

DIMENSIONS IN INCHES

MODEL	Rated CFM	A	B	C	D	E	F	G	H	UH	FH*
VDT-03BPCU	1,500	36	36	30	6	6	63	8	24	93	14
VDT-06BPCU	3,000	44	44	42	8	8	67	11	38	109	14
VDT-10BPCU	5,000	48	44	48	10	10	73	15	42	121	14
VDT-17BPCU	7500	62	52	48	11	11	81	23	42	129	14
VDT-21BPCU	10,000	72	60	54	12	12	86	27	48	140	14
VDT-25BPCU	12,500	74	66	60	14	14	92	30	54	152	14
VDT-30BPCU	15,000	74	66	74	15	15	92	30	67	166	14
VDT-36BPCU	18,000	84	76	74	18	18	100	35	67	174	14

\*FLOOR HEIGHT (FH) MUST BE VERIFIED WITH THE PROJECT ARCHITECT.

## SPECIFICATIONS OF CONSTRUCTION

- BASE FRAME** - 11 Gauge Tubular Steel; Electrically Welded
- CASING**
- **FLOOR** - 16 Gauge, G-90 Galvanized Steel Floor Sheet  
- 22 Gauge, G-90 Galvanized Steel Sub-Floor
  - **WALLS** - 16 Gauge, G-90 Galvanized Steel Exterior  
- 22 Gauge, G-90 Galvanized Steel Interior
  - **TOP** - 16 Gauge, G-90 Galvanized Steel Exterior  
- 22 Gauge, G-90 Galvanized Steel Interior
- INSULATION**
- 2"-3# Insulation in all Wall & Roof Casing Panels  
1"-1.5# Insulation in Floor Panels
- All insulation is encapsulated between the inner and outer skin  
Perforated Panels include a FSK Vapor Seal to Protect Insulation  
Insulation has a composite rating in accordance with ASTM E84, NFPA 90A and UL 723 for Fire & Smoke Rating not to exceed a Flame Spread of 25 and a Smoke Development of 50
- ACCESS DOORS**
- 16 Gauge, G-90 Galvanized Steel Double Wall with a 20-solid liner & 2"- 3 lb. Insulation; Fan Section Access Doors are Removable for a Roll-Out Fan Assembly that may be quickly removed for service  
Access Doors have Double Perimeter Bulb Seal, Low-Leak Gasket  
(4) Latches are provided with Roller-Ball Design  
Viewing Windows in Removable Fan Section Access Doors
- PAINT**
- All non-galvanized materials are and painted with Air Dried Polyurethane 2 to 3 mils DFT

## CONDITIONING COMPONENTS

- SUPPLY FAN ASSEMBLY**
- Quiet Plenum Fan, Class 1, Rated in Accordance with AMCA 300 Direct Drive Aluminum Fan Wheel & Steel Inlet Cone for strength  
Bearings are selected for a minimum L-10 200,000 Average Life.  
The complete rotating assembly is designed to roll out of the unit Casing to expose the fan for maintenance and service.  
The fan assembly is installed on a welded structural steel frame with Restrained Open Spring Isolators & Quick Release Flex Connector
- SUPPLY FAN MOTOR**
- Premium Efficient 480/3/60, ODP, NEMA Design B Direct Drive Motors with a 1.15 Service Factor with Class F Insulation  
All Motors have Copper Windings & pre-Lubricated Bearings  
NEMA type Adjustable Bases are provided for each motor.
- COOLING COIL**
- Cooling Coil Constructed with 5/8" x .025 Copper Tubes Expanded into Plate type Aluminum Fins are 0.0075  
Casing is 304-Stainless Steel with Box shaped channels  
Stainless Tube Supports are provided on coils over 48" long  
Coils are rated for 250 PSIG Operating Pressure  
Rated and Certified under the ARI 410 Certification Program  
Evaporator Cooling Coil for DX System is Optional
- HEATING OPTIONS**
- Hot Water, Steam or Electric Heat is optional

### CONDITIONING COMPONENTS (Continued)

#### **MIXING AIR DAMPERS**

- Low-Leak Opposed Blade Design with Galvanized Steel Casing  
Lifetime Lubricate Bearings and Solid Zinc Plated Steel Axles  
Stainless Steel Side Seals and Compression type Blade Edge Seals  
All Pivot Points are Brass and all Hardware is Zinc Plated.  
Control Shaft is Permanently Notched to Indicate Damper Position  
Damper Actuators and Controls are Field Installed **“By-Others”**

#### **AIRFLOW SENSOR**

- Piezometer Ring Flow Sensor at Fan Inlet is Optional

#### **FILTER RACK**

- Filter Racks are provided at the cooling coil & the by-pass dampers  
(1) Set of 4”-MERV13, Class 2 Filters at Coil and By-Pass Inlets  
All Filters rated in accordance with ASHRAE 52-76 & UL Std. 900

### ELECTRICAL COMPONENTS

#### **POWER REQUIREMENTS**

- 480/3/60 Main Power for each Air Tower Unit is **“By-Others”**  
Installer to Connect at factory furnished Non-Fused Disconnect Switch  
Branch Circuit Protection is **“By Others”**

#### **SYSTEM CONTROLS**

- All Actuators & Controls are Furnished and Installed **“By Others”**

#### **VF DRIVE**

- Variable Frequency Drive is Factory Furnished and Installed  
Mod-Bus, Johnson, Siemens or BAC-Net Protocol for is standard  
All VF Drives are 6-Pulse type with a 5% Impedance Reactor included  
Input AC Voltage tolerance of 380 to 500v is +/- 10% is standard  
Input Frequency tolerance of 50/60 Hz +/- 6%  
No Additional Fault or Filters are required or included.

#### **MAIN POWER DISCONNECT**

- Non-Fused Main Power Disconnect Switch  
20 Amp, 3-Pole, UL Listed, Load Break Switch  
Lock-Out Design to Meet OSHA 1910 requirements

#### **ELECTRICAL COMPONENTS**

- (1) 100w Compact Fluorescent Light in Fan Section  
Light Switch & GFI Receptacle on Exterior of Casing  
**Branch Circuit Fuse and 480/115 Lighting Transformer**  
NEMA 1 Electrical Enclosure with Pocket Wiring Diagram

#### **ELECTRICAL COMPLIANCE**

- This Equipment is ETL Listed and Certified  
Compliance of State and Local Code is **“By-Others”**

### COMPONENTS SHIPPED DE MOUNTED FOR FIELD INSTALLATION

ITEM	QUANTITY	DESCRIPTION
Raised Floor Base	One per Unit	Shipped De-Mounted for field installation <b>“By-Others”</b>
Mixing Damper Section	One per Unit	Shipped De-Mounted for field installation <b>“By-Others”</b>

PHYSICAL DATA

Model	Rated CFM	MAX HP	Plenum Fan	Max. Rpm	Coil Filters	NC	Dry Weight
VDT-03BPCU	1,500	3/4	16"	900	(1) 20 x 20	40	1,540#
VDT-06BPCU	3,000	1	22"	900	See Below*	40	1,575#
VDT-10BPCU	5,000	2	27"	900	(4) 16 x 20	40	1,910#
VDT-17BPCU	7,500	3	36"	900	See Below**	40	2,175#
VDT-21BPCU	10,000	5	36"	900	(6) 20 x 24	40	2,585#
VDT-25BPCU	12,500	7.5	44"	900	(6) 20 x 24	40	2,950#
VDT-30BPCU	15,000	7.5	44"	900	(9) 20 x 20	40	3,070#
VDT-36BPCU	18,000	10	49"	900	(9) 20 x 24	40	3,380#

\*(1) 24 x 24 & (1) 12 x 24

\*\* (2) 24 x 24 & (2) 12 x 24

COIL & FILTER DATA

Model	Total CFM	O.A. CFM	By-Pass CFM	Coil CFM	Coil (Qty) Size	Area*	Velocity*
VDT-03BPCU	1,500	150	675	675	(1) 18" x 21"	2.63	257
VDT-06BPCU	3,000	300	1,350	1,350	(1) 30" x 24"	5.00	270
VDT-10BPCU	5,000	500	2,250	2,250	(1) 36" x 33"	8.25	273
VDT-17BPCU	7,500	700	3,400	3,400	(1) 36" x 47"	11.75	289
VDT-21BPCU	10,000	1,000	4,500	4,500	(1) 42" x 59"	17.21	261
VDT-25BPCU	12,500	1,250	5,625	5,625	(1) 48" x 59"	19.67	286
VDT-30BPCU	15,000	1,500	6,750	6,750	(2) 30" x 59"	24.58	275
VDT-36BPCU	18,000	1,800	8,100	8,100	(2) 30" x 69"	28.75	282

\* Based on the maximum area of cooling coil.

Run testing of each unit is conducted at Air Zone International prior to shipment.

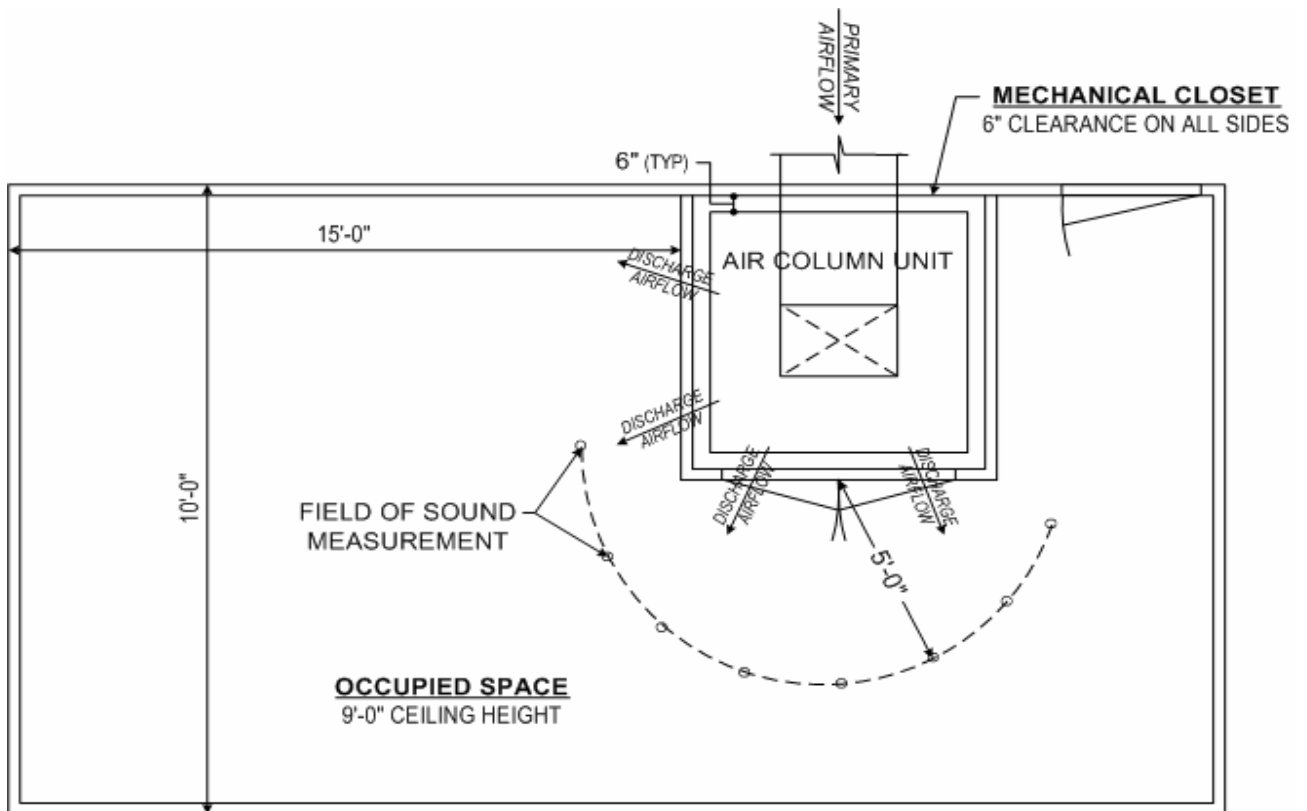
The VF Drive is factory set to the required CFM. A two year warranty is provided on the VFD.



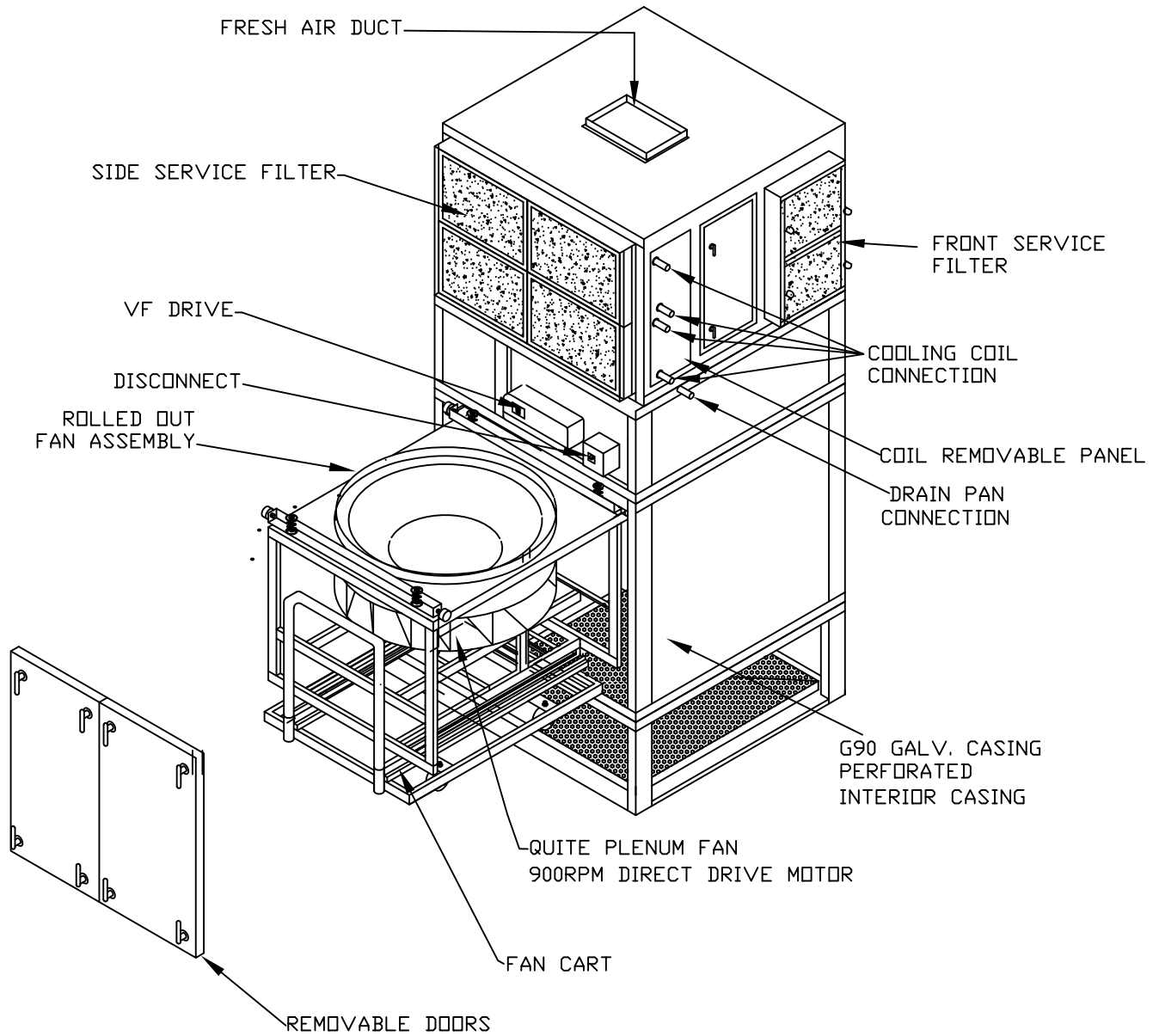
**Certified Sound Performance  
Air Column Units**

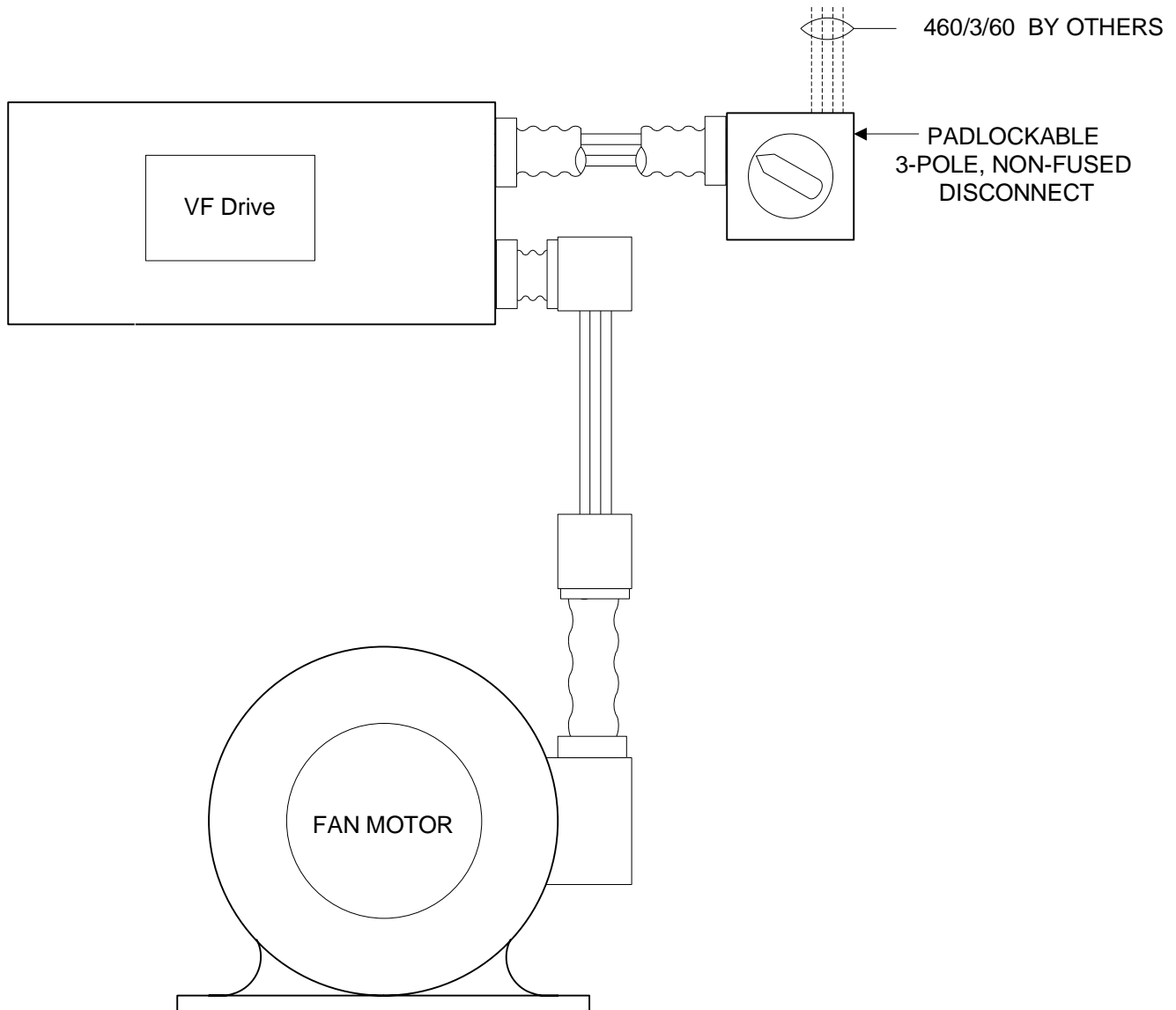
VOLUME CFM	OCTAVE BANDS								NC LEVEL
	1 63	2 125	3 250	4 500	5 1K	6 2K	7 4K	8 8K	
1,500	51	48	46	37	34	33	26	22	40
3,000	51	50	49	44	40	36	30	26	36
5,000	55	53	51	45	42	37	31	28	40
7,500	57	50	47	43	39	35	26	22	39
10,000	63	49	46	42	37	30	25	21	39
12,500	64	49	46	42	38	30	23	19	40
15,000	63	48	45	41	36	28	21	17	39
18,000	63	50	49	43	38	30	22	18	39

Certified Sound Data based on independent laboratory testing in a mock-up facility as shown below.

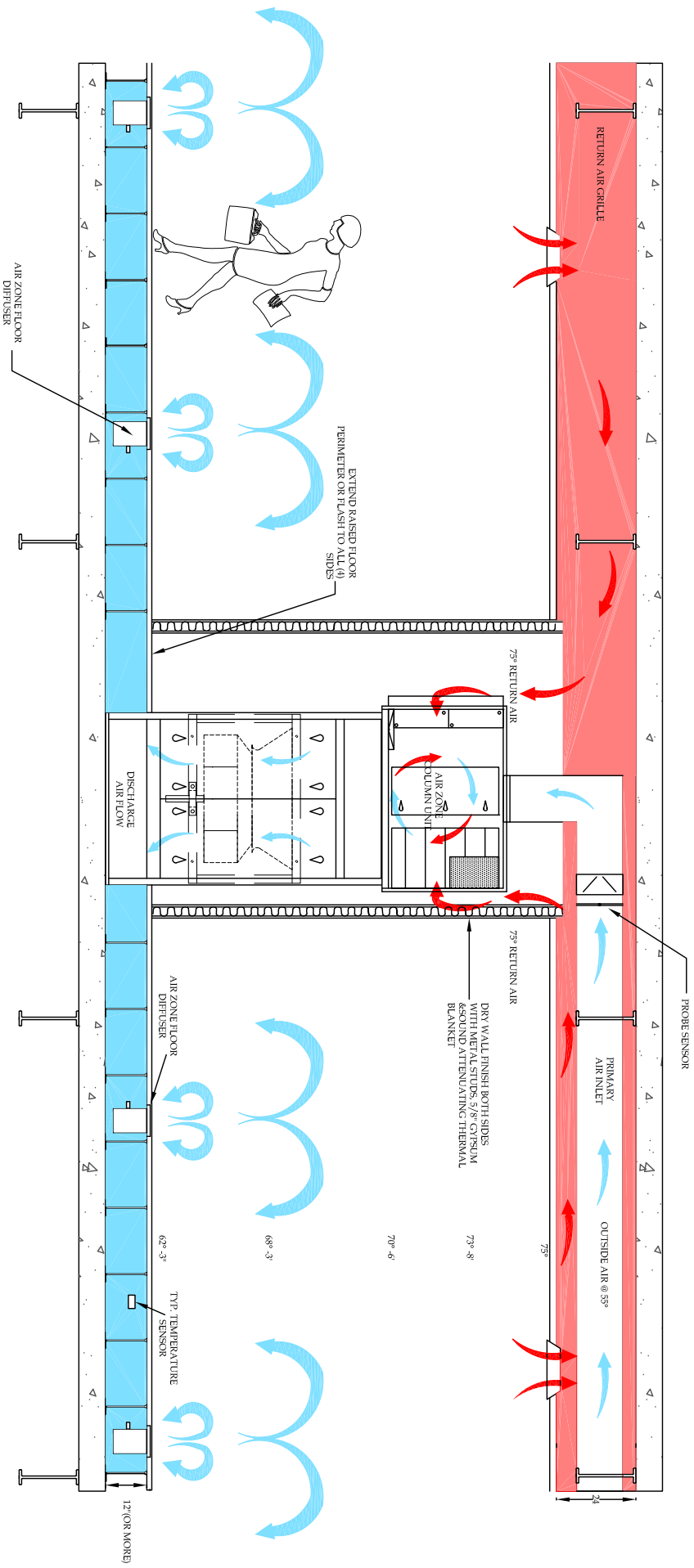


**TYPICAL TEST SET-UP**





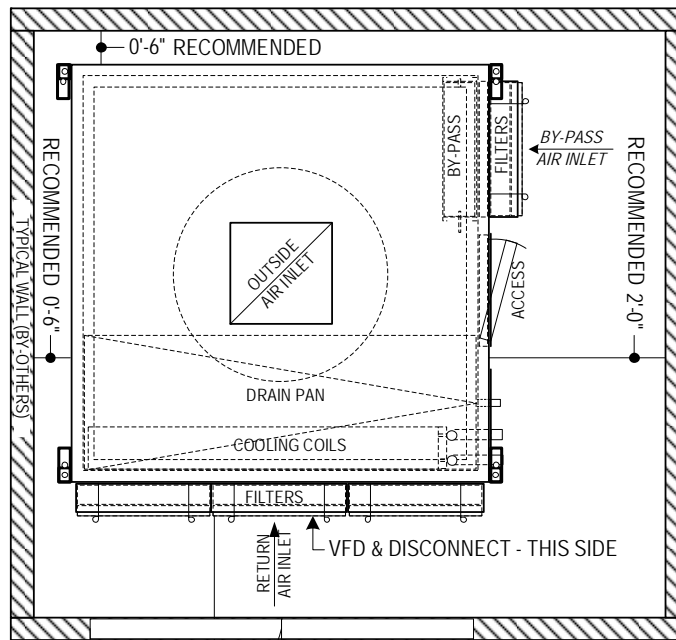
**Note:**  
1. All wiring in accordance with Chicago Building Code and NEC.  
2. All units are ETL Certified



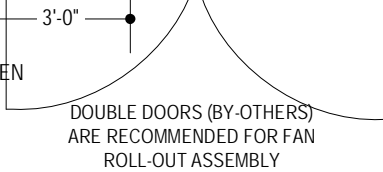
**INSTALLATION CLEARANCES**

**NOTE:**  
 MINIMUM ROOM SIZE  
 RECOMMENDED

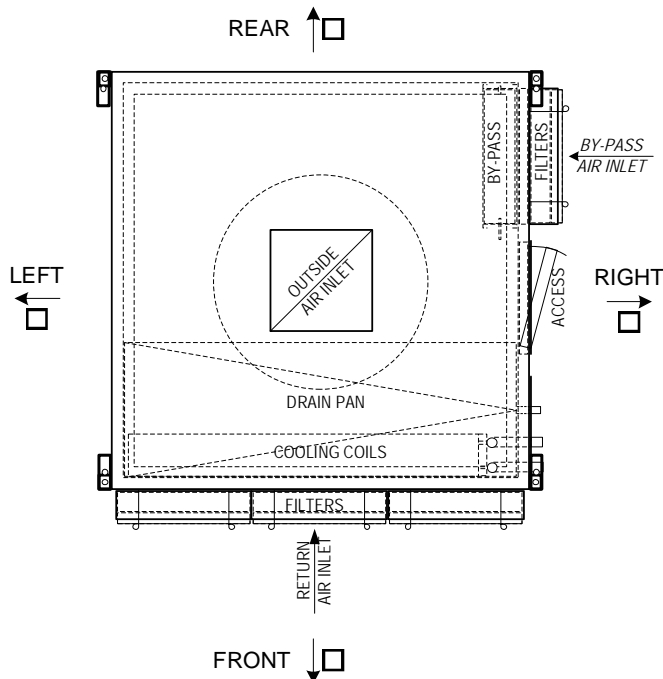
PLAN VIEW



MINIMUM 36" REQUIRED  
 FOR MAIN POWER PER CODE  
 COMPLIANCE WHEN DOOR IS OPEN



**DISCHARGE ARRANGEMENT**



### List of Column Unit Installations

Project Name	Location	Year	Engineer	Representative	Qty. Units	Unit Series	Unit Description
Northern Trust	Chicago, IL	2001	ESD Chicago	Hatchell & Assoc.	8	VDT-CU	Mixed-Flow Units
ABN AMRO	Chicago, IL	2002	ESD Chicago	Hatchell & Assoc.	103	VDT-CU	Mixed-Flow Units
Bank One Plaza	Chicago, IL	2005	ESD Chicago	Hatchell & Assoc.	4	VDT-BPCU	Environmental Air Twr.
Chicago Board of Trade	Chicago, IL	2005	ESD Chicago	Hatchell & Assoc.	3	VDT-BPCU	Environmental Air Twr.
Calamos Financial	Chicago, IL	2005	ESD Chicago	Hatchell & Assoc.	20	VDT-CU	Mixed-Flow Units
Ford Financial Center	Deerfield, IL	2005	ESD Chicago	Hatchell & Assoc.	20	VDT-CU	Mixed-Flow Units
Takada Pharmaceutical	Decature, IL	2006	Cosentini & Assoc.	Hatchell & Assoc.	32	VDT-CU	Mixed-Flow Units
GS @ 30 Hudson Street	Jersey City, NJ	2006	JB&B Engr. NY	SRS Enterprises, Inc.	3	VDT-BPCU	Environmental Air Twr.
City Gate Center	Chicago, IL	2006	ESD Chicago	Hatchell & Assoc.	24	VDT-CU	Mixed-Flow Units
HSCB Chicago North	Chicago, IL	2006	ESD Chicago	Hatchell & Assoc.	52	VDT_CU	Mixed-Flow Units
McCoy's Spec. Products	Houston, TX	2006	Andy Bergman	Factory Direct Sale	1	VDT-CU	Mixed-Flow Units
Goldman Sachs Hdq.	NY, NY	2007	Cosentini & Assoc.	SRS Enterprises, Inc.	156	VDT-BPCU	Environmental Air Twr.
Bank of America	NY, NY	2007	JB&B Engr. NY	SRS Enterprises, Inc.	220	VDT-CU	Mixed-Flow Units
Meadow Ridge 95 Bldg.	Elkridge, MD	2007	ESD Chicago	Metro. Equip. Group	8	VDT-CU	Mixed-Flow Units
BP Rodeo	Houston, TX	2007	IA Naman+A Houston	IDS	1	VDT-BPCU	Environmental Air Twr.
Man-Power Bldg.	Oak Groove, WI	2007	Cosentini & Assoc. NY	Hatchell & Assoc.	30	VDT-CU	Mixed-Flow Units
FEMA Office & Whse.	Manchester, VA	2007	CHPA	IDS	8	VDT-BPCU	Environmental Air Twr.
NW Mutual	Madison, WI	2007	Cosentini & Assoc. NY	Hatchell & Assoc.	22	VDT-CU	Mixed-Flow Units
Veritas Headquarters	Houston, TX	2007	IA Naman+A Houston	IDS	16	VDT-CU	Mixed-Flow Units
Morningstar Reporting	Chicago, IL	2007	WMA Engr. Chicago	Hatchell & Assoc.	73	VDT-CU	Mixing Flow with Heat
ATP Building	Chicago, IL	2007	Team Engr. Chicago	Hatchell & Assoc.	15	VDT-CU	Mixing Flow with Heat
Ntl. Audubon Society	NY, NY	2007	Flack & Kurtz NY	SRS Enterprises, Inc.	4	VDT-BPCU	Environmental Air Twr.
SAP America, Inc.	Newton Sq, PA	2008	Flack & Kurtz NY	Carrier Corporation	23	VDT-BPCU	Environmental Air Twr.

### List of Horizontal Unit- Raised Floor Installations

Project Name	Year Insta	Engineer	Representative	Qty. Units	Unit Model	Unit Description	
H & R Block Building	Kansas City, MO	2005	M-E Engineers KC	IDS	32	RTAH-PL	Hor. Environmental Unit
Sysco Office Campus	Houston, Texas	2006	IA Naman+A Houston	IDS	36	RTAH-PL	Hor. Environmental Unit
Shell Oil Company	Houston, Texas	2007	IA Naman+A Houston	IDS	12	RTAH-PL	Hor. Environmental Unit
One Victory Park	Dallas, Texas	2007	JJA, Inc. Dallas	IDS	32	RTAH-PL	Hor. Environmental Unit
Tetra Office Building	Houston, Texas	2008	Wylie & Assoc. Houston	IDS	12	RTAH-PL	Hor. Environmental Unit