

AMERICAN COOLAIR CORPORATION



Greenhouse Ventilation Systems



Farm Products Division

NBF Greenhouse Fan



Economical, Practical, Effective

American Coolair's NBF fan provides the ideal solution to fresh air ventilation in most types of greenhouse buildings. NBF fans are built to give you years of heavy-duty trouble-free service. The rugged, belt driven construction operates in any position, has permanently lubricated ball bearings, and is available with single- or two-speed totally enclosed motors.

Coolair has developed a complete ventilation package by combining the NBF fan with an all aluminum shutter (Type LRW) and a heavy gauge galvanized steel wall housing (square box or slope) for exterior mounting, allowing a maximum of unobstructed interior space.

Basic Components

The fan panel is fabricated of heavy gauge steel and features an all-welded construction. The uprights which support the motor and propeller are formed from heavy gauge steel for maximum strength and rigidity.

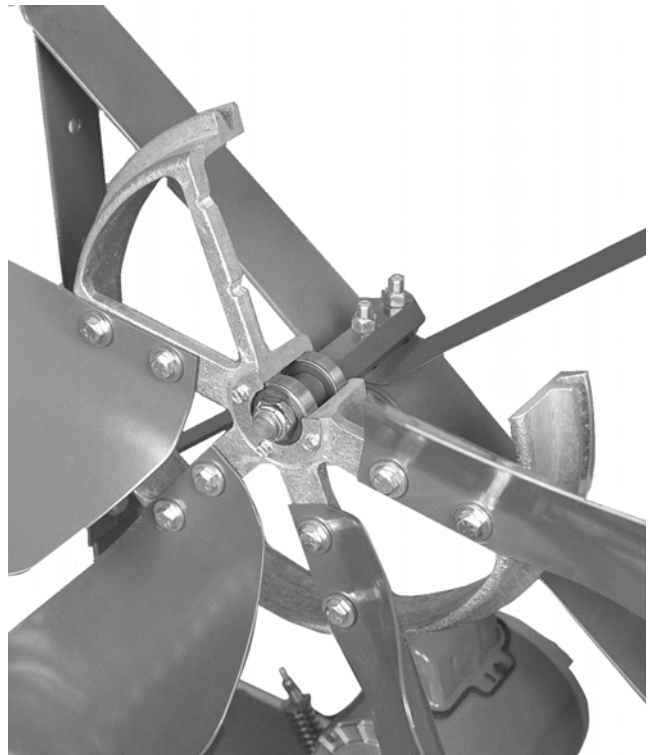
Painted parts are coated with a thermosetting epoxy coating to provide a protective coating rated excellent for hardness, impact resistance, adhesion and chemical resistance.

Exclusive Drive Assembly

Our engineers have developed an innovative drive assembly for the NBF fan. Our use of quality materials and precise engineering techniques in constructing wheel assemblies assure you of years of quiet, trouble-free service. Power is applied through V-belts directly to the propeller with blade load concentrated directly over the bearings to eliminate overhung bearing load. The exclusive, time tested design has been widely acclaimed by engineers and users alike.

Performance and Efficiency

When economy is measured in terms of cubic feet of air per minute per dollar invested, the NBF wall fan exhaust unit is unsurpassed. American Coolair's Type NBF fan is today's best investment. Coolair uses only the most efficient totally enclosed ball bearing motors available.



PERFORMANCE RATINGS



American Coolair Corporation certifies that the NBF fans 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 comply with the requirements of the AMCA Certified Ratings Program.

CUBIC FEET PER MINUTE (CFM) AT STATIC PRESSURE													
Fan Model	Fan Size	Motor HP	Fan RPM	0" S.P.		.05" S.P.		.10" S.P.		.125" S.P.		.15" S.P.	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
NBF24G	24	1/4	688	5,293	0.24	5,026	0.25	4,724	0.26	4,553	0.27	4,362	0.28
NBF24H		1/3	769	5,916	0.33	5,680	0.35	5,421	0.36	5,279	0.37	5,128	0.38
NBF24J		1/2	891	6,855	0.51	6,654	0.53	6,438	0.55	6,324	0.56	6,205	0.57
NBF24K		3/4	1042	8,017	0.83	7,846	0.84	7,574	0.86	7,574	0.87	7,478	0.88
NBF30G	30	1/4	491	7,205	0.24	6,625	0.25	5,997	0.27	5,648	0.27	5,239	0.28
NBF30H		1/3	531	7,792	0.29	7,258	0.32	6,690	0.33	6,386	0.34	6,056	0.34
NBF30J		1/2	641	9,406	0.52	8,968	0.54	8,512	0.56	8,276	0.57	8,034	0.58
NBF30K		3/4	739	10,845	0.80	10,466	0.83	10,076	0.85	9,877	0.86	9,674	0.87
NBF36H	36	1/3	447	9,735	0.29	9,007	0.32	8,241	0.34	7,773	0.36	7,103	0.38
NBF36J		1/2	524	11,411	0.47	10,793	0.51	10,160	0.54	9,832	0.55	9,477	0.56
NBF36K		3/4	615	13,393	0.75	12,868	0.80	12,334	0.84	12,063	0.86	11,790	0.87
NBF36L		1	692	15,070	1.07	14,604	1.12	14,132	1.18	13,894	1.20	13,654	1.22
NBF42J	42	1/2	371	13,948	0.46	12,986	0.49	11,525	0.53	10,797	0.54	10,159	0.56
NBF42K		3/4	430	16,166	0.71	15,372	0.75	14,318	0.79	13,625	0.81	12,938	0.83
NBF42L		1	492	18,497	1.07	17,821	1.11	17,009	1.15	16,513	1.18	15,932	1.20
NBF48J	48	1/2	307	16,740	0.49	15,278	0.52	13,371	0.54	12,370	0.54	11,062	0.56
NBF48K		3/4	358	19,521	0.77	18,315	0.82	16,814	0.84	15,964	0.85	15,121	0.85
NBF48L		1	380	20,721	0.92	19,597	0.97	18,238	1.00	17,456	1.01	16,652	1.01
NBFH48L		1	408	22,248	1.14	21,212	1.19	20,001	1.23	19,305	1.24	18,565	1.25
NBFA54L	54	1	374	23,911	1.06	22,693	1.11	21,283	1.16	20,480	1.18	19,618	1.20
NBFA54M		1 1/2	414	26,496	1.44	25,381	1.50	24,165	1.55	23,491	1.58	22,766	1.60
NBFA54N		2	446	28,515	1.80	27,512	1.86	26,412	1.92	25,814	1.95	25,178	1.97
NBF60L	60	1	281	26,569	0.89	24,816	0.95	22,568	1.00	21,081	1.02	19,370	1.05
NBF60M		1 1/2	323	30,514	1.35	29,053	1.42	27,299	1.48	26,263	1.50	25,065	1.53
NBF60N		2	365	34,512	1.94	33,216	2.02	31,756	2.09	30,941	2.13	30,048	2.16
NBF60P		3	414	39,145	2.84	38,016	2.92	36,784	3.01	36,119	3.05	35,414	3.09

Performance shown is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating (BHP) does not include transmission losses. Bearing losses are included. Because of the cooling the motor receives from the moving air stream, motor loading beyond the nominal nameplate ratings on these American Coolair fans does not overheat the motor and is within NEMA recommended limits and motor service factor. It is not detrimental to the motor and is economically desirable.



AL

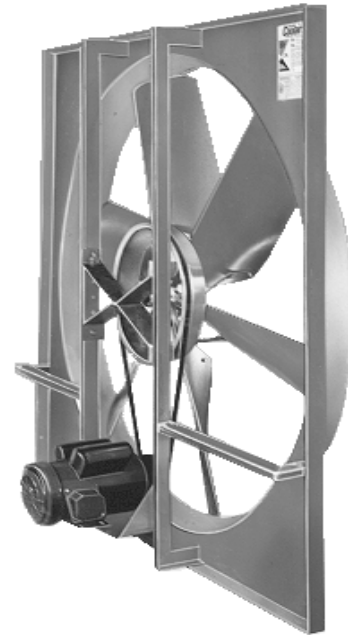
Aluminum Greenhouse Fan

American Coolair's AL all-aluminum fans are the answer to concerns about rust and corrosion in today's damp greenhouse environment. Combined with an aluminum wall housing, an aluminum shutter, and a vinyl coated wire guard, the AL fan will provide years of trouble-free and corrosion-free service.

AL fans feature all-welded angle frame construction for a rugged and durable unit. The fan panel has a deep spun orifice for maximum efficiency.

AL fans utilize Coolair's exclusive drive assembly used on our fans for over 80 years. The die-formed aluminum blades are bolted to a cast aluminum hub, which also serves as the fan pulley. Power is applied through V-belts directly to the propeller with the blade load concentrated directly over the fan bearings, thus eliminating overhung bearing load.

AL fans are available with single- or two-speed totally enclosed motors.



PERFORMANCE RATINGS

AMERICAN COOLAIR CORPORATION certifies that the performance data for the type AL wall fan models shown below are based on tests conducted in an accredited laboratory in accordance with ANSI/AMCA Standard 210-07.

CUBIC FEET PER MINUTE (CFM) AT STATIC PRESSURE													
Fan Model	Fan Size	Motor HP	Fan RPM	0" S.P.		.05" S.P.		.10" S.P.		.125" S.P.		.15" S.P.	
				CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
AL24G	24	1/4	688	5,293	0.24	5,026	0.25	4,724	0.26	4,553	0.27	4,362	0.28
AL24H		1/3	769	5,916	0.33	5,680	0.35	5,421	0.36	5,279	0.37	5,128	0.38
AL24J		1/2	891	6,855	0.51	6,654	0.53	6,438	0.55	6,324	0.56	6,205	0.57
AL24K		3/4	1042	8,017	0.83	7,846	0.84	7,574	0.86	7,574	0.87	7,478	0.88
AL30G	30	1/4	491	7,205	0.24	6,625	0.25	5,997	0.27	5,648	0.27	5,239	0.28
AL30H		1/3	531	7,792	0.29	7,258	0.32	6,690	0.33	6,386	0.34	6,056	0.34
AL30J		1/2	641	9,406	0.52	8,968	0.54	8,512	0.56	8,276	0.57	8,034	0.58
AL30K		3/4	739	10,845	0.80	10,466	0.83	10,076	0.85	9,877	0.86	9,674	0.87
AL36H	36	1/3	447	9,735	0.29	9,007	0.32	8,241	0.34	7,773	0.36	7,103	0.38
AL36J		1/2	524	11,411	0.47	10,793	0.51	10,160	0.54	9,832	0.55	9,477	0.56
AL36K		3/4	615	13,393	0.75	12,868	0.80	12,334	0.84	12,063	0.86	11,790	0.87
AL36L		1	692	15,070	1.07	14,604	1.12	14,132	1.18	13,894	1.20	13,654	1.22
AL42H	42	1/3	322	12,106	0.30	10,921	0.33	9,919	0.36	8,430	0.37	7,149	0.39
AL42J		1/2	371	13,948	0.46	12,986	0.49	11,525	0.53	10,797	0.54	10,159	0.56
AL42K		3/4	430	16,166	0.71	15,372	0.75	14,318	0.79	13,625	0.81	12,938	0.83
AL42L		1	492	18,497	1.07	17,821	1.11	17,009	1.15	16,513	1.18	15,932	1.20
AL48J	48	1/2	307	16,740	0.49	15,278	0.52	13,371	0.54	12,370	0.54	11,062	0.56
AL48K		3/4	358	19,521	0.77	18,315	0.82	16,814	0.84	15,964	0.85	15,121	0.85
AL48L		1	408	22,248	1.14	21,212	1.19	20,001	1.23	19,305	1.24	18,565	1.25
AL54L	54	1	374	23,911	1.06	22,693	1.11	21,283	1.16	20,480	1.18	19,618	1.20
AL54M		1 1/2	414	26,496	1.44	25,381	1.50	24,165	1.55	23,491	1.58	22,766	1.60



Accessories for AL and NBF Fans



GWH & WHA Square Wall Housing

Coolair's GWH/WHA wall housing is an exterior unit to house the NBF/AL fan and the LRW shutter. The GWH is constructed of heavy gauge galvanized steel. The WHA is constructed of aluminum. Both can be attached to exterior walls to free the interior space from obstructions.

Housing Guards

1/2" x 1" wire guards come standard on all wall housings. Slope wall housings have a front guard, while the square wall housings have a rear guard. Shutter-side guards are also available.

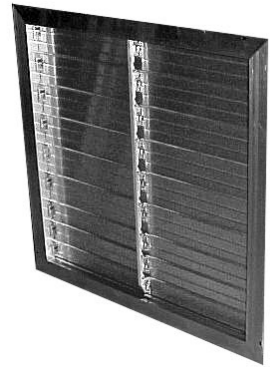
GSWH & SWHA Slope Wall Housing

The slope wall housing allows the shutter to be placed on the intake side of the fan and eliminates the air turbulence that occurs with the shutter on the exhaust side of the fan. It also prevents the warm air from being lost through the metal wall housing to the outside cold air in cold climate conditions. The GSWH housing is constructed of galvanized steel for long, durable wear and low maintenance. The SWHA is constructed of aluminum for a rust resistant finish.



LRW All Aluminum Shutter

The LRW Shutter is an all aluminum damper featuring an extruded aluminum frame with interlocking aluminum blades for maximum weather seal. Double panel shutters (LRW45 and larger) are constructed with a rigid 'T' section center member to prevent shutter blades from sticking. The LRW Shutter has nylon bearings on all movable linkage. A sturdy, extruded aluminum tie-bar is connected exactly on the blade centers. Double panel shutters feature dual tie-bars (one for each panel). The LRW Shutter can be gravity or motor operated.



LRW-E Motorized Air Inlet Shutter

The LRW-E Air Inlet Shutter is designed to allow fresh air to enter the greenhouse as the fans at the opposite side/end of the building exhaust it. The LRW-E features a sturdy aluminum frame, aluminum blades, aluminum reinforcing brackets and nylon bearings on all movable linkage. The LRW-E Air Inlet Shutter is fully automatic and comes standard with a motor to automatically open and close the shutter blades.



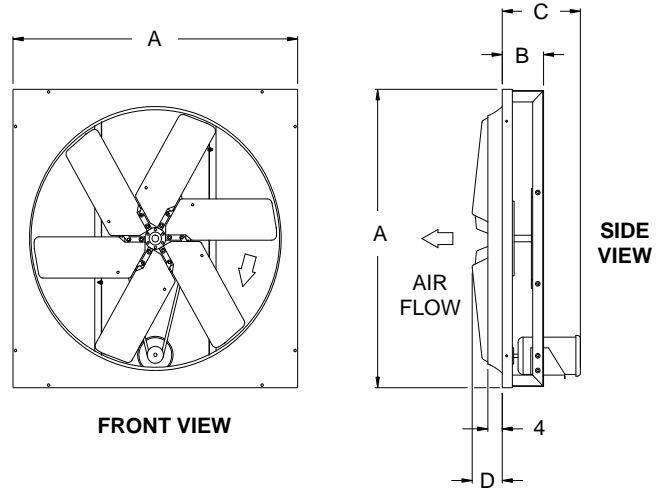
Air Inlet Shutter Model	Air Flow Capacity (CFM)	Required Opening Dimensions	Overall Dimensions Including Flange
LRW16E	1,000	16 1/2 x 16 1/2	19 1/4 x 19 1/4
LRW21E	1,800	21 1/2 x 21 1/2	24 1/4 x 24 1/4
LRW27E	3,000	27 1/2 x 27 1/2	30 1/4 x 30 1/4
LRW33E	4,500	33 1/2 x 33 1/2	36 1/4 x 36 1/4
LRW39E	6,300	39 1/2 x 39 1/2	42 1/4 x 42 1/4
LRW45E	8,400	45 1/2 x 45 1/2	48 1/4 x 48 1/4
LRW51E	10,700	51 1/2 x 51 1/2	54 1/4 x 54 1/4
LRW57E	13,400	57 1/2 x 57 1/2	60 1/4 x 60 1/4
LRW66E	18,000	66 1/2 x 66 1/2	69 1/4 x 69 1/4
LRW4515E	2,800	45 1/2 x 15 1/2	48 1/4 x 18 1/4
LRW4527E	5,000	45 1/2 x 27 1/2	48 1/4 x 30 1/4
LRW6015E	3,700	60 1/2 x 15 1/2	63 1/4 x 18 1/4
LRW6024E	6,000	60 1/2 x 24 1/2	63 1/4 x 27 1/4
LRW6036E	8,900	60 1/2 x 36 1/2	63 1/4 x 39 1/4



Drawings and Dimensions

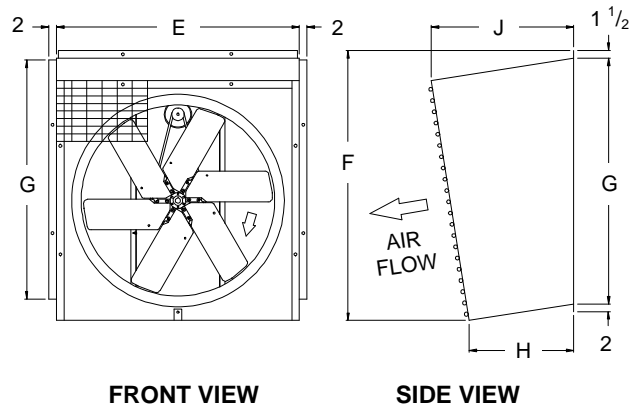
NBF & AL Fans

Fan Model	A	B	C	D
NBF/AL24	32	5 1/8	12 1/2	5
NBF/AL30	38	5 1/8	12 1/2	5 1/8
NBF/AL36	44	5 1/8	13 1/4	5 1/4
NBF/AL42	50	5 1/8	13 1/4	5 7/8
NBF/AL48	56	5 1/8	13 1/4	6 1/4
NBFA/AL54	62	5 1/8	13 1/4	6 1/2
NBF60	68	6 1/8	18	6



GSWH & SWHA Slope Wall Housing

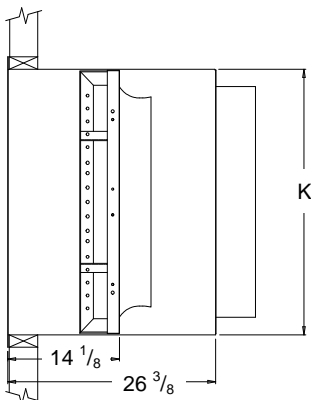
Size	E	F	G	H	J
24	32 3/8	37 11/16	32 11/16	23 7/8	29 1/16
30	38 3/8	44 1/2	38 3/4	23	29 1/16
36	44 3/8	50 5/16	44 13/16	22 1/2	29 9/16
42	50 3/8	56 5/16	50 15/16	21 3/4	29 11/16
48	56 3/8	62 3/8	57	21 5/8	30 1/2
54	62 3/8	68 11/16	63 1/16	22 3/4	32 9/16
60	68 1/4	74 1/4	69 1/8	22 1/4	33



Rough Opening for GSWH & SWHA Housings:

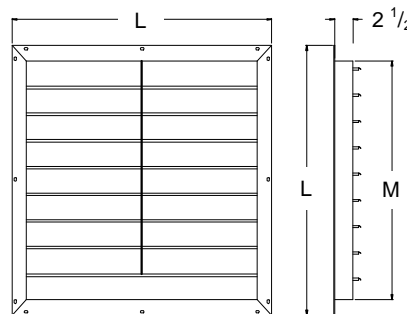
Add 1/2" to 'E' for Width For 4" Wall: Add 1 1/4" to 'G' for Height
 For 2" Wall: Add 3/4" to 'G' for Height For 6" Wall: Add 1 1/2" to 'G' for Height

GWH & WHA Square Wall Housing



Size	K
24	32 3/8
30	38 3/8
36	44 3/8
42	50 3/8
48	56 3/8
54	62 3/8

For rough opening, add 1/2" to 'K'



LRW Shutter

Shutter Model	L O.D.	M I.D.
LRW27	30 1/4	27
LRW33	36 1/4	33
LRW39	42 1/4	39
LRW45	48 1/4	45
LRW51	54 1/4	51
LRW57	60 1/4	57
LRW66	69 1/4	66

For rough opening, add 1/2" to 'M'

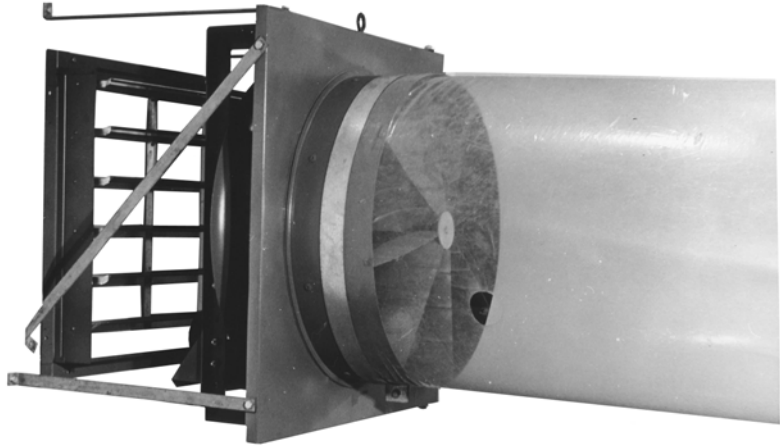
Power Tube Fans

PTF

Power Tube Fan

In controlled environments where a precise tempering of air is critical to production, American Coolair offers the PTF Power Tube fan. The PTF fan, with its companion polyethylene Power Tube, is specially designed to make up air lost to exhaust fans while at the same time provide low velocity tempering and mixing of air.

Constructed of heavy gauge steel, the PTF fan is offered in sizes from 12 to 30 inches. The 12 and 18 inch fans are direct drive units. The 24 and 30 inch fans are belt driven and incorporate the Coolair exclusive static shaft design used on the Coolair Type NBF and AL fans.



PERFORMANCE RATINGS (Power Tube included)

Model	Fan Size	Motor HP	Drive Type	Fan RPM	System CFM *	Motorized Shutter Model	Framed Opening
PTFA12F17	12	1/6	Direct	1,725	1,250	LRW16E	17" x 17"
PTFA18H16	18	1/3	Direct	1,625	3,650	LRW21E	22" x 22"
PTFB24H	24	1/3	Belt	784	4,850	LRW27E	28" x 28"
PTFB30J	30	1/2	Belt	627	7,550	LRW33E	34" x 34"
PTFB30L	30	1	Belt	815	10,450	LRW33E	34" x 34"

Power Tube

Manufactured from polyethylene tubing with UV inhibitor, the Power Tube is custom punched to suit your particular requirements. The Power Tube is clear so as not to obscure vision or light in your facility. Coolair Power Tube hangers are designed to be easily installed — just slide the hanger into position on the tubing, and clip onto a suspended wire. The Tube Hanger also supports the tube when the fan is not in use, allowing for unrestricted view and normal air movement. The Coolair Power Tube is a methodically researched product designed to meet the ventilation needs of the industry with traditional American Coolair quality.

Tube Hanger Spacing	
12" Tube	8 ft
18" Tube	8 ft
24" Tube	5 ft
30" Tube	5 ft

Power Tube Selection Chart

(Tube Length in feet)

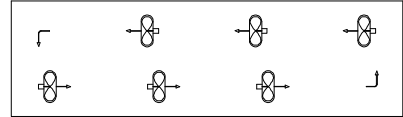
For PTFA12F17		For PTFA18H16		For PTFB24H		For PTFB30J		For PTFB30L	
Model	Tube Length	Model	Tube Length	Model	Tube Length	Model	Tube Length	Model	Tube Length
2BJS	10 - 16	8DJR	20 - 24	4DJS	30 - 36	3EKM	60 - 72	31EKJ	60 - 72
2BKK	17 - 21	8DKK	25 - 31	4DKK	37 - 44	3EKP	73 - 87	31EKL	73 - 88
2BKM	22 - 27	8DKM	32 - 39	4DKM	45 - 54	3EKR	88 - 105	31EKN	89 - 107
2BKR	28 - 35	8DKQ	40 - 48	4DKP	55 - 65	3ELL	106 - 126	31EKQ	108 - 130
2AKQ	36 - 45	8DLJ	49 - 58	4DKS	66 - 79	3ELP	127 - 150	31ELJ	131 - 158
2ALK	46 - 58	8DLN	59 - 70	4DLM	80 - 96	3CKP	151 - 178	31ELN	159 - 189
2ALQ	59 - 74	8BKP	71 - 85	4BKP	97 - 116	3CKS	179 - 212	31CKQ	190 - 224
2AMK	75 - 93	8BLJ	86 - 103	4BKS	117 - 138	3CLQ	213 - 250	31CLJ	225 - 268
2AMN	94 - 115	8BLN	104 - 125	4BLL	139 - 166	3AKO	251 - 296	31CLM	269 - 316
		8BLS	126 - 149	4BLQ	167 - 199	3ALL	297 - 345	31CLQ	317 - 367
		8ALN	150 - 178	4ALL	200 - 238	3ALO	346 - 380	31FLK	368 - 425
		8ALR	179 - 210	4ALP	239 - 280	3ALQ	381 - 410	31FLN	426 - 475



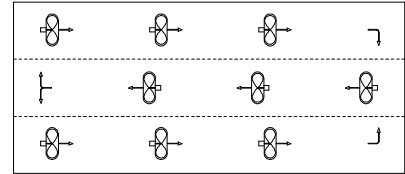
Circulator Fans

In greenhouses, proper air circulation helps plants grow better by increasing the amount of carbon dioxide at the plant level and reducing condensation on plant surfaces, reducing the risk of disease. Eliminate air stratification, reduce condensation, and eliminate hot and cold spots effectively and economically with American Coolair BK and FH fans. These fans feature aluminum propellers directly mounted to totally enclosed motors, steel guards that comply with OSHA standards, and cord sets that plug into standard 115 volt electrical outlets.

In general, the amount of circulation airflow needed is 2-1/2 to 3 CFM per square foot of floor space. Use the fans whenever the house exhaust fan system is not operating at full capacity. Circulator fans should be installed above the top of the crops to be cooled, but should be no closer than 1' from the roof. Use the figures to the right to determine the best fan layout for any type of building.



Typical Fan Placement - Individual House



Typical Fan Placement - Multiple-Gutter House

FH Horizontal Air Fan



Type FH Horizontal Air Fans feature heavy gauge galvanized steel motor mounts, fan guards, and fan casing to provide the durability and corrosion resistance needed for greenhouse environments. Each FH fan comes with a chain mounting kit.

Model	Fan Size	Motor HP	Voltage	Fan RPM	CFM
FH18B11	18	1/15	115	1,100	2,000
FH18G11	18	1/4	115	1,050	3,500

BK Basket Fan



Type BK Basket Fans feature coated steel wire guards. Each BK fan comes with a rafter hanging kit designed to easily mount to a "2-by" wooden beam or up to 2-1/8" metal tubing as standard. The standard mounting kit features 2-axis pivot adjustment to allow for precise vertical and horizontal orientation. Wall and ceiling mounting brackets, as well as chain kits, are also available to install the fans virtually anywhere in the building.

Model	Fan Size	Motor HP	Voltage	Fan RPM	CFM
BK18B11	18	1/15	115	1,075	2,310
BK18G11	18	1/4	115	1,125	3,130
BK20B11	20	1/15	115	1,075	2,960
BK20G11	20	1/4	115	1,125	3,880



Hobby Greenhouse Fans



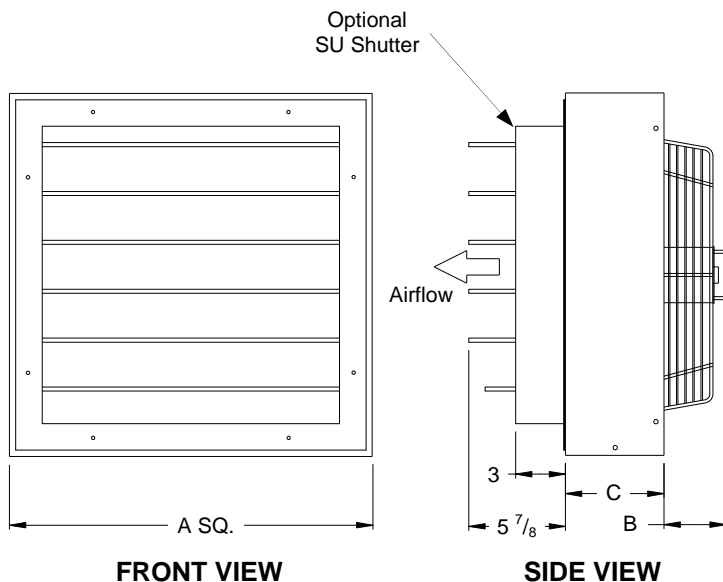
CDP/WS Exhaust Fan

CDP/WS fans are engineered for minimal maintenance and efficient, economical operation. Designed to exhaust relatively low volumes of air from smaller buildings, these fans are well suited for the Hobby Greenhouse.

Each CDP/WS fan features an aluminum propeller which mounts directly to the motor shaft. Motors are permanently lubricated and totally enclosed. A welded steel wire inlet guard is standard on all models. An optional speed controller accessory allows the motor speed to be varied to achieve performances from 50% to 100% of catalog ratings.

The CDP/WS is shipped with the fan already mounted in a galvanized steel wall sleeve for quick and easy installation. Combined with the optional aluminum Type SU shutter and optional mounting flanges, the CDP/WS is a complete Hobby Greenhouse fan package.

Fan Model	Fan Size	Motor HP	Fan RPM	CFM at Static Pressure		Shutter Model
				0"	1/10"	
CDP/WS7B17	7	1/20	1725	333	263	SU7-8
CDP/WS8B17	8	1/20	1675	530	458	SU7-8
CDP/WS10B15	10	1/20	1560	793	706	SU10-12
CDP/WS14B15	14	1/20	1450	1,144	1,028	SU14-16
CDP/WS16G11	16	1/4	1140	2,388	2,243	SU14-16
CDP/WS18G10	18	1/4	1060	3,281	2,932	SU18-20



Fan Size	Dimensions in Inches			
	A	B	C	Wall Opening
7-8	14 1/4	5	5 9/16	15
10	18 1/4	5	6 1/16	19
14	22 1/4	5	6 1/16	23
16	22 1/4	7 1/2	6 1/16	23
18	26 1/4	7 1/2	6 1/16	27



Evaporative Cooling Systems

Evaporative Cooling in Concept

To counter periods of extreme temperature that affect in-house environments and therefore production, Coolair Evaporative Cooling Pad Systems are used with outstanding success. When large quantities of air are pulled through Evaporative Cooling Pads that are saturated with water, a substantial cooling effect is realized due to the evaporation of that water. Used in conjunction with Coolair fans, a temperature reduction of 10-25 degrees is commonplace. Suited for virtually all geographic locations, the Coolair Evaporative Cooling System delivers the greatest economic benefits to areas where higher temperatures during longer periods of time are normal.

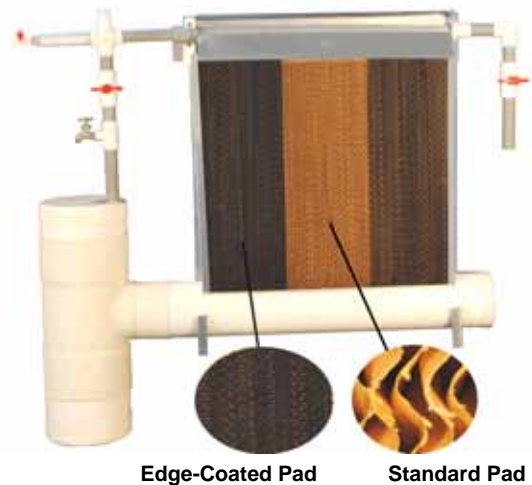
The Evaporative Cooling Pad

Evaporative Cooling Pads (Evap Pads) are a product developed for horticultural and agricultural cooling applications. Evap Pads are made of a specially formulated cellulose paper, impregnated with insoluble anti-rot salts, stiffening saturants and wetting agents. Evap Pads have a cross fluted configuration that provides maximum cooling when warm air passes through the wet Evap Pad material.

- Evap Pads will not sag, rot or develop holes.
- With proper care and maintenance, Evap Pads will last for 5 years or more.
- There is no carry-over of water droplets to enter the house.
- Aesthetic appearance of Evap Pads compliments modern buildings.

Evap Pads are 4" or 6" thick, and 12" or 24" wide with height increments every 12" from 24" to 72". The Evap Pads are positioned adjacent to each other to form a continuous surface of the required height and length. In addition to the standard Evap Pad, Edge-coated pads, which help reduce algae growth or build-up, are also available.

All 6" Evap Pads and 4" Evap Pads up to 48" tall are self-supporting, and do not require wire baskets or other supporting materials. The pads are held in place by component parts of the system. Tall pad supports are required on 4" pad systems over 4' tall. Standard Evaporative Cooling Systems are available from 2' to 6' tall in lengths up to 110'. Systems up to 12' tall are available with American Coolair's 'Doublestack' Evap Pad Cooling System.



System Design

For greenhouse applications, the Coolair Evap Pad is most effective when the system is centered on the plants to be cooled. Specific placement should be such that the upper portion of the pad itself is on the same level as the top of the crop to be cooled.

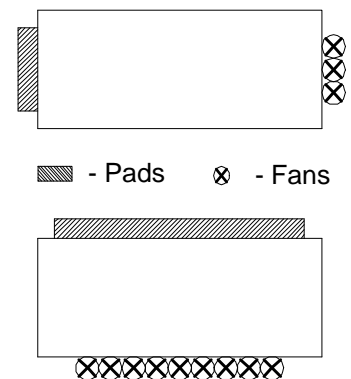
An important consideration for the placement of pads in a building is the prevailing wind direction during the summer months. Pads should be placed on the same side as the prevailing winds with fan installation on the opposite side.

For system designs to suit the specific needs for your type of building and atmospheric conditions, you may wish to consult your American Coolair representative. However, as a general guide, you can use the following system recommendations to insure proper cooling in your building:

- For 4" pad systems: Use 1 sq. ft. of pad per 250 CFM.
- For 6" pad systems: Use 1 sq. ft. of pad per 400 CFM.

Example: A building has 6 fans that produce 20,000 CFM each for a total of 120,000 CFM through the building.

- 4" systems — $120,000 \div 250 = \underline{480 \text{ sq. ft. of pad required.}}$
- 6" systems — $120,000 \div 400 = \underline{300 \text{ sq. ft. of pad required.}}$



Evaporative Cooling Systems

PVC

- System length 5' to 110' - System height 2' to 6'
- Completely self-contained
- PVC trough and sump included
- Available in Standard Top (system includes pipe cover/ spray deflector) or Open Top (for easy access to distribution pipe) designs
- Multiple pump designs available. For longer systems, consult your American Coolair representative.



Aluminum

- System length 5' to 100' - System height 2' to 6'
- Ideal when large amounts of cooling is needed.
- Extruded aluminum trough
- Aluminum pipe cover/ spray deflector
- Multiple pump designs available. For longer systems, consult your American Coolair representative.



Pump and Sump

The pumps are sized for the system to supply at least 1/2 gallon of water per minute per linear foot of pad system. The integral PVC sump and trough hold an adequate water supply for systems up to 110' long and 6' high.

Pump and Sump

The pumps are sized for the system to supply at least 1/2 gallon of water per minute per linear foot of pad system. The sump should be purchased locally and be sized for at least 3/4 gallon capacity per square foot of pad area.

Doublestack

The Doublestack Evap Pad Cooling System features the Open Top distribution system, and is available in system heights from 7' to 12'. The Doublestack System includes rigid pad supports that completely bear the weight of the upper Evap Pads, keeping them securely in place. This prevents the weight of the upper pads from causing the lower pads to sag.

'Modular' Doublestack systems are available in lengths up to 60' and come standard with a PVC water return trough and PVC sump. 'Tank' systems are available from 50' to 100' in length and require a separate sump tank (to be purchased locally).



Water Distribution System

The water distribution systems for the PVC, Aluminum, and Doublestack designs feature PVC pipe with metered outlet holes, water return trough, water filter, an automatic supply valve, and a volume control valve. All systems also include top and bottom pad support material, water distribution pipe cover (except for Open Top systems), and all necessary fasteners.



Motors and Controllers



Motors

American Coolair provides dependable, energy efficient motors to drive our fans. These totally enclosed motors are available in 1/20 to 3 horsepower sizes. Motors have been tested at maximum brake horsepower conditions and operate within standard allowable NEMA temperature limits. All motors carry the motor manufacturer's full warranty.

A19 Thermostat

- Single stage, single pole
- Temperature range 30° - 110°F
- Controls motors up to 1 HP



T109 Thermostat

- Two stage, single pole
- NEMA 4X weatherproof box
- Temperature range 30° - 110°F
- Controls 2-speed motors up to 3/4 HP
- 3°F separation between stages.



T16 Thermostat

- Single stage, single pole
- NEMA 4X weatherproof box
- Temperature range 30° - 110°F
- Controls motors up to 1 HP

WARNING

If these ventilation products are used in agricultural structures to support life where failure of the ventilation could result in loss or injury, the user must provide an adequate back-up ventilation system and a failure alarm system. The user must accept the risk of such loss or injury from failure of the ventilation system.

Limited Warranty

In the sale of its products, American Coolair Corporation agrees to correct, by repairs or replacement, any defects in workmanship or material that may develop under proper and normal use during the period of one year from the date of shipment from the factory. Any product or part proving, upon American Coolair's examination, to be defective during limited warranty period will be repaired or replaced, at American Coolair's option, f.o.b. factory, without charge. Deterioration or wear caused by chemicals, abrasive action or excessive heat shall not constitute defects. Motors are guaranteed only to the extent of the manufacturer's warranty. American Coolair's limited warranty does not apply to any of its products or parts that have been subject to accidental damage, misuse by the user, unauthorized modifications, improper installation or electrical wiring, or lack of proper lubrication or other service requirements as established by American Coolair. Repairs or replacements provided under the above terms shall constitute fulfillment of all American Coolair's obligations with respect to limited warranty. THE LIMITED WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING WITHOUT LIMITATION THAT OF MERCHANTABILITY AND FITNESS. NO LIABILITY FOR REINSTALLATION COST OR FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE IS ASSUMED OR SHALL BE IMPOSED UPON AMERICAN COOLAIR.



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