

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
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Date: 5/17/2024

Return Request: 5/27/2024

Project: CALS Main Library Renovations

Supplier: Powers of Arkansas

Manufacturer: Loren Cook

Submittal: HVAC Power Ventilators

Submittal Number: 23 34 23-01

Drawing # and Installation: Mechanical Drawings

ARCHITECT

Polk Stanley Wilcox
801 South Spring St.
Little Rock, AR 72201
501-378-0878

ENGINEER

Bernhard
1 Allied Drive, Bldg. 2, Suite 2600
Little Rock, AR 72202
501-666-6776

GENERAL CONTRACTOR

CDI
3000 Cantrell Rd.
Little Rock, AR 72202
501-5666-4300

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

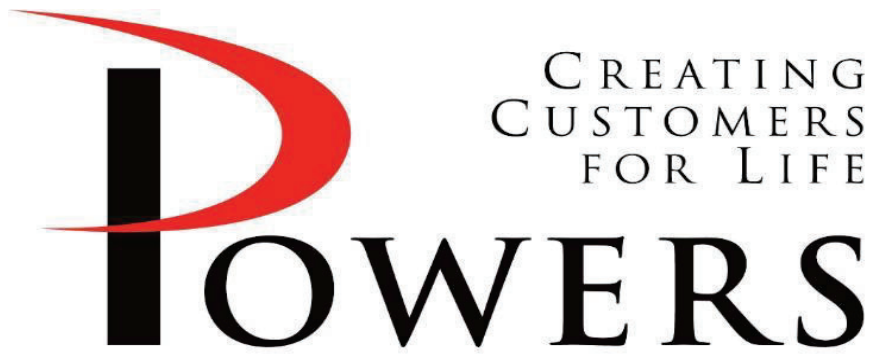
Notes:

CSUSA PROJECT NO.

23-8016

dpierce@comfortar.com

9924 Landers Rd.
No. Little Rock, AR 72117



SUBMITTAL

PRODUCT	Exhaust Fans
MANUFACTURER	Loren Cook
JOB NAME	CALS Main Library Renovation
LOCATION	Little Rock, AR
ENGINEER	Bernhard TME
CONTRACTOR	Comfort Systems
DATE	5/14/2024
SUBMITTED BY	Courtney Michael

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298



COOK



MARK: EF-2

PROJECT: CALS MAIN LIBRARY RENOVATION

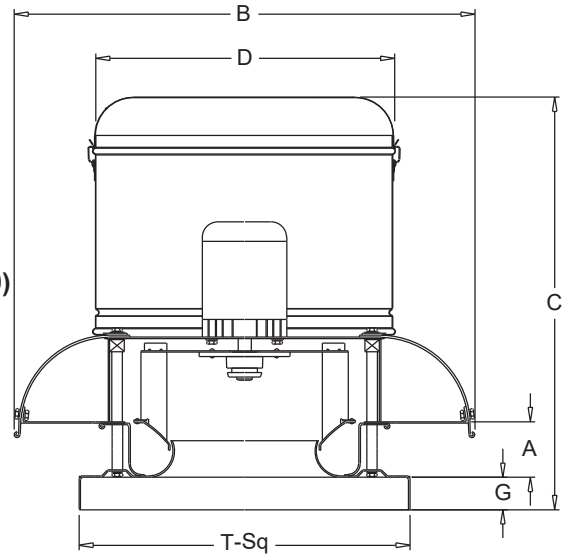
DATE: 5/6/2024

ACE-D VF

**Downblast Centrifugal
Exhaust Ventilator
Roof Mounted/Direct Drive
Electronically Commutated Vari-Flow® Motor**

STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches (sizes 120 - 300)
- Welded curb cap corners - Birdscreen - Permanently lubricated ball bearing motors - Corrosion resistant fasteners - Transit tested packaging.



Performance

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Power (HP)	FEG	FEI	Speed Control
1	150C17D (VF)	1750	1.00	1287	.457	n/a(<1HP)	1.74	EC

Altitude (ft): 266 Temperature (F): 70

Motor Information

HP	RPM*	Volts/Ph/Hz	Enclosure	RLA
1/2	1725	115/1/60	OPEN -EC	5.9



*Motor programmed to max speed of 1305 RPM.
RLA based on motor manufacturer's data at programmed HP and max RPM.
Motor is electronically/thermally protected.

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
76	78	81	71	67	65	59	55	75	64	13.1

- Distance from Sound source 5 ft

Accessories:

- EXTERNAL SIGNAL SPEED CONTROL
- CTL & XFMR BY OTHERS
- DISCONNECT NEMA 1 PRE-WIRED
- BD-18 DAMPER
- ROOF CURB RCG 22 13.5H -C-T+N

EF-2 model is different than specified based on updated Loren Cook software. For 1/2 HP, I have changed this to a size 150. It's a couple inches larger. To use a size 135, it would now require a .75 HP motor. Please verify this is acceptable

Dimensions (inches)

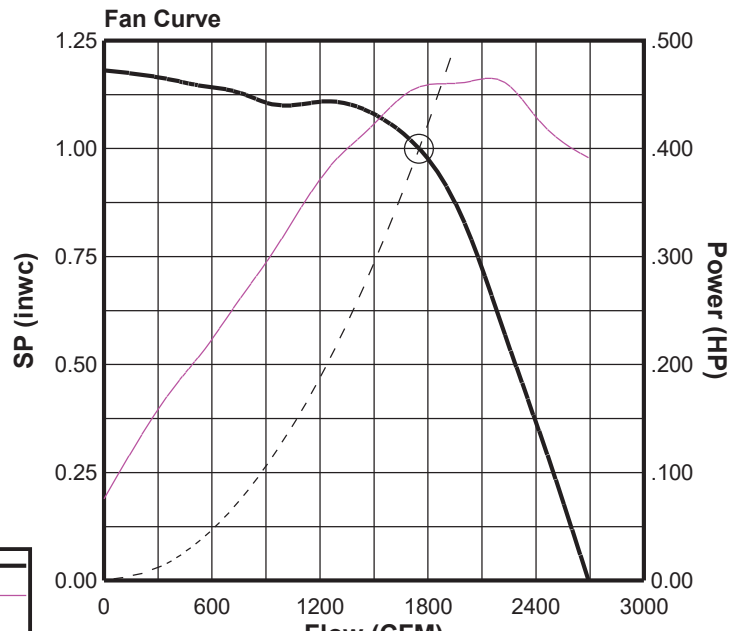
A	2-13/16
B O.D.	32-7/8
C	29-3/16
D O.D.	23-13/16
G	2
T Sq.	24
Roof Open. Sq.*	19-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	113	Unit	87
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* Roof opening size for curbs supplied by Cook only.

***Includes fan, motor & accessories.



Fan Curve Legend

CFM vs SP	—
CFM vs HP	- - -
Point of Operation	○



Speed Control

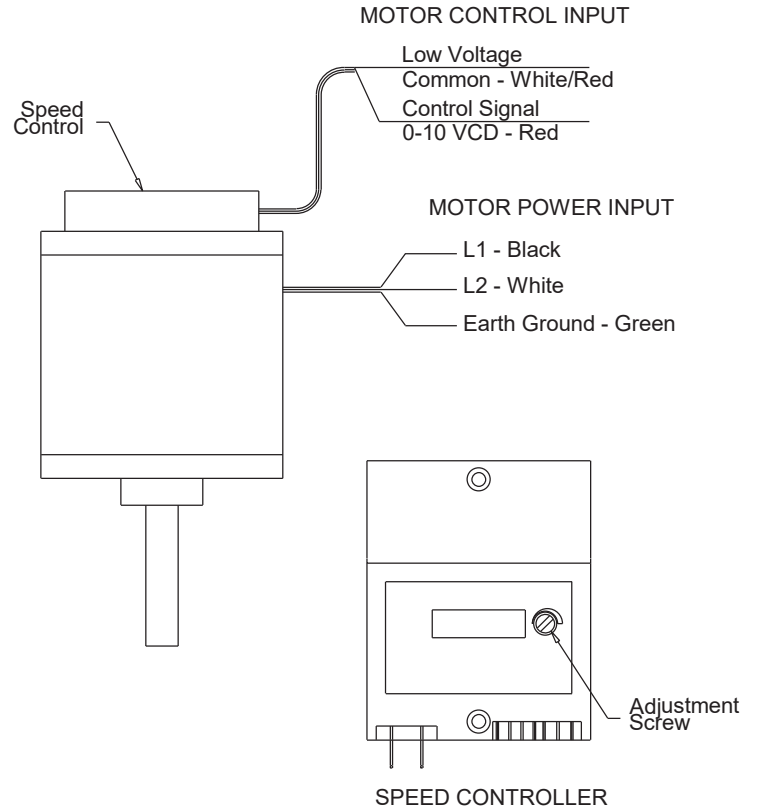
External Speed Control Electronically Commutated (EC) Motor Type N

STANDARD CONSTRUCTION FEATURES:

Vari-Flow EC Motors are available in 1/8 to 1 HP for 120V or 208-230V -Single phase applications have a adjustable speed range of 500 to 1725 or 500 to 2800 - Some motors come with a factory programmed maximum RPM for specific applications - External signal speed control requires a 0-10 VDC control signal to adjust speed of the motor - The motor will operate from 2-10 VDC and turns off when the control signal is below 1.9 VDC - Dial on speed control must be set to 0 for proper external speed control operation.

Dimensions (inches)

Mark	Qty	Description
EF-2	1	OPEN -1/2HP - 115V/1 PH/ 60 1725/0000 -EC





BD

Gravity Backdraft Damper

STANDARD CONSTRUCTION FEATURES:

.020 Aluminum blades - .060 aluminum frame -
 Aluminum hinge pins - Nylon bushings.

Notes:

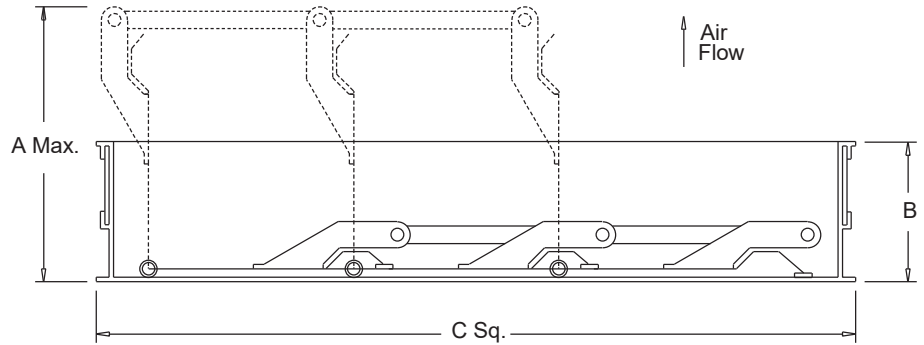
Max. operating temperature 200 Deg F (95 Deg C).

Max. discharge velocity 2000 fpm.

Sizes 36 thru 60 are shipped as 2 panels.

Sizes 66 and 78 are shipped as 6 panels.

These may require assembly.



Dimensions (inches)

Mark	Qty	Description	A Max.	B	C Sq.	# Panels
EF-2	1	BD-18 DAMPER	5-3/16	1-7/8	17-3/4	1



RCG

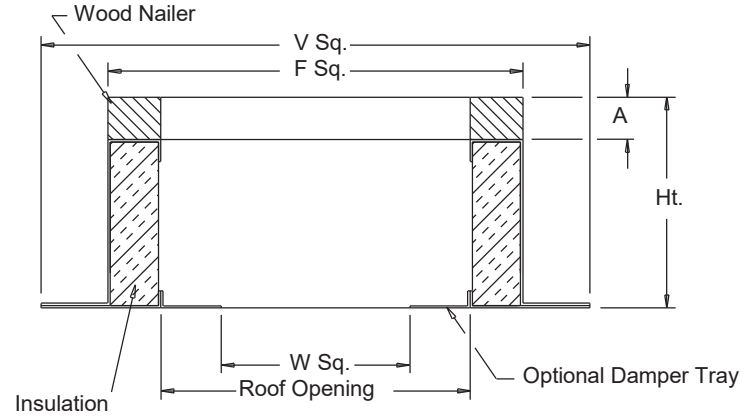
Galvanized Steel Roof Curb

STANDARD CONSTRUCTION FEATURES:

18 gauge galvanized steel - 1-1/2",
 3 lbs. density thermal and acoustical insulation - Continuously welded corners -
 Wood nailer.

Options:(As noted below*)

- 1) No wood nailer (deduct 1-1/2" for actual height).
- 2) Damper tray.
- 3) Liner.
- 4) Gasket on wood nailer.
- 5) Lorenized coating.
- 6) Enamel coating.
- 7) Burglar bars.



Dimensions (inches)

Mark	Qty	Description	Ht	Options*	A	F Sq.	V Sq.	W Sq.	Roof Opening
EF-2	1	RCG 22	13.5	-	1-1/2	22-1/2	26-1/2	15-3/4	19-1/2



COOK



MARK: EF-3

PROJECT: CALS MAIN LIBRARY RENOVATION

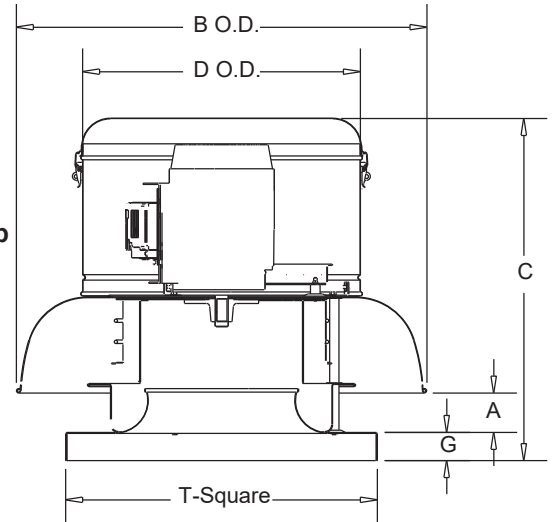
DATE: 5/6/2024

ACE-D VF

Downblast Centrifugal Exhaust Ventilator
Roof Mounted/Direct Drive
Electronically Commutated Vari-Flow® Motor

STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches (sizes 120 - 300) - Welded curb cap corners - Birdscreen - Permanently lubricated ball bearing motors - Corrosion resistant fasteners - Transit tested packaging.



Performance

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Power (HP)	FEG	FEI	Speed Control
1	210C17D (VF2)	5500	2.25	1395	3.51	63	1.22	EC

Altitude (ft): 266 Temperature (F): 70

Motor/Controller Information

HP	RPM*	Volts/Ph/Hz	Enclosure	FLA	VFD Rated
5	1725	460/3/60	TEFC -PM	7.6	Yes

FLA based on NEC (2017) Table 430.250

*Motor programmed to max speed of 1497 RPM.

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
88	89	89	85	79	75	70	66	86	75	24

- Distance from Sound source 5 ft

Accessories:

- EXTERNAL SIGNAL SPEED CONTROL
- CTL & XFMR BY OTHERS
- DISCONNECT NEMA 1 PRE-WIRED
- BD-24 DAMPER
- ROOF CURB RCG 28 13.5H -C-T+N
- REINFORCED WHEEL



Dimensions (inches)

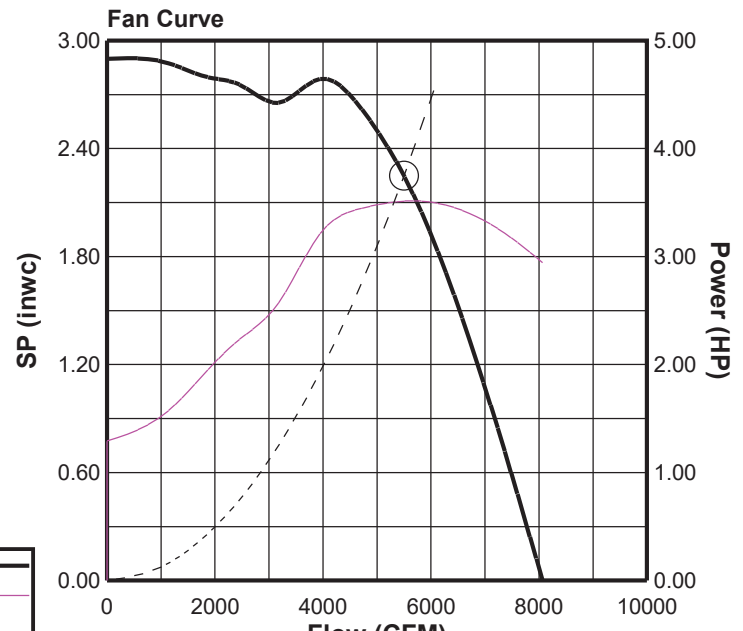
A	4-3/4
B O.D.	43-5/8
C	37-1/4
D O.D.	29-7/8
G	3
T Sq.	30
Roof Open. Sq.*	25-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	371	Unit	238
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* Roof opening size for curbs supplied by Cook only.

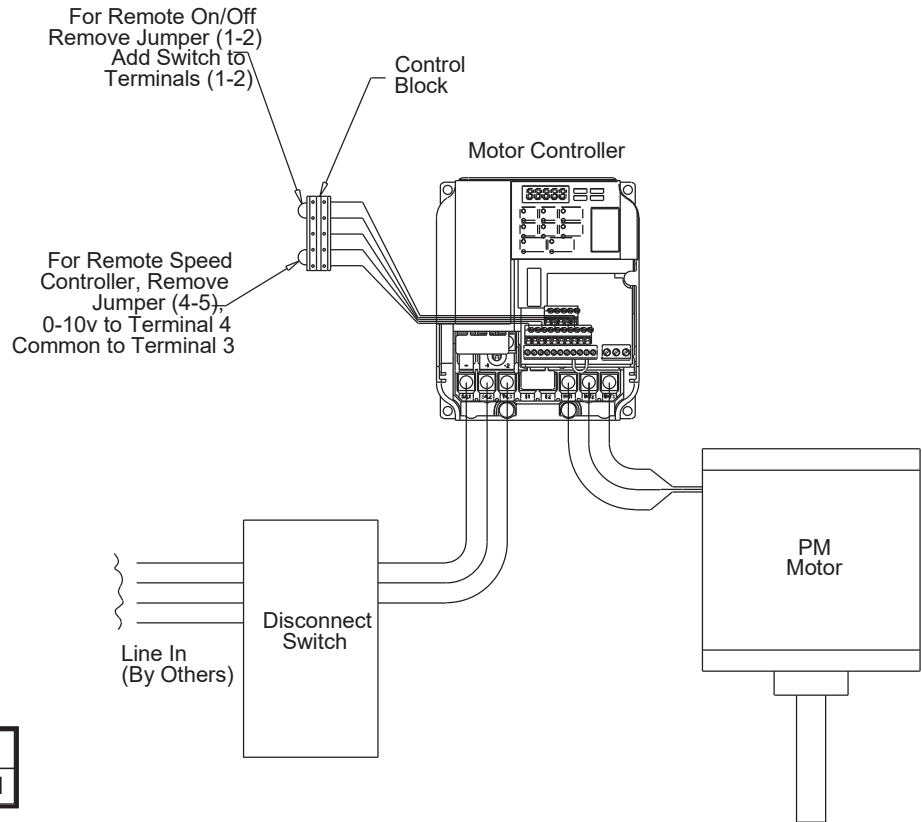
***Includes fan, motor & accessories.





PM Motor Control

Permanent Magnet Motor
Electronically Commutated
External Signal Speed Control



Dimensions (inches)

Mark	Qty	Description
EF-3	1	TEFC -5HP - 460V/3 PH/ 60 1725/0000 -PM

Permanent Magnet Motor with External Mounted Controller.
For AC units the controller and disconnect are mounted under the unit top cap.



BD

Gravity Backdraft Damper

STANDARD CONSTRUCTION FEATURES:

.020 Aluminum blades - .060 aluminum frame -
 Aluminum hinge pins - Nylon bushings.

Notes:

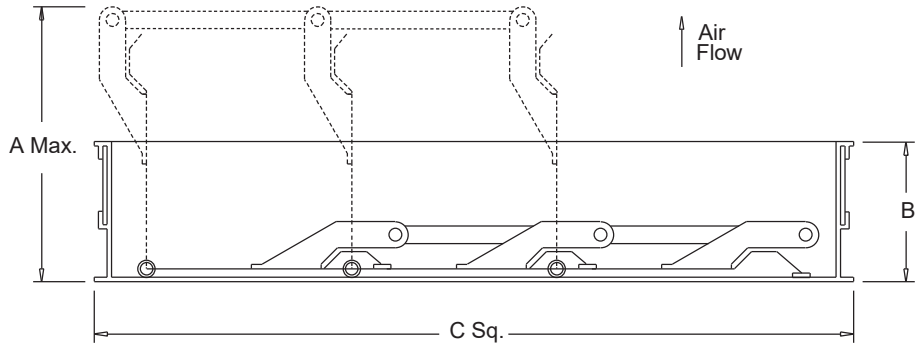
Max. operating temperature 200 Deg F (95 Deg C).

Max. discharge velocity 2000 fpm.

Sizes 36 thru 60 are shipped as 2 panels.

Sizes 66 and 78 are shipped as 6 panels.

These may require assembly.



Dimensions (inches)

Mark	Qty	Description	A Max.	B	C Sq.	# Panels
EF-3	1	BD-24 DAMPER	5-3/16	1-7/8	23-3/4	1



RCG

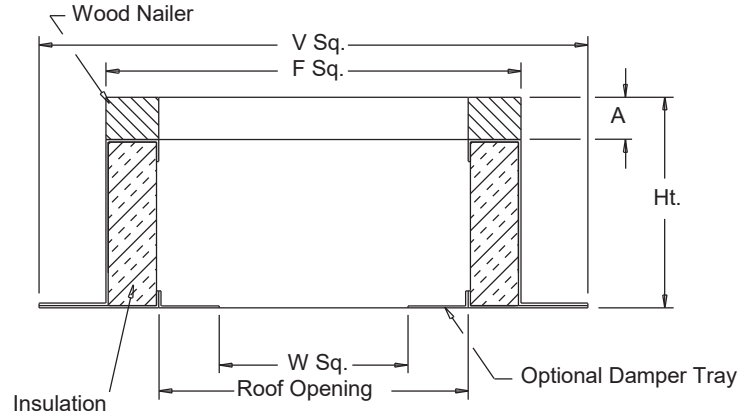
Galvanized Steel Roof Curb

STANDARD CONSTRUCTION FEATURES:

18 gauge galvanized steel - 1-1/2",
 3 lbs. density thermal and acoustical
 insulation - Continuously welded corners -
 Wood nailer.

Options:(As noted below*)

- 1) No wood nailer (deduct 1-1/2" for actual height).
- 2) Damper tray.
- 3) Liner.
- 4) Gasket on wood nailer.
- 5) Lorenized coating.
- 6) Enamel coating.
- 7) Burglar bars.



Dimensions (inches)

Mark	Qty	Description	Ht	Options*	A	F Sq.	V Sq.	W Sq.	Roof Opening
EF-3	1	RCG 28	13.5	-	1-1/2	28-1/2	32-1/2	21-3/4	25-1/2



COOK



MARK: EF-4

PROJECT: CALS MAIN LIBRARY RENOVATION

DATE: 5/6/2024

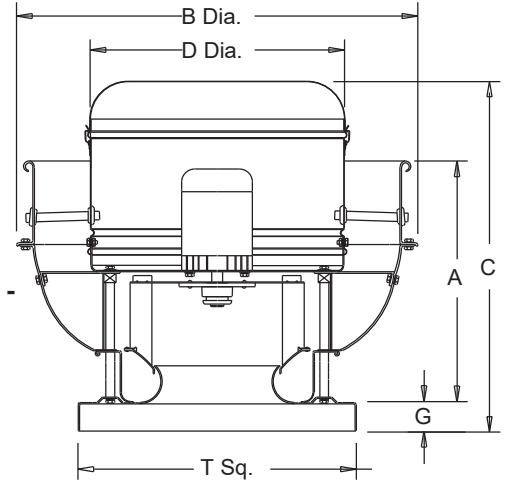
ACRU-D VF

**Upblast Centrifugal
Exhaust Ventilator
Roof Mounted/Direct Drive
Electronically Commutated Vari-Flow® Motor**

STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches - (size 120 - 300) - Welded curb cap corners - Birdscreen - Permanently lubricated ball bearing motors - Corrosion resistant fasteners - Transit tested packaging.

Model string and HP is slightly different based on updated software. HP is fractionally larger and should not effect electrical. Please verify this is acceptable.



Performance

Qty	Catalog Number	Flow (CFM)	SP (inwc)	Fan RPM	Power (HP)	FEG	Speed Control
1	135R17D (VF)	1200	.500	1137	.194	n/a(<1HP)	EC

Altitude (ft): 266 Temperature (F): 70

Motor Information

HP	RPM*	Volts/Ph/Hz	Enclosure	RLA
1/4	1725	115/1/60	OPEN -EC	3.2



*Motor programmed to max speed of 1190 RPM.
RLA based on motor manufacturer's data at programmed HP and max RPM.
Motor is electronically/thermally protected.

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
75	78	75	64	61	59	54	49	70	58	9.7

- Distance from Sound source 5 ft

Accessories:

- EXTERNAL SIGNAL SPEED CONTROL
- CTL & XFMR BY OTHERS
- DISCONNECT NEMA 1 PRE-WIRED
- BD-14 DAMPER
- ROOF CURB RCG 18 13.5H -C-T+N

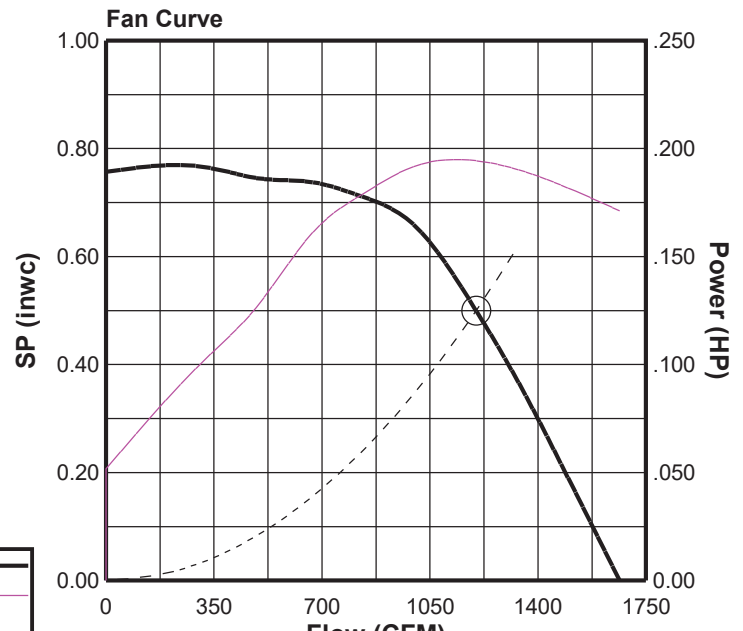
Dimensions (inches)

A	19-1/16
B	30-3/16
C	28-5/8
D	20-3/8
G	2
T Sq.	20
Roof Open. Sq.*	15-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lbs)***	Shipping	83	Unit	66
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* Roof opening size for curbs supplied by Cook only.
***Includes fan, motor & accessories.





Speed Control

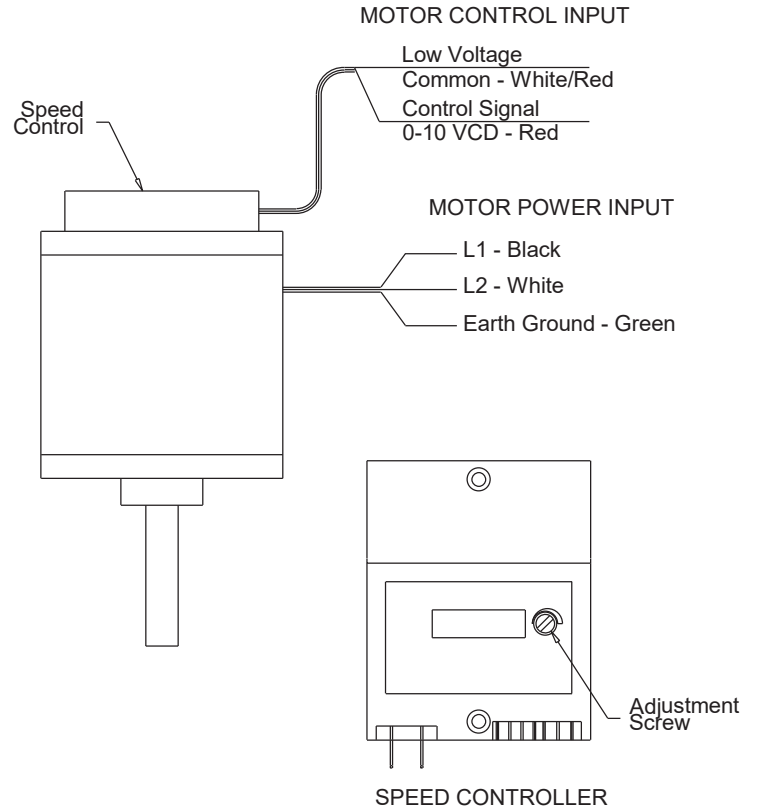
External Speed Control Electronically Commutated (EC) Motor Type N

STANDARD CONSTRUCTION FEATURES:

Vari-Flow EC Motors are available in 1/8 to 1 HP for 120V or 208-230V -Single phase applications have a adjustable speed range of 500 to 1725 or 500 to 2800 - Some motors come with a factory programmed maximum RPM for specific applications - External signal speed control requires a 0-10 VDC control signal to adjust speed of the motor - The motor will operate from 2-10 VDC and turns off when the control signal is below 1.9 VDC - Dial on speed control must be set to 0 for proper external speed control operation.

Dimensions (inches)

Mark	Qty	Description
EF-4	1	OPEN -1/4HP - 115V/1 PH/ 60 1725/0000 -EC





BD

Gravity Backdraft Damper

STANDARD CONSTRUCTION FEATURES:

.020 Aluminum blades - .060 aluminum frame -
 Aluminum hinge pins - Nylon bushings.

Notes:

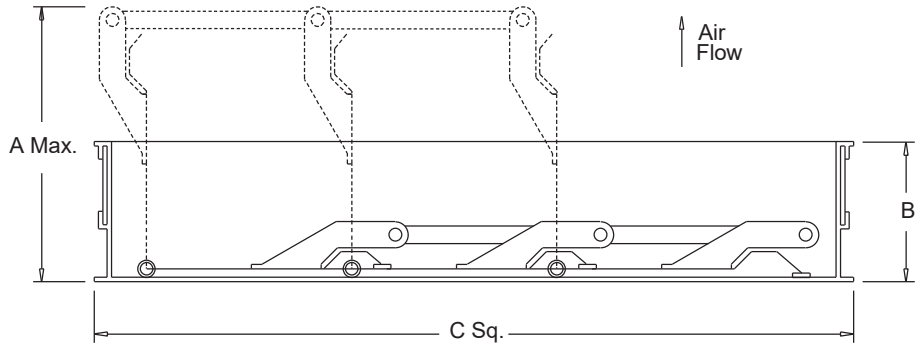
Max. operating temperature 200 Deg F (95 Deg C).

Max. discharge velocity 2000 fpm.

Sizes 36 thru 60 are shipped as 2 panels.

Sizes 66 and 78 are shipped as 6 panels.

These may require assembly.



Dimensions (inches)

Mark	Qty	Description	A Max.	B	C Sq.	# Panels
EF-4	1	BD-14 DAMPER	5-3/16	1-7/8	13-3/4	1



RCG

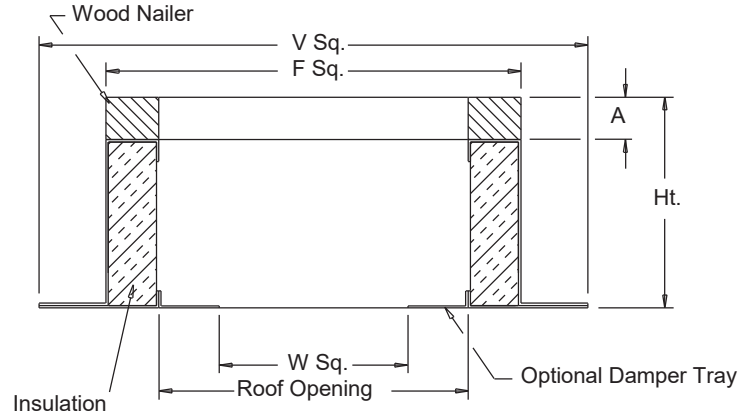
Galvanized Steel Roof Curb

STANDARD CONSTRUCTION FEATURES:

18 gauge galvanized steel - 1-1/2",
 3 lbs. density thermal and acoustical insulation - Continuously welded corners - Wood nailer.

Options:(As noted below*)

- 1) No wood nailer (deduct 1-1/2" for actual height).
- 2) Damper tray.
- 3) Liner.
- 4) Gasket on wood nailer.
- 5) Lorenized coating.
- 6) Enamel coating.
- 7) Burglar bars.



Dimensions (inches)

Mark	Qty	Description	Ht	Options*	A	F Sq.	V Sq.	W Sq.	Roof Opening
EF-4	1	RCG 18	13.5	-	1-1/2	18-1/2	22-1/2	11-3/4	15-1/2