



LC Dynafan

Technical Specifications



BULLETIN 17

INTRODUCTION

Belt driven LC Dynafans offer a wide range of sizes with capacities extending over 17,000 CFM. Units are low and inconspicuous, with a unique design that features motor mounting beside the wheel rather than atop the wheel. Large wheels turning at moderate speeds provide quieter operation and airstream cooling for the motors and bearings. Units float on vibration isolators. Ball bearing motors, sheaves, belts and self-aligning ball bearings are all standard brands of national manufacturers. All components are selected for durability, efficiency and value.

PennBarry's LC Dynafan units are completely self-contained packaged exhaust systems. Direct drive units are especially effective at providing a quiet steady exhaust at moderate resistance. Direct drive units offer extensive performance flexibility when used with the Lek-Trol™ speed controller. Lek-Trol™ switches employ solid state circuitry to enable air movement adjustment from full to half of capacity. Additional Dynafan construction features include low profile housings of sturdy steel or durable aluminum, dynafoil impellers and a strong welded and reinforced chassis. These housings are removable or hinged for easy access to all components and can be fitted with expanded metal bird and debris guards.

Model: LC Direct Drive

- Static pressure up to 1.5" wg.
- Flow capacity up to 2072 CFM

Model: LC Belt Drive

- Static pressure up to 1.25" wg.
- Flow capacity between 17,16 CFM



CERTIFICATIONS & LISTINGS



AMCA Certification

PennBarry certifies that the LC Dynafan models 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.



UL and cUL Certification

PennBarry LC Dynafan exhausters carry the UL label, UL705 (ZACT/ZACT7), file #E28413.

FEATURES & BENEFITS

Motor Selection

Both direct drive and belt drive models are available with a wide range of voltages and enclosures (see Motor Selection for a complete listing). Standard belt drive Open Drip Proof (ODP) ball bearing motors are selected using a conservative portion of the NEMA service factor. Standard direct drive ODP motors have Class B insulation and internal thermal overload protection. Each size is carefully engineered to match the motor to the wheel capacity.

Internal Wiring

All direct drive models with ODP motors feature a polarized disconnect plug between the motor and junction box. This provides a positive method of electric shut-off. Belt drive units with ODP motors are factory-wired between the motor and junction box. For either direct drive or belt drive models, an disconnect switch is available.

Backdraft Dampers

Open and close with stop/start of fan. Square frame, multileaf, roll formed aluminum blades have nylon bearings. This damper is also used with the PennBarry Damper Motor Kit for positive control through electric motor operation as required.

Sound Performance

Units deliver outstanding air performance with minimal noise.

Solid Steel Shafts

Sized so the first critical speed is a minimum of 130% of maximum cataloged operating speed, shafts are precision ground, polished and treated for rust resistance.

Installation

Installing contractors should secure mounting base to roof curbs with lag bolts and washers or other proper fasteners 12" O.C. In areas subjected to high winds it is recommended that large units be guyed down. Refer to Publication 410 of Air Movement & Control Association (AMCA).

Firestat Switches

This safety device is mounted below the fan and automatically disconnects the unit when the temperature of the air being exhausted exceeds a pre-set rating.

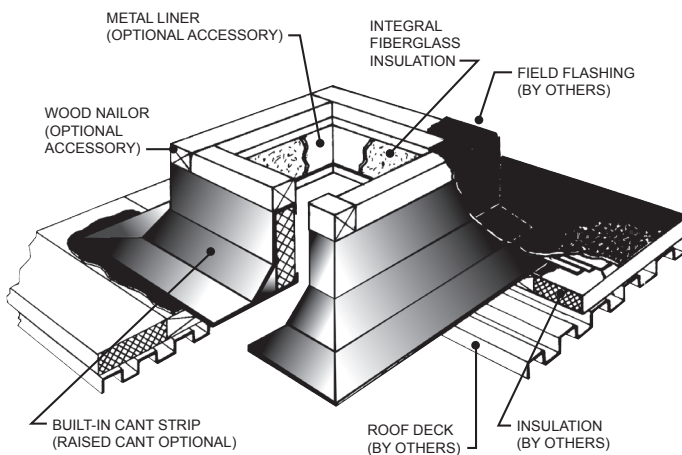
OPTIONS & ACCESSORIES

Screen & Fan Guards

Diamond Mesh aluminum expanded metal is used for bird and debris guard when specified. 18 x 14 mesh aluminum wire can be provided to effectively exclude insects. All fans have moving parts which require guarding in the same way as other moving machinery. Inlet and discharge openings for PennBarry units can be easily and neatly fitted with framed safety guards when specified. Guards which comply with OSHA regulations should be installed when fans are located within seven feet of floor and/or working level, or within reach of personnel, review OSHA codes.

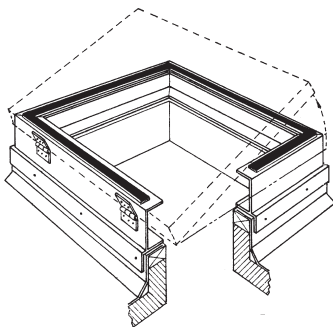
Roof Curbs

Roof curbs are furnished in a variety of types from canted or self-flashing to sloped or flat pitch. Standard construction includes galvanized or aluminum material, insulation, and metal, rubber gasketing or wood nailer mounting surface. See the roof curbs brochure for details. Illustrated here, is the Unibeam which is most generally used with Hi-Ex vertical discharge ventilators. Costs of this device are normally less than field built curbs. The Unibeam shown is for flat roof installation.



Hinged Sub-Base

Hinged sub-bases can be utilized to provide access to curb mounted dampers where overall heights are an important consideration. A rustproof hinge arrangement permits full access to curb well for damper service. This accessory is available for use with an adapter for most field-built curbs.



Safety Disconnect Switch

Safety disconnect switches are available to allow positive electrical shut-off and safety. Switches are factory mounted when factory wiring is requested. Wiring is only run from the motor to the junction box. (Factory wiring of explosion proof applications is not available.) A wide range of Nema rated enclosures with disconnect switches are available for indoor, outdoor, and explosion proof installations. Disconnects are to be field wired by a licensed electrician.



Time-Delay Switch

(Selected direct drive models only) The Airminder Model AM12 switch is a UL recognized and CSA certified time-delay relay that operates both the fan and room light to ventilate an area even after the occupants depart. In the "On" position, the Airminder turns the light and fan on immediately. In the "Off" position, the light goes off immediately and the fan is in operation for a period of time as preset from 1 to 60 minutes. Suitable only for 1/3 HP maximum at 120/1/60.



Lek-Trol Variable Speed Controller Switch

The Lek-Trol variable speed controller permits you to control air movement from 100% of capacity to approximately 50%. The Lek-Trol employs the latest type of solid state "quadrac" circuitry and insures not only complete speed-range control and extra long-life reliability but also a savings in the cost of electricity. This solid state controller is much better suited to this type of fan than conventional speed controllers. Lek-Trols can be installed and connected within the fan hood. This option permits precise system balancing without unauthorized tampering of the setting and airflow.

LC | DIRECT DRIVE

Performance Data Overview

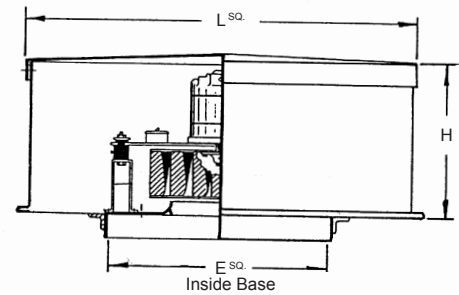
LC Dynafan direct drive models are available with single and multi-speed motors. Multi-speed motors are designated V (1050 RPM), S (1300 RPM), and R (1550 RPM). A single LC Dynafan fan may be suitable for several requirements by a simple wiring change. This feature provides flexibility for a variety of reasons, including energy savings, off-hours requirements, future expansion, or unexpected field variations.

LC Dynafan direct drive models are available in two sizes (6 and 12). Capacities range from below 150 CFM to above 2000 CFM, with static pressures beyond 1 1/4".

When compared to belt drive models, LC Dynafan direct drive fans require less maintenance, have a simpler construction, cost less, and are lighter in weight.

Performances in 50 Hz applications will be less than shown below; consult with local PennBarry representative.

By using Lek-Trol™ variable speed controllers, the high speed flow rate of most models can be reduced by as much as 50%. Do not use Lek-Trol™ on medium or low speed for multi-speed models, unless a specific Lek-Trol™ is shown to be available (see below for Lek-Trol™ speed controller availability).



Model No.	Lek-Trol Model
LC06RC	LT30
LC12RC	LT50

Model	Unit Dimensions			Field Built Curb		Self Flashing Sonotrol Curb			Fabricated Unibeam Curb			Unibeam Ultra Sonotrol Curb			Ship Wt. (Less Curb) lbs.
	L	H	E	T	Ro	Ro	O	T	Ro	O	T	Ro	O	T	
LC06VC	24	16	18 1/2	17	9	9	15	18	9	14	17	9	14	17	75
LC06SC	24	16	18 1/2	17	9	9	15	18	9	14	17	9	14	17	75
LC06RC	24	16	18 1/2	17	9	9	15	18	9	14	17	9	14	17	75
LC12VC	33	21	20 1/2	19	11 1/2	11 1/2	17	20	11 1/2	16	19	11 1/2	16	19	95
LC12SC	33	21	20 1/2	19	11 1/2	11 1/2	17	20	11 1/2	16	19	11 1/2	16	19	95
LC12RC	33	21	20 1/2	19	11 1/2	11 1/2	17	20	11 1/2	16	19	11 1/2	16	19	95

All dimensions in inches. T = Outside Curb Dimension, Ro = Roof Opening Dimension, O = Inside Curb Dimension

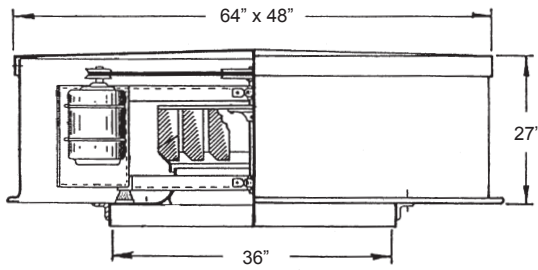
Model	HP	Max. Watts	RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP	
					CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones
LC06VC	1/25	105	1050	3058	417	2.4	242	2.3	163	3.4	120	4.3	80	5.2
LC06SC	1/11	165	1300	3786	459	4.0	358	4.5	281	5.2	215	6.1	161	6.6
LC06RC	1/7	196	1550	4514	787	7.6	691	7.5	614	7.6	530	8.1	455	8.7
LC12VC	1/6	479	1050	3788	1410	7.5	1243	6.1	1055	5.1	878	6.4	730	7.4
LC12SC	1/3	533	1300	4721	1798	10.4	1618	9.0	1452	7.8	1266	8.0	1119	8.1
LC12RC	1/2	600	1550	5592	2072	13.1	1918	12.0	1783	11.2	1639	10.6	1495	10.6

Model	HP	Max. Watts	RPM	Tip Speed	0.625" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP	
					CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones	CFM	Sones
LC06VC	1/25	105	1050	3058	39	6.1	-	-	-	-	-	-	-	-
LC06SC	1/11	165	1300	3786	119	7.1	75	7.6	-	-	-	-	-	-
LC06RC	1/7	196	1550	4514	382	8.8	283	9.0	104	9.5	-	-	-	-
LC12VC	1/6	479	1050	3788	633	8.2	543	9.4	341	9.7	198	10.1	83	11.1
LC12SC	1/3	533	1300	4721	979	8.7	880	9.3	692	10.2	484	10.8	260	11.5
LC12RC	1/2	600	1550	5592	1354	10.7	1212	10.9	950	11.9	688	12.5	406	13.2

Performance shown is for installation type A: Free Inlet, Free Outlet. Speed (RPM) shown is nominal. Performance is based on actual speed of test. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for Installation Type A: free inlet fan sone levels. Performance ratings include the effects of screen in the airstream. For models shown on this page, the AMCA Certified Ratings Seal applies to air and sound. Watt ratings shown are for models tested at 115/1/60.

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LC30BC | BELT DRIVE

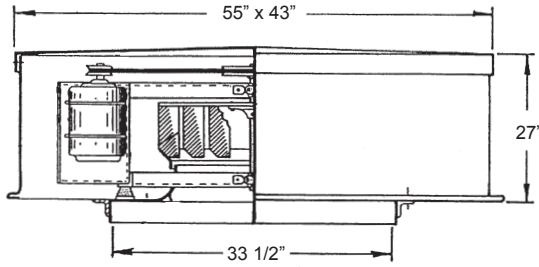


Roof Opening = 28"	Ship WT (LBS) = 520	Max RPM = 788 (3 HP)
Damper Size = 30 1/2"	Galv. Hood = 20 Gauge	Alum. Base = .100

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP			
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/3	250	1996	3152	2216	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	275	2196	3468	2652	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
			5.3	0.12	4.6	0.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	300	2395	3783	3052	1638	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			6.3	0.16	5.6	0.18	5.3	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	340	2715	4287	3656	2851	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			7.9	0.23	7.3	0.25	6.7	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
360	2875	4540	3946	3260	1375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
382	3050	4817	4260	3635	2626	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		9.9	0.32	9.1	0.35	8.5	0.37	8.1	0.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1/2	400	3194	5044	4513	3935	3115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	420	3354	5296	4793	4250	3567	1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			12.0	0.43	10.8	0.46	10.2	0.48	9.7	0.48	8.7	0.38	-	-	-	-	-	-	-	-	-	-	-	-
440	3513	5548	5070	4557	3977	2997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
3/4	460	3673	5801	5344	4859	4319	3549	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	480	3833	6053	5617	5157	4655	4014	2913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			15.7	0.64	14.0	0.68	13.2	0.71	12.9	0.73	12.5	0.72	11.2	0.64	-	-	-	-	-	-	-	-	-	-
506	4040	6381	5968	5536	5075	4555	3759	1710	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1	520	4152	6557	6155	5736	5292	4797	4111	2860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	542	4328	6835	6449	6049	5628	5170	4600	3770	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1 1/2	570	4551	7188	6821	6443	6050	5636	5168	4513	3564	-	-	-	-	-	-	-	-	-	-	-	-	-	
	590	4711	7440	7086	6722	6348	5949	5510	4961	4216	2448	-	-	-	-	-	-	-	-	-	-	-	-	
			19.9	1.19	18.9	1.23	18.1	1.28	17.1	1.31	16.3	1.34	15.6	1.35	14.9	1.33	14.5	1.28	13.3	0.98	-	-	-	-
	600	4791	7566	7218	6861	6495	6103	5680	5171	4480	3277	-	-	-	-	-	-	-	-	-	-	-	-	
	623	4975	7856	7521	7180	6827	6455	6065	5637	5055	4263	-	-	-	-	-	-	-	-	-	-	-	-	
2	640	5110	8070	7744	7414	7070	6713	6345	5929	5416	4753	-	-	-	-	-	-	-	-	-	-	-	-	
	660	5270	8323	8006	7688	7354	7013	6657	6268	5833	5256	2771	-	-	-	-	-	-	-	-	-	-	-	
			23.0	1.66	22.0	1.71	21.0	1.77	20.0	1.81	19.4	1.85	18.8	1.87	17.9	1.89	17.1	1.88	16.8	1.84	15.7	1.38	-	-
	670	5350	8449	8137	7824	7496	7163	6811	6436	6038	5489	3615	-	-	-	-	-	-	-	-	-	-	-	
	687	5486	8663	8359	8055	7735	7415	7072	6719	6331	5849	4461	-	-	-	-	-	-	-	-	-	-	-	-
24.0			1.87	23.0	1.93	22.0	1.98	21.0	2.03	20.0	2.07	19.4	2.10	18.5	2.13	17.6	2.13	16.8	2.11	15.7	1.95	-	-	
3	700	5589	8827	8529	8230	7918	7604	7270	6934	6552	6120	4876	-	-	-	-	-	-	-	-	-	-	-	
	720	5749	9079	8789	8499	8197	7892	7573	7246	6890	6519	5427	-	-	-	-	-	-	-	-	-	-	-	
			26.0	2.15	25.0	2.21	24.0	2.27	23.0	2.32	22.0	2.37	21.0	2.43	20.0	2.45	19.4	2.45	18.8	2.36	-	-	-	-
	740	5909	9331	9049	8767	8475	8178	7873	7554	7223	6863	5928	-	-	-	-	-	-	-	-	-	-	-	
	787	6284	9924	9659	9393	9123	8844	8564	8269	7970	7654	6934	-	-	-	-	-	-	-	-	-	-	-	-
29.0			2.81	28.0	2.88	27.0	2.94	26.0	3.05	25.0	3.10	24.0	3.14	23.0	3.17	22.0	3.20	21.0	3.19	-	-	-	-	

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include drive losses. Selection software automatically calculates drive losses when selecting equipment. The sound ratings shown are for loudness values in fan sones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet fan sone levels. Performance ratings include the effects of screen in the airstream.

LC40BC | BELT DRIVE



Roof Opening = 25"	Ship WT (LBS) = 385	Max RPM = 1045 (2HP)
Damper Size = 24 3/4"	Galv. Hood = 20 Gauge	Alum. Base = .080

HP	RPM	Tip Speed FPM	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP	
			Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP	Sones	BHP
1/2	210	2044	5417		3705		-		-		-		-		-		-		-		-	
			3.9	0.13	2.4	0.16	-		-		-		-		-		-		-		-	
	230	2239	5933		4392		-		-		-		-		-		-		-		-	
			4.9	0.17	3.3	0.21	-		-		-		-		-		-		-		-	
	250	2434	6449		5057		1935		-		-		-		-		-		-		-	
			5.9	0.22	4.3	0.27	3.8	0.19	-		-		-		-		-		-		-	
3/4	270	2629	6965		5687		4046		-		-		-		-		-		-		-	
			6.8	0.28	5.3	0.33	4.5	0.34	-		-		-		-		-		-		-	
	290	2823	7481		6283		4945		-		-		-		-		-		-		-	
			7.8	0.35	6.3	0.40	5.2	0.42	-		-		-		-		-		-		-	
	319	3106	8229		7133		6001		4174		-		-		-		-		-		-	
			9.4	0.46	7.7	0.52	6.6	0.57	6.2	0.53	-		-		-		-		-		-	
1	330	3213	8513		7458		6371		4915		-		-		-		-		-		-	
			10.0	0.51	8.2	0.57	7.1	0.62	6.6	0.62	-		-		-		-		-		-	
	350	3407	9029		8044		7035		5835		-		-		-		-		-		-	
1 1/2	367	3573	9467		8535		7588		6537		4666		-		-		-		-		-	
			12.2	0.70	10.2	0.77	9.0	0.83	8.2	0.86	7.7	0.80	-		-		-		-		-	
	385	3748	9932		9051		8137		7157		5903		-		-		-		-		-	
2	393	3826	10138		9279		8377		7427		6255		-		-		-		-		-	
			14.0	0.86	11.8	0.94	10.3	1.00	9.8	1.06	9.0	1.05	-		-		-		-		-	
	420	4089	10835		10043		9176		8331		7411		5983		-		-		-		-	
3	435	4235	11222		10464		9614		8824		7937		6801		3672		-		-		-	
			16.4	1.17	14.4	1.26	12.4	1.34	12.1	1.40	11.7	1.44	10.7	1.42	9.7	1.05	-		-		-	
	452	4400	11660		10938		10114		9375		8516		7539		6000		-		-		-	
4	470	4576	12124		11438		10645		9921		9122		8303		7148		3990		-		-	
			18.2	1.48	16.4	1.58	14.7	1.66	14.0	1.73	13.8	1.79	13.2	1.82	12.2	1.78	11.2	1.32	-		-	
	480	4673	12382		11715		10939		10220		9455		8655		7602		5547		-		-	
5	498	4848	12847		12212		11463		10755		10049		9272		8381		7142		-		-	
			19.9	1.76	18.4	1.88	16.7	1.95	15.7	2.03	15.5	2.10	15.3	2.15	14.4	2.15	13.3	2.10	-		-	
	520	5062	13414		12816		12099		11402		10763		10015		9280		8279		6711		-	
6	540	5257	13930		13360		12673		11985		11374		10682		9969		9143		8093		-	
			23.0	2.24	21.0	2.38	19.6	2.44	18.3	2.55	18.1	2.62	18.0	2.70	17.7	2.75	16.9	2.74	15.9	2.70	-	
	555	5403	14317		13762		13101		12429		11824		11177		10478		9778		8811		-	
7	572	5569	14756		14217		13583		12931		12329		11731		11050		10381		9548		6400	
			25.0	2.66	23.0	2.81	22.0	2.89	21.0	2.99	20.0	3.08	19.9	3.16	19.8	3.24	19.3	3.27	18.6	3.25	16.6	2.75
	600	5841	15478		14965		14372		13751		13154		12604		11981		11335		10700		8824	
8	620	6036	15994		15497		14933		14332		13736		13204		12636		12008		11390		9829	
			29.0	3.39	27.0	3.55	26.0	3.65	25.0	3.74	24.0	3.86	23.0	3.95	23.0	4.03	23.0	4.12	23.0	4.16	21.0	4.11
	640	6231	16510		16029		15491		14909		14326		13799		13283		12675		12070		10696	
9	679	6610	17516		17063		16573		16024		15475		14945		14459		13951		13378		12246	
			35.0	4.46	33.0	4.63	32.0	4.77	30.0	4.84	29.0	4.97	28.0	5.09	28.0	5.18	28.0	5.28	28.0	5.37	27.0	5.47

Performance shown is for installation type A: Free Inlet, Free Outlet. Power rating (BHP) does not include drive losses. Selection software automatically calculates drive losses when selecting equipment. The sound ratings shown are for loudness values in fan zones at 5'0" (1.5m) in a hemispherical free field per AMCA Standard 301. Values shown are for installation Type A: free inlet fan zone levels. Performance ratings include the effects of screen in the airstream.

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