

We Care for Your Needs

MAKE-UP FRESH AIR FAN

RS Series



ENERGY TWIN CITY
A TWIN CITY FAN COMPANY

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MAKE-UP FRESH AIR FAN

RS Series

OVERVIEW

Energy Twin City RS Make-Up Air Fan a roof mounted centrifugal supply fan designed to provide filtered outside air to buildings such as manufacturing plants, warehouses, and auditoriums. The RS fan supplies fresh make-up air to replace the air lost through industrial processes, fume hood exhaust, or general building ventilation.

The unit is a self-contained, completely weatherproof filtered supply fan package. This package includes an arrangement of double width forward curved fan, motor base, V-belt drive in case of belt driven fan, and filters all enclosed in a louvered GI hood with GI top cap.

TYPICAL APPLICATIONS INCLUDE

Commercial kitchens, chemical laboratories, electrical control rooms and anywhere gas equipment is installed. Proper make-up air provisions should be part of every building plan.

➤ (Direct Drive Units)

Available in 4 sizes, 7.0" to 12.0"

➤ (Belt Drive Units)

Available in 5 sizes, 10.0" to 20.0"

CONFIGURATIONS

Bottom and Side discharge, Direct Drive and Belt Driven Configurations



WHEEL TYPES

Forward and Backward centrifugal wheel

AMCA test performed with Forward centrifugal wheel

OPTIONAL CONSTRUCTION

Special Coatings, Aluminum Housing, STL louver

MOTOR SELECTION

Both direct drive and belt drive models are available with a wide range of voltages and enclosures. Standard belt drive TEFC selected using a conservative portion of the IEC/NEMA service factor. Standard direct drive TEAO motors have Class B/F insulation and internal thermal overload protection. Each size is carefully engineered to match the motor to the wheel capacity.

CERTIFICATIONS

AMCA Sound & Air Performance, CE (IEC60335) EMC & RoHS



Energy Industrial Company L.L.C. certifies that the Models RS shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

Low Voltage Directive

IEC 60335-2-80:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, AMD2:2016.



EMC Directive

EN 55014-1: 2017+A11: 2020; EN IEC 61000-3-2: 2019; EN 61000-3-3: 2013+A1:2019; EN 55014-2: 2015(IEC 61000-4-2; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-11).



RoHS Directive

Restriction of Hazardous substances in Electrical and Electronic Equipments.

GENERAL INFORMATION

RS – ROOF SUPPLY SERIES

WASHABLE FILTERS

The filter media is washable aluminum available with a 1" or 2" inch thickness.

EASY INSTALLATION

The base/curb cap is free of protruding fasteners which would interfere with installation onto the curb.

INTERNAL WIRING

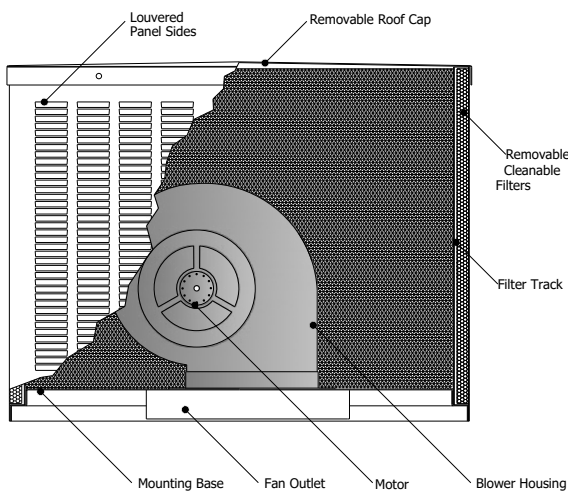
TEFC/TEAO motors are factory-wired between the motor and junction box. For either direct drive or belt drive models, an electric disconnect is available.

EASY MAINTENANCE ACCESS

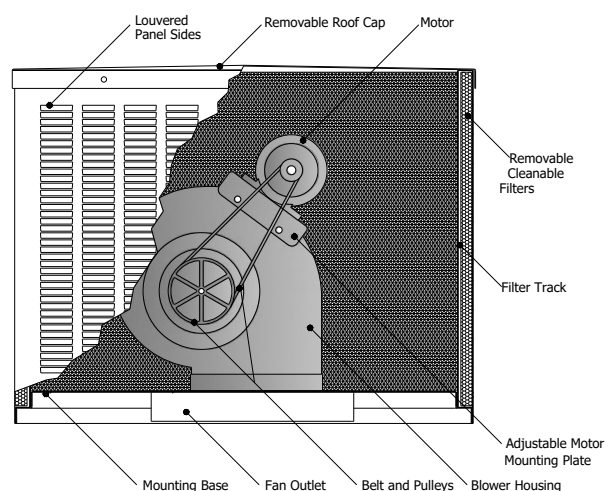
A full-size cover is easily removed, providing clear

STRUCTURAL INTEGRITY

The galvanized housing provides a high degree of rigidity and weather protection by bending and overlapping all seams. Additional angle reinforcement is provided along the interior base, providing stiffness to the walls and support of the unit on the curb.



DIRECT DRIVE



BELT DRIVE

HOUSINGS

Designed to provide unrestricted air flow and maximum weather protection. Housing style is louvered constructed of heavy gauge galvanized steel.

Features a double-width forward curved wheel for high efficiency and low sound.

STEEL WHEEL - DOUBLE-WIDTH FORWARD-CURVED

Constructed of heavy gauge galvanized steel, the fan sheave and bearings within the airstream.

BEARINGS AND BEARING SUPPORTS

Fans are designed with pre-lubricated pillow block bearings which provide a minimum life of 200,000 hours (L-50) at maximum cataloged speed. These bearings are mounted to a heavy duty steel support structure to ensure strength and rigidity.

DRIVES AND BELTS

Pulleys are pre-set to the specified RPM. Cast iron variable pitch pulleys are adjustable, allowing for field balancing based on actual field conditions. All pulleys are sized for at least 150% of the driven horsepower. Motors can be adjusted to maintain proper belt tension.

FILTERS

Filters are 1" or 2" aluminum mesh and are easily removed for washing.

FILTER CHANNELS

Formed filter channels securely hold filters in place and provide easy removal from inside.

MOTORS

A variety of single and three phase motors are available in TEFC and TEAO.

MOTOR SLIDE BASE (BELT DRIVEN)

Motor slide bases provide positive slide adjustment for proper belt tension. Turning jack screws force the motor to slide laterally in slots until proper tension is achieved.

SHAFT

Shafts are turned, ground and polished cold rolled steel accurately sized for the proper bearing size.

The shafts are extended at both ends for flexibility in mounting V-belt drives.

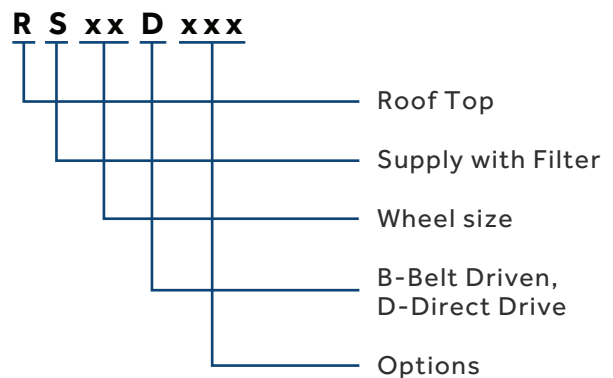
BLOWER HOUSINGS

Fan housings are constructed of galvanized steel. The side sheets are fastened to the scroll housing with an airtight lock seam connection.

TOP CAP

Fully weather tight top cap provides complete protection and easy removal for maintenance and service. Low profile cover is pitched to assure weather runoff.

ORDER CODE



➤ RS WITH SAND TRAP LOUVER CONSTRUCTION

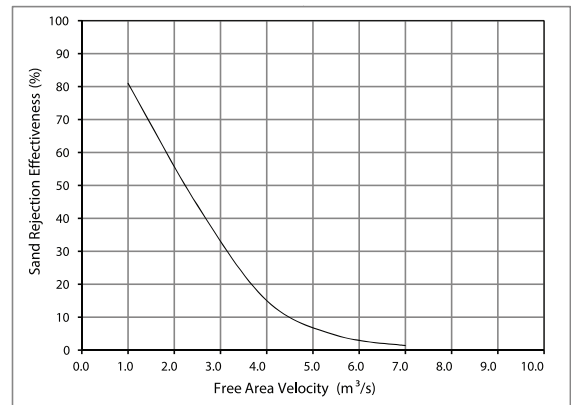
CONSTRUCTION FEATURES

STL louvered Housing constructed of aluminum profile framing and heavy alloy blade extrusions with pressure die cast aluminum corners. Low profile cover is pitched to ensure water runoff. Roof cur cap shall be GI steel sheet with support structure with reusable 1 or 2 inch aluminum filters.

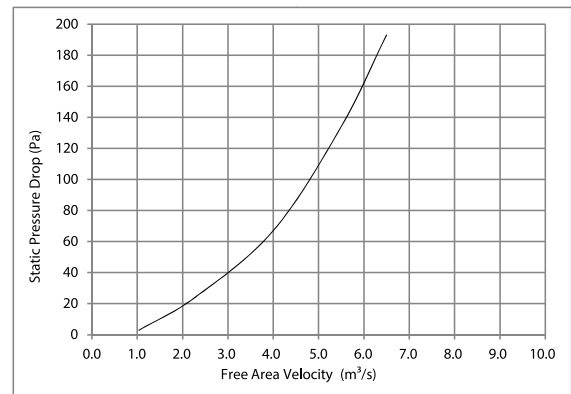
The STL louver consist of two rows of interlocking vertical blades that catches up to 93% of sand and dust, where it drops down on to emptying holes or sloped sill then ejected through the louver face by gravity.



SAND REJECTION EFFECTIVENESS



AIR FLOW RESISTANCE



Energy Industrial Company L.L.C. certifies that the STL-A04 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to wind driven sand and air performance ratings only.



Backdraft Damper

Backdraft Damper, with automatic or motorized operation, features a felt seal on the edge of the damper blades for quiet operation. Damper frames are constructed of steel and blades are constructed of aluminum.

Variable Speed Control

Variable Speed Control is an optional accessory; allow the adjustment of airflow for system balancing. Variable speed controllers are solid-state design, Variable speed controls can be shipped separately.



Disconnect Switch

NEMA 1 type disconnect switch mounted in the motor compartment when ODP or TEFC motors used. When explosion proof motors are specified, a NEMA7/9 disconnect switch will be shipped loose for field mounting and wiring.

NEMA 3R Disconnect Switch

NEMA 3R rain-tight disconnect switch, externally mounted when ODP or TEFC motors are used. NEMA 3R, rain proof, disconnects are available shipped loose for field mounting and wiring or factory mounted and wired.

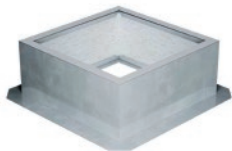


NEMA 4 Disconnect Switch

NEMA 4 disconnect switch (optional) is mounted externally and is water and dust-tight. Switch is available shipped loose for field mounting and wiring or factory mounted and wired.

NEMA 7/9 Disconnect Switch

NEMA 7/9 disconnect switches are provided on fan with explosion proof motors. The NEMA7/9 switch is designed for use with fans operating in hazardous environments. NEMA 7/9 disconnects will be shipped loose for field mounting and wiring.



Straight-Sided Roof Curbs

Roof Curb Constructed of galvanized steel with continuous, wide base plate (flashing) to insure watertight seal to roof, lined with 1 1/2" fiberglass fire-resistant, sound-absorbing insulation.

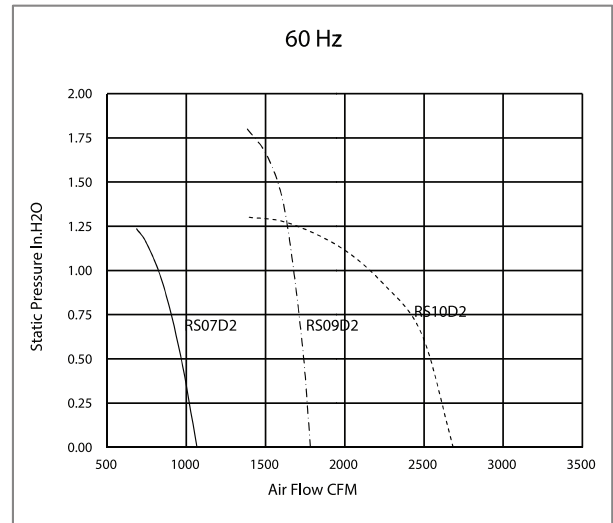
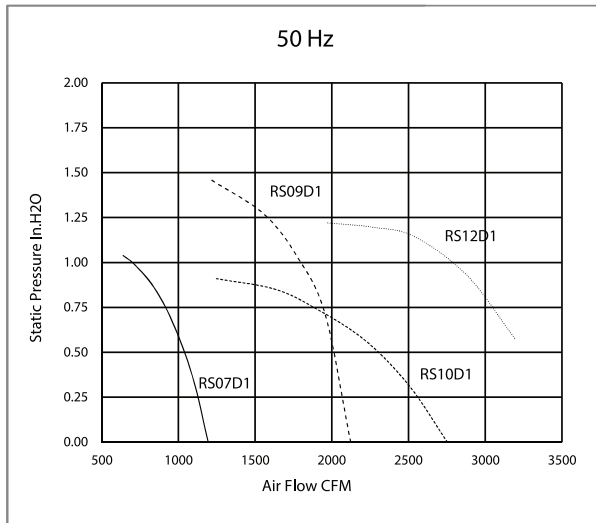
OTHER ACCESSORIES/OPTIONS:

- Special Coatings
- Stainless Steel Construction
- Pleated and Panel Filters
- Stainless Steel Hardware/Accessories

DIRECT DRIVE FAN DATA

RS – ROOF SUPPLY SERIES

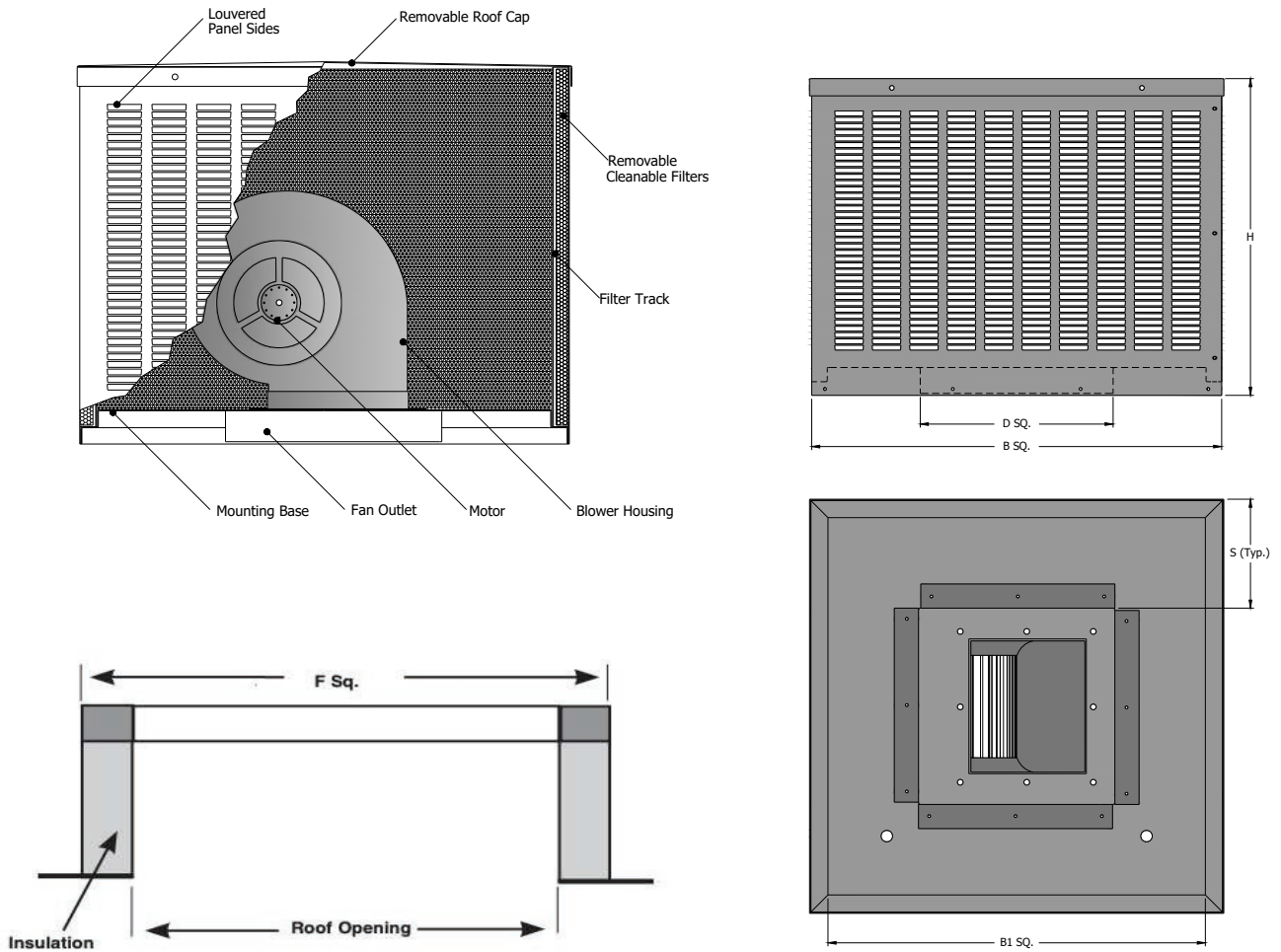
➤ 230V 1 ~ – IP55 - 50/60Hz



Model D1-50 Hz D2-60 Hz	Max. Input KW	A	RPM	0.00" Pst	0.25" Pst	0.37" Pst	0.50" Pst	0.75" Pst	1.00" Pst	1.25" Pst	1.50" Pst	
				CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM	CFM
				Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones	Sones
RS07D1	0.437	2.0	1350	1195	1125	1089	1035	911	699	-	-	
				12.7	12.7	11.2	11.2	10.0	10.0	-	-	
RS07D2	0.491	2.0	1575	1068	1018	993	968	901	819	506	-	
				11.2	11.2	11.2	10.2	10.2	10.6	10.6	-	
RS09D1	1.267	4.6	1375	2123	2065	2036	2006	1934	1793	1575	548	
				19.4	19.4	18.2	18.2	18.2	18.2	14.7	12.1	
RS09D2	1.347	4.6	1650	1784	1762	1751	1740	1709	1673	1636	1565	
				16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	
RS10D1	0.968	3.8	1000	2754	2556	2436	2294	1877	-	-	-	
				19.1	19.1	19.1	19.1	15.1	-	-	-	
RS10D2	1.201	4.5	1100	2685	2607	2569	2530	2392	2145	1686	-	
				18.7	18.7	18.7	18.7	17.1	17.1	14.8	-	
RS12D1	1.642	5.3	915	-	-	-	-	3028	2737	942	-	
				-	-	-	-	16.1	14.5	13.1	-	

Performance certified is for installation type B: Free Inlet, Ducted Outlet. The sound ratings shown are loudness values in fan sones at a distance of 1.5m (5ft) in a hemispherical free field calculated per AMCA International Standard 301. Values shown are for installation Type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream. Speed (RPM) shown is nominal. Performance is based on actual speed of test.

► DIMENSIONAL DATA



MODEL	B Sq.	B1 Sq.	D Sq.	H	S	F Sq.	RO Sq.	KG
RS07D	710	655	400	550	155	700	600	37
RS09D	710	655	400	550	155	700	600	41
RS10D	930	870	700	700	113	920	820	71
RS12D	930	870	700	700	113	920	820	76

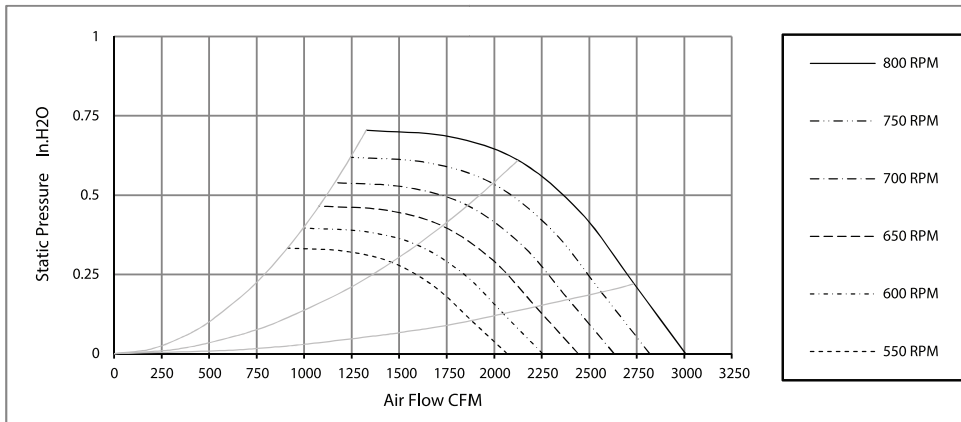
► Notes:

All dimensions are in mm unless otherwise noted.
Dimensions are not to be used for construction.

BELT DRIVE FAN DATA

RS – ROOF SUPPLY SERIES

➤ RS10B



Max. Motor Frame Size	90
Maximum RPM	850
Wheel Diameter	250
Max HP	1.0
Outlet Area	700 x 700
Fan Weight Kg	68

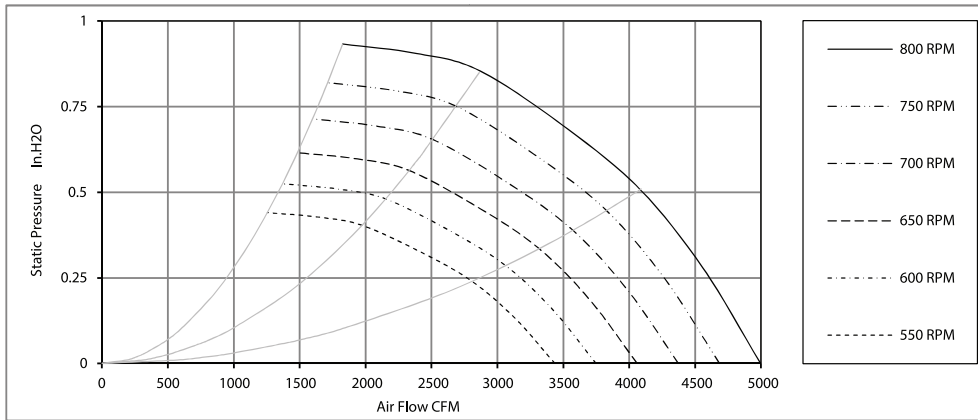
Motor	Fan	0.000" Pst		0.125" Pst		0.250" Pst		0.375" Pst		0.500" Pst		0.625" Pst	
HP	RPM	CFM		CFM		CFM		CFM		CFM		CFM	
		Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/2	550	2067		1843		1573		-		-		-	
		11.1	0.29	9.6	0.25	7.8	0.19	-	-	-	-	-	-
	600	2255		2050		1842		1386		-		-	
		12.6	0.38	11.2	0.33	9.4	0.28	7.3	0.18	-	-	-	-
3/4	650	2443		2254		2062		1795		-		-	
		14.0	0.48	12.8	0.43	11.1	0.37	9.6	0.30	-	-	-	-
	700	2631		2455		2278		2070		1676		-	
		15.5	0.60	14.3	0.54	12.8	0.49	11.3	0.42	9.4	0.30	-	-
1	750	2819		2655		2490		2323		2070		-	
		17.0	0.74	15.9	0.68	14.6	0.62	13.0	0.55	11.8	0.46	-	-
	800	3007		2853		2699		2543		2346		2053	
		18.6	0.90	17.6	0.83	16.4	0.77	14.9	0.70	13.5	0.62	12.3	0.50

MOTOR WEIGHT

HP	1/2	3/4	1	1 1/2
KG	9.5	12.5	14.5	19.5

Performance certified is for installation type B: Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. The sound ratings shown are loudness values in fan sones at 1.5m(5ft) in a hemispherical free field calculated per AMCA international Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream.

➤ RS12B



Max. Motor Frame Size	100
Maximum RPM	850
Wheel Diameter	300
Max HP	4.0
Outlet Area	700 x 700
Fan Weight Kg	74

Motor	Fan	0.000" Pst		0.125" Pst		0.250" Pst		0.375" Pst		0.500" Pst		0.625" Pst		0.750" Pst		0.875" Pst	
HP	RPM	CFM		CFM		CFM		CFM		CFM		CFM		CFM		RPM	
		Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1	550	3435		3150		2762		2136		-		-		-		-	
		15.3	0.69	13.3	0.60	11.5	0.49	8.1	0.33	-	-	-	-	-	-	-	-
1 1/2	600	3747		3486		3161		2692		1907		-		-		-	
		17.2	0.89	15.3	0.79	13.6	0.68	10.8	0.53	8.0	0.33	-	-	-	-	-	-
	650	4059		3818		3536		3165		2639		-		-		-	
		18.9	1.14	17.3	1.03	15.7	0.91	13.7	0.77	10.8	0.58	-	-	-	-	-	-
2	700	4372		4147		3902		3605		3178		2641		-		-	
		20.8	1.42	19.2	1.30	17.8	1.18	16.5	1.05	13.6	0.86	11.1	0.66	-	-	-	-
3	750	4684		4475		4263		3986		3650		3216		2693		-	
		22.8	1.99	21.3	1.74	19.9	1.50	18.6	1.35	16.8	1.18	14.0	0.97	11.8	0.76	-	-
	800	4996		4800		4604		4359		4099		3719		3278		2740	
		24.9	2.12	23.3	1.98	22.0	1.85	20.8	1.71	19.6	1.56	17.1	1.33	14.7	1.10	12.6	0.85

MOTOR WEIGHT

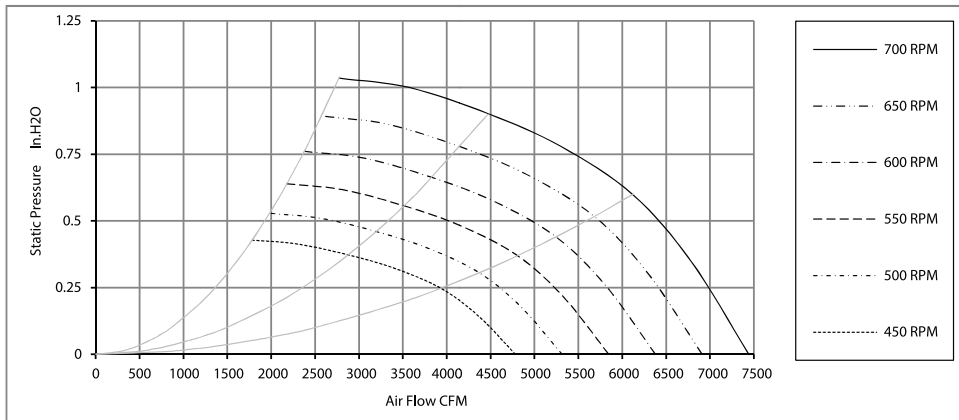
HP	1	1 1/2	2	3
KG	14.5	19.5	23.0	31.5

Performance certified is for installation type B: Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. The sound ratings shown are loudness values in fan sones at 1.5m(5ft) in a hemispherical free field calculated per AMCA international Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream.

BELT DRIVE FAN DATA

RS – ROOF SUPPLY SERIES

➤ RS15B



Max. Motor Frame Size	112
Maximum RPM	750
Wheel Diameter	375
Max HP	5.0
Outlet Area	790 x 790
Fan Weight Kg	118

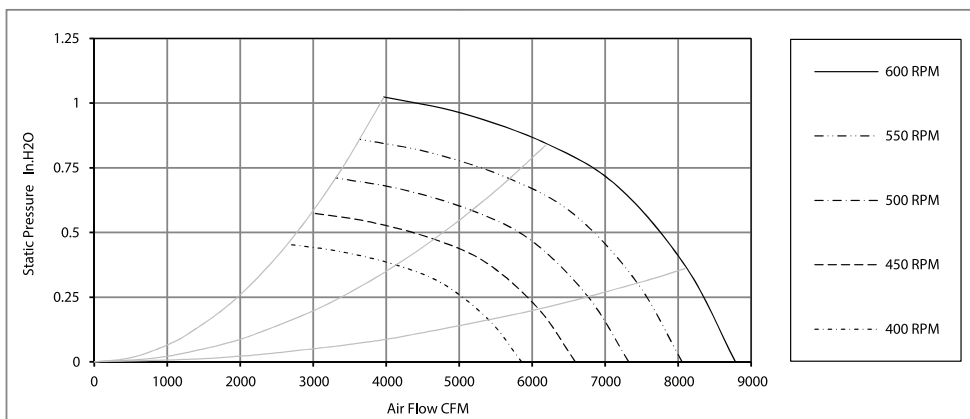
Motor	Fan	0.000" Pst	0.125" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.625" Pst	0.750" Pst	1.000" Pst								
HP	RPM	CFM		CFM		CFM		CFM		CFM		CFM		RPM			
		Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP		
1	450	4784		4417		3916		2842		-		-		-			
		14.9	0.87	12.8	0.76	11.8	0.63	7.5	0.38	-	-	-	-	-	-		
1 1/2	500	5315		4986		4577		3929		2684		-		-			
		17.2	1.19	15.4	1.08	13.7	0.94	10.9	0.74	7.5	0.42	-	-	-	-		
2	550	5847		5547		5212		4777		4002		2588		-			
		19.6	1.59	17.9	1.46	16.4	1.32	14.9	1.15	11.4	0.87	8.0	0.47	-	-		
3	600	6378		6103		5829		5447		4927		4130		2660		-	
		22.1	2.06	20.5	1.92	19.0	1.78	17.6	1.60	15.4	1.36	12.3	1.04	9.0	0.57	-	-
	650	6910		6656		6403		6086		5730		5151		4354		-	
		24.7	2.62	23.1	2.47	21.7	2.32	20.3	2.14	19.1	1.94	16.3	1.64	13.5	1.27	-	-
4	700	7441		7206		6970		6713		6382		6001		5433		3575	
		27.3	3.28	25.8	3.11	24.5	2.95	23.2	2.77	22.0	2.56	20.5	2.31	17.6	1.98	11.8	1.07

MOTOR WEIGHT

HP	1	1 1/2	2	3	4
KG	14.5	19.5	23.0	31.5	35.5

Performance certified is for installation type B: Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. The sound ratings shown are loudness values in fan sones at 1.5m(5ft) in a hemispherical free field calculated per AMCA international Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream.

➤ RS18B



Max. Motor Frame Size
112
Maximum RPM
650
Wheel Diameter
450
Max HP
5.0
Outlet Area
790 x 790
Fan Weight Kg
134

Motor	Fan	0.000" Pst	0.125" Pst	0.250" Pst	0.375" Pst	0.500" Pst	0.625" Pst	0.750" Pst	1.000" Pst						
HP	RPM	CFM		CFM		CFM		CFM		CFM		CFM		RPM	
		Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1 1/2	400	5858		5512		5013		4129		-		-		-	
		14.4	0.99	12.6	0.89	10.1	0.76	7.9	0.57	-	-	-	-	-	-
2	450	6590		6283		5905		5406		4312		-		-	
		17.0	1.42	15.3	1.30	13.4	1.17	10.9	1.01	8.8	0.73	-	-	-	-
3	500	7322		7046		6769		6322		5771		4700		-	
		19.7	1.94	18.3	1.81	17.0	1.68	14.4	1.51	12.2	1.31	10.1	0.98	-	-
	550	8054		7803		7552		7212		6804		6220		5237	
		22.6	2.58	21.2	2.44	20.0	2.30	18.1	2.13	15.7	1.94	13.9	1.70	11.8	1.33
4	600	8787		8556		8326		8081		7707		7333		6749	
		25.6	3.36	24.3	3.20	23.1	3.04	21.9	2.88	19.6	2.67	17.5	2.47	15.7	2.18

MOTOR WEIGHT

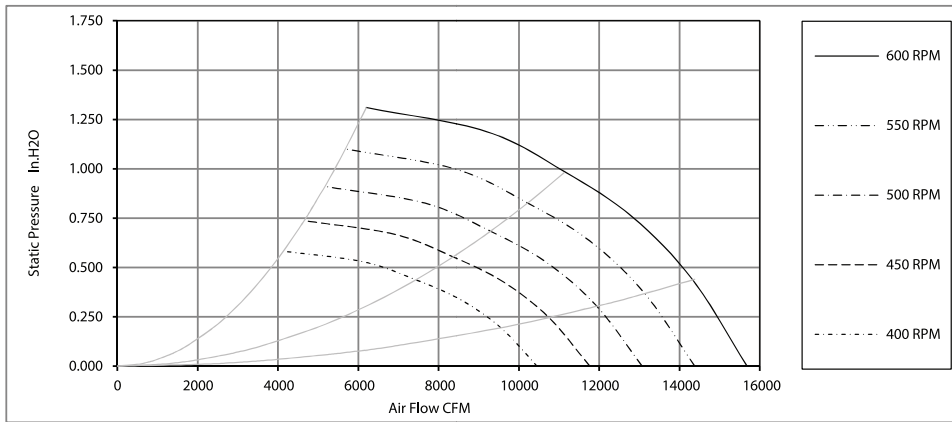
HP	1 1/2	2	3	4
KG	19.5	23.0	31.5	35.5

Performance certified is for installation type B: Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. The sound ratings shown are loudness values in fan sones at 1.5m(5ft) in a hemispherical free field calculated per AMCA international Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream.

BELT DRIVE FAN DATA

RS – ROOF SUPPLY SERIES

► RS20B



Max. Motor Frame Size	132
Maximum RPM	650
Wheel Diameter	500
Max HP	10
Outlet Area	895 x 895
Fan Weight Kg	245

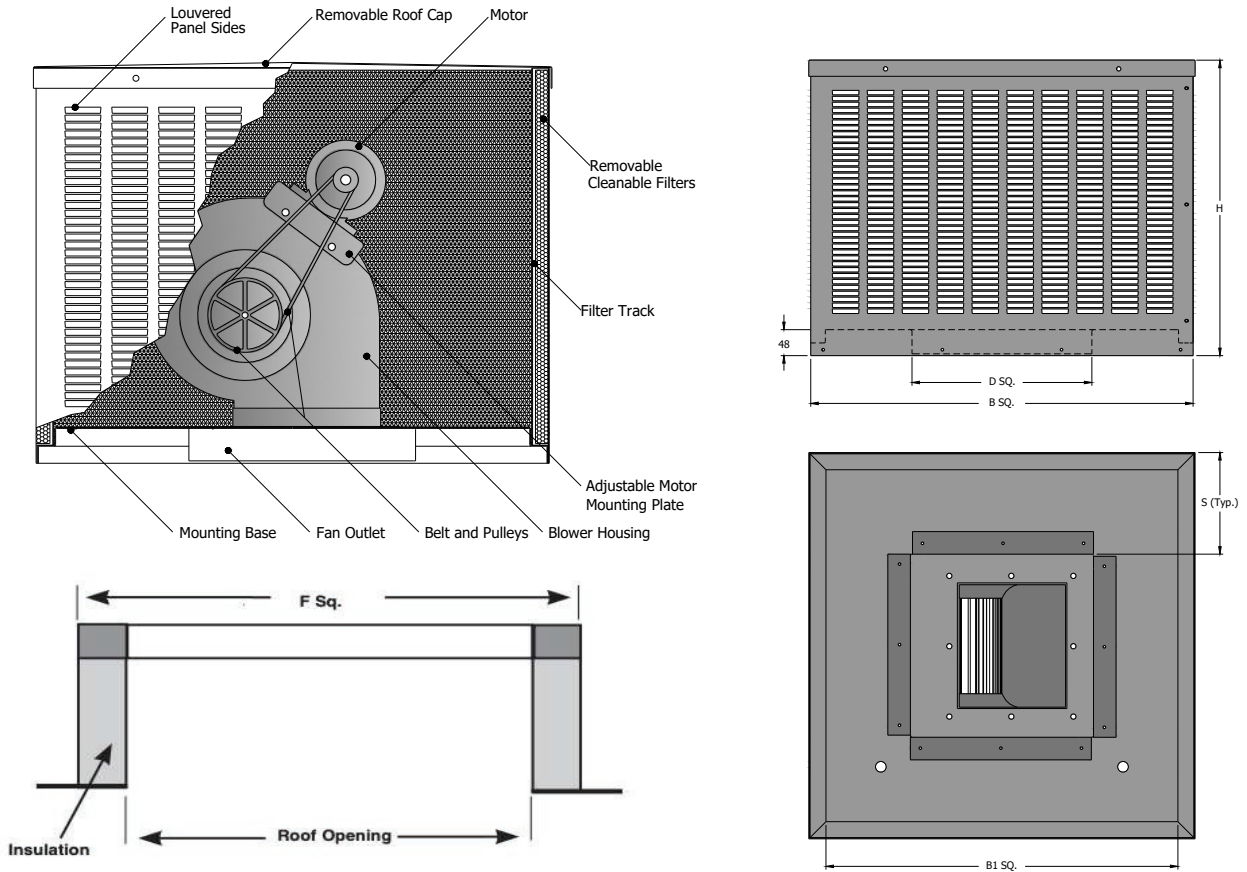
Motor	Fan	0.000" Pst		0.125" Pst		0.250" Pst		0.375" Pst		0.500" Pst		0.625" Pst		1.000" Pst		1.2500" Pst	
HP	RPM	CFM		CFM		CFM		CFM		CFM		CFM		CFM		RPM	
		Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
3	400	10456		9875		9160		8123		6535		-		-		-	
		20.1	2.53	18.1	2.32	15.9	2.06	13.5	1.71	11.0	1.24	-	-	-	-	-	-
5	450	11763		11246		10721		9938		8889		7452		-		-	
		23.7	3.60	21.9	3.36	20.3	3.12	20.1	2.77	15.6	2.33	13.2	1.80	-	-	-	-
7 1/2	500	13069		12605		12140		11538		10833		9808		-		-	
		27.6	4.93	25.8	4.67	24.2	4.41	22.3	4.07	20.1	3.68	18.1	3.16	-	-	-	-
	550	14376		13954		13531		13095		12455		11814		8401		-	
		31.6	6.57	29.9	6.28	28.4	5.99	26.9	5.69	24.7	5.26	22.7	4.83	16.3	2.94	-	-
10	600	15683		15296		14909		14522		14034		13446		10999		7800	
		36.2	8.52	34.5	8.21	32.9	7.89	31.3	7.58	29.6	7.19	27.6	6.72	22.3	4.91	17.5	3.1

MOTOR WEIGHT

HP	3	5	7 / 12	10
KG	31.5	44.0	66.0	74.0

Performance certified is for installation type B: Free Inlet, Ducted Outlet. Power rating (BHP) does not include transmission losses. The sound ratings shown are loudness values in fan sones at 1.5m(5ft) in a hemispherical free field calculated per AMCA international Standard 301. Values shown are for installation type B: free inlet hemispherical sone levels. Performance ratings include the effects of the aluminum filter in the airstream.

► DIMENSIONAL DATA



MODEL	B Sq.	B1 Sq.	D Sq.	H	S	F Sq.	RO Sq.
RS10B	930	870	700	700	113	920	820
RS12B	930	870	700	700	113	920	820
RS15B	1130	1075	790	900	170	1120	1020
RS18B	1130	1075	790	900	170	1120	1020
RS20B	1500	1440	895	1200	304	1490	1390

► Notes:

All dimensions are in mm unless otherwise noted.
Dimensions are not to be used for construction.

TYPICAL SPECIFICATION

RS – ROOF SUPPLY SERIES

PERFORMANCE

Fans shall be tested in accordance with AMCA Publication 210 and AMCA Publication 300 test codes for air moving devices and shall be guaranteed by the manufacturer to deliver rated published performance levels. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air.

CONSTRUCTION

Louvered Housing shall be constructed of GI steel sheet. Low profile cover is pitched to ensure water runoff. Roof curb cap shall be GI steel sheet with support structure and fan constructed of steel. All units shall be equipped with re-usable 1 or 2 inch aluminum filters.

WHEELS

All fan wheels shall have wheel cones or shrouds, providing stable flow and high rigidity. Wheels shall be of the forward curved, all wheels shall be statically and dynamically balanced. The complete fan assembly shall be test balanced at the operating speed prior to shipment.

FINISH AND COATING

STD housing fans shall have galvanized housings. STL louvered housing and structural framing shall be constructed of aluminum.

FACTORY RUN TEST

All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each wheel shall be statically and dynamically balanced in accordance with ISO1940 G 2.5 or 6.3 "Balance Quality and Vibration Levels for Fans"

WARANTEE

The manufacturer shall guarantee the workmanship and materials for at least one (1) year from startup or eighteen (18) months from shipment whichever occurs first.



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