# Type C Propeller Fans





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#### **Application**

Type C wall propeller fans are used for general ventilation and are designed for efficiency and economy. Suggested uses include commercial installations such as warehouses, schools, hospitals, parking garages and industrial uses such as process plants, wastewater treatment plants, and manufacturing facilities.

These propeller fans are rugged and dependable and are available in a wide selection of sizes and performance. These fans can be arranged for supply, exhaust or a combination of both. (See application section for each fan type for proper selection.)

These fans are offered with a wide selection of accessories to complete a well-balanced and specifically engineered air moving system.

#### Construction

MATERIALS: The fan panel is fabricated of heavy-gauge steel and the uprights which support the motor and propeller are formed from heavy-gauge steel for maximum strength and rigidity. Aluminum construction is available on all CBA, CBH, CBC, and CDC models. See specific fan model for information on blade material.

Painted parts are coated with a thermosetting epoxy coating to provide a protective coating rated excellent for hardness, impact resistance, adhesion and chemical resistance. For protective coating options see the Accessories section.

METHODS: The entire panel assembly for CBL, CBH, CBHX, and CDC units (24 and larger) utilizes all-welded construction. It is specifically engineered to provide maximum efficient air movement and quiet operation. All blade assemblies are dynamically balanced.

Parts requiring painting are processed through the American Coolair five-stage pretreatment system prior to the application of any coatings to ensure maximum finish adhesion. These parts use a thermosetting epoxy powder paint with an average thickness of 3 mils and baked at 400°F to a smooth, hard, continuous finish.

#### **Drive Mechanism**

BELT DRIVE: Available in sizes from 18 inch to 84 inch, belt driven models are designed for quieter operation and lower initial cost. They use standardly available 1750 RPM motors.

DIRECT DRIVE: Available in sizes from 7 inch to 60 inch, direct driven models require less maintenance, offer longer operating life, increased efficiency and reduced operating cost.

VARIABLE PITCH PULLEYS: Most belt drive models are equipped with a variable pitch motor pulley which allows fan speed adjustment where desirable. The settings made at the factory allow the fan to operate within the maximum safe capabilities of the motor. The pulley may be opened to reduce fan speed and thus decrease air flow.

If an increase in fan speed is desired, contact your American Coolair representative for information on fan performance and motor load before making any adjustment.

#### **Bearings**

See specific fan style features for bearing information.

#### **Motors**

The American Coolair air-over-motor design provides extra capacity and economy because it serves to dissipate heat and thus increase horsepower capability. Totally enclosed motors are standard. Several alternatives, such as explosion proof motors, energy efficient motors and severe duty motors, are available to fit your specific needs.

Only nationally recognized brand motors with nationwide service facilities are used.

#### Listings



All Type C ventilators are listed by Underwriters Laboratory, Inc. to U.S. and Canadian safety standards.

UL705 - E39944

Certified ratings licensed by AMCA (Air Movement and Control Association International, Inc.), for both air and sound performance, are available for all Type C fans. These, along with dimensional drawings are included in this form.

#### Additional Information Available

Octave band sound power levels are available for use by the acoustical engineer in predicting on-the-job sound levels.

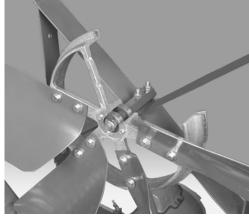
American Coolair will provide installation instructions and maintenance information at your request as well as information on any air movement need you may have. For performance requirements not listed or alternate construction requirements contact your American Coolair representative.

American Coolair has over 70 years of experience in air moving systems and offers you the very best equipment and knowledgeable personnel.

## Type CB (Models CBA-CBL-CBH-CBHX)

BELT DRIVE — 2500 to 58,800 CFM 0" to 3/4" STATIC PRESSURE





#### **Dimensions**

Dimension A is the O.D. of the square fan panel.

Dimension B is the depth from the face of the fan panel to the back of the fan frame.

Dimension C is the maximum with constant speed, 3-phase TEFC motor of maximum horsepower for fan size and style indicated. This dimension will vary with the type and HP of the motor actually selected.

Dimension J is the diameter of the installation holes.

(1) Maximum blade protrusion beyond venturi.

#### **Application**

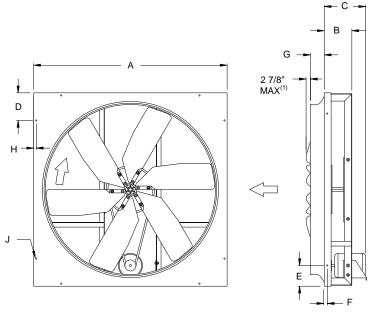
The CBA, CBL, CBH and CBHX fans are known for lower initial cost, proven reliability and quiet, efficient operation at both lower and higher pressures. These fans are generally used for exhaust, but with the addition of a wall housing, they can be turned around for use as a supply fan.

#### **Features**

These fans utilize a cross-frame to support American Coolair's unique bearing and shaft assembly. Power is applied directly to the fan/hub assembly in the same plane as the bearings. This reduces bearing load and dramatically increases fan bearing life. Bearings are permanently lubricated and sealed and have an  $L_{10}$  life exceeding 300,000 hours.

The die-formed steel propeller blades are securely attached to the hub to form a strong, rigid propeller assembly.

The motor pulley can be opened to reduce fan speed and decrease air flow on most models. If an increase in fan speed is desired, contact your American Coolair representative for information on fan performance and motor load before making any adjustments.



				Dimens	ions in I	nches			
Fan	Α	В	С	D	E	F	G	Н	J
CBA18	26	5 5/8	14 3/8	11/16	11/16	5/16	1 1/8	11/16	17/64
CBA20	26	5 5/8	14 3/8	11/16	11/16	5/16	1 1/8	11/16	17/64
CBL24	22	E 1/0	12 5/8	6	5	7/0	4	2/4	2/0
CBH24	32	5 1/8	13 1/4	6	Э	7/8	4	3/4	3/8
CBL30	38	5 1/8	12 5/8	6	5	7/8	4	3/4	3/8
CBH30	3H30	5 1/6	16 3/4	O	5	1/0	4	3/4	3/0
CBL36	44	4 5 1/8	12 3/4	7	5	7/8	4	3/4	3/8
CBH36	44	3 1/6	17 1/4	,	3	1/0	4	3/4	3/6
CBL42	50	5 1/8	12 3/4	7	4	7/8	4	3/4	3/8
CBH42	5	3 1/6	17 1/4	,	4	1/0	4	3/4	3/6
CBL48		5 1/8	12 3/4		5				
CBH48	56	5 1/6	17 1/4	8	5	1	4	3/4	3/8
CBHX48		6 5/8	20 1/2		6				
CBH54	62	5 1/8	17 1/4	8	6	7/8	4	3/4	3/8
CBHX54	02	6 5/8	20 1/2	0	O	1	4	3/4	3/0
CBHX60	68	6 5/8	20 1/2	11	9	3/4	4	3/4	1/2

## **Performance Ratings**



American Coolair Corporation certifies that the Type CB fan 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.

## **Typical Specifications**

Belt driven propeller fans shall be American Coolair Type CBA, CBL, CBH, and CBHX as manufactured by American Coolair Corporation, Jacksonville, Florida; specific models shall be as shown in the fan schedule. Panels and structural angle supports shall be of welded steel construction with spun orifice to provide improved performance (CBL, CBH, & CBHX). Die formed steel blades shall be firmly attached to cast aluminum hub, which also serves as driven sheave. Fan hub shall rotate on fixed shaft using oversized sealed ball bearings. Belt load shall be applied to hub in the same plane as bearings, eliminating overhung load on bearings and increasing bearing life. Motor pulleys shall be variable pitch (except where noted below). Fans shall be licensed to bear the AMCA Certified Ratings Seal for sound and air performance. (Specify for each fan model in schedule the required CFM and static pressure; motor enclosure, phase and voltage; and accessories such as wall shutter, motor side or front guard, wall housing, etc.)

Item		Cubic Fe	et Per Min	ute (CFM)	at Static Pr	essure <sup>1,7</sup>			Fan	Motor	Fan	Sone	Max	Approx.	
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,7</sup>	Ship Wt.	Model <sup>5</sup>
1	3,190	3,002	2,797	2,536				CBA18H		1/3	1475	18.0	0.41	60	SU18-20
2	3,639	3,476	3,302	3,113	2,864			CBA18J	18	1/2	1683	23	0.61	66	SU18-20
3	4,165	4,023	3,875	3,719	3,549	3,341		CBA18K	10	3/4	1926	27	0.91	80	SU18-20
4	4,634	4,507	4,376	4,239	4,096	3,941	3,759	CBA18L		1	2143	32	1.25	85	SU18-20
5	3,279	3,002						CBA20G		1/4	1165	13.9	0.31	65	SU18-20
6	3,599	3,348	3,089					CBA20H		1/3	1279	16.5	0.40	65	SU18-20
7	4,117	3,898	3,676	3,433				CBA20J	20	1/2	1463	21	0.61	71	SU18-20
8	4,700	4,508	4,314	4,118	3,896			CBA20K		3/4	1670	26	0.91	85	SU18-20
9	5,223	5,051	4,877	4,702	4,522	4,317		CBA20L*		1	1856	30	1.25	90	SU18-20
10	5,792	5,636	5,480	5,323	5,164	5,000	4,817	CBA20M*		1 1/2	2058	36	1.70	112	SU18-20
11	5,216	4,460	3,341					CBL24G		1/4	678	11.8	0.30	70	S24
12	5,909	5,271	4,345					CBL24H		1/3	768	15.4	0.41	73	S24
13	6,601	6,046	5,327	4,404				CBL24J	24	1/2	858	19.1	0.60	79	S24
14	7,593	7,123	6,567	5,842	5,044			CBL24K	2-7	3/4	987	25	0.91	93	S24
15	8,143	7,705	7,248	6,726	5,879	5,119		CBH24L*		1	1065	28	1.28	98	S24
16	8,992	8,597	8,188	7,755	7,217	6,397	5,719	CBH24M*		1 1/2	1176	33	1.72	128	S24
17	7,469	5,985						CBL30G		1/4	509	10.5	0.30	77	S30
18	8,350	7,056						CBL30H		1/3	569	13.1	0.41	80	S30
19	9,304	8,160	6,766					CBL30J		1/2	634	16.2	0.60	86	S30
20	10,536	9,538	8,431	6,784				CBL30K	30	3/4	718	20	0.91	106	S30
21	11,945	11,072	10,139	9,073				CBH30L	30	1	814	25	1.25	111	S30
22	12,601	11,810	10,932	9,855	8,395	6,779		CBH30M		1 1/2	865	27	1.70	140	S30
23	13,956	13,247	12,481	11,619	10,528	9,167	7,737	CBH30N		2	958	34	2.30	143	S30
24	16,214	15,610	14,971	14,290	13,539	12,648	11,546	CBH30P*		3	1113	48	3.36	168	SR30
25	9,059	6,766						CBL36G		1/4	416	6.9	0.30	91	S36
26	10,257	8,453						CBL36H		1/3	471	8.5	0.41	94	S36
27	11,194	9,579	7,020					CBL36J		1/2	514	9.9	0.60	100	S36
28	13,197	11,847	10,174					CBL36K		3/4	606	13.4	0.91	114	S36
29	14,373	13,138	11,787	9,624				CBL36L	36	1	660	15.4	1.25	119	S36
30	15,902	14,845	13,330	11,742				СВН36М		1 1/2	698	21	1.70	156	S36
31	17,497	16,562	15,313	13,812	12,287			CBH36N		2	768	25	2.30	159	SR36
32	19,706	18,898	17,906	16,618	15,318	13,969	11,777	СВН36Р		3	865	30	3.44	186	SR36
33	23,238	22,568	21,807	20,899	19,796	18,654	17,605	CBH36Q*		5	1020	43	5.28	186	SR36
34	12,557	9,045						CBL42H		1/3	334	8.8	0.41	104	S42
35	14,437	11,407						CBL42J		1/2	384	11.4	0.60	110	S42
36	16,129	13,576	10,304					CBL42K		3/4	429	14.1	0.91	124	S42
37	18,272	16,245	13,455					CBL42L		1	486	17.6	1.25	129	S42
38	19,656	17,706	15,431	12,496				CBH42M	42	1 1/2	530	23	1.69	166	S42
39	21,547	19,789	17,804	15,463	12,261			CBH42N		2	581	26	2.30	169	S42
40	24,774	23,266	21,621	19,795	17,699	15,052		CBH42P		3	668	32	3.43	199	S42
41	29,595	28,348	27,021	25,616	24,098	22,440	20,569	CBH42Q		5	798	44	5.63	227	S42
71	23,333	20,040	21,020	20,010	27,030	22,440	20,509	ODITAL		5	1 30		5.05	221	042

## Type CB Performance Ratings (cont'd)

Item		Cubic Fe	et Per Min	ute (CFM) a	at Static Pr	essure <sup>1,7</sup>			Fan	Motor	Fan	Sone	Max	Approx.	Shutter
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,7</sup>	Ship Wt.	Model <sup>5</sup>
42	17,340	13,177						CBL48J		1/2	318	10.6	0.60	144	S48
43	19,958	16,510						CBL48K		3/4	366	14.1	0.90	149	S48
44	21,975	18,979	14,938					CBL48L		1	403	16.9	1.25	154	S48
45	24,163	21,204	18,055					CBH48M	48	1 1/2	432	19.7	1.69	211	S48
46	26,512	23,794	21,127	16,104				CBH48N		2	474	23	2.30	214	S48
47	30,316	27,912	25,634	23,110	17,991			CBH48P		3	542	29	3.44	259	S48
48	35,853	33,799	31,848	29,919	27,804	24,638		CBH48Q		5	641	38	5.62	287	S48
49	38,129	36,933	35,561	33,911	32,098	30,645	29,434	CBHX48R*		7 1/2	745	49	7.89	445	SR48
50	41,814	40,733	39,530	38,153	36,527	34,915	33,622	CBHX48S*		10	817	57	10.33	479	Note 6
51	18,733	13,770						CBH54J		1/2	293	11.2	0.60	197	S54
52	21,802	17,875						CBH54K		3/4	341	14.7	0.91	204	S54
53	24,359	21,018						CBH54L	54	1	381	17.7	1.24	211	S54
54	26,469	23,491	19,439					CBH54M	34	1 1/2	414	20	1.69	212	S54
55	29,602	27,026	23,705					CBH54N		2	463	24	2.29	215	S54
56	33,693	31,492	28,816	25,630				CBH54P		3	527	29	3.44	261	S54
57	40,129	38,154	35,880	33,210	30,151	25,250		CBHX54Q		5	547	33	5.58	402	SR54
58	46,952	45,293	43,469	41,419	39,117	36,592	33,602	CBHX54R		7 1/2	640	43	8.61	459	SR54
59	50,693	49,166	47,513	45,696	43,681	41,467	39,082	CBHX54S*		10	691	50	10.67	491	SR54
60	28,555	23,769						CBHX60L		1	302	13.0	1.24	348	S60
61	31,864	27,859						CBHX60M		1 1/2	337	15.8	1.69	360	S60
62	34,512	30,941	25,318					CBHX60N		2	365	18.3	2.30	360	S60
63	39,145	36,119	31,981	26,357				CBHX60P	60	3	414	22	3.43	382	S60
64	46,425	43,964	41,005	37,085	32,291			CBHX60Q		5	491	29	5.68	409	S60
65	53,422	51,324	48,945	46,130	42,560	38,342		CBHX60R		7 1/2	565	38	8.58	467	SR60
66	58,812	56,924	54,842	52,485	49,714	46,280	42,430	CBHX60S		10	622	45	11.43	500	SR60

- 1 Performance shown is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories).
- 2 The first three or four letters of the model number identify **fan type**, **drive configuration** and **style**. The next two numbers indicate **fan size**, the next letter identifies motor **horsepower**. Example: Model CBL24K is Type "C", belt drive, Style "L", 24" size, 3/4 H.P.
- 3 The sound ratings shown are loudness values in hemispherical sones at 1.5m (5 ft.) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels. The sound ratings shown are at 0" static pressure.
- 4 Maximum brake horsepower (BHP) within the catalog performance range. Power rating (BHP) does not include transmission losses. Bearing losses are included. BHP at most static pressures listed is less than that shown, in some cases substantially less. For specific BHP values at individual static pressure points contact your American Coolair representative. 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.
- 5 Shutter models shown are automatic (gravity) type. Add suffix "M" for manual operation; suffix "E" for motor operation.
- 6 Consult factory for these shutter specifications.
- 7 To convert air performance (CFM and SP) and power (BHP) to metric units, multiply CFM x .000472 to obtain cubic meters per second (m³/s). Multiply SP x 248.36 to obtain pascals (Pa). Multiply BHP x .7457 to obtain kilowatts (kW).

**Example:** 3904 CFM x .000472 = 1.8427 m<sup>3</sup>/s 0.125 SP x 248.36 = 31.05 Pa 0.886 BHP x .7457 = 0.661 kW

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

<sup>\*</sup> These models have fixed pitch motor pulleys.

## Type CBC

BELT DRIVE — 4,400 to 117,900 CFM 0" to 3/4" STATIC PRESSURE



#### **Application**

CBC fans are designed to move large volumes of air efficiently at both lower and higher pressures. The 3-bladed units provide efficiency economically, while the 6- and 8-bladed units provide maximum flow at lower speeds for lower sound ratings. These fans are generally used for exhaust, but with the addition of a wall housing, they can be turned around for use as a supply fan.

#### **Features**

American Coolair's Type C panel and rugged angle frame form the structure for CBC fans. The steel fan shaft is supported by two pillow-block ball bearings attached to this frame.

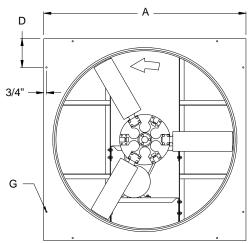
Cast aluminum adjustable pitch airfoil blades are securely attached to a heavy cast aluminum hub. Blade pitch is set for catalog performance.

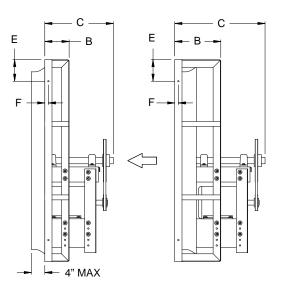
The blade pitch should not be adjusted without first contacting your American Coolair representative.

CBC fans incorporate specifically engineered airfoil sections and hub sizes for optimum efficiency and physical strength.

The motor pulley on most models can be opened to reduce fan speed and thus decrease air flow.

Do not increase fan speed or adjust blade pitch without first contacting your American Coolair representative.





CBC24-60 Side View

CBC72-84 Side View

Fan		Dir	mension	s in I	nche	s	
Size	Α	В	С	D	Е	F	G
24	32	5 1/8	18	6	5	7/8	3/8
30	38	5 1/8	18	6	5	7/8	3/8
36	44	5 1/8	19 1/2	7	5	7/8	3/8
42	50	5 1/8	19 1/2	7	4	7/8	3/8
48	56	6 5/8	19 1/2	8	6	1	3/8
54	62	6 5/8	19 1/2	8	6	1	3/8
60	68	6 5/8	19 1/2	11	9	1	1/2
72	80	17 7/8	34	13	11	1 1/8	1/2
84	92	17 7/8	34	15	13	1 5/8	1/2

Cast aluminum airfoil blades are standard.

#### **Dimensions**

Dimension A is the O.D. of the square fan panel.

Dimension B is the depth from the face of the fan panel to the back of the fan frame.

Dimension C is the maximum with constant speed, 3-phase TEFC motor of maximum horsepower for fan size and style indicated. This dimension will vary with the type and HP of the motor actually selected.

Dimension G is the diameter of the installation holes.

Drawings of belt, drive and blade assembly are schematic. Multiple belts are used on certain sizes and HPs.

## **Performance Ratings**



American Coolair Corporation certifies that the Type CBC fan 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.

## **Typical Specifications**

Belt driven propeller fans shall be American Coolair Type CBC as manufactured by American Coolair Corporation, Jacksonville, Florida; specific models shall be as shown in the fan schedule. Panels and structural angle supports shall be of welded steel construction. Fan blades shall be airfoil shaped cast aluminum securely attached to heavy cast aluminum hub. Blade pitch shall be adjustable. Ball bearings shall be of heavy duty pillow block type. Motor pulleys shall be variable pitch. Fans shall be licensed to bear the AMCA Certified Ratings Seal for sound and air performance. (Specify for each fan model in schedule the required CFM and static pressure; motor enclosure, phase and voltage; and accessories such as wall shutter, motor side or front guard, wall housing, etc.)

Item		Cubic Fee	t Per Minu	ite (CFM)	at Static F	ressure <sup>1,</sup>	7		Fan	Motor	Fan	Sone	Max	ВІ	lade	Approx.	Shutter
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,7</sup>	No.	Pitch	Ship Wt.	-
1	5,764	4,715						CBC24G		1/4	897	10.8	0.30	3	25°	119	S24
2	5,834	4,755						CBC246G		1/4	659	9.5	0.30	6	35°	128	S24
3	6,387	5,454	4,394					CBC24H		1/3	994	12.8	0.41	3	25°	119	S24
4	6,471	5,573	4,148					CBC246H		1/3	731	11.3	0.41	6	35°	128	S24
5	7,248	6,438	5,544	4,540				CBC24J		1/2	1128	15.9	0.60	3	25°	125	S24
6	7,356	6,615	5,419	4,139				CBC246J		1/2	831	14.0	0.60	6	35°	134	S24
7	8,328	7,631	6,881	6,071	5,177			CBC24K		3/4	1296	19.7	0.91	3	25°	139	S24
8	8,436	7,818	6,974	5,803	4,659			CBC246K		3/4	953	17.5	0.91	6	35°	148	S24
9	9,253	8,630	7,969	7,267	6,519	5,697		CBC24L	24	1	1440	23	1.25	3	25°	144	S24
10	9,366	8,822	8,142	7,174	6,173			CBC246L	24	1	1058	21	1.25	6	35°	153	S24
11	10,256	9,696	9,110	8,494	7,847	7,165	6,428	CBC24M		1 1/2	1596	27	1.70	3	25°	159	SR24
12	10,375	9,893	9,323	8,597	7,621	6,765	5,796	CBC246M		1 1/2	1172	24	1.70	6	35°	168	SR24
13	11,342	10,838	10,315	9,770	9,203	8,613	7,996	CBC24N		2	1765	32	2.30	3	25°	174	SR24
14	11,482	11,052	10,564	9,985	9,253	8,344	7,575	CBC246N		2	1297	28	2.30	6	35°	183	SR24
15	12,968	12,529	12,077	11,612	11,133	10,638	10,128	CBC24P		3	2018	40	3.43	3	25°	198	SR24
16	13,137	12,767	12,361	11,907	11,384	10,756	9,982	CBC246P		3	1484	35	3.43	6	35°	207	SR24
17	15,384	15,015	14,639	14,256	13,864	13,464	13,054	CBC24Q		5	2394	53	5.70	3	25°	213	Note 6
18	15,571	15,263	14,934	14,582	14,200	13,779	13,307	CBC246Q		5	1759	47	5.70	6	35°	222	Note 6
19	8,817	7,159						CBC30H		1/3	731	12.7	0.41	3	25°	140	S30
20	8,893	6,922						CBC306H		1/3	529	10.3	0.41	6	35°	149	S30
21	9,999	8,591	6,653					CBC30J		1/2	829	15.6	0.60	3	25°	146	S30
22	10,104	8,461						CBC306J		1/2	601	12.9	0.60	6	35°	155	S30
23	11,495	10,284	8,799	7,072				CBC30K		3/4	953	19.7	0.91	3	25°	160	S30
24	11,617	10,242	8,454					CBC306K		3/4	691	16.3	0.91	6	35°	169	S30
25	12,773	11,685	10,510	8,892	7,405			CBC30L		1	1059	23	1.25	3	25°	165	S30
26	12,878	11,663	10,187	8,292				CBC306L	30	1	766	19.4	1.24	6	35°	174	S30
27	14,149	13,167	12,158	10,877	9,419	8,062		CBC30M	00	1 1/2	1173	27	1.70	3	25°	180	S30
28	14,273	13,194	11,946	10,420	8,510			CBC306M		1 1/2	849	23	1.69	6	35°	189	S30
29	15,644	14,757	13,861	12,872	11,557	10,285	9,069	CBC30N		2	1297	32	2.29	3	25°	195	SR30
30	15,803	14,840	13,763	12,517	11,035	9,200		CBC306N		2	940	27	2.30	6	35°	204	SR30
31	17,900	17,125	16,347	15,550	14,657	13,517	12,342	CBC30P		3	1484	40	3.43	3	25°	219	SR30
32	18,073	17,240	16,339	15,345	14,223	12,937	11,493	CBC306P		3	1075	33	3.43	6	35°	228	SR30
33	21,205	20,551	19,896	19,237	18,566	17,850	17,024	CBC30Q		5	1758	53	5.71	3	25°	234	SR30
34	21,385	20,689	19,954	19,172	18,333	17,422	16,415	CBC306Q		5	1272	44	5.69	6	35°	243	SR30
35	11,479	9,062						CBC36J	36	1/2	690	14.9	0.60	3	20°	173	S36
36	11,993	9,758						CBC366J		1/2	498	13.1	0.60	6	30°	182	S36
37	13,209	11,198	8,930					CBC36K		3/4	794	18.7	0.91	3	20°	187	S36
38	13,702	11,873						CBC366K		3/4	569	16.2	0.91	6	30°	196	S36
39	14,673	12,934	10,838	8,871				CBC36L		1	882	22	1.25	3	20°	192	S36
40	15,220	13,622	11,282					CBC366L		1	632	19.2	1.25	6	30°	201	S36
41	16,237	14,717	12,819	11,015	9,183			CBC36M		1 1/2	976	26	1.69	3	20°	207	S36
42	16,881	15,471	13,695	10,863				CBC366M		1 1/2	701	22	1.70	6	30°	216	S36
43	17,951	16,610	14,947	13,247	11,647	9,934		CBC36N		2	1079	31	2.29	3	20°	222	S36
44	18,639	17,382	15,909	13,816	11,007			CBC366N		2	774	26	2.28	6	30°	231	S36
45	20,529	19,386	18,033	16,504	15,042	13,643	12,224	CBC36P		3	1234	39	3.42	3	20°	246	SR36
46	21,312	20,231	19,025	17,605	15,615	13,172		CBC366P		3	885	32	3.43	6	30°	255	SR36
47	24,356	23,413	22,361	21,162	19,867	18,608	17,405	CBC36Q		5	1464	51	5.72	3	20°	261	Note 6
48	25,262	24,362	23,395	22,342	21,151	19,668	17,735	CBC366Q		5	1049	42	5.71	6	30°	270	Note 6
49	27,899	27,086	26,206	25,238	24,170	23,039	21,922	CBC36R		7 1/2		65	8.59	3	20°	327	Note 6
50	27,935	27,126	26,270	25,356	24,369	23,261	21,923	CBC366R		7 1/2	1160	50	7.72	6	30°	384	Note 6

## **Type CBC Performance Ratings (cont'd)**

Item		Cubic Fee	t Per Minu	ıte (CFM)	at Static F	Pressure <sup>1,7</sup>	7		Fan	Motor	Fan	Sone	Max	В	lade	Approx.	Shutter
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>				Rating <sup>3</sup>				Ship Wt.	_
51	16,463	13,354						CBC42K		3/4	631	18.9	0.91	3	20°	232	S42
52	17.092	14,090						CBC426K		3/4	453	15.1	0.91	6	30°	241	S42
53	18,420	15,623	12.748					CBC42L		1	706	23	1.25	3	20°	237	S42
54	18,979	16,349						CBC426L		1	503	18.0	1.25	6	30°	246	S42
55	20,246	17,676	15,158	12,111				CBC42M		1 1/2	776	26	1.70	3	20°	252	S42
56	20,979	18,637	15,683					CBC426M		1 1/2	556	21	1.70	6	30°	261	S42
57	22,542	20,201	18,001	15,589	12,453			CBC42N		2	864	32	2.29	3	20°	267	S42
58	23,205	21,111	18,708	15,393				CBC426N	42	2	615	25	2.30	6	30°	276	S42
59	25,673	23,584	21,666	19,672	17,506	14,802		CBC42P		3	984	40	3.43	3	20°	291	S42
60	26,525	24,714	22,752	20,386	17,331			CBC426P		3	703	31	3.43	6	30°	300	S42
61	30,396	28,600	26,945	25,331	23,648	21,867	19,938	CBC42Q		5	1165	55	5.71	3	20°	306	SR42
62	31,393	29,877	28,284	26,573	24,585	22,140		CBC426Q		5	832	41	5.69	6	30°	315	SR42
63	35,066	33,492	32,019	30,613	29,213	27,764	26,251	CBC42R		7 1/2	1344	72	8.57	3	20°	372	Note 6
64	35,996	34,682	33,318	31,897	30,381	28,680	26,668	CBC426R		7 1/2	954	51	8.58	6	30°	429	Note 6
65	22,286	18,518						CBC48L		1	575	23	1.25	3	20°	329	S48
66	24,611	21,208	16,698					CBC48M		1 1/2	635	28	1.68	6	25°	334	S48
67	27,131	24,062	20,721	15,365				CBC48N		2	700	33	2.26	3	20°	359	S48
68	26,338	23,218	18,616					CBC486N		2	512	28	2.27	6	25°	369	S48
69	30,968	28,293	25,550	21,826	16,995			CBC48P		3	799	41	3.39	3	20°	383	S48
70	30,093	27,457	23,931	19,504				CBC486P		3	585	36	3.39	6	25°	393	S48
71	28,891	27,036	24,646	22,110	17,286			CBC488P		3	504	28	3.41	8	30°	433	S48
72	36,626	34,374		29,736		22,702		CBC480		5	945	54	5.61	3	20°	398	SR48
73	35,546		32,071 30,834	27,500	26,650 23,794			CBC48Q CBC486Q	48	5	691	48	5.58	6	25°	408	SR48
74	34,223	33,360 32,706	30,834	28,761	26,629	24,161		CBC488Q		5	597	37	5.62	8	30°	448	SR48
75	41,820	39,851	37,852	35,819	33,764	31,175	27,612	CBC488R		7 1/2	1079	69	8.32	3	20°	455	SR48
76	40,536	38,635	36,582	34,106		27,808	23,673	CBC48R		7 1/2	788	60	8.28	6	25°	465	SR48
77	39,152	37,850	36,385	34,681	31,038	30,891	28,997	CBC488R		7 1/2	683	47	8.38	8	30°	505	SR48
78	46,044	44,258	42,452	40,615	32,762 38,768	36,875	34,504	CBC488		10	1188	83	11.09	3	20°	489	Note 6
79	44,703	42,986	41,181	39,145	36,698	33,826	30,903	CBC486S		10	869	72	11.11	6	25°	499	Note 6
80	42,993	41,819	40,530	39,080	37,430	35,664	33,969	CBC488S		10	750	57	11.10	8	30°	539	Note 6
	*	•	•	00,000	-	•											
81	23,897	17,331						CBC54L		1	467	22	1.12	3	20°	367	S54
82	24,545	18,118						CBC546L		1	354	22	1.16	6	25°	382	S54
83	27,274	22,248						CBC54M		1 1/2	533	27	1.66	3	20°	379	S54
84	27,735	22,627	40.007					CBC546M		1 1/2	400	27	1.67	6	25°	394	S54
85	30,242	25,651	19,237					CBC54N		2	591	32	2.26	3	20°	380	S54
86	30,716	26,393	19,489	10.426				CBC546N		2	443	31	2.27	6	25°	395	S54
87	34,489	30,670	25,683	19,426				CBC54P		3	674	40	3.36	3	20°	402	S54
88	35,015	31,385	26,047	24.020				CBC546P CBC548P	ΕΛ	3	505 424	39	3.37	6	25°	417	S54
89	34,923	31,816	28,534	24,930	24 447			CBC548P	54	3		23 55	3.37	8	30°	462	S54
90	40,988	38,123	34,250	29,377	24,447					5	801	55 53	5.64	3	20°	430	S54
91	41,602	38,628	35,073	30,128	 20 555	22.550		CBC546Q		5	600 504	53	5.65 5.65	6	25°	445	S54 S54
92	41,512	38,925	36,205	33,442	30,555	22,550	22.956	CBC548Q CBC54R		5 7 1/2	914	32 70	5.65	8	30° 20°	490	
93	46,770	44,345	40,954	37,973 38,456	33,060	28,834	22,856			7 1/2	914 685	70 68	8.40	3		487 502	SR54
94	47,496	44,917	42,085	38,456	34,052	27,310	 20 41F	CBC546R		7 1/2		68	8.40	6	25°	502 547	SR54
95 06	47,360	45,106	42,762	40,339	37,927	35,450	30,415	CBC548R		7 1/2	575 1005	41 95	8.41	8	30°	547 510	SR54
96	51,427	49,252	46,535	43,341	40,552	35,673	31,882	CBC54S		10	1005	85 91	11.16	3	20°	519 524	SR54
97	52,141	49,803	47,318	44,426	40,599	36,761	30,266	CBC546S		10	752	81	11.11	6	25°	534	SR54
98	52,054	50,011	47,901	45,720	43,506	41,325	39,066	CBC548S		10	632	47	11.15	8	30°	589	SR54

## Type CBC Performance Ratings (cont'd)

Item	(	Cubic Fee	t Per Minu	ite (CFM)	at Static F	ressure <sup>1,</sup>	7		Fan	Motor		Sone			lade	Approx.	
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,7</sup>	No.	Pitch	Ship Wt.	Model <sup>5</sup>
99	27,428	19,065						CBC60L		1	437	25	1.11	3	15°	381	S60
100	28,128	17,778						CBC606L		1	304	21	1.16	6	25°	401	S60
101	31,382	24,760						CBC60M		1 1/2	500	31	1.66	3	15°	393	S60
102	31,829	24,731						CBC606M		1 1/2	344	25	1.68	6	25°	413	S60
103	34,771	29,285	20,768					CBC60N		2	554	37	2.26	3	15°	393	S60
104	35,253	29,369						CBC606N		2	381	30	2.28	6	25°	414	S60
105	39,667	35,018	28,189	21,036				CBC60P		3	632	46	3.35	3	15°	415	S60
106	39,879	35,008	25,314					CBC606P		3	413	38	3.30	6	25°	435	S60
107	40,792	36,888	29,353					CBC608P	60	3	333	28	3.34	8	35°	485	S60
108	47,135	43,239	38,812	32,500	26,273			CBC60Q	00	5	751	63	5.63	3	15°	442	S60
109	47,559	43,691	38,535	28,873				CBC606Q		5	514	52	5.60	6	25°	462	S60
110	48,632	45,237	42,170	33,641				CBC608Q		5	397	39	5.65	8	35°	512	S60
111	53,788	50,368	46,894	42,068	36,622	30,983		CBC60R		7 1/2	857	81	8.36	3	15°	500	SR60
112	54,313	50,997	47,035	41,603				CBC606R		7 1/2	587	67	8.34	6	25°	520	SR60
113	55,492	52,444	49,790	46,804	37,802			CBC608R		7 1/2	453	49	8.40	8	35°	570	SR60
114	59,123	56,008	52,907	49,337	44,191	39,475	34,242	CBC60S		10	942	97	11.10	3	15°	533	SR60
115	59,865	56,883	53,520	49,330	43,084			CBC606S		10	647	81	11.16	6	25°	553	SR60
116	61,126	58,317	55,858	53,424	50,051	40,852		CBC608S		10	499	59	11.23	8	35°	603	SR60
117	44,303	35,814						CBC72N		2	281	24	2.19	8	20°	732	S72
118	51,083	44,599	35,032					CBC72P		3	324	31	3.35	8	20°	754	S72
119	60,700	55,262	47,784	40,066				CBC72Q		5	385	41	5.62	8	20°	768	S72
120	69,371	64,532	59,668	51,733	45,056	32,768		CBC72R	72	7 1/2	440	52	8.40	8	20°	826	S72
121	76,466	72,029	67,882	61,637	55,122	48,437	38,049	CBC72S		10	485	63	11.24	8	20°	857	SR72
122	87,187	83,258	79,601	75,745	69,544	63,744	58,787	CBC72T*		15	553	80	16.67	8	20°	928	SR72
123	96,332	92,758	89,377	86,112	82,174	76,074	70,901	CBC72U*		20	611	98	22.48	8	20°	962	Note 6
124	54,338	40,521						CBC84N		2	218	21	2.19	8	20°	1044	S84
125	62,564	52,069	35,886					CBC84P		3	251	26	3.34	8	20°	1067	S84
126	74,528	66,415	54,355	39,643				CBC84Q		5	299	36	5.65	8	20°	1092	S84
127	84,997	77,824	68,687	58,350	43,030			CBC84R	84	7 1/2	341	45	8.38	8	20°	1149	S84
128	93,721	87,139	80,433	69,678	60,413			CBC84S		10	376	54	11.24	8	20°	1180	SR84
129	106,931	101,088	95,624	88,192	78,813	71,136	59,347	CBC84T		15	429	69	16.69	8	20°	1253	SR84
130	117,899	112,565	107,578	102,269	93,763	86,019	79,119	CBC84U*		20	473	83	22.38	8	20°	1287	SR84

- 1 Performance shown is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories).
- 2 —The first three letters of the model number identify fan type, drive configuration and style. The next two numbers indicate fan size, the next letter identifies motor horsepower. For example: Model CBC48N is Type "C", belt drive, Style "C", 48" size, 2 H.P.
- 3 The sound ratings shown are loudness values in hemispherical sones at 1.5m (5 ft.) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels. The sound ratings shown are at 0" static pressure.
- 4 Maximum brake horsepower (BHP) within the catalog performance range. Power rating (BHP) does not include transmission losses. Bearing losses are included. BHP at most static pressures listed is less than that shown, in some cases substantially less. For specific BHP values at individual static pressure points contact your American Coolair representative. 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.
- 5 Shutter models shown are automatic (gravity) type. Add suffix "M" for manual operation; suffix "E" for motor operation.
- **6** Consult factory for these shutter specifications.
- 7 To convert air performance (CFM and SP) and power (BHP) to metric units, multiply CFM x .000472 to obtain cubic meters per second (m³/s). Multiply SP x 248.36 to obtain pascals (Pa). Multiply BHP x .7457 to obtain kilowatts (kW).

**Example:** 3904 CFM x .000472 = 1.8427 m<sup>3</sup>/s 0.125 SP x 248.36 = 31.05 Pa 0.886 BHP x .7457 = 0.661 kW

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

## Type CD (Models CDP-CDU-CDC)

DIRECT DRIVE — 330 to 61,400 CFM 0" to  $^{3}/_{4}$ " STATIC PRESSURE



#### **CDP**

CDP fans provide an efficient and economical means to move relatively low volumes of air. Each CDP features 3, 4, or 5 aluminum blades. The available speed controller accessory allows the CDP's motor speed to be varied to achieve performances from 50% to 100% of catalog ratings. A welded steel wire inlet guard is standard on all CDP models.



#### **CDU**

CDU fans are ideal for quietly moving low to medium volumes of air. The CDU features 3 formed steel "teardrop" blades specifically engineered for ultra-quiet operation. A PVC coated steel wire inlet guard is standard on all CDU models, and a motor speed controller is available on some models (see the performance table).

#### **Application**

CD fans are designed for minimal maintenance requirements and efficient, economical operation.

These fans are suggested for use in situations where the installed fan will be difficult to reach for periodic maintenance.

These fans can used for either air supply or exhaust by specifying the arrangement desired.

#### **Features**

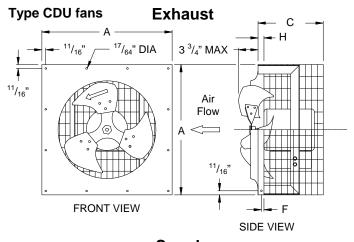
American Coolair's Type C panel and rugged angle frame form the structure for CD fans.

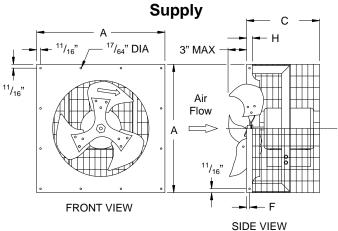
The propeller assembly is connected directly to the motor shaft. There are no bearings or belts to require maintenance. Many motors are permanently lubricated.



#### CDC

For moving medium to high air volumes, the CDC is the answer. CDC fans incorporate specifically engineered airfoil sections and hub sizes for optimum efficiency and physical strength. Three, four or six cast aluminum adjustable pitch airfoil blades are securely attached to a heavy cast aluminum hub. Blade pitch is set for catalog performance. NOTE: The blade pitch should not be adjusted without first contacting your American Coolair representative.





#### **Dimensions**

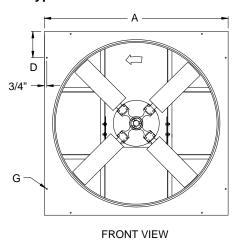
Dimension A is the O.D. of the square fan panel.

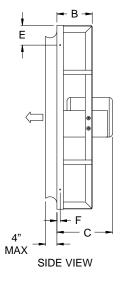
Dimension B is the depth from the face of the fan panel to the back of the fan frame.

Dimension C is the maximum with constant speed, 3-phase TEFC motor of maximum horsepower for fan size and style indicated. This dimension will vary with the type and HP of the motor actually selected.

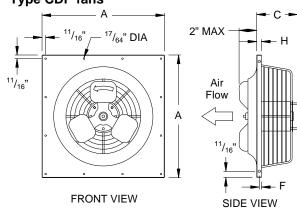
Dimension G is the diameter of the installation holes.

#### Type CDC fans





#### Type CDP fans



#### **TYPE CDP AND CDU FANS**

_	Di	mension	s in Inch	es
Fan	Α	С	F	н
CDP7	14	5	1/4	1/2
CDP8	14	5	1/4	1/2
CDP10	18	5	1/4	1/2
CDU12	18	11	1/4	1/2
CDP14	22	5	1/2	1
CDU14	22	12	1/2	1
CDP16	22	7 1/2	1/2	1
CDU16	22	12	1/2	1
CDP18	26	7 1/2	1/2	1
CDU18	26	14	1/2	1
CDU20	26	14	1/2	1
CDU24	32	14	1/2	1

#### **TYPE CDC FANS**

Fan			Dimens	sions in	Inches		
Size	Α	В	С	D	Е	F	G
18	26	5 5/8	13 3/8	11/16	11/16	9/16	17/64
24	32	5 1/8	12 1/2	6	5	7/8	3/8
30	38	5 1/8	13 7/8	6	5	7/8	3/8
36	44	5 1/8	15 3/8	7	5	7/8	3/8
42	50	5 1/8	15 3/8	7	4	7/8	3/8
48	56	6 5/8	17 3/8	8	6	1	3/8
54	62	6 5/8	17 3/8	8	6	1	3/8
60	68	6 5/8	17 3/8	11	9	1	1/2

## **Performance Ratings**



American Coolair Corporation certifies that the Type CD fan 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.

## **Typical Specifications**

Direct driven propeller fans shall be American Coolair Type CD as manufactured by American Coolair Corporation, Jacksonville, Florida; specific models shall be as shown in the fan schedule. Panels and structural angle supports shall be of welded steel construction (CDC). Fan blades shall be formed aluminum (CDP), formed steel (CDU), or cast aluminum (CDC) securely attached to heavy cast aluminum hub. Blade pitch shall be adjustable (CDC). Entire blade assembly shall be mounted directly to the motor shaft. Fans shall be licensed to bear the AMCA Certified Ratings Seal for air and sound performance. (Specify for each fan model in schedule the required CFM and static pressure; motor enclosure, phase and voltage; and accessories such as wall shutter, motor side or front guard, wall housing, etc.)

No. 0"   1/8"   1/4"   3/8"   1/2"   5/8"   3/4"   Fan Moder   Size   HP   RPM   Rating   BHP <sup>46</sup>   No.   Pitch   Ship Wt.   No.   1   3333	Item	Cul	bic Feet	Per Minu	te (CFM)	at Static	Pressur	·e <sup>1,8</sup>		Fan	Motor	Fan	Sone	Max	Blade	Descr.	Approx.	Shutter
2   530   450           CDP8B17   8   1/20   1675   7.1   0.03   5   32°   12   5   5   37°   3   SI     4   1.165   900         CDP1B15   10   1/20   1660   9.2   0.05   5   37°   13   SI     4   1.165   900         CDU12F17   1/3   1160   4.4   0.07   3   41°   34   SI     5   1.500   1.380   1.210       CDU12F17   1/3   1160   4.4   0.07   3   41°   34   SI     6   1.760   1.630   1.430       CDU12F17   1/3   1750   9.8   0.23   3   41°   37   SI     7   1.144   1.001         CDP14B15   1/20   1450   1160   0.06   3   41°   37   SI     8   1.750   1.555         CDP14B15   1/20   1450   1160   0.06   3   41°   37   SI     8   1.750   1.555         CDP14B15   1/20   1450   1160   0.06   3   41°   37   SI     9   2.035   1.920   1.795       CDP14B17   1/3   1760   6.7   0.16   3   41°   37   SI     10   2.635   2.520   2.395   2.200       CDP14B17   1/3   1760   6.7   0.16   3   41°   37   SI     11   2.388   2.198       CDP14B17   1/4   1140   6.7   0.17   4   32°   33   SI     12   2.480   2.235   1.935       CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     13   2.970   2.845   2.690   2.515   2.285     CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     14   3.281   2.842   2.225       CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     15   2.905   2.700   2.435       CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     16   3.265   3.130   2.900       CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     16   3.265   3.130   2.900       CDP14B17   1/3   1760   1.6   0.39   3   32°   44   SI     17   3.760   3.660   3.510   3.355   3.150     CDP14B17   1/3   1750   16.6   0.39   3   32°   44   SI     18   4.385   4.230   4.110   3.960   3.760     CDP14B17   1/3   1750   18.7   0.76   3   32°   57   SI     19   2.890   2.528   2.032       CDP14B17   1/3   1750   18.7   0.76   3   32°   57   SI	No.								Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,8</sup>	No.	Pitch	Ship Wt.	Model <sup>5</sup>
3	1	333	_	_	_	_	_	_	CDP7B17 <sup>7</sup>	7	1/20	1725	5.1	0.01	5	30°	12	SU7-8
4	2	530	450	_	_	_	_	_	CDP8B17 <sup>7</sup>	8	1/20	1675	7.1	0.03	5	32°	12	SU7-8
5	3	793	687	_	_	_	_	_	CDP10B15 <sup>7</sup>	10	1/20	1560	9.2	0.05	5	37°	13	SU10-12
6		,		_		_	_		_	40								SU10-12
7 1,144 1,001 — — — — — — — — — CDP14B157 1/20 1450 11.9 0.06 3 18° 22 SI 8 1,750 1,555 — — — — — — CDU14H17 1/4 1/3 1750 13.8 0.38 3 41° 37 SI 9 2,035 1,920 1,795 — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,480 2,235 1,935 — — — — — CDU16H17 1/3 1750 16.6 0.39 3 32° 44 SI 13 2,970 2,845 2,690 2,515 2,285 — — CDU16H17 1/3 1750 16.6 0.39 3 32° 44 SI 14 3,281 2,842 2,225 — — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 44 SI 14 3,281 2,842 2,225 — — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 44 SI 15 2,905 2,700 2,435 — — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 44 SI 16 3,265 3,130 2,660 — — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 44 SI 16 3,265 3,130 2,660 — — — — CDU18H17 1/3 1750 14.7 0.40 3 21° 44 SI 17 3,760 3,660 3,510 3,355 3,150 — — CDU18H17 1/3 1750 16.2 0.58 3 25° 50 SI 18 4,365 4,230 4,110 3,960 3,780 — — CDU18H17 1/2 1750 16.2 0.58 3 25° 50 SI 18 4,365 4,230 4,110 3,960 3,780 — — — — CDC18F11 1/6 1160 9.5 0.18 4 23.5° 60 SI 23 3,868 3,635 2,632 — — — — — CDC18F11 1/6 1750 15.4 0.19 3 10.5° 51 SI 23 3,659 3,373 3,068 2,706 2,235 — — — — CDC18F11 1/6 1750 15.4 0.19 3 10.5° 51 SI 23 3,659 3,373 3,068 2,706 2,235 — — — — CDC18F17 1/6 1750 16.8 0.38 3 19° 55 SI 31 SI 22 2,642 2,299 1,967 1,555 — — — — CDC18F17 1/6 1750 16.8 0.38 3 19° 55 SI 31 SI 22 3,366 3,255 2,870 — — — — — CDC18F11 1/3 1750 16.8 0.38 3 19° 55 SI 31 SI 32 3,365 2,864 2,270 3,364 3,365 4,2894 CDC18H17 1/3 1750 16.8 0.38 3 19° 55 SI 31 SI 32 3,365 3			,			_	_			12								SU10-12 SU10-12
8 1,750 1,555 — — — — — — — — — — — — — — — — — —	7	-				_	_				1/20	1450	11.9			18°	22	SU14-16
9 2,035 1,920 1,795 — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — CDU14H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — — CDU16H17 1/3 1750 13.8 0.38 3 41° 40 SI 11 2,388 2,198 — — — — — — — CDU16H17 1/3 1760 13.8 0.38 3 41° 40 SI 12 2,480 2,235 1,935 — — — — — CDU16H17 1/3 1160 6.7 0.17 4 32° 33 SI 13 2,970 2,845 2,690 2,515 2,285 — — CDU16H17 1/3 1750 16.6 0.39 3 32° 44 SI 14 3,281 2,842 2,225 — — — — — CDU16H17 1/3 1750 16.6 0.39 3 32° 44 SI 15 2,905 2,700 2,435 — — — — — CDU18H11 1/3 1160 8.9 0.30 3 32° 41 SI 16 3,265 3,130 2,960 — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 44 SI 16 3,265 3,130 2,960 — — — — CDU18H17 1/3 1750 16.6 0.39 3 32° 55 SO SI 18 4,385 4,230 4,110 3,960 3,780 — — CDU18H17 1/2 1750 16.2 0.58 3 25° 50 SI 18 4,385 4,230 4,110 3,960 3,780 — — CDU18H17 1/6 1160 9.5 0.18 4 23.5° 60 SI 19 2,890 2,526 2,032 — — — — CDC18F11 1/6 1160 9.5 0.18 4 23.5° 60 SI 20 3,328 3,035 2,632 — — — — CDC18F11 1/6 1160 11.5 0.29 6 28° 62 SI 21 3,856 3,543 3,059 — — — — CDC18H11 1/3 1160 11.5 0.29 6 28° 62 SI 22 2,642 2,299 1,967 1,595 — — — CDC18H17 1/3 1750 15.4 0.19 3 10.5° 51 SI 23 3,659 3,373 3,068 2,706 2,235 — — CDC18H17 1/3 1750 15.4 0.19 3 10.5° 51 SI 24 4,050 3,820 3,887 3,320 2,993 2,610 2,194 CDC18H17 1/3 1750 15.4 0.19 3 10.5° 51 SI 25 5,065 4,851 4,569 4,272 3,942 3,456 2,894 CDC18K17 1/7 1750 18.8 0.38 3 19° 55 SI 24 4,050 3,820 3,887 3,320 2,993 2,610 2,194 CDC18H17 1/3 1750 12.0 0.39 3 31° 42 SI 25 5,065 4,851 4,569 4,272 3,942 3,456 2,894 CDC18K17 1/7 1/3 1160 11.5 0.39 3 28° 63 31° 70 SI 26 5,435 5,214 4,980 4,770 4,546 4,258 3,909 CDC18L17 1/1750 16.8 0.38 3 19° 55 SI 31 4,800 4,345 — — — — — — CDU20H17 1/3 1160 11.5 0.39 3 28° 63 31° 70 SI 31 4,800 4,345 — — — — — — CDU24H17 1/3 1160 11.5 0.39 3 28° 63 31° 70 SI 31 4,800 4,345 — — — — — — CDC24H11 1/3 1160 12.2 0.85 3 28° 63 31° 70 SI 31 4,800 4,849 3,546 — — — — — CDC24H11 1/1 1/160 12.0 0.85 3 28° 63 31° 104 SI 31 4,800 4,849 3,546 — — — — — CDC24H11 1/1 1/160 12.0 0.85 3 23.5° 59 SI 31 4,800 4,809 3,				_	_	_	_	_		1.1	1/3		6.7		3	41°	37	SU14-16
11	9	2,035	1,920	1,795	_	_	_	_	CDU14F17 <sup>7</sup>	14	1/6	1750	9.2	0.23	3	29°	38	SU14-16
12	10	2,635	2,520	2,395	2,200	_	_	_	CDU14H17		1/3	1750	13.8	0.38	3	41°	40	SU14-16
13		,	,			_	_		_									SU14-16
14   3,281   2,842   2,225						_	_			16								SU14-16
15	13	2,970		-	2,515	2,285			CDU16H17						3		44	SU14-16
16		,	,		_	_	_	_	· · · · · · -									SU18-20
17			,	,	_	_	_	_										SU18-20
18			,	,		_	_	_										SU18-20
19		,					_											SU18-20
20					3,960	3,780	_	_										SU18-20
21       3,856       3,543       3,059       —       —       —       —       —       CDC18H11       1/3       1160       12.4       0.38       6       33.5°       58       SI         22       2,642       2,299       1,967       1,595       —       —       CDC18F17       1/6       1750       15.4       0.19       3       10.5°       51       SI         23       3,659       3,373       3,068       2,706       2,235       —       —       CDC18H17       1/3       1750       16.8       0.38       3       19°       55       SI         24       4,050       3,820       3,587       3,320       2,993       2,610       2,194       CDC18H17       1/2       1750       18.7       0.57       4       21°       63       SI         25       5,065       4,851       4,589       4,272       3,456       2,894       CDC18H17       1       1750       22       1.20       6       31°       74       SI         26       5,435       5,214       4,980       4,770       4,546       4,258       3,909       CDC18L17       1       1750       22       1.20       6					_	_	_	_										SU18-20
22         2,642         2,299         1,967         1,595         —         —         —         CDC18F17         1/6         1750         15.4         0.19         3         10.5°         51         SI           23         3,659         3,373         3,068         2,706         2,235         —         —         CDC18H17         1/3         1750         16.8         0.38         3         19°         55         SI           24         4,050         3,820         3,587         3,320         2,993         2,610         2,194         CDC18J17         1/2         1750         18.7         0.57         4         21°         63         SI           25         5,065         4,851         4,569         4,272         3,942         3,456         2,894         CDC18L17         1         1750         22         1.20         6         31°         74         SI           26         5,435         5,214         4,980         4,770         4,546         4,258         3,999         CDC18L17         1         1750         22         1.20         6         31°         74         SI           27         3,920         3,680         3,405					_	_	_	_		18								SU18-20
23 3,659 3,373 3,068 2,706 2,235 — — CDC18H17 1/3 1750 16.8 0.38 3 19° 55 SI 24 4,050 3,820 3,587 3,320 2,993 2,610 2,194 CDC18J17 1/2 1750 18.7 0.57 4 21° 63 SI 25 5,065 4,851 4,569 4,272 3,942 3,456 2,894 CDC18K17 3/4 1750 23 0.85 4 29.5° 70 SI 26 5,435 5,214 4,980 4,770 4,546 4,258 3,909 CDC18L17 1 1750 22 1.20 6 31° 74 SI 27 3,920 3,680 3,405 3,055 — — — CDU20H11 <sup>7</sup> 1/3 1160 11.5 0.39 3 31° 42 SI 28 3,235 2,870 — — — — CDU20H17 20 1/3 1750 22 0.39 3 13° 45 SI 29 4,940 4,815 4,670 4,520 4,340 — — CDU20K17 3/4 1750 24 0.89 3 24° 58 SI 30 4,670 4,175 3,180 — — — — CDU24G8 1/4 830 8.9 0.28 3 28° 63 31 4,800 4,345 — — — — CDU24H11 1/2 1160 16.2 0.69 3 28° 63 33 5,890 4,869 3,546 — — — — CDU24H11 1/2 1160 16.2 0.69 3 28° 63 33 5,890 4,869 3,546 — — — — CDU24J11 1/2 1160 16.2 0.69 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/2 870 15.4 0.57 6 30.5° 119 35 5,659 4,996 4,300 3,262 — — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — — CDC24H11 3/4 1160 22 0.85 3 33° 104 38 9,318 8,574 7,813 6,957 5,707 — — CDC24H11 1 1 1160 25 1.14 4 33.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24H17 1 1750 34 1.18 3 14.5° 100 40 9,810 9,880 9,882 8,942 8,470 7,916 7,374 6,807 CDC24M17 1 1/2 1750 36 1.70 3 19.5° 122		3,856		3,059	_	_	_	_	CDC18H11				12.4	0.38		33.5°	58	SU18-20
24         4,050         3,820         3,587         3,320         2,993         2,610         2,194         CDC18J17         1/2         1750         18.7         0.57         4         21°         63         SI           25         5,065         4,851         4,569         4,272         3,942         3,456         2,894         CDC18K17         3/4         1750         23         0.85         4         29.5°         70         SI           26         5,435         5,214         4,980         4,770         4,546         4,258         3,909         CDC18L17         1         1750         22         1.20         6         31°         74         SI           27         3,920         3,680         3,405         3,055         —         —         —         CDU20H17         20         1/3         1750         22         0.39         3         13°         42         SI           28         3,235         2,870         —         —         —         CDU20H17         20         1/3         1750         22         0.39         3         13°         45         SI           30         4,670         4,175         3,180         —	22	2,642	2,299	1,967	1,595	_	_	_	CDC18F17		1/6	1750	15.4	0.19	3	10.5°	51	SU18-20
25 5,065 4,851 4,569 4,272 3,942 3,456 2,894 CDC18K17 3/4 1750 23 0.85 4 29.5° 70 SI 26 5,435 5,214 4,980 4,770 4,546 4,258 3,909 CDC18L17 1 1750 22 1.20 6 31° 74 SI 27 3,920 3,680 3,405 3,055 — — — CDU20H117 1/3 1160 11.5 0.39 3 31° 42 SI 28 3,235 2,870 — — — — — CDU20H17 20 1/3 1750 22 0.39 3 13° 45 SI 29 4,940 4,815 4,670 4,520 4,340 — — CDU20K17 3/4 1750 24 0.89 3 24° 58 SI 31 4,800 4,345 — — — — — — CDU20H117 1/3 1160 14.1 0.39 3 28° 63 31 4,800 4,345 — — — — — CDU24H117 1/3 1160 14.1 0.39 3 20° 53 33 5,890 4,869 3,546 — — — — CDU24H117 1/2 1160 16.2 0.69 3 28° 63 33 5,890 4,869 3,546 — — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 37 8,567 7,747 6,728 5,837 4,308 — — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — — CDC24H11 1/3 1160 19.1 0.59 3 23.5° 95 37 8,567 7,747 6,728 5,837 4,308 — — CDC24H11 3/4 1160 22 0.85 3 33° 104 38 9,318 8,574 7,813 6,957 5,707 — — CDC24H11 1 1160 25 1.14 4 33.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24H17 1 1750 36 1.70 3 19.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24H17 1 1750 36 1.70 3 19.5° 122 30 30 30 30 30 30 30 30 30 30 30 30 30	23	3,659	3,373	3,068	2,706	2,235	_	_	CDC18H17		1/3	1750	16.8	0.38	3	19°	55	SU18-20
26       5,435       5,214       4,980       4,770       4,546       4,258       3,909       CDC18L17       1       1750       22       1.20       6       31°       74       SI         27       3,920       3,680       3,405       3,055       —       —       —       CDU20H17       20       1/3       1750       22       0.39       3       31°       42       SI         28       3,235       2,870       —       —       —       —       CDU20H17       20       1/3       1750       22       0.39       3       13°       45       SI         29       4,940       4,815       4,670       4,520       4,340       —       —       CDU20K17       3/4       1750       24       0.89       3       24°       58       SI         30       4,670       4,175       3,180       —       —       —       —       CDU24H8       1/4       830       8.9       0.28       3       28°       63       3         31       4,800       4,345       —       —       —       —       CDU24H11       1/2       1160       16.2       0.69       3       28°       63 </td <td>24</td> <td>4,050</td> <td>3,820</td> <td>3,587</td> <td>3,320</td> <td>2,993</td> <td>2,610</td> <td>2,194</td> <td>CDC18J17</td> <td></td> <td>1/2</td> <td>1750</td> <td>18.7</td> <td>0.57</td> <td>4</td> <td>21°</td> <td>63</td> <td>SU18-20</td>	24	4,050	3,820	3,587	3,320	2,993	2,610	2,194	CDC18J17		1/2	1750	18.7	0.57	4	21°	63	SU18-20
27 3,920 3,680 3,405 3,055 — — — CDU20H11 <sup>7</sup> 1/3 1160 11.5 0.39 3 31° 42 SI 28 3,235 2,870 — — — — — CDU20H17 20 1/3 1750 22 0.39 3 13° 45 SI 29 4,940 4,815 4,670 4,520 4,340 — — CDU20K17 3/4 1750 24 0.89 3 24° 58 SI  30 4,670 4,175 3,180 — — — — CDU24G8 1/4 830 8.9 0.28 3 28° 63 31 4,800 4,345 — — — — — CDU24H11 <sup>7</sup> 1/3 1160 14.1 0.39 3 20° 53 32 6,525 6,220 5,815 — — — — CDU24J11 1/2 1160 16.2 0.69 3 28° 63 33 5,890 4,869 3,546 — — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — CDC24J8 1/2 870 15.4 0.57 6 30.5° 119 35 5,659 4,996 4,300 3,262 — — CDC24J8 1/2 870 15.4 0.57 6 30.5° 119 35 7,197 6,519 5,714 4,812 — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — CDC24H11 1/3 1160 19.1 0.59 3 23.5° 95 37 8,567 7,747 6,728 5,837 4,308 — — CDC24H11 3/4 1160 22 0.85 3 33° 104 38 9,318 8,574 7,813 6,957 5,707 — — CDC24L11 1 1160 25 1.14 4 33.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24H17 1 1750 36 1.70 3 19.5° 122	25	5,065	4,851	4,569	4,272	3,942	3,456	2,894	CDC18K17		3/4	1750	23	0.85	4	29.5°	70	SU18-20
28	26	5,435	5,214	4,980	4,770	4,546	4,258	3,909	CDC18L17		1	1750	22	1.20	6	31°	74	SU18-20
29  4,940  4,815  4,670  4,520  4,340  —  —  CDU20K17  3/4  1750  24  0.89  3  24°  58  SI  30  4,670  4,175  3,180  —  —  —  —  —  CDU24G8  1/4  830  8.9  0.28  3  28°  63  33  4,800  4,345  —  —  —  —  —  CDU24H11 <sup>7</sup> 1/3  1160  14.1  0.39  3  20°  53  33  5,890  4,869  3,546  —  —  —  —  CDU24J11  1/2  1160  16.2  0.69  3  28°  63  33  5,890  4,869  3,546  —  —  —  —  CDC24G8  1/4  870  12.1  0.29  3  28°  95  34  6,923  6,304  5,478  3,998  —  —  —  CDC24J8  1/2  870  15.4  0.57  6  30.5°  119  35  5,659  4,996  4,300  3,262  —  —  —  CDC24H11  1/3  1160  17.7  0.37  3  15.5°  100  36  7,197  6,519  5,714  4,812  —  —  —  CDC24J11  24  1/2  1160  19.1  0.59  3  23.5°  95  37  8,567  7,747  6,728  5,837  4,308  —  —  CDC24K11  3/4  1160  22  0.85  3  33°  104  38  9,318  8,574  7,813  6,957  5,707  —  —  CDC24L11  1  1160  25  1.14  4  33.5°  122  39  8,229  7,753  7,358  6,983  6,460  5,854  5,210  CDC24L17  1  1750  34  1.18  3  14.5°  100  40  9,810  9,382  8,942  8,470  7,916  7,374  6,807  CDC24M17  1  1/2  1750  36  1.70  3  19.5°  122	27	3,920	3,680	3,405	3,055	_	_	_	CDU20H11 <sup>7</sup>		1/3	1160	11.5	0.39	3	31°	42	SU18-20
30	28	3,235	2,870	_	_	_	_	_	CDU20H17	20	1/3	1750	22	0.39	3	13°	45	SU18-20
31 4,800 4,345 — — — — — — — — — — — — — — — — — — —	29	4,940	4,815	4,670	4,520	4,340	_	_	CDU20K17		3/4	1750	24	0.89	3	24°	58	SU18-20
32 6,525 6,220 5,815 — — — — CDU24J11 1/2 1160 16.2 0.69 3 28° 63 3 3 5,890 4,869 3,546 — — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24J8 1/2 870 15.4 0.57 6 30.5° 119 35 5,659 4,996 4,300 3,262 — — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — — CDC24J11 24 1/2 1160 19.1 0.59 3 23.5° 95 37 8,567 7,747 6,728 5,837 4,308 — — CDC24K11 3/4 1160 22 0.85 3 33° 104 38 9,318 8,574 7,813 6,957 5,707 — — CDC24L11 1 1160 25 1.14 4 33.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24L17 1 1750 34 1.18 3 14.5° 100 40 9,810 9,382 8,942 8,470 7,916 7,374 6,807 CDC24M17 1 1/2 1750 36 1.70 3 19.5° 122 39	30	,	,	3,180	_	_	_	_					8.9	0.28	3	28°	63	SU24
33 5,890 4,869 3,546 — — — — CDC24G8 1/4 870 12.1 0.29 3 28° 95 34 6,923 6,304 5,478 3,998 — — — CDC24J8 1/2 870 15.4 0.57 6 30.5° 119 35 5,659 4,996 4,300 3,262 — — — CDC24H11 1/3 1160 17.7 0.37 3 15.5° 100 36 7,197 6,519 5,714 4,812 — — — CDC24J11 24 1/2 1160 19.1 0.59 3 23.5° 95 37 8,567 7,747 6,728 5,837 4,308 — — CDC24K11 3/4 1160 22 0.85 3 33° 104 38 9,318 8,574 7,813 6,957 5,707 — — CDC24L11 1 1160 25 1.14 4 33.5° 122 39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 CDC24L17 1 1750 34 1.18 3 14.5° 100 40 9,810 9,382 8,942 8,470 7,916 7,374 6,807 CDC24M17 1 1/2 1750 36 1.70 3 19.5° 122		,	,	_	_	_	_	_										SU24
34       6,923       6,304       5,478       3,998       —       —       —       CDC24J8       1/2       870       15.4       0.57       6       30.5°       119         35       5,659       4,996       4,300       3,262       —       —       —       CDC24H11       1/3       1160       17.7       0.37       3       15.5°       100         36       7,197       6,519       5,714       4,812       —       —       CDC24J11       24       1/2       1160       19.1       0.59       3       23.5°       95         37       8,567       7,747       6,728       5,837       4,308       —       —       CDC24K11       3/4       1160       22       0.85       3       33°       104         38       9,318       8,574       7,813       6,957       5,707       —       —       CDC24L11       1       1160       25       1.14       4       33.5°       122         39       8,229       7,753       7,358       6,983       6,460       5,854       5,210       CDC24L17       1       1750       36       1.70       3       19.5°       122       3					_	_	_	_										SU24
35       5,659       4,996       4,300       3,262       —       —       —       CDC24H11       1/3       1160       17.7       0.37       3       15.5°       100         36       7,197       6,519       5,714       4,812       —       —       CDC24J11       24       1/2       1160       19.1       0.59       3       23.5°       95         37       8,567       7,747       6,728       5,837       4,308       —       —       CDC24K11       3/4       1160       22       0.85       3       33°       104         38       9,318       8,574       7,813       6,957       5,707       —       —       CDC24L11       1       1160       25       1.14       4       33.5°       122         39       8,229       7,753       7,358       6,983       6,460       5,854       5,210       CDC24L17       1       1750       34       1.18       3       14.5°       100         40       9,810       9,382       8,942       8,470       7,916       7,374       6,807       CDC24M17       1       1/2       1750       36       1.70       3       19.5°       122 <td></td> <td>,</td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>S24</td>		,				_	_	_										S24
36       7,197       6,519       5,714       4,812       —       —       —       CDC24J11       24       1/2       1160       19.1       0.59       3       23.5°       95         37       8,567       7,747       6,728       5,837       4,308       —       —       CDC24K11       3/4       1160       22       0.85       3       33°       104         38       9,318       8,574       7,813       6,957       5,707       —       —       CDC24L11       1       1160       25       1.14       4       33.5°       122         39       8,229       7,753       7,358       6,983       6,460       5,854       5,210       CDC24L17       1       1750       34       1.18       3       14.5°       100         40       9,810       9,382       8,942       8,470       7,916       7,374       6,807       CDC24M17       1       1/2       1750       36       1.70       3       19.5°       122       3		,				_	_	_										S24
37       8,567       7,747       6,728       5,837       4,308       —       —       CDC24K11       3/4       1160       22       0.85       3       33°       104         38       9,318       8,574       7,813       6,957       5,707       —       —       CDC24L11       1       1160       25       1.14       4       33.5°       122         39       8,229       7,753       7,358       6,983       6,460       5,854       5,210       CDC24L17       1       1750       34       1.18       3       14.5°       100         40       9,810       9,382       8,942       8,470       7,916       7,374       6,807       CDC24M17       1       1/2       1750       36       1.70       3       19.5°       122	35	5,659	4,996	4,300	3,262	_	_	_	CDC24H11			1160			3	15.5°	100	S24
38     9,318     8,574     7,813     6,957     5,707     —     —     CDC24L11     1     1160     25     1.14     4     33.5°     122       39     8,229     7,753     7,358     6,983     6,460     5,854     5,210     CDC24L17     1     1750     34     1.18     3     14.5°     100       40     9,810     9,382     8,942     8,470     7,916     7,374     6,807     CDC24M17     1     1/2     1750     36     1.70     3     19.5°     122	36	7,197	6,519	5,714	4,812	_	_	_	CDC24J11	24	1/2	1160	19.1	0.59	3	23.5°	95	S24
39 8,229 7,753 7,358 6,983 6,460 5,854 5,210 <b>CDC24L17</b> 1 1750 34 1.18 3 14.5° 100 40 9,810 9,382 8,942 8,470 7,916 7,374 6,807 <b>CDC24M17</b> 1 1/2 1750 36 1.70 3 19.5° 122	37	8,567	7,747	6,728	5,837	4,308	_	_	CDC24K11		3/4	1160	22	0.85	3	33°	104	S24
40 9,810 9,382 8,942 8,470 7,916 7,374 6,807 <b>CDC24M17</b> 1 1/2 1750 36 1.70 3 19.5° 122	38	9,318	8,574	7,813	6,957	5,707	_	_	CDC24L11		1	1160	25	1.14	4	33.5°	122	S24
	39	8,229	7,753	7,358	6,983	6,460	5,854	5,210	CDC24L17		1	1750	34	1.18	3	14.5°	100	S24
	40	9,810	9,382	8,942	8,470	7,916	7,374	6,807	CDC24M17		1 1/2	1750	36	1.70	3	19.5°	122	SR24
	41		11,235						CDC24N17			1750	39	2.31	3	27°	117	SR24
42 13,449 12,948 12,461 12,005 11,563 11,089 10,517 <b>CDC24P17</b> 3 1750 56 3.47 4 31° 143		,		,	,	,	,											SR24

## **Type CDC Performance Ratings (cont'd)**

Item	Cub	ic Feet l	Per Minu	te (CFM)	at Static	Pressur	e <sup>1,8</sup>		Fan	Motor	Fan	Sone	Max	Blade	Descr.	Approx.	Shutter
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,8</sup>	No.	Pitch	Ship Wt.	Model <sup>5</sup>
43	6,959	5,680	3,716	_	_	_	_	CDC30G8		1/4	870	15.3	0.29	3	12.5°	108	S30
44	9,727	8,287	6,678	_	_	_	_	CDC30J8		1/2	870	16.5	0.58	3	22.5°	116	S30
45	11,088	9,857	8,475	6,852	_	_	_	CDC30K8		3/4	870	21	0.85	4	25°	121	S30
46	10,211	9,439	8,380	7,253	5,364	_	_	CDC30K11		3/4	1160	26	0.87	3	15°	131	S30
47	11,971	11,026	9,884	8,785	7,265	_	_	CDC30L11	30	1	1160	27	1.14	3	19.5°	136	S30
48	13,453	12,657	11,661	10,742	9,675	8,208	_	CDC30M11	30	1 1/2	1160	31	1.70	4	22°	162	S30
49	15,421	14,507	13,519	12,375	11,277	10,049	_	CDC30N11		2	1160	34	2.27	4	27°	175	SR30
50	13,716	13,156	12,517	11,835	11,161	10,457	9,695	CDC30N17		2	1750	47	2.24	3	12°	131	S30
51	16,883	16,339	15,746	14,907	14,287	13,592	12,818	CDC30P17		3	1750	52	3.46	3	17.5°	157	SR30
52	20,296	19,791	19,262	18,500	17,905	17,332	16,731	CDC30Q17		5	1750	65	5.73	4	22°	175	SR30
53	15,166	13,428	11,504	8,275	_	_	_	CDC36L6		1	680	24	1.13	6	23.5°	195	S36
54	17,616	16,111	13,671	10,232	_	_	_	CDC36M6		1 1/2	680	26	1.67	6	30°	247	S36
55	9,928	8,214	6,126	_	_	_	_	CDC36J8		1/2	870	24	0.56	3	8.5°	139	S36
56	13,266	11,226	9,218	_	_	_	_	CDC36K8		3/4	870	26	0.85	3	15.5°	150	S36
57	15,110	13,215	10,748	8,133	_	_	_	CDC36L8		1	870	27	1.14	3	20°	178	S36
58	17,697	15,810	13,253	10,129	_	_	_	CDC36M8		1 1/2	870	28	1.72	3	27.5°	185	S36
59	19,152	17,634	15,906	13,468	— 45 205	40.570	_	CDC36N8	26	2	870	33	2.30	4	28.5°	239	SR36
60	22,314	21,202	19,777	17,836	15,385	12,578	_	CDC36P8	36	3 1 1/2	870 1160	39 40	3.41	6	29.5°	270	SR36 S36
61 62	15,810 18,781	14,417 17.324	12,949 15,688	11,604 13,922	10,038 12,336	— 10,551	_	CDC36M11 CDC36N11		2	1160	40 42	1.70 2.31	3 3	12.5° 17.5°	185 194	SR36
63	22,145	20.931	19,114	17,409	15,401	13,202	_	CDC36P11		3	1160	44	3.44	3	17.5 24°	240	SR36
64	25,938	24,835	23,680	22,432	20,951	19,063	16,909	CDC36Q11		5	1160	54	5.71	4	29.5°	289	Note 6
65	22,279	21,361	20,488	19,630	18,799	17,981	17,159	CDC36Q17		5	1750	79	5.73	3	11°	196	SR36
66	27,585	26,651	25,669	24,602	23,646	22,722	21,819	CDC36R17		7 1/2	1750	83	8.47	3	16.5°	240	Note 6
67	31,604	30,726	29,804		27,791	26,684		CDC36S17		10	1750	78	11.19	3	20.5°	267	Note 6
68	18,329	15,148	11,428	_	_	_	_	CDC42L6		1	680	28	1.16	3	18.5°	237	S42
69	20,660	17,624	14,584	11,783	_	_	_	CDC42M6		1 1/2	680	31	1.71	4	21.5°	293	S42
70	22,048		17,980	16,050	_	_	_	CDC42N6		2	680	36	2.31	6	22°	319	S42
71	16,053	13,871	11,574	8,770	_	_	_	CDC42L8		1	870	33	1.14	3	8°	229	S42
72	19,684	17,398	14,856	12,241	_	_	_	CDC42M8		1 1/2	870	37	1.70	3	13°	238	S42
73	22,803	20,405	17,788	14,905	_	_	_	CDC42N8	42	2	870	41	2.27	3	17.5°	286	S42
74	23,247	21,939	20,679	19,429	18,052	16,304	13,495	CDC42P8	42	3	870	49	3.31	6	15°	351	S42
75	19,570	17,975	16,339	14,624	12,881	10,654	_	CDC42N11		2	1160	51	2.29	3	6°	189	S42
76	23,738	21,937	20,306	18,759	17,055	14,854	12,235	CDC42P11		3	1160	58	3.31	3	10.5°	225	S42
77	31,267	29,640	27,673	25,656	23,586	21,408	19,055	CDC42Q11		5	1160	70	5.78	3	18.5°	240	SR42
78	30,907	29,798	28,711	27,672	26,655	25,554	24,398	CDC42R17		7 1/2	1750	114	8.45	3	7°	225	SR42
79	35,812	34,607	33,414	32,280	31,206	30,175	29,155	CDC42S17		10	1750	128	11.27	3	10.5°	245	Note 6
80	19,158	15,792	12,004	_	_	_	_	CDC48L6		1	680	29	1.16	3	9°	270	S48
81	,	- ,	15,364	_	_	_	_	CDC48M6		1 1/2	680	31	1.70	3	14°	308	S48
82			18,685		_	_	_	CDC48N6		2	680	37	2.33	4	15.5°	331	S48
83				15,270		_	_	CDC48N8		2	870	41	2.26	3	8°	302	S48
84		26,364		20,083		_	_	CDC48P8		3	870	47	3.45	3	13.5°	319	S48
85				25,467		_	_	CDC48Q8	48	5	870	49	5.64	3	21.5°	378	SR48
86				32,664			_	CDC48R8		7 1/2	870	68	8.50	6	20°	428	SR48
87	32,064			26,105			19,483	CDC48Q11		5	1160	70	5.60	3	8.5°	319	S48
88						28,136		CDC48R11		7 1/2	1160	80	8.47	3	14°	359	SR48
89		42,565				32,752		CDC48S11		10	1160	81	11.33	3	18.5°	395	Note 6
90	45,574	44,428				39,127 44,500		CDC48T17		15	1750 1750	142	16.76	3	7°	359	Note 6
91	49,029	40,019	47,009	40,599	45,561	44,500	43,422	CDC48U17		20	1750	161	22.17	4	7.5°	395	Note 6

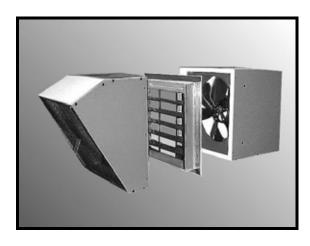
## Type CDC Performance Ratings (cont'd)

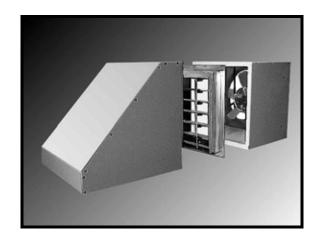
Item	n Cubic Feet Per Minute (CFM) at Static Pressure <sup>1,8</sup>									Motor	Fan	Sone	Max	Blade	Descr.	Approx.	Shutter
No.	0"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	Fan Model <sup>2</sup>	Size	HP	RPM	Rating <sup>3</sup>	BHP <sup>4,8</sup>	No.	Pitch	Ship Wt.	Model <sup>5</sup>
92	26,200	22,089	17,992	_	_	_	_	CDC54M6		1 1/2	680	37	1.73	3	8.5°	375	S54
93	29,639	25,602	20,796	14,890	_	_	_	CDC54N6	54	2	680	39	2.27	3	12°	397	S54
94	32,293	29,264	26,144	22,614	18,652	_	_	CDC54P8		3	870	54	3.33	3	7.5°	393	S54
95	41,756	37,845	35,237	30,261	26,772	23,053	_	CDC54Q8		5	870	61	5.82	3	15°	443	SR54
96	48,304	45,458	42,027	35,213	30,889	26,860	_	CDC54R8		7 1/2	870	67	8.61	3	22°	473	SR54
97	43,875	41,864	39,351	36,781	34,602	32,118	29,100	CDC54R11		7 1/2	1160	94	8.28	3	8°	439	SR54
98	50,560	48,007	45,916	43,404	39,866	37,179	35,111	CDC54S11		10	1160	103	11.36	3	12°	473	SR54
99	58,018	56,403	54,597	52,499	49,742	47,262	45,173	CDC54T11		15	1160	128	17.41	4	14.5°	500	Note 6
100	31,795	26,932	21,425	16,194	_	_	_	CDC60N6		2	680	40	2.29	3	6°	412	S60
101	37,877	32,608	27,882	21,251	_	_	_	CDC60P6	60	3	680	48	3.44	3	11°	492	S60
102	43,820	39,639	36,142	32,648	27,552	23,321	_	CDC60Q8		5	870	66	5.78	3	8°	452	S60
103	52,955	49,203	44,663	40,761	35,890	28,254	_	CDC60R8		7 1/2	870	80	8.71	3	14°	484	SR60
104	54,238	51,001	48,093	45,745	43,499	40,386	35,960	CDC60S11		10	1160	104	11.38	3	6°	480	SR60
105	61,427	59,014	56,886	55,040	52,871	49,802	46,550	CDC60T11		15	1160	123	16.81	4	7.5°	510	SR60

- 1 Performance shown is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories).
- 2 The first three letters of the model number identify fan type, drive configuration and style. The next two numbers indicate fan size, the next letter identifies motor horsepower, the last number (or numbers) indicates RPM in hundreds. For example: Model CDC24G8 is Type "C", direct drive, Style "C", 24" size, 1/4 H.P., 870 RPM.
- 3 The sound ratings shown are loudness values in hemispherical sones at 1.5m (5 ft.) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels. The sound ratings shown are at 0" static pressure.
- 4 Maximum brake horsepower (BHP) within the catalog performance range. Power rating (BHP) does not include transmission losses. Bearing losses are included. BHP at most static pressures listed is less than that shown, in some cases substantially less. For specific BHP values at individual static pressure points contact your American Coolair representative. 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.
- 5 Shutter models shown are automatic (gravity) type. Add suffix "M" for manual operation; suffix "E" for motor operation.
- **6** Consult factory for these shutter specifications.
- 7 Manually adjustable variable speed controller is available as an option on these models. Control provides infinite variation of motor speed from full speed, which is RPM shown, to 50% of full speed. It is available only with single-phase, 115V or 230V motors. Specify "variable speed control" when this accessory is desired.
- **8** To convert air performance (CFM and SP) and power (BHP) to metric units, multiply CFM x .000472 to obtain cubic meters per second (m<sup>3</sup>/s). Multiply SP x 248.36 to obtain pascals (Pa). Multiply BHP x .7457 to obtain kilowatts (kW).

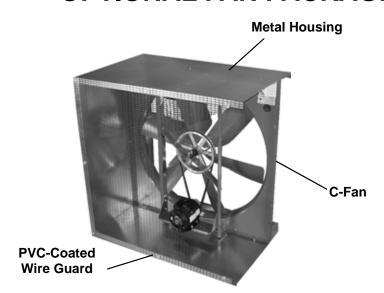
**Example:** 3904 CFM x .000472 = 1.8427 m<sup>3</sup>/s 0.125 SP x 248.36 = 31.05 Pa 0.886 BHP x .7457 = 0.661 kW

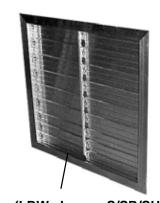
ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE





## OPTIONAL FAN PACKAGE COMPONENTS





Shutter - (LRW shown - S/SR/SU shutter also may be used)

## **ACCESSORIES FOR FAN PACKAGES**



#### **INLET HOOD OPTION**

- Specifically designed for supply applications
- Designed to prevent entrainment of moisture into the airstream
- Hardware kit included for ease of assembly
- PVC-coated wire guard available
- · Wide range of sizes to fit every need

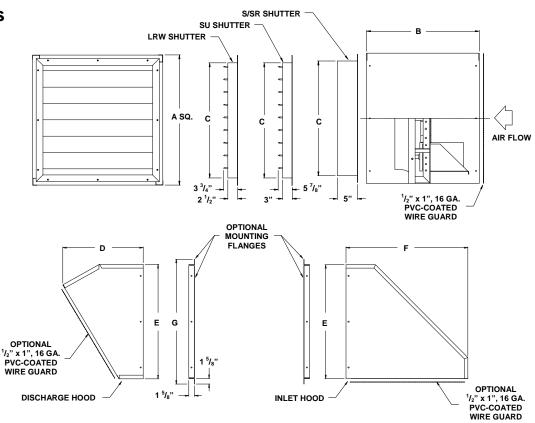
#### DISCHARGE HOOD OPTION

- Specifically designed for exhaust applications
- Designed for all-weather performance with minimal pressure losses
- Hardware kit included for ease of assembly
- PVC-coated wire guard available
- Wide range of sizes to fit every need

#### **MOUNTING FLANGE OPTION**

- For mounting inlet hood or discharge hood to the wall
- For mounting metal housing to the wall
- Hardware kit included for attaching to hood or fan housing

#### **Accessories**



	UNIT SIZE			METAL								
STYLE		A SQ.	В	С		D	Е	F	G	GAUGES		WALL
				LRW	S/SR/SU		-	•		HSG	HOOD	OPENING
МН	7-8	14 <sup>1</sup> / <sub>4</sub>	16 <sup>1</sup> / <sub>8</sub>		10 <sup>1</sup> / <sub>4</sub>	13	14 <sup>1</sup> / <sub>2</sub>	15 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>2</sub>	22	22	15 SQ.
МН	10-12	18 <sup>1</sup> / <sub>4</sub>	21 <sup>1</sup> / <sub>8</sub>	I	14 <sup>1</sup> / <sub>4</sub>	15	18 <sup>1</sup> / <sub>2</sub>	19 <sup>1</sup> / <sub>2</sub>	21 1/2	20	22	19 SQ.
МН	14-16	22 1/4	25 <sup>3</sup> / <sub>8</sub>	-	18 <sup>1</sup> / <sub>4</sub>	17	22 1/2	23 1/2	25 <sup>1</sup> / <sub>2</sub>	20	22	23 SQ.
МН	18-20	26 <sup>1</sup> / <sub>4</sub>	25 <sup>3</sup> / <sub>8</sub>		22 1/4	19	26 <sup>1</sup> / <sub>2</sub>	27 <sup>1</sup> / <sub>2</sub>	29 <sup>1</sup> / <sub>2</sub>	20	22	27 SQ.
МН	24	32 <sup>1</sup> / <sub>4</sub>	26 <sup>7</sup> / <sub>8</sub>	27	28 <sup>3</sup> / <sub>8</sub>	22	32 <sup>1</sup> / <sub>2</sub>	33 <sup>1</sup> / <sub>2</sub>	35 <sup>3</sup> / <sub>8</sub>	20	20	33 SQ.
МН	30	38 <sup>1</sup> / <sub>4</sub>	26 <sup>7</sup> / <sub>8</sub>	33	34 <sup>3</sup> / <sub>8</sub>	24 <sup>5</sup> / <sub>8</sub>	38 <sup>1</sup> / <sub>2</sub>	39 <sup>1</sup> / <sub>2</sub>	41 <sup>3</sup> / <sub>8</sub>	20	20	39 SQ.
МН	36	44 1/4	32 <sup>5</sup> / <sub>8</sub>	39	40 <sup>3</sup> / <sub>8</sub>	27 <sup>5</sup> / <sub>8</sub>	44 1/2	45 <sup>1</sup> / <sub>2</sub>	47 <sup>3</sup> / <sub>8</sub>	18	18	45 SQ.
МН	42	50 <sup>1</sup> / <sub>4</sub>	32 <sup>5</sup> / <sub>8</sub>	45	46 <sup>3</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>4</sub>	50 <sup>1</sup> / <sub>2</sub>	51 <sup>1</sup> / <sub>2</sub>	53 <sup>3</sup> / <sub>8</sub>	18	18	51 SQ.
МН	48	56 <sup>1</sup> / <sub>4</sub>	32 <sup>5</sup> / <sub>8</sub>		52 <sup>3</sup> / <sub>8</sub>	32 <sup>7</sup> / <sub>8</sub>	56 <sup>1</sup> / <sub>2</sub>	57 <sup>1</sup> / <sub>2</sub>	59 <sup>3</sup> / <sub>8</sub>	18 16 14	18	57 SQ.
МНН		56 <sup>3</sup> / <sub>8</sub>	32 / <sub>8</sub>	51					59 <sup>1</sup> / <sub>2</sub>			57 <sup>1</sup> / <sub>8</sub> SQ.
MHX		56 <sup>1</sup> / <sub>2</sub>	44 1/2						59 <sup>3</sup> / <sub>4</sub>			57 <sup>1</sup> / <sub>4</sub> SQ.
МНН	54	62 <sup>3</sup> / <sub>8</sub>	32 <sup>5</sup> / <sub>8</sub>	57	58 <sup>3</sup> / <sub>8</sub>	35 <sup>3</sup> / <sub>4</sub>	62 1/2	63 <sup>1</sup> / <sub>2</sub>	65 <sup>5</sup> / <sub>8</sub>	14	18	63 <sup>1</sup> / <sub>8</sub> SQ.
MHX		62 <sup>1</sup> / <sub>2</sub>	44 1/2						65 <sup>7</sup> / <sub>8</sub>			63 <sup>1</sup> / <sub>4</sub> SQ.
МНН	60	68 <sup>3</sup> / <sub>8</sub>	32 <sup>5</sup> / <sub>8</sub>		64 <sup>3</sup> / <sub>8</sub>	35 <sup>3</sup> / <sub>4</sub>	68 <sup>1</sup> / <sub>2</sub>	69 <sup>1</sup> / <sub>2</sub>	71 <sup>5</sup> / <sub>8</sub>	14	18	69 <sup>1</sup> / <sub>8</sub> SQ.
MHX		68 <sup>1</sup> / <sub>2</sub>	44 1/2						71 <sup>7</sup> / <sub>8</sub>			69 <sup>1</sup> / <sub>4</sub> SQ.
MHX	72	80 <sup>3</sup> / <sub>4</sub>	45 <sup>1</sup> / <sub>4</sub>		80 <sup>3</sup> / <sub>4</sub>				84	12		81 <sup>1</sup> / <sub>2</sub> SQ.
MHX	84	92 <sup>3</sup> / <sub>4</sub>	45 <sup>1</sup> / <sub>4</sub>		92 <sup>3</sup> / <sub>4</sub>				96	12		93 <sup>1</sup> / <sub>2</sub> SQ.

#### **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.

### **Accessory Dimensions**

Dimension A is the OD of the square metal housing, excluding hardware.

Dimension B is the length of the metal housing.

Dimension C is the OD of the shutter frame.

Dimension D is the overall length of the discharge hood.

Dimension E is the overall height of the discharge and inlet hoods.

Dimension F is the overall length of the inlet hood.

Dimension G is the overall height of the mounting flanges.

#### WARNING

#### **CAUTION**



DO NOT INSTALL FAN WITH MOVING PARTS WITHIN 8 FEET OF FLOOR OR GRADE LEVEL WITHOUT A GUARD THAT COMPLIES WITH OSHA REGULATIONS. DO NOT USE UNLESS ELECTRICAL WIRING COMPLIES WITH ALL APPLICABLE CODES. DO NOT WIRE WITHOUT PROVIDING FOR A POWER SOURCE DISCONNECT AT THE FAN ITSELF. DO NOT SERVICE EXCEPT BY A QUALIFIED MAINTENANCE TECHNICIAN AND ONLY AFTER DISCONNECTING THE POWER SOURCE. FAILURE TO OBSERVE THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

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