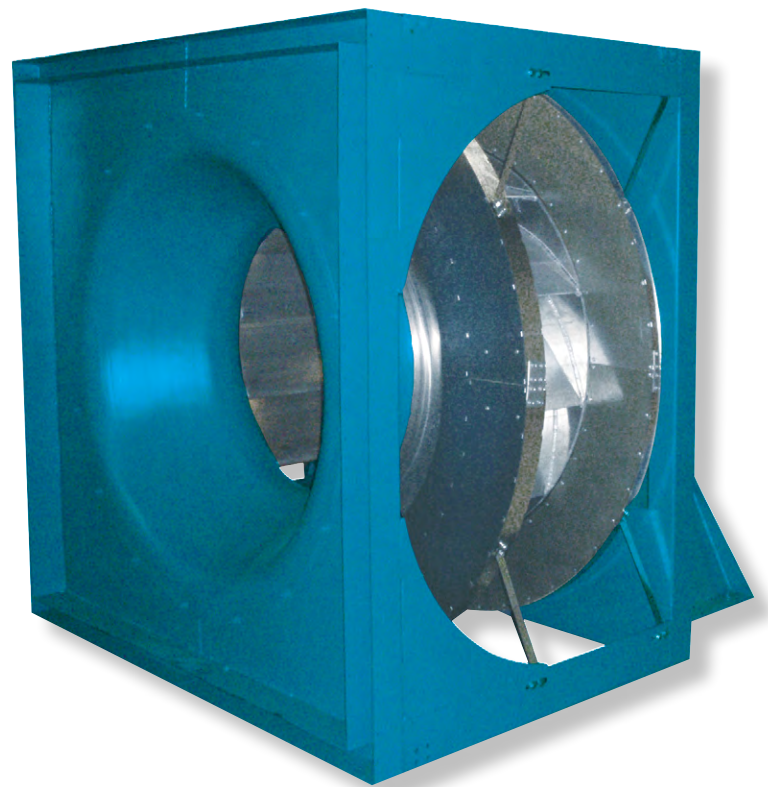




INDUSTRIAL PROCESS AND  
COMMERCIAL VENTILATION SYSTEMS

# AERO ACOUSTIC DIFFUSER™ FOR E-SERIES PLENUM FANS



# AERO ACOUSTIC DIFFUSER™

(U.S. PATENT 8025477)

## Lower Energy Costs and silences E-Series Plenum Fans more efficiently than ever before...



E-Series Plenum Fan With Aero Acoustic Diffuser™

Traditional acoustic silencers attenuate sound at the expense of additional pressure drop resulting in higher power consumption and lower aerodynamic efficiencies. Twin City Fan and Blower's patented Aero Acoustic Diffuser™ (U.S. Patent 8025477) achieves discharge sound power reduction by up to 3dBA. Static pressure is boosted and aerodynamic static efficiency increases by up to 4%.

When used with Twin City Fan's E-Series plenum fans, static efficiency up to 80% is achieved on a size 365 (36.5" wheel diameter)...the best in the industry.

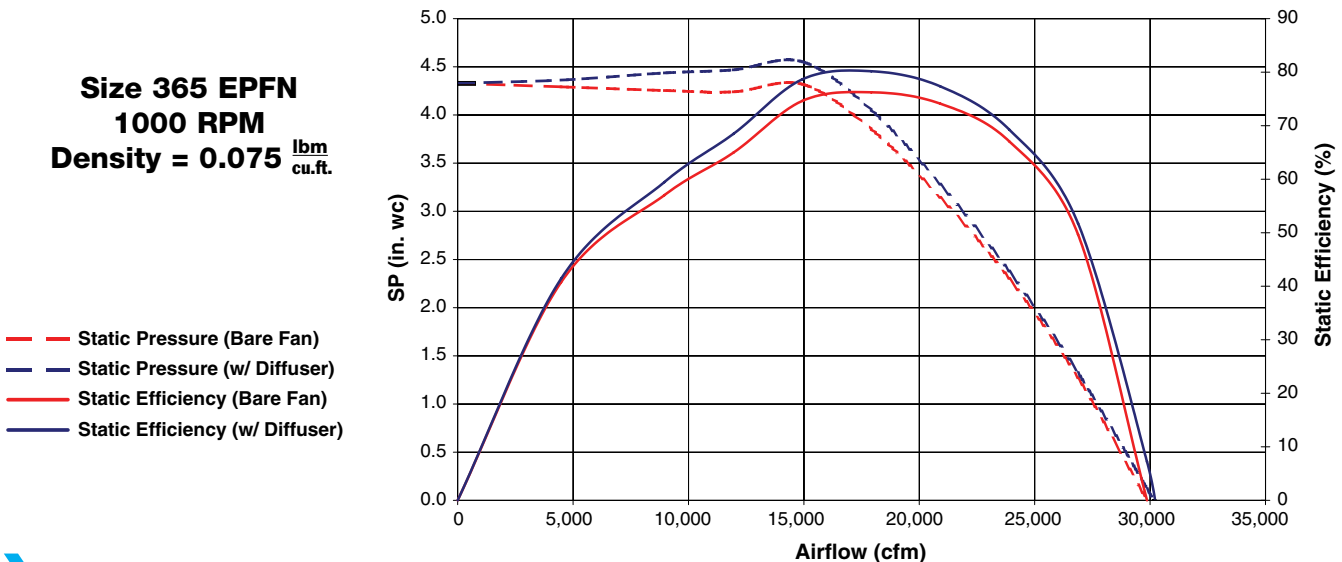
Higher air handling unit system pressure drops, equating to more coil rows or high efficiency filters, can be handled with the same size fan running at the same speed. In certain cases, a smaller size fan may be selected for a given application.

Requirements for acoustic lining of cabinets is reduced as fan source noise is minimized.

### Outlet Sound Comparison - Size 365 EPFN (9-Blade)

APPROX. WOV (%)	CFM	SP (in. wg.)	FAN	OCTAVE BAND								LwA
				1	2	3	4	5	6	7	8	
90	26789	1.272	EPFN	92	100	97	92	90	88	81	71	96
			EPFN w/ Diffuser	92	100	97	92	87	84	76	69	95
75	22400	2.745	EPFN	87	92	89	86	86	81	73	67	90
			EPFN w/ Diffuser	87	91	88	86	83	76	68	64	88
60	17920	3.853	EPFN	89	91	87	83	80	76	71	66	86
			EPFN w/ Diffuser	88	90	85	82	78	72	67	64	84

**Size 365 EPFN**  
**1000 RPM**  
 Density = 0.075  $\frac{\text{lbm}}{\text{cu.ft.}}$

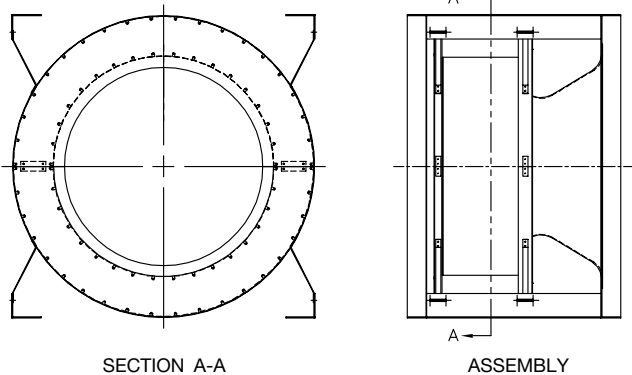


## Diffuser

Fully-galvanized construction features two diffuser sections mounted at the front and back of the fan wheel. Acoustic attenuating material inserted within a solid housing and a perforated frontplate directs airflow across the diffuser reducing fan noise and increasing static efficiency.

## Mounting Brackets

Mounting brackets constructed of galvanized steel, mount directly to the E-Series plenum fan framework allowing for ease of installation and compact design.



Aero Acoustic Diffuser™  
mounted on EPQN E-Series

## Availability

The Aero Acoustic Diffuser™ is available on all E-Series plenum fan sizes, both direct drive and belt drive. The compact design maintains all dimensions of the standard E-Series plenum fan and allows options such as a Piezometer Ring and protective enclosures to be utilized. The diffuser is also available as a retrofit kit for existing fans.



## E-Series Plenum Fans

E-Series plenum fans offer maximum flexibility to choose the right fan for a given application.

Twin City Fan & Blower's inlet and outlet sound and air performance ratings for their entire plenum fan line is AMCA certified in two different configurations: one with the bearing in the inlet and one without the bearing in the inlet.

For more information, refer to Fan Engineering Letter 3700: Improvements in Fan Performance Rating Methods and Catalog 470 found on our web site at [www.tcf.com](http://www.tcf.com).

## Aero Acoustic Diffuser™ Awards



2009 AHR Expo Innovation  
Award Ventilation Division

# INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS  
MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS  
CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS  
RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS  
LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS



**TWIN CITY FAN & BLOWER**  
**[WWW.TCF.COM](http://WWW.TCF.COM)**

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