THERMAL
CORPORATION

A Division of Nailor International, Inc.

Tranquility Column Unit

Tranquility Column Unit

Thermal's Tranquility Column Unit (TCU) is designed to mix multiple airstreams and provide the conditioned air to an underfloor space or plenum. The TCU series provides a very flexible approach to underfloor systems by utilizing a variety of options. Whether used as a primary booster, primary or supplemental cooling, dedicated outdoor air or a pre-treated, primary air stream mixed with space return air, the series will accommodate almost any underfloor application.

FRAME

Borrowing Thermal's CF, F and T Series frame construction techniques, each TCU unit can be customized to offer varying degrees of structural rigidity or modularity, while providing economical solutions to meet project specifications.

Thermal's Tubular Frame (T Series) construction is the standard frame design on TCU Series. This rigid structural design, allows for a wide range of size and configurations while providing a customizable platform with an optimal balance in strength, quality and value.

PANELS

Unit exterior panels are constructed of galvanized steel. They may be screwed to the standard tubular welded frame (T Series), to die-formed welded frames (CF Series) or to the bolted unitized frame (F Series). All side, end and roof panels provide a smooth, flush, pleasing appearance. Panels are sealed with closed cell neoprene gaskets around the perimeter. A few features include:

- 16 gauge (1.5) galvanized steel panels
- Closed cell neoprene gasketing
- Installed with ¼" (6) sealed fasteners
- All panels are removable without affecting structural integrity of the unit
- 2" (51), 3" (76) or 4" (102) walls are available with single or double wall construction

Options:

- Epoxy coated painted casing
- 304SS or 316SS exterior and/or interior

Liner:

Interior of walls, roof, doors, frame and floor lined with 20 ga. (1.0) perforated galvanized steel sheet.

Options:

- 304 or 316 Stainless steel

INSULATION

Entire casing insulated with 2" (51) thick, 3 lb/ft^3. (48 kg/m^3) density FSK faced fiber insulation, rated and marked for compliance with NFPA 90A and 90B.

Insulation is applied with 100 percent coverage of a bonding adhesive.

Options:

- 2" (51) thick, 3 lb/ft^3 (48 kg/m^3) density mat faced insulation
- 3" (76) thick, 3 lb/ft^3 (48 kg/m^3) density mat faced insulation
- 3" (76) thick, 3 lb/ft^3 (48 kg/m^3) density FSK faced insulation

ACCESS DOORS

Double wall, hinged and latched access doors are provided for fan access, filter access and the controls vestibule. Access doors are constructed with the same materials as the unit casing specified above.

Gasket: Closed cell neoprene bulb.

Hinge (Where Necessary): 3-Way Adjustable zinc plated.

Handles: Durable glass reinforced nylon construction.

Options:

- Fan access doors provided with a 12" (305) x 12" (305) Lexan view glass window
- Key-locking door handles

FANS AND MOTORS

Fans selected are direct drive SWSI airfoil 12 blade plenum, with sizes as shown on the tables.

Unit fan selection and ratings shall be based on tests made in accordance with ASHRAE 51, AMCA 210, and AHRI 430.

Fans are selected to be capable of operating safely at every point of rating on or below the minimum performance class limit and have stable operation over the entire operating range from shut off to free delivery.

Fan and motor assembly mounted on a tubular steel roll out base, isolated from the unit frame with un-housed, bolted spring type vibration isolators having a minimum of 1" (25) deflection. A neoprene coated flexible connector with quick release latch is provided between fan and inlet panel. Fan base is coated with self-priming urethane enamel.

Motors selected are 900 RPM, ODP standard efficiency, with horsepower as shown on the tables and voltage as determined by project specifications.

Options:

- Seismic restraints
- TEFC or P Motors
- Premium Efficiency motors

FILTER SECTION (Optional)

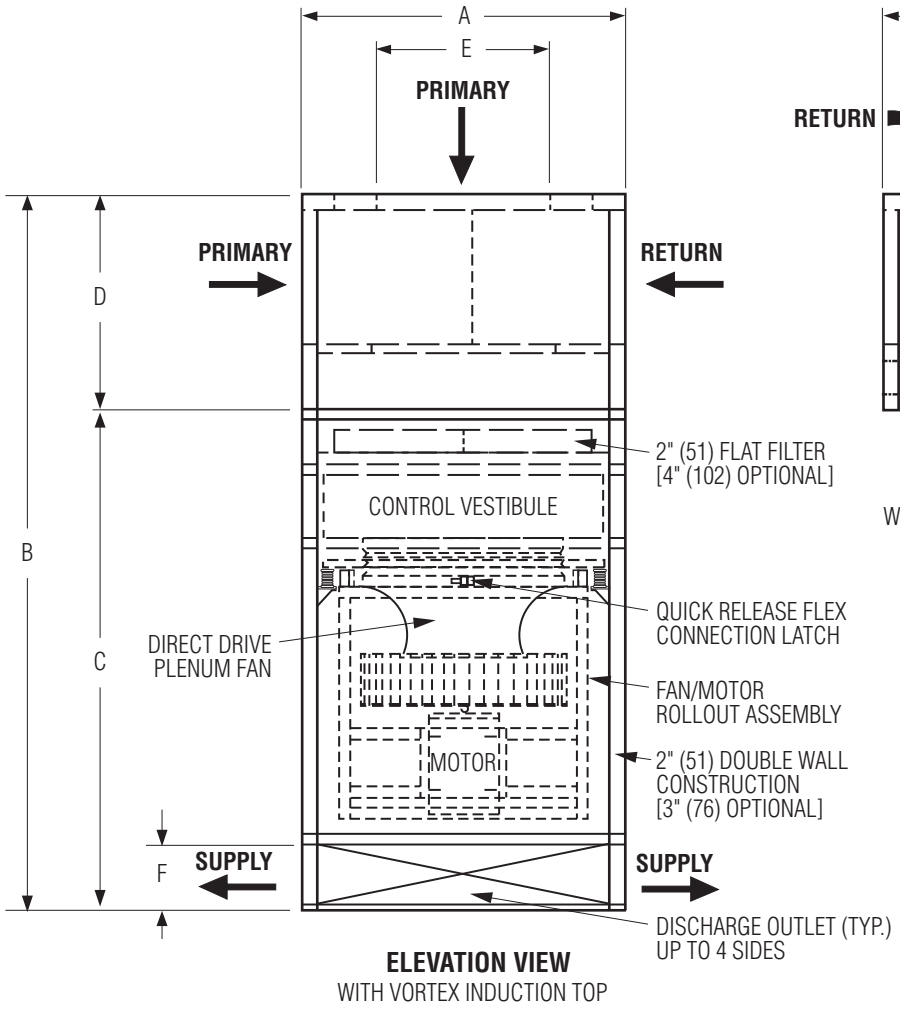
Filter section is equipped with a latched access door on the front of the unit casing. This allows filters to be changed from within the mechanical room closet.

Options:

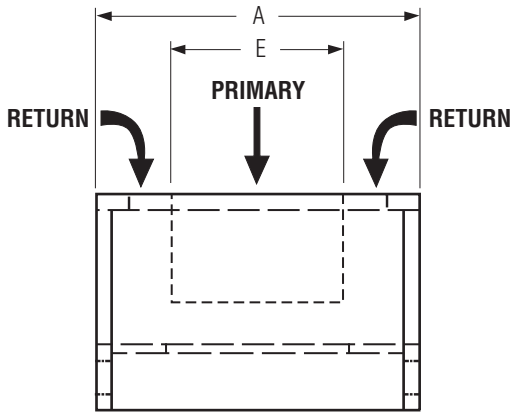
- 2" (51) thick, pleated media type
- 4" (102) thick, pleated media type

Dimensions are in inches (mm)

Tranquility Column Unit
Model TCU



ELEVATION VIEW
WITH VORTEX INDUCTION TOP



ELEVATION VIEW
OPTIONAL RETURN AIR INLET
WITH PRIMARY AIR SILENCING SLEEVE

Model	CFM (l/s) Range	A	B	C	D	E	F
TCU-500	3,000 - 5,000 (1416 - 2360)	54 (1372)	127 [1] (3226)	91 [1] (2311)	36 (914)	Project Specific	Project Specific
TCU-1000	7,500 - 10,000 (3539 - 4719)	58 (1473)	135 [2] (3429)	99 [2] (2515)	36 (914)	Project Specific	Project Specific
TCU-1500	13,000 - 15,000 (6135 - 7079)	66 (1676)	161 [3] (4089)	116 [3] (2941)	45 (1143)	Project Specific	Project Specific

[1] – 12" used for **F** dimension to determine **B** and **C**.
[2] – 18" used for **F** dimension to determine **B** and **C**.
[3] – 24" used for **F** dimension to determine **B** and **C**.

Model	Filter Area Sq. ft. (m^2)	Max Filter Velocity fpm (m/s)	Filter Sizes		Fan Size	Motor hp (kW)	Motor RPM	NC Rating
			Qty.	Size				
TCU-500	13.33 (1.24 m^2)	375 (1.91)	6	16 x 20 (406 x 508)	27 (686)	2 (1.49)	900	37
TCU-1000	18.00 (1.67 m^2)	555 (2.82)	6	18 x 24 (457 x 610)	36.5 (927)	5 (3.73)	900	40
TCU-1500	22.22 (2.06 m^2)	675 (3.43)	8	16 x 25 (406 x 635)	40 (1016)	5 (3.73)	900	45

Dimensions are in inches (mm)

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Thermal Air Handlers For Thermal Comfort.

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