cooking grate. See **Figure 3-22**.



## Introduction

This addendum to the Buckeye Kitchen Mister Restaurant Cooking Area Fire Suppression System Technical Manual (BFR-TM) dated February 1, 2008 covers the addition of high proximity coverage of a range that may or may not incorporate a back-shelf. This coverage can be used in both new and existing installations.

## Listings and Approvals

This addendum of The *Kitchen Mister* Fire Suppression System has been tested to and meets the following:

- Underwriters Laboratories, Inc. (Listed to the requirements of UL-300/UL-1254) UL-EX 6885
- Underwriters Laboratories of Canada ULC-EX 6885

## Range Protection

### 24" (61 cm) x 24" (61 cm) Range with a Back-shelf – HIGH Proximity

X3

**Nozzle:** N-2LP (2 Flow Point)

**Coverage:** 24" (61 cm) x 24" (61 cm) Maximum (measured burner edge to burner edge)

**Nozzle Ht:** 30" (76 cm) – 40" (102 cm)

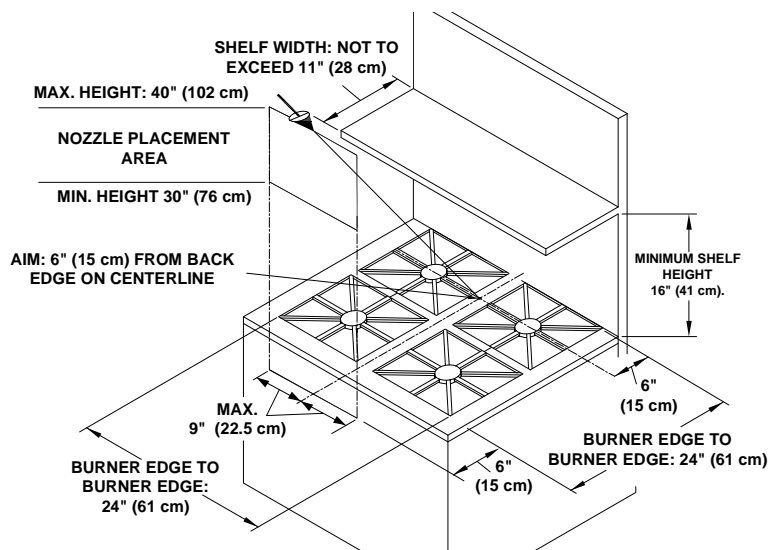
**Placement:** 6" (15 cm) outside the front edge of the burners within 9" (22.6 cm) from the centerline.

**Aim point:** 6" (15 cm) from the back edge of the burner on the centerline of the appliance.

**Shelf Height:** Minimum of 16" (41 cm) from the top of the appliance.

**Shelf Width:** A maximum of 11" (28 cm).

The **Model N-2LP** nozzle is a two (2) flow point nozzle that can protect a range cooking area of 24" (61 cm) wide by 24" (61 cm) deep. The nozzle must be located 30" (76 cm) to 40" (102 cm) above the cooking surface 6" (15 cm) outside the front edge of the burners and within 9" (22.5 cm) of the centerline of the appliance. The nozzle must be aimed 6" (15 cm) from the back edge of the burner on the centerline of the appliance. The back-shelf shall not be less than 16" (41 cm) from the top of the appliance and extend more than 11" (28 cm) over the back edge of the burners. See **Figure AD1-1**.



**Figure AD1-1.**  
**24" (61 cm) x 24" (61cm) Range with Back-shelf**  
**Model N-2LP Nozzle**