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Date: 07/14/2026
Return Request: 08/11/2026
Project: Highlands Building at Pinnacle Hills
Supplier: Comfort Systems USA
Manufacturer: Various
Submittal: Roof Exhaust Systems
Submittal Number: 23 34 23-01
Drawing # and Installation: Mechanical

ARCHITECT

Crafton Tull
Fayetteville, Ar

ENGINEER

IMEG

GENERAL CONTRACTOR

Clark Contractors
Rogers, Ar

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
116 Commercial Ave.
Lowell, AR 72745
(479) 770.8992

NOTES:

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CSUSA PROJECT NO.
26-5034

jzuber@comfortar.com

Submittal

JOB NAME	Highlands Building at Pinnacle Hills Rogers
JOB NUMBER	26ADCA0017-1
PRODUCT	Roof Exhausters
MANUFACTURER	Loren Cook
LOCATION	Rogers, AR
DATE	June 25, 2026
SPECIFICATION	23 34 23 2.3
LEAD TIME	8 Weeks
ENGINEER	IMEG
CONTRACTOR	Knight & Wilson
SUBMITTED BY	Chris Atwood



COOK



MARK: EF-5

PROJECT: Highlands Building Rogers

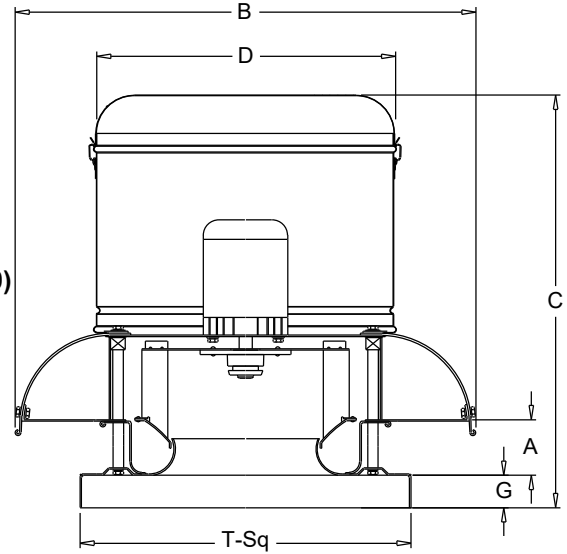
DATE: 06/25/2026

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 (inwg)	Fan RPM	Power (HP)	FEG	Speed Control
1	101C17DOR60VF	125	.400	1407	.082	n/a(<1HP)	EC

Altitude (ft): 1352 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 1725 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
72	71	75	59	54	48	46	43	67	56	7.7

- Distance from Sound source 5 ft

Accessories:

FAN MOUNTED SPEED CONTROL
DISCONNECT NEMA 1 PRE-WIRED
BDM-12 MTR DPR 115V
ROOF CURB RCG 16 20H -C-T+N
ORIFICE PLATE 60
END SWITCH FOR MOTORIZED DAMPER

Dimensions (inches)

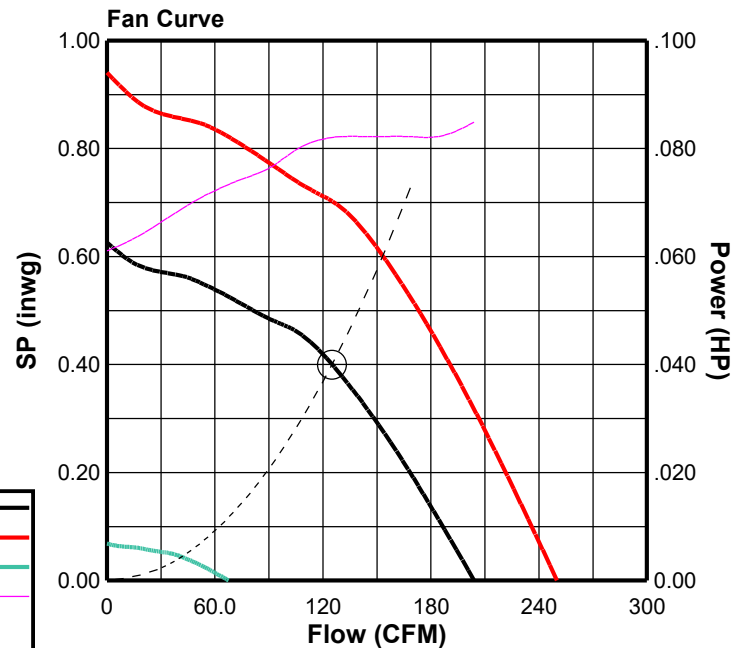
A	2-3/8
B O.D.	23-9/16
C	21-1/8
D O.D.	16-3/4
G	2
T Sq.	18
Roof Open. Sq.*	13-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lb)***	Shipping	81	Unit	31
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* Roof opening size for curbs supplied by Cook only.

***Includes fan, motor & accessories.





COOK



MARK: EF-5

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

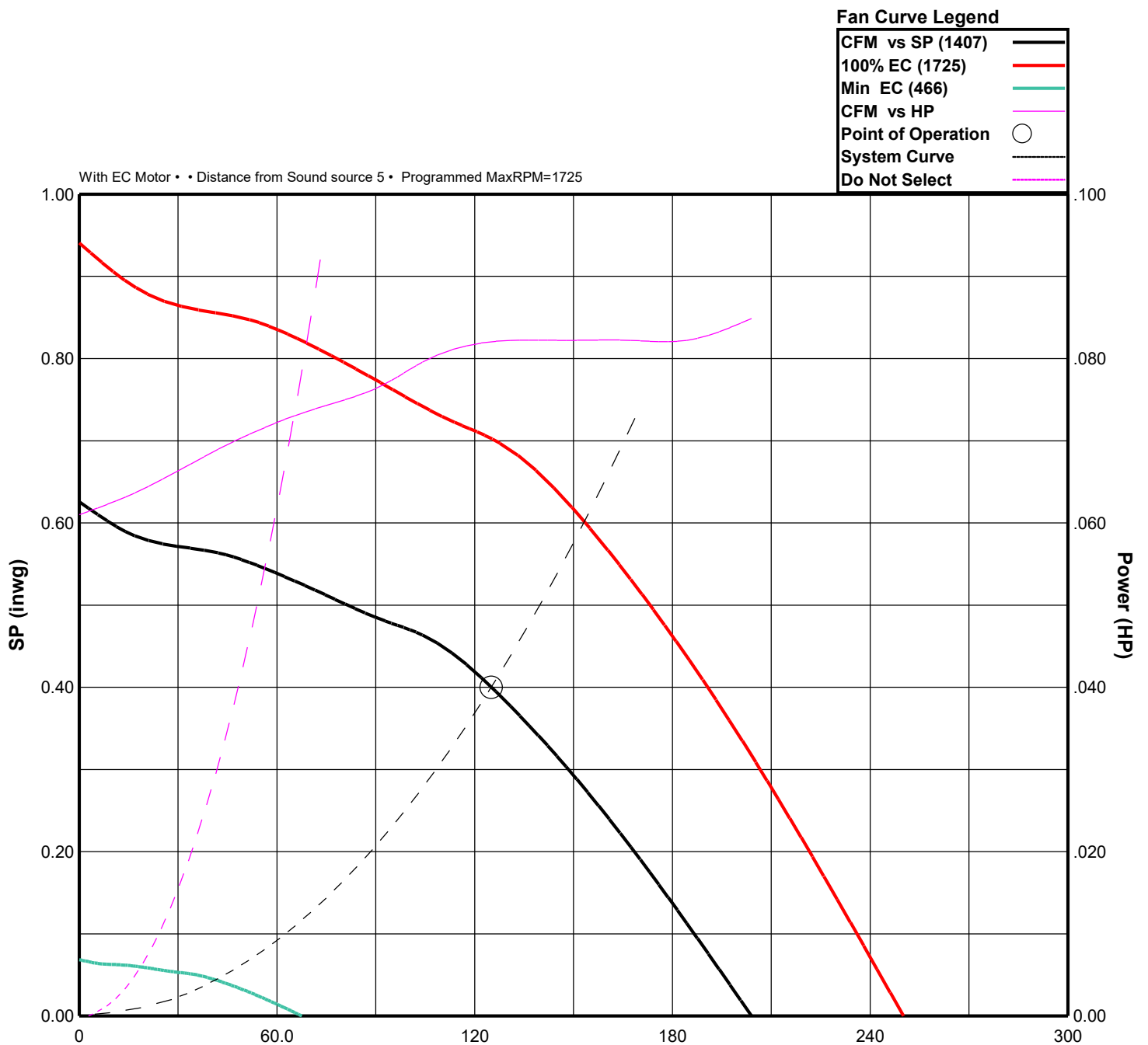
ACE-D VF

Performance

Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power (HP)	FEG	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
101C17DOR60VF	125	.400	1407	.082	n/a(<1HP)	191	3684	9%	70	1352

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
72	71	75	59	54	48	46	43	67	56	7.7





COOK

ACE-D VF

MARK: EF-5

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



Loren Cook Company certifies that the 101C17DOR60VF shown herein is 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.

Performance certified is for installation type A: free inlet, free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in hemispherical sones at 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 AMCA International licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

The sound power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet Lwi and LwiA sound power levels for installation type A: free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to sone ratings only. Octave Band, LwA and dBA levels are not AMCA International licensed.



COOK



MARK: EF-6

PROJECT: Highlands Building Rogers

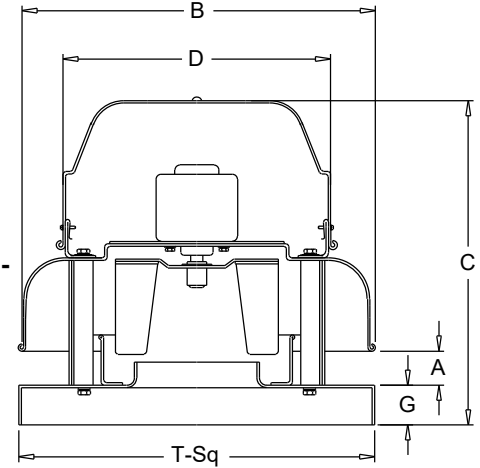
DATE: 06/25/2026

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 (inwg)	Fan RPM	Power (HP)	FEG	Speed Control
1	70C17DM (VF)	80	.400	1696	.021	n/a(<1HP)	EC

Altitude (ft): 1000 Temperature (F): 70

Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure
1/20	1725	115/1/60	OPEN -EC



Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
60	62	63	49	47	46	39	36	57	45	4.1

- Distance from Sound source 5 ft

Accessories:

FAN MOUNTED SPEED CONTROL
DISCONNECT NEMA 1 PRE-WIRED
BDM-12 MTR DPR 115V
ROOF CURB RCG 16 20H -C-T+N
END SWITCH FOR MOTORIZED DAMPER

Dimensions (inches)

A	1-3/4
B O.D.	13-5/8
C	13-13/16
D O.D.	16-3/4
G	2
T Sq.	18
Roof Open. Sq.*	13-1/2

NOTE: Accessories may affect dimensions shown.

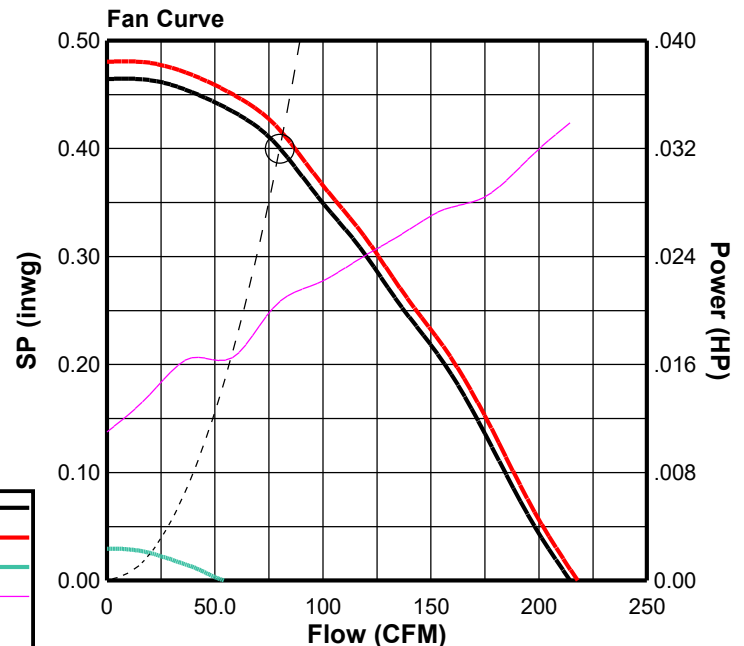
Weight(lb)***	Shipping	68	Unit	21
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* Roof opening size for curbs supplied by Cook only.

***Includes fan, motor & accessories.

Fan Curve Legend

CFM vs SP (1696)	—
100% EC (1725)	—
Min EC (428)	—
CFM vs HP	—
Point of Operation	○
System Curve	—





COOK



MARK: EF-6

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

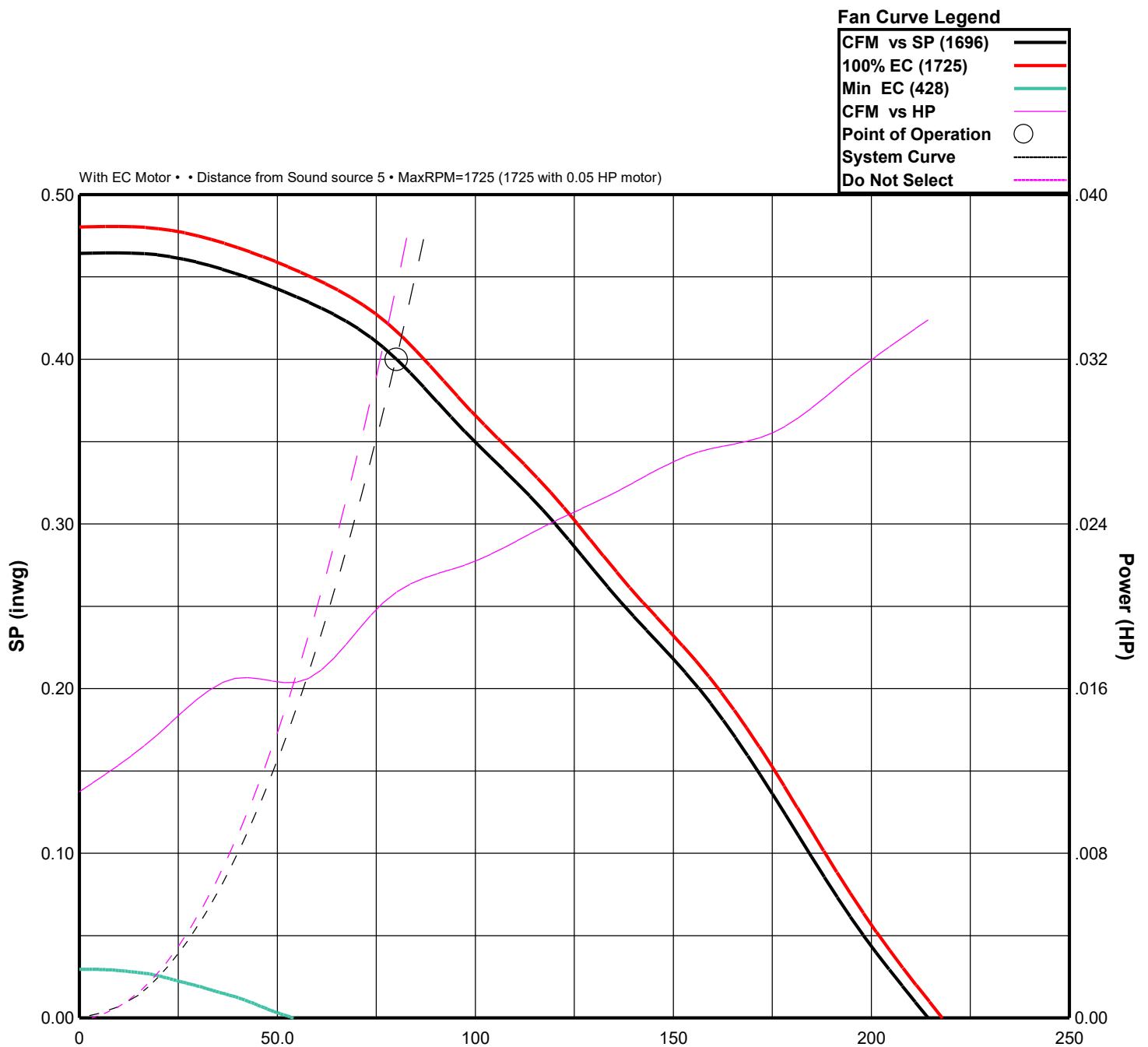
ACE-D VF

Performance

Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power (HP)	FEG	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
70C17DM (VF)	80	.400	1696	.021	n/a(<1HP)	195	3108	24%	70	1000

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
60	62	63	49	47	46	39	36	57	45	4.1





COOK

ACE-D VF

MARK: EF-6

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



Loren Cook Company certifies that the 70C17DM shown herein is 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.

Performance certified is for installation type A: free inlet, free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in hemispherical sones at 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 power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet Lwi and LwiA sound power levels for installation type A: free inlet, free outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to sone ratings only. Octave Band, LwA and dBA levels are not AMCA International licensed.



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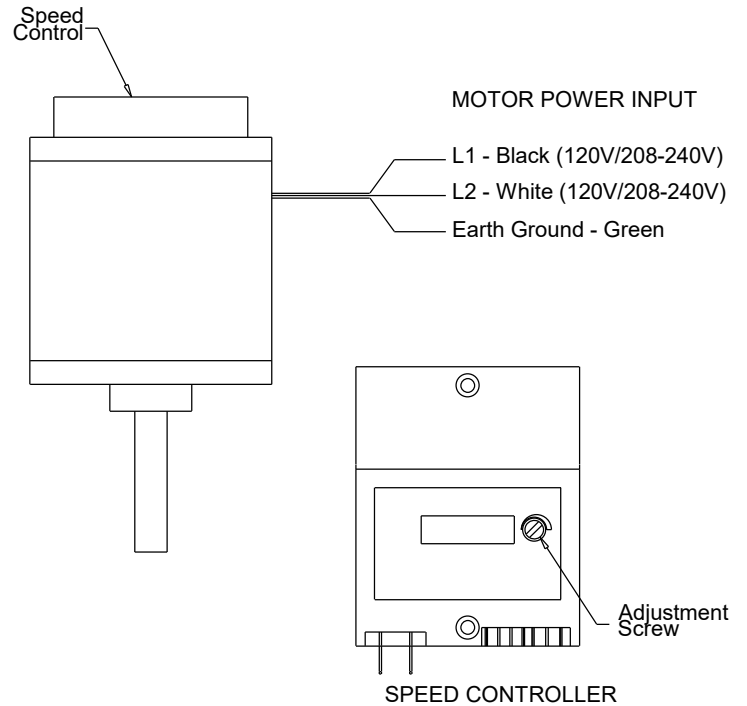
PROJECT: Highlands Building Rogers

DATE: 06/25/2026

Speed Control

**Internal Speed Control
Electronically Commutated (EC) Motor
Type N**

STANDARD CONSTRUCTION FEATURES:
Some motors come with a factory programmed maximum RPM for specific applicaitons - Integral potentiometer with slotted screw for speed adjustment.



Dimensions (inches)

Mark	Qty	Description
EF-5	1	OPEN -1/4HP - 115V/1 PH/ 60 1725/0000-EC



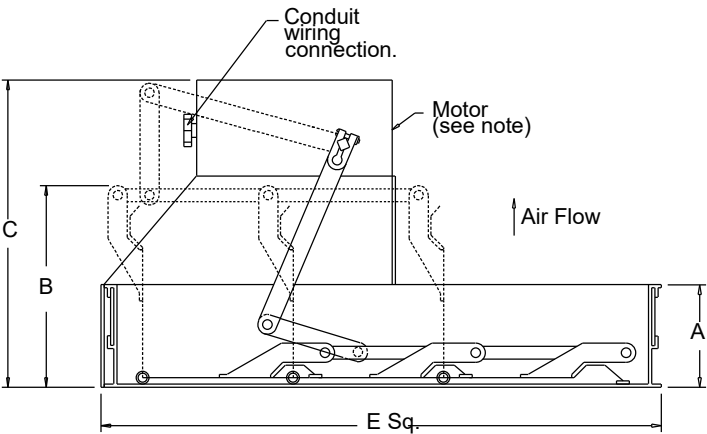
BDM

Motorized Backdraft Damper

STANDARD CONSTRUCTION FEATURES:

- .020 aluminum blades - .060
- aluminum frame - Aluminum hinge
- pins - Brass bushings -
- Non-overloading motor.

Notes:
Max operating temperature 130 Deg F (50 Deg C)



Dimensions (inches)

Mark	Qty	Description	A	B Max	C	E Sq.	# Motors
EF-5	1	BDM-12 MTR DPR 115V	1-7/8	5-3/16	8	11-3/4	1
EF-6	1	BDM-12 MTR DPR 115V	1-7/8	5-3/16	8	11-3/4	1



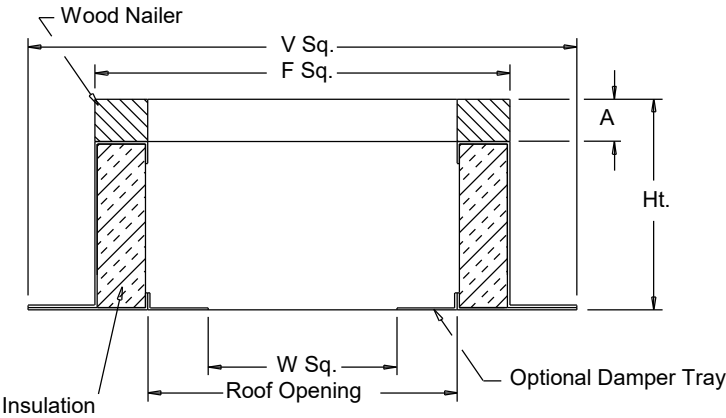
RCG

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)

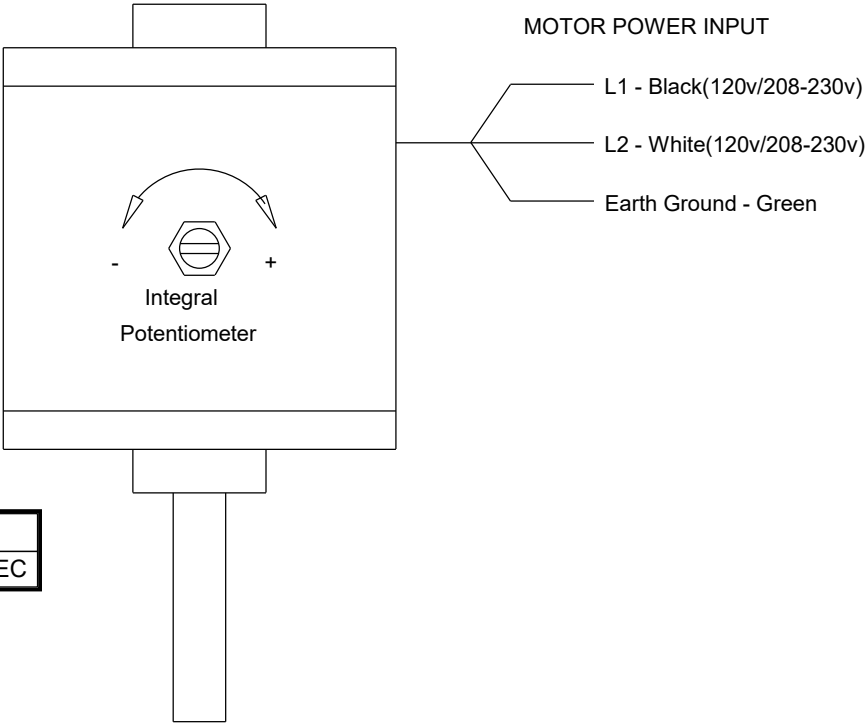
Mark	Qty	Description	Ht	Options*	A	F Sq.	V Sq.	W Sq.	Roof Opening
EF-5	1	RCG 16	20	-	1-1/2	16-1/2	20-1/2	9-3/4	13-1/2
EF-6	1	RCG 16	20	-	1-1/2	16-1/2	20-1/2	9-3/4	13-1/2



Speed Control

Internal Speed Control
Electronically Commutated (EC) Motor
Type P

STANDARD CONSTRUCTION FEATURES:
Integral potentiometer with slotted screw
for speed adjustment.



Dimensions (inches)

Mark	Qty	Description
EF-6	1	OPEN -1/20HP - 115V/1 PH/ 60 1725/0000-EC

Submittal

JOB NAME	Highlands Building at Pinnacle Hills Rogers
JOB NUMBER	26ADCA0017-1
PRODUCT	Upblast Roof Exhausters
MANUFACTURER	Loren Cook
LOCATION	Rogers, AR
DATE	June 25, 2026
SPECIFICATION	23 34 23 2.4
LEAD TIME	10 Weeks
ENGINEER	IMEG
CONTRACTOR	Knight & Wilson
SUBMITTED BY	Chris Atwood



COOK

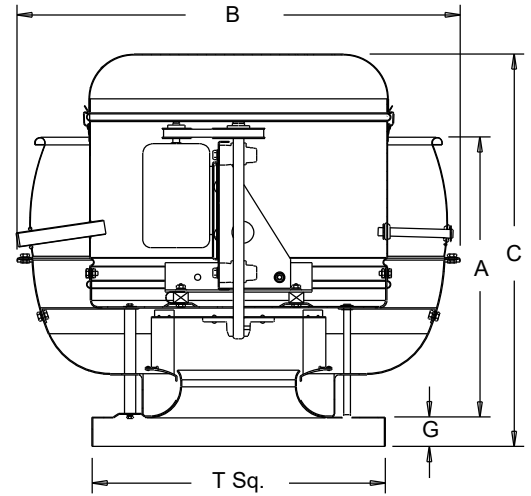

MARK: EF-1
PROJECT: Highlands Building Rogers
DATE: 06/25/2026

ACRU-HP

Upblast Centrifugal Exhaust Ventilator Roof Mounted/Belt Drive

STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches - One piece bottom spinning - Welded curb cap corners - Birdscreen - Vibration isolators - Lifting Lugs - Permanently lubricated ball bearing motors - Oil and heat resistant, static conducting belts - Adjustable pitch drives through 5 hp motor - Corrosion resistant fasteners - Regreasable bearings in a cast iron pillow block housing, rated at 200,000 hours average life - All fans factory adjusted to specified fan RPM - Transit tested packaging. Standard motors ship factory installed.



Performance (*Bhp includes 6% drive loss)

Qty	Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power* (HP)	FEG	FEI
1	365RH12B	9500	2.00	770	5.37	63	1.20

Altitude (ft): 1000 Temperature (F): 70

Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure	FLA	Mounted	VFD Rated
7-1/2	1725	460/3/60	ODP -PE	11	Yes	Yes

NEMA Premium® efficiency motor per MG-1 (2014) Table 12-12
FLA based on NEC (2017) Table 430.250

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
86	88	88	85	80	76	72	67	87	75	24

- Distance from Sound source 5 ft

Accessories:

Premium Efficiency Motor (Min. 91.0%)
SHAFT GROUNDING KIT
DRIVES (1.5 SF) @ 770 RPM
DISCONNECT NEMA 1 PRE-WIRED
BDM-36 MTR DPR 460V
ROOF CURB RCG 40 20H -C-T+N
REINFORCED WHEEL
DRAIN TUBE (ALUM)
BELT TENSER 4000 1A
END SWITCH FOR MOTORIZED DAMPER

Dimensions (inches)

A	36-3/8
B	64-1/4
C	48-7/16
G	3
T Sq.	42
Roof Open. Sq.*	37-1/2

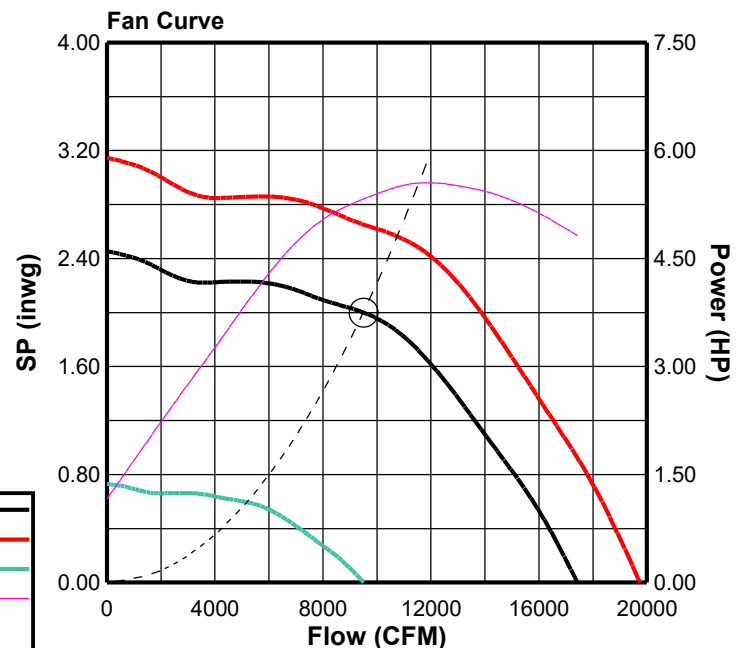
NOTE: Accessories may affect dimensions shown.

Weight(lb)***	Shipping	620	Unit	411
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* Roof opening size for curbs supplied by Cook only.
***Includes fan, motor & accessories.

Fan Curve Legend

CFM vs SP (770)	—
MaxRPM(872)	—
MinRPM(420)	—
CFM vs HP	—
Point of Operation	○
System Curve	---





COOK



MARK: EF-1

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

ACRU-HP

Performance (*Bhp includes 6% drive loss)

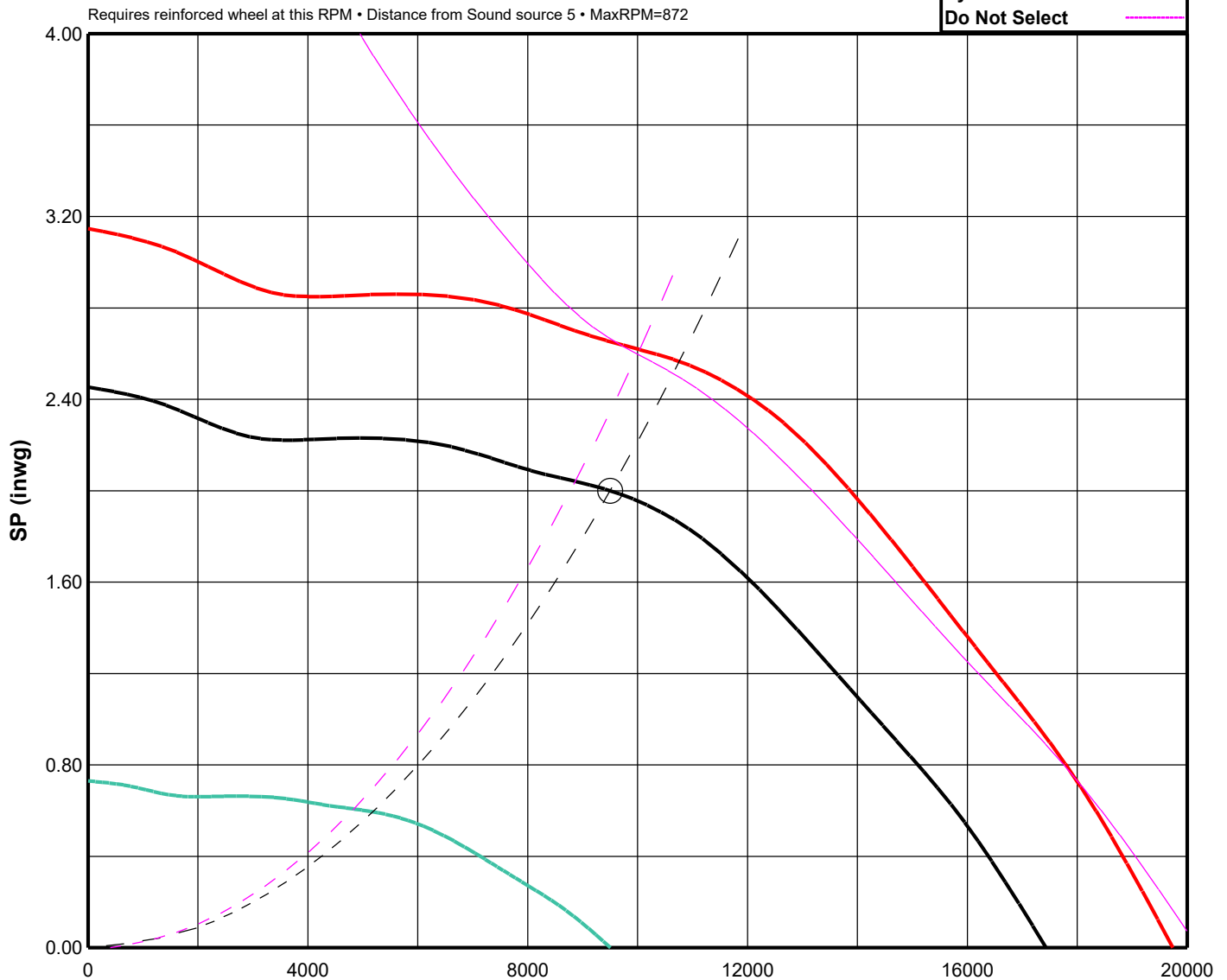
Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power* (HP)	FEG	FEI	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
365RH12B	9500	2.00	770	5.37	63	1.20	971	7358	59%	70	1000

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
86	88	88	85	80	76	72	67	87	75	24

Fan Curve Legend

CFM vs SP (770)	—
MaxRPM(872)	—
MinRPM(420)	—
HP Curve (7.5)	—
Point of Operation	○
System Curve	- - -
Do Not Select	---





COOK

ACRU-HP

MARK: EF-1

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



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Performance certified is for installation type A: free inlet, free outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in hemispherical sones at 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 AMCA International licensed air and/or sound performance data has been modified for installation, appurtenances or accessories, etc. not included in the certified data. The modified performance is not AMCA licensed but is provided to aid in selection and applications of the product.

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COOK



MARK: EF-2

PROJECT: Highlands Building Rogers

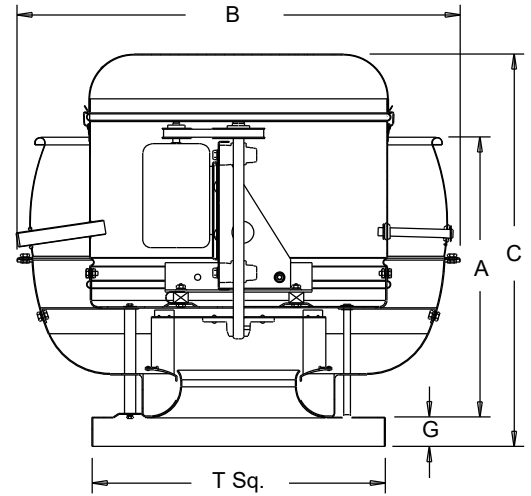
DATE: 06/25/2026

ACRU-HP

**Upblast Centrifugal
Exhaust Ventilator
Roof Mounted/Belt Drive**

STANDARD CONSTRUCTION FEATURES:

All aluminum housing - Backward inclined all aluminum wheel - Two piece top cap with stainless steel quick release latches - One piece bottom spinning - Welded curb cap corners - Birdscreen - Vibration isolators - Lifting Lugs - Permanently lubricated ball bearing motors - Oil and heat resistant, static conducting belts - Adjustable pitch drives through 5 hp motor - Corrosion resistant fasteners - Regreasable bearings in a cast iron pillow block housing, rated at 200,000 hours average life - All fans factory adjusted to specified fan RPM - Transit tested packaging. Standard motors ship factory installed.



Performance (*Bhp includes 6% drive loss)

Qty	Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power* (HP)	FEG	FEI
1	365RH12B	11500	2.00	806	6.38	63	1.21

Altitude (ft): 1000 Temperature (F): 70

Motor Information

HP	RPM	Volts/Ph/Hz	Enclosure	FLA	Mounted	VFD Rated
7-1/2	1725	460/3/60	ODP -PE	11	Yes	Yes

NEMA Premium® efficiency motor per MG-1 (2014) Table 12-12
FLA based on NEC (2017) Table 430.250

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
87	89	90	86	82	77	73	68	88	76	26

- Distance from Sound source 5 ft

Accessories:

Premium Efficiency Motor (Min. 91.0%)
SHAFT GROUNDING KIT
DRIVES (1.5 SF) @ 806 RPM
DISCONNECT NEMA 1 PRE-WIRED
BDM-36 MTR DPR 460V
ROOF CURB RCG 40 20H -C-T+N
REINFORCED WHEEL
DRAIN TUBE (ALUM)
BELT TENSER 4000 1A
END SWITCH FOR MOTORIZED DAMPER

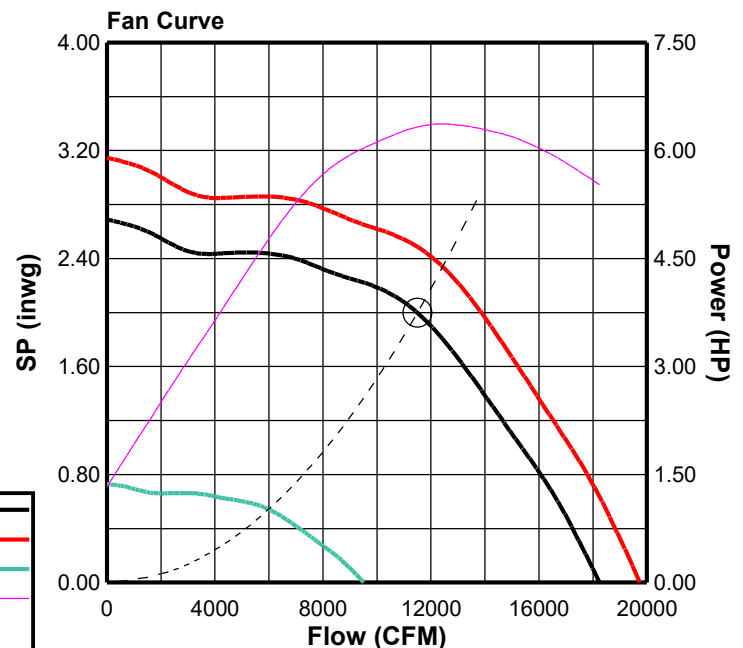
Dimensions (inches)

A	36-3/8
B	64-1/4
C	48-7/16
G	3
T Sq.	42
Roof Open. Sq.*	37-1/2

NOTE: Accessories may affect dimensions shown.

Weight(lb)***	Shipping	614	Unit	405
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* Roof opening size for curbs supplied by Cook only.
***Includes fan, motor & accessories.





COOK



MARK: EF-2
PROJECT: Highlands Building Rogers
DATE: 06/25/2026

ACRU-HP

Performance (*Bhp includes 6% drive loss)

Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power* (HP)	FEG	FEI	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
365RH12B	11500	2.00	806	6.38	63	1.21	1176	7702	60%	70	1000

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
87	89	90	86	82	77	73	68	88	76	26

Fan Curve Legend

CFM vs SP (806)

MaxRPM(872)

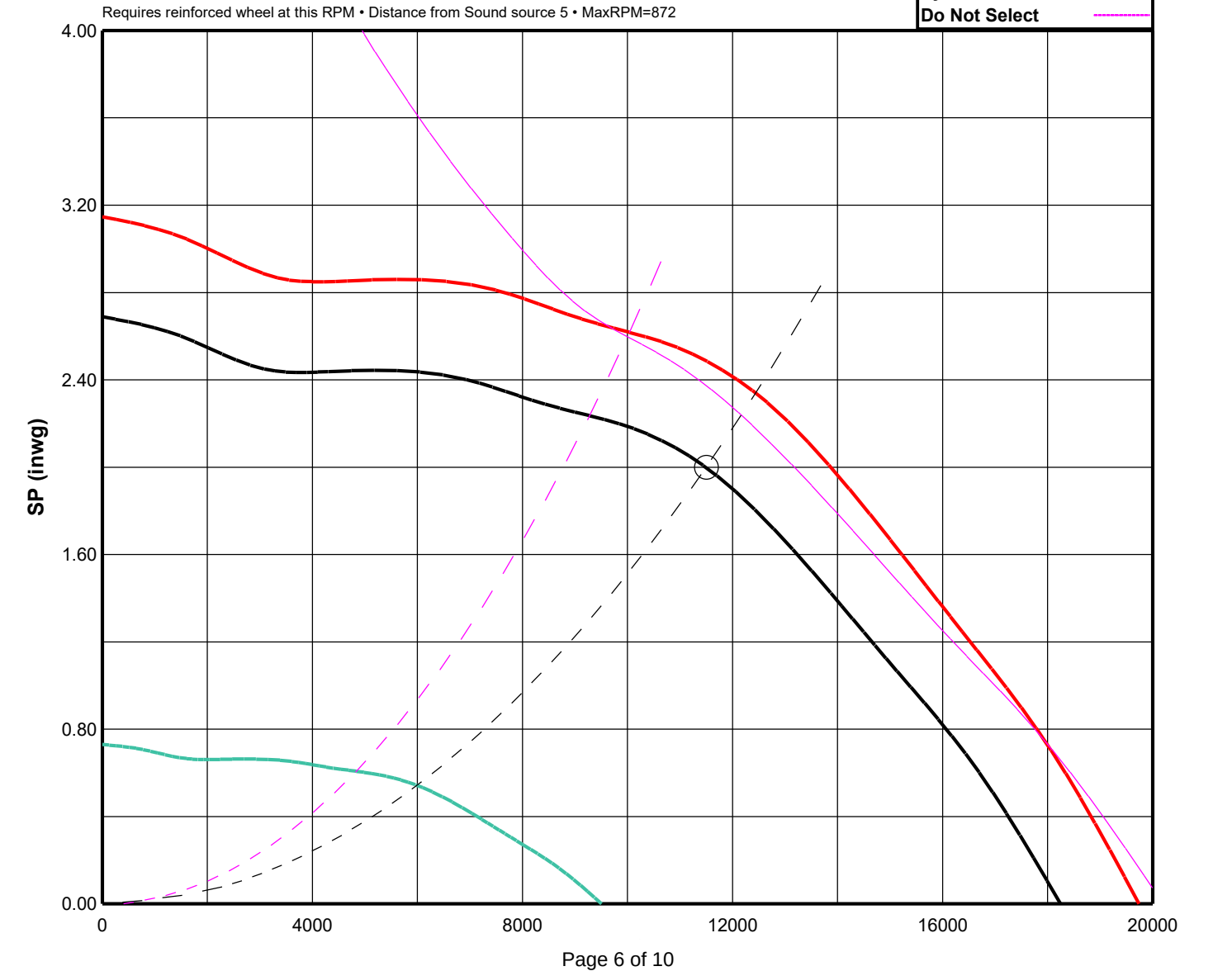
MinRPM(420)

HP Curve (7.5)

Point of Operation

System Curve

Do Not Select





COOK

ACRU-HP

MARK: EF-2

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



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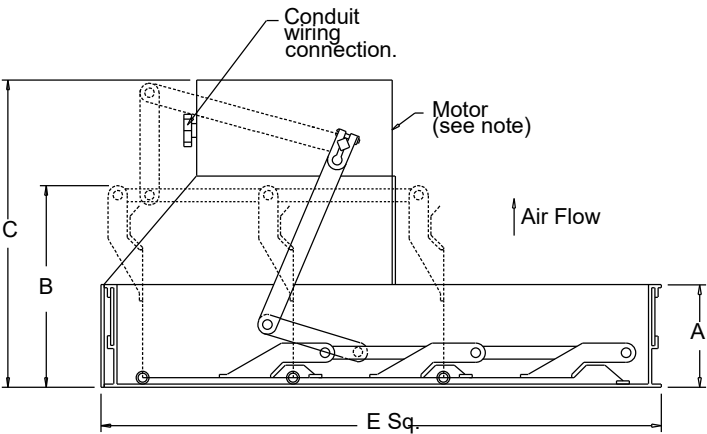
BDM

Motorized Backdraft Damper

STANDARD CONSTRUCTION FEATURES:

- .020 aluminum blades - .060
- aluminum frame - Aluminum hinge
- pins - Brass bushings -
- Non-overloading motor.

Notes:
Max operating temperature 130 Deg F (50 Deg C)



Dimensions (inches)

Mark	Qty	Description	A	B Max	C	E Sq.	# Motors
EF-1	1	BDM-36 MTR DPR 460V	1-7/8	5-3/16	8	35-3/4	2
EF-2	1	BDM-36 MTR DPR 460V	1-7/8	5-3/16	8	35-3/4	2



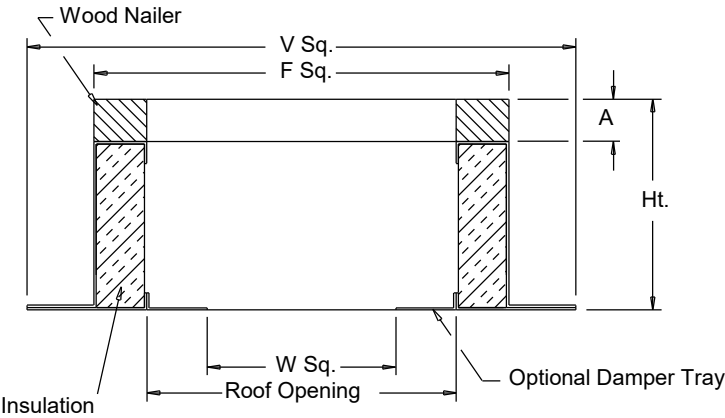
RCG

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-1	1	RCG 40	20	-	1-1/2	40-1/2	44-1/2	33-3/4	37-1/2
EF-2	1	RCG 40	20	-	1-1/2	40-1/2	44-1/2	33-3/4	37-1/2

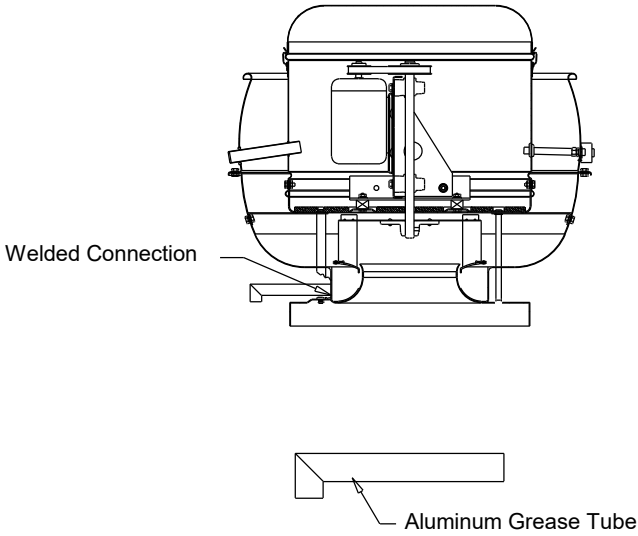


COOK

Grease Tube

Aluminum

Aluminum Installation



Dimensions (inches)

Mark	Qty	Description
EF-1	1	DRAIN TUBE (ALUM)
EF-2	1	DRAIN TUBE (ALUM)

Submittal

JOB NAME	Highlands Building at Pinnacle Hills Rogers
JOB NUMBER	26ADCA0017-1
PRODUCT	Laboratory Fume-Exhaust Fans
MANUFACTURER	Loren Cook
LOCATION	Rogers, AR
DATE	June 25, 2026
SPECIFICATION	23 34 23 2.7
LEAD TIME	8 Weeks
ENGINEER	IMEG
CONTRACTOR	Knight & Wilson
SUBMITTED BY	Chris Atwood



COOK

MARK: EF-3

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

QMXDLE/QMXHPDLE

Laboratory Exhaust

Mixed-Flow Inline, Bifurcated Direct Drive

1x2 Mixing Box, Parallel Bypass

STANDARD CONSTRUCTION FEATURES:

High efficiency, non-overloading mixed-flow welded aluminum wheel - Minimum 14 gauge steel welded bifurcated housing - Welded aerodynamic straightening vanes - Hinged discharge damper with windband - Phenolic epoxy powder with UV protection (Light Gray) - Bolted access door - Lifting lugs - Fan drain - Reinforced curb cap - SS hardware - SS extended lube lines, when applicable - NEMA 3R disconnect mounted and pre-wired - Designed to withstand 125 mph wind *

BYPASS PLENUM - Single wall welded steel construction with inner angle frame - Bottom inlet location - Phenolic epoxy powder with UV protection (Light Gray) - Plenum drain - Bolted access door - Painted aluminum bypass damper with manual hand quadrant - Painted aluminum isolation damper with 2 position actuator - Weather hood - SS birdscreen - SS hardware - Designed to withstand 125 mph wind *

* Windload rating dependent on adequate attachment to roof structure



System Design Conditions

SP (inwg)	Lab System Exhaust (CFM)		Bypass Airflow (CFM)		Total Inlet Airflow (CFM)		Fans/ System (Operating)		Fan Inlet Airflow (CFM)
2.00	5000	+	0	=	5000	÷	1	=	5000

System Information (*Includes fan, motor & accessories.)

System Qty	Fans/ System	Fans on Standby	Plenum Intake	System Weight*	
				Shipping (lbs)	Unit (lbs)
1	2	1	Bottom	4444	3681

Individual Fan Performance (Wheel Width = 50%)

Catalog Number	Fan Inlet Airflow (CFM)	Outlet Airflow (CFM)	Dilution Ratio	Fan RPM	Power (HP)	FEG	FEI	Outlet Vel (FPM)
202QMXHPD17LE17	5000	5000	100%	1725	3.68	75	1.10	3219

Altitude (ft): 1000 Temperature (F): 70

Plume Information

Windspeed (MPH)	Plume Information (ft)				
	Plume Rise		*Unit Height		Effective Plume H
10.0	15.6	+	11.2	=	26.8

*Unit Height includes 12" high curb.

Motor Information

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

NEMA Premium® efficiency motor per MG-1 (2014) Table 12-12
FLA based on NEC (2017) Table 430.250

Sound Data Sound Power by Octave Band

	1	2	3	4	5	6	7	8	LwA	dBA
Inlet	82	82	80	80	78	75	73	70	83	72
Outlet	87	85	82	82	78	73	69	66	83	72

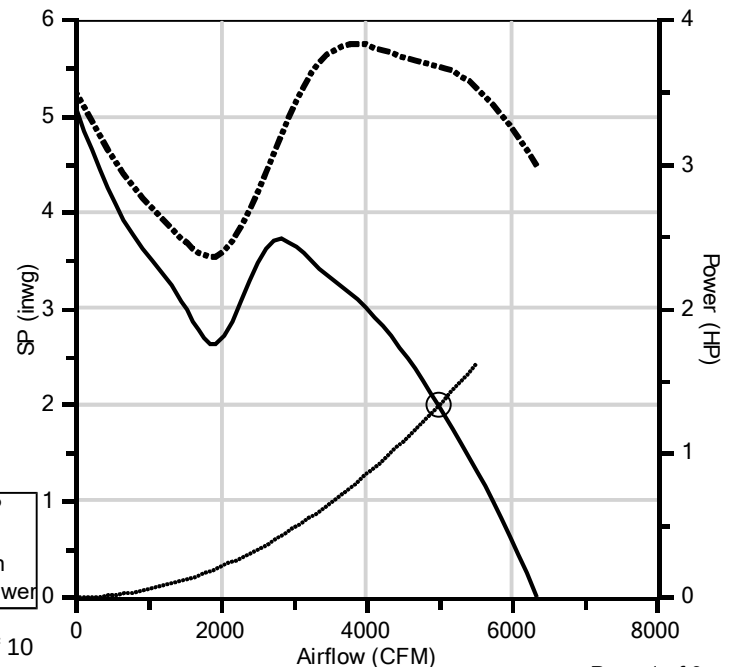
- Distance from Sound source 5 ft

Accessories:

Premium Efficiency Motor (Min. 89.5%)
DISCONNECT PRE-WIRED NEMA3 1/3PH
BYPASS DAMPER-24V
ISOLATN DMPR-230/460
ROOF CURB LECQ 202 -12H 1X2
PHENOLIC EPOXY W/UV-(LIGHT GRAY)
ACCESS DOOR-HINGED
UNIT INCL ALUM WHEEL
BIFURCATED HOUSING
ADAPTOR PLT 202-17
STACK CAP DMPR/NOZ17
MIXING BOX B-IN 1X2

Notes:

DRIVE LOSS NOT INCLUDED





COOK

MARK: EF-3

PROJECT: Highlands Building Rogers

DATE: 6/25/2026

Fan Curve

Bifurcated Housing, Bottom Intake Mixing Box

QMXDLE/QMXHPDLE

System Design Conditions

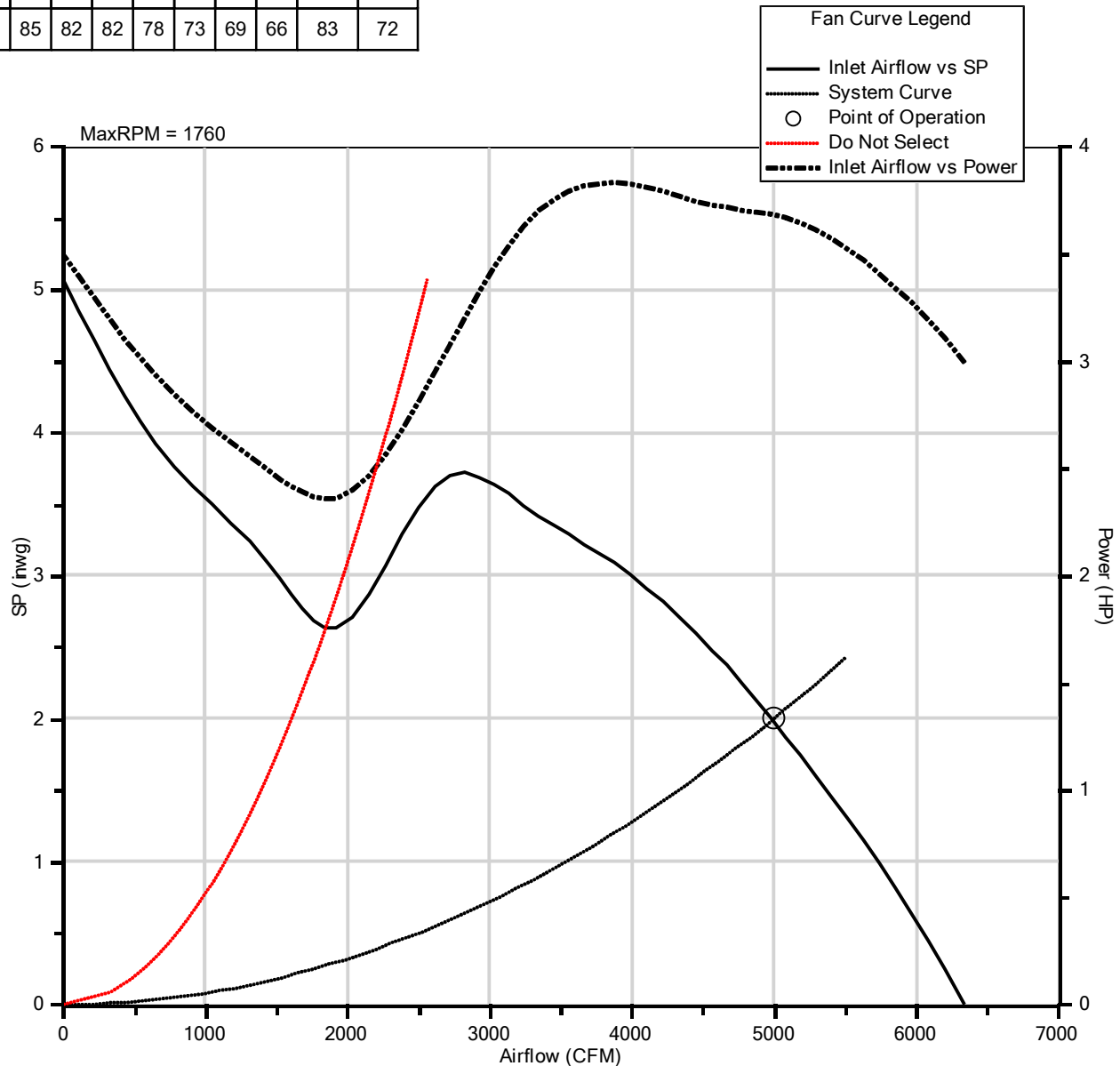
SP (inwg)	Lab System Exhaust (CFM)		Bypass Airflow (CFM)		Total Inlet Airflow (CFM)		Fans/ System (Operating)		Fan Inlet Airflow (CFM)
2.00	5000	+	0	=	5000	÷	1	=	5000

Individual Fan Performance (Wheel Width = 50%)

Catalog Number	Fan Inlet Airflow (CFM)	Outlet Airflow (CFM)	Dilution Ratio	Fan RPM	Power (HP)	FEG	FEI	Motor (HP)	Outlet Vel (FPM)	Tip Speed (FPM)	Temp (°F)	ALT (ft)
202QMXHPD17LE17	5000	5000	100%	1725	3.68	75	1.10	5	3219	9145	70	1000

Individual Fan Sound Power by Octave Band

	1	2	3	4	5	6	7	8	LwA	dBA
Inlet	82	82	80	80	78	75	73	70	83	72
Outlet	87	85	82	82	78	73	69	66	83	72





COOK

MARK: EF-3
PROJECT: Highlands Building Rogers
DATE: 6/25/2026

Plume Information

Bifurcated Housing, Bottom Intake Mixing Box

QMXDLE/QMXHPDLE

System Design Conditions

SP (inwg)	Lab System Exhaust (CFM)	Bypass Airflow (CFM)	Total Inlet Airflow (CFM)	Fans/ System (Operating)	Fan Inlet Airflow (CFM)
2.00	5000	+	0	=	5000
				÷	1
				=	5000

Individual Fan Performance (Wheel Width = 50%)

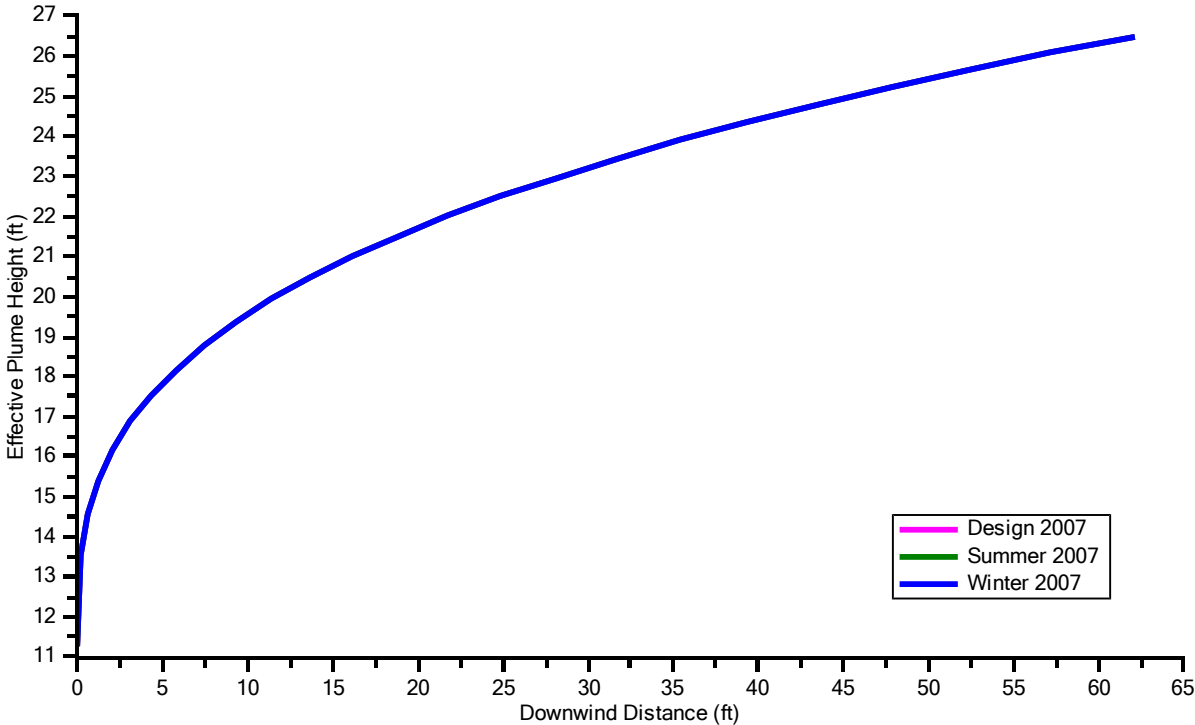
Catalog Number	Fan Inlet Airflow (CFM)	Outlet Airflow (CFM)	Dilution Ratio	Fan RPM	Power (HP)	FEG	FEI	Motor (HP)	Outlet Vel (FPM)	Tip Speed (FPM)	Temp (°F)	ALT (ft)
202QMXHPD17LE17	5000	5000	100%	1725	3.68	75	1.10	5	3219	9145	70	1000

Plume Information

Windspeed (MPH)	Building Height (ft)	Terrain Category	Calculation Method		Temperature (°F)		Plume Information (ft)					
					Lab Exhaust	Bypass	Plume Rise		*Unit Height		Effective Plume Ht	Plume Type
10.0	30	Flat, Water, Desert										
			ASHRAE 2007	Design	70	70	15.6	+	11.2	=	26.8	Momentum
			ASHRAE 2007	Summer	70	70	15.6	+	11.2	=	26.8	Momentum
			ASHRAE 2007	Winter	70	70	15.6	+	11.2	=	26.8	Momentum

*Unit Height includes 12" high curb.

Effective Plume Height vs. Distance





COOK

MARK: EF-3
PROJECT: Highlands Building Rogers
DATE: 6/25/2026

Flow Diagram
Bifurcated Housing, Bottom Intake Mixing Box

QMXDLE/QMXHPDLE

System Design Conditions

SP (inwg)	Lab System Exhaust (CFM)	Bypass Airflow (CFM)	Total Inlet Airflow (CFM)	Fans/ System (Operating)	Fan Inlet Airflow (CFM)
2.00	5000	+ 0	= 5000	÷ 1	= 5000

Individual Fan Performance (Wheel Width = 50%)

Catalog Number	Fan Inlet Airflow (CFM)	Outlet Airflow (CFM)	Dilution Ratio	Fan RPM	Power (HP)	FEG	FEI	Motor (HP)	Outlet Vel (FPM)	Tip Speed (FPM)	Temp (°F)	ALT (ft)
202QMXHPD17LE17	5000	5000	100%	1725	3.68	75	1.10	5	3219	9145	70	1000

- A: Total Lab Airflow
5000 CFM
- B: Total Bypass Airflow
0 CFM
- C: Total Outlet Airflow
5000 CFM



(Flow diagrams are for illustration only. Bottom intake shown, your configuration may vary.)



COOK

MARK: EF-3

PROJECT: Highlands Building Rogers

DATE: 6/25/2026

Dimensions

QMXDLE/QMXHPDLE

Laboratory Exhaust
Mixed-Flow Inline, Bifurcated Direct Drive
1x2 Mixing Box, Parallel Bypass

Dimensions (inches)

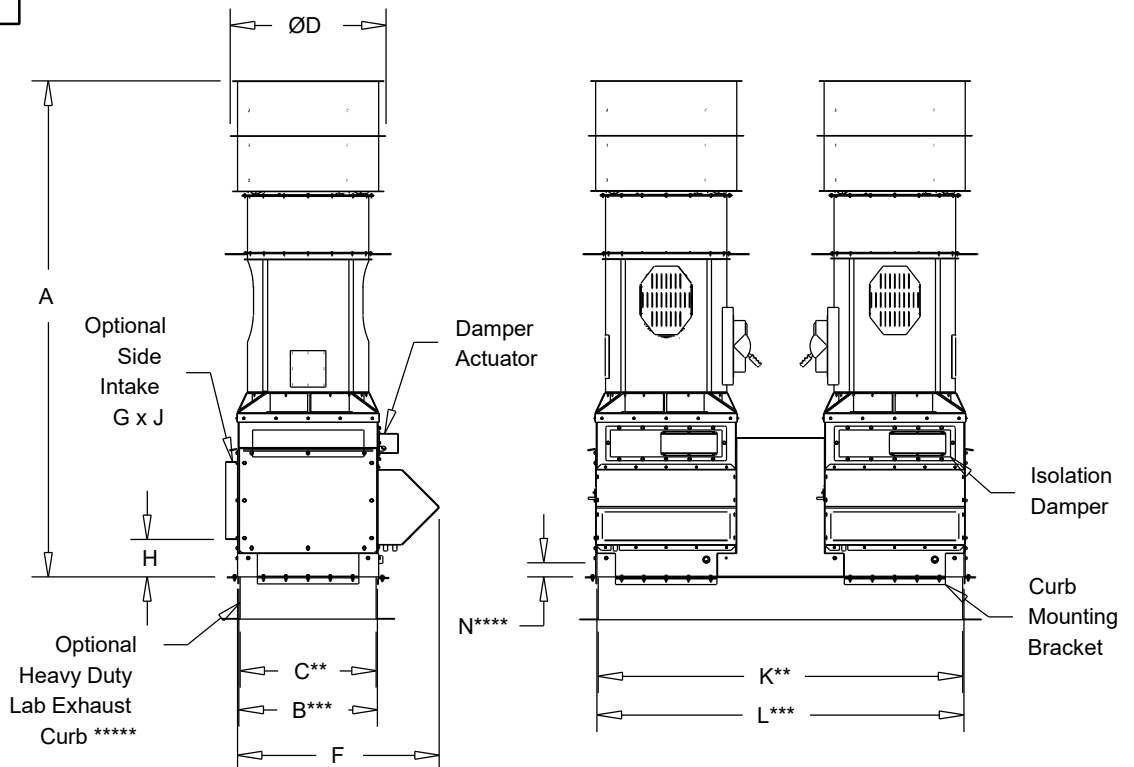
Model	202QMXHPD17LE17
A	125-13/16
B	38
C	36-15/16
D	37-15/16
F	54
G	22-9/16
H	8
J	28-9/16
K	89-1/8
L	90
M	52-9/16
N	3
*System Weight	3,681 (lb)

*Estimated Weight - includes fan motor and accessories.

**Recommended curb outside dimension.

***Mixing Box inside dimension.

****Dimension is from the bottom of the curb cap to the top of the curb.



***** Not intended to be supported by traditional sheetmetal roof curb, but by integral members of roof structure.



COOK

MARK: EF-3

PROJECT: Highlands Building Rogers

DATE: 6/25/2026

Features

Standard Construction

- High efficiency, non-overloading mixed-flow welded aluminum wheel
- Minimum 14 gauge steel welded bifurcated housing
- Welded aerodynamic straightening vanes
- Hinged discharge damper with windband
- Phenolic epoxy powder with UV protection (Light Gray)
- Bolted access door
- Lifting lugs
- Fan drain
- Reinforced curb cap
- SS hardware
- SS extended lube lines, when applicable
- NEMA 3R disconnect mounted and pre-wired
- Designed to withstand 125 mph wind *

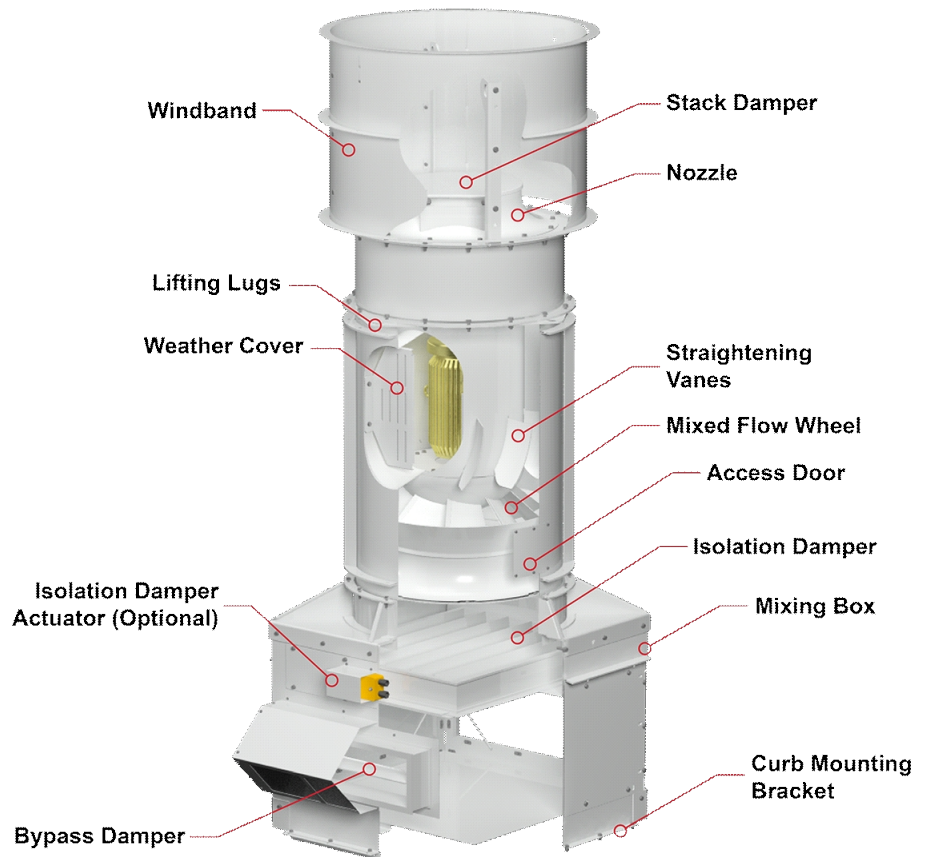
BYPASS PLENUM

- Single wall welded steel construction with inner angle frame
- Bottom inlet location
- Phenolic epoxy powder with UV protection (Light Gray)
- Plenum drain
- Bolted access door
- Painted aluminum bypass damper with manual hand quadrant
- Painted aluminum isolation damper with 2 position actuator
- Weather hood
- SS birdscreen
- SS hardware
- Designed to withstand 125 mph wind *

* Windload rating dependent on adequate attachment to roof structure

QMXDLE/QMXHPDLE

Laboratory Exhaust
Mixed-Flow Inline, Bifurcated Direct Drive
1x2 Mixing Box, Parallel Bypass



(Standard Construction Features are for illustration only, your configuration may vary.)

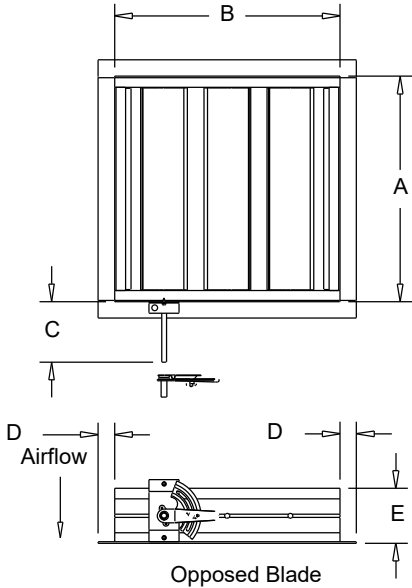
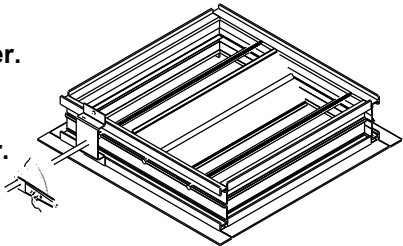


Bypass Damper

Low Leakage Class 1A Rated
for QMXHP Mixing Box
Aluminum

STANDARD CONSTRUCTION FEATURES:

- Frame: 5"x1"x 6063T5 extruded hat channel with .125" minimum wall thickness.
- Blades: 6" wide, 6063T5 heavy gauge extruded aluminum, airfoil shape. Opposed blade standard.
- Seals: Synthetic polymer blade edge seals and flexible SS compressible jamb seals.
- Bearings: Molded synthetic.
- Linkage: Concealed in frame.
- Axles: 1/2" plated steel hex.
- Temperature Limits: -72 and +275 degrees F.
- Damper provided with manual hand quadrant.
- Actuator out of Airstream, protected from weather. Available in 24vdc or 24vac.
- Power Open/Spring Close (Reversible).
- Finish: Air-dry enamel coating to match fan color.



Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E	Panels
EF-3	2	BYPASS DAMPER-24V	25-1/2	11-1/2	9-1/4	1-1/2	5	1

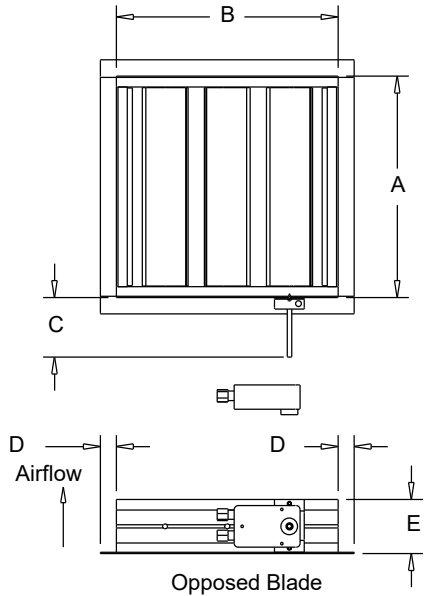
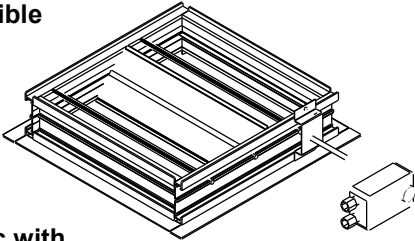


Isolation Damper

Low Leakage Class 1A Rated
for QMX/HP Mixing Box
Aluminum

STANDARD CONSTRUCTION FEATURES:

- Frame: 5"x1"x 6063T5 extruded hat channel with .125" minimum wall thickness.
 - Blades: 6" wide, 6063T5 heavy gauge extruded aluminum, airfoil shape. Opposed blade standard.
 - Seals: Synthetic polymer blade edge seals and flexible SS compressible jamb seals.
 - Bearings: Molded synthetic.
 - Linkage: Concealed in frame.
 - Axles: 1/2" plated steel hex.
 - Temperature Limits: -72 and +275 degrees F.
 - Actuator out of Airstream, protected from weather.
- Sizes 90-202 available in 115v (230, 460, and 575vac with transformer)
Sizes 225-600 available in 24-124vdc or 24-230vac (460 and 575vac with transformer)
Power Open/Spring Close (Reversible).
- Finish: Air-dry enamel coating to match fan color.



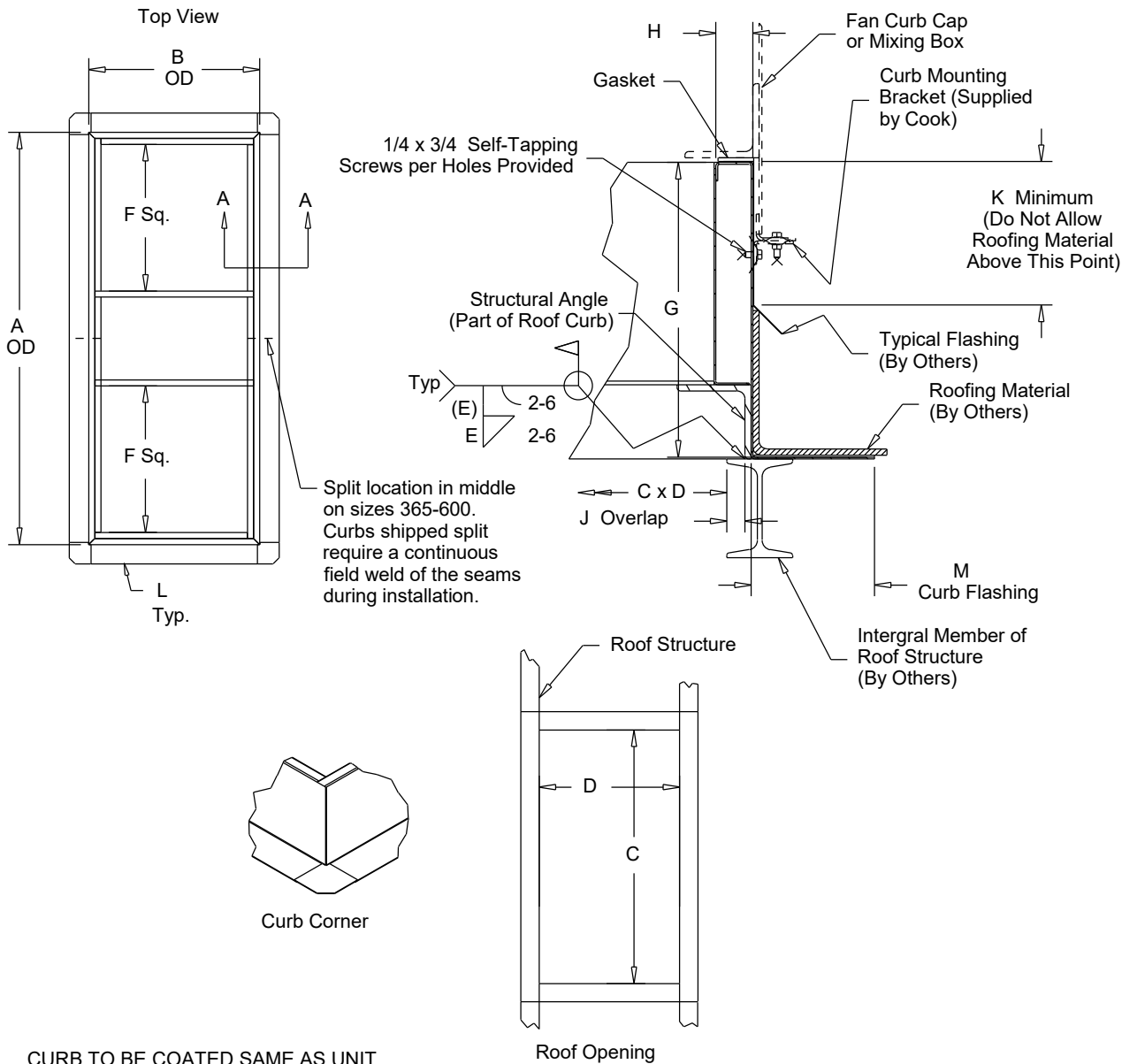
Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E	Panels
EF-3	2	ISOLATN DMPR-230/460	34-1/2	26-1/2	6	1-1/2	5	1



LECQ

Lab Exhauster Curb
Coated Steel
Dual (1x2) Configuration
12" High



CURB TO BE COATED SAME AS UNIT

Note: All lab Exhaust Curbs require a steel integral member of the roof structure with an inside dimension of "C" x "D". The curb must have the structural angle field welded to the steel roof structure. Steel roof structure to be determined by the engineer of record.

Dimensions (inches)

Mark	Qty	Description	A	B	C	D	E	F	G	H	J	K	L	M	GA.THK.
EF-3	1	LECQ 202	89-1/8	36-15/16	87-7/16	35-1/4	1/4	30-3/4	12	1-1/2	1/2	6	5	4-7/8	12

Submittal

JOB NAME	Highlands Building at Pinnacle Hills Rogers
JOB NUMBER	26ADCA0017-1
PRODUCT	Inline Duct Exhaust Fans
MANUFACTURER	Loren Cook
LOCATION	Rogers, AR
DATE	June 25, 2026
SPECIFICATION	23 34 23
LEAD TIME	8 Weeks
ENGINEER	IMEG
CONTRACTOR	Knight & Wilson
SUBMITTED BY	Chris Atwood



COOK



MARK: EF-4

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

SQN-D VF

Centrifugal Square Inline

Direct Drive

Preprogrammed EC

Electronically Commutated Vari-Flow® Motor

STANDARD CONSTRUCTION FEATURES:

All aluminum wheel - Galvanized 18 gauge steel

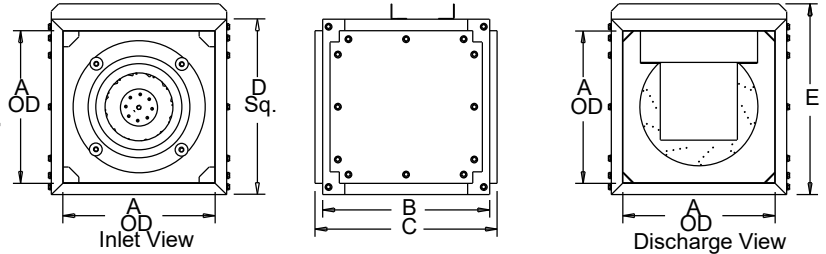
housing - Three removable access doors - Closed cell

neoprene gasketing - Inlet and discharge duct collars -

Universal mounting feet - Preprogrammed EC

electronically commutated Vari-Flow® motor/drive

package - Transit tested packaging.



Performance

Qty	Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power (HP)	FEG	Speed Control
1	150SQN17D (VF)	1800	.500	1185	.342	n/a(<1HP)	EC

Altitude (ft): 1000 Temperature (F): 70

Motor Information

HP	RPM*	Volts/Ph/Hz	Enclosure	RLA
1/2	1725	115/1/60	OPEN -EC	6.4



*Motor programmed to max speed of 1285 RPM.

RLA based on motor manufacturer's data at programmed HP and max RPM.

Motor is electronically/thermally protected.

Sound Data Sound Power by Octave Band

	1	2	3	4	5	6	7	8	LwA	dBA	Sones
Inlet	65	71	79	73	65	64	58	52	75	63	11.5
Outlet	68	79	67	69	69	67	60	54	74	62	11.1

- Distance from Sound source 5 ft

Accessories:

FAN MOUNTED SPEED CONTROL
DISCONNECT NEMA 1 PRE-WIRED
BD-20 DAMPER
RF-55 SET(4) - ISOLATORS

Dimensions (inches)

A	20
B	21-7/8
C	23-7/8
D Sq	23
E	25-1/16
Housing Gauge	18

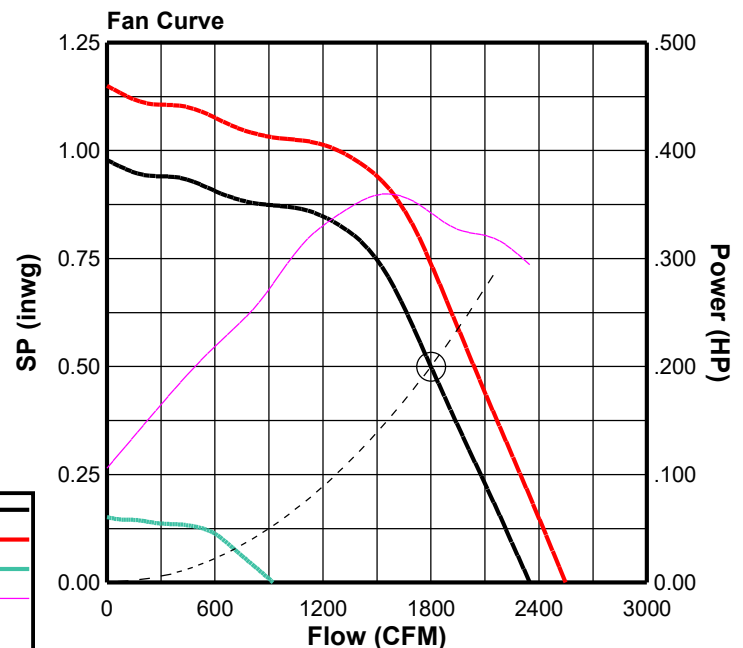
NOTE: Accessories may affect dimensions shown.

Weight(lb)***	Shipping	195	Unit	115
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***Includes fan, motor & accessories.

Fan Curve Legend

CFM vs SP (1185)	—
100% EC (1285)	—
Min EC (466)	—
CFM vs HP	—
Point of Operation	○
System Curve	—





COOK



MARK: EF-4

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

SQN-D VF

Performance

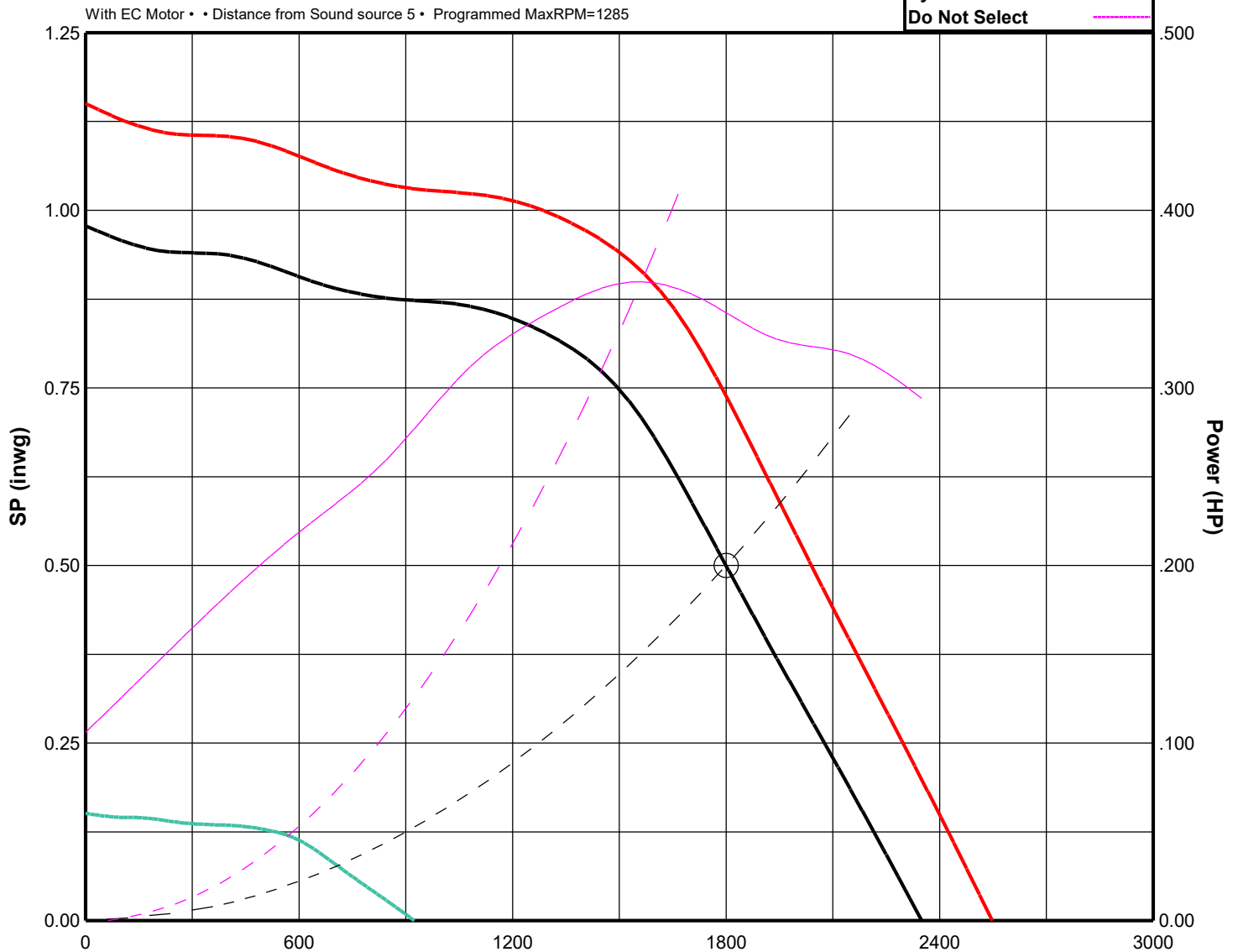
Catalog Number	Flow (CFM)	SP (inwg)	Fan RPM	Power (HP)	FEG	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
150SQN17D (VF)	1800	.500	1185	.342	n/a(<1HP)	648	4653	41%	70	1000

Sound Data Sound Power by Octave Band

	1	2	3	4	5	6	7	8	LwA	dBA	Sones
Inlet	65	71	79	73	65	64	58	52	75	63	11.5
Outlet	68	79	67	69	69	67	60	54	74	62	11.1

Fan Curve Legend

CFM vs SP (1185)	—
100% EC (1285)	—
Min EC (466)	—
CFM vs HP	—
Point of Operation	○
System Curve	- - -
Do Not Select	- · - · -





COOK

SQN-D VF

MARK: EF-4

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



Loren Cook Company certifies that the 150SQN17D shown herein is 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.

Performance certified is for installation type B: free inlet, ducted outlet. Power rating (BHP/kW) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet Lwi, LwiA and outlet Lwo, LwoA sound power levels for installation type B: free inlet, ducted outlet. Outlet ratings include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301.

The sound ratings shown are loudness values in hemispherical sones at 5 ft. in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation type B: free inlet, ducted outlet hemispherical sone levels. Outlet ratings do not include the effect of duct end correction. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to Octave Bands and LwA only. Sone ratings and dBA levels are not AMCA International licensed.



COOK



MARK: EF-7

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

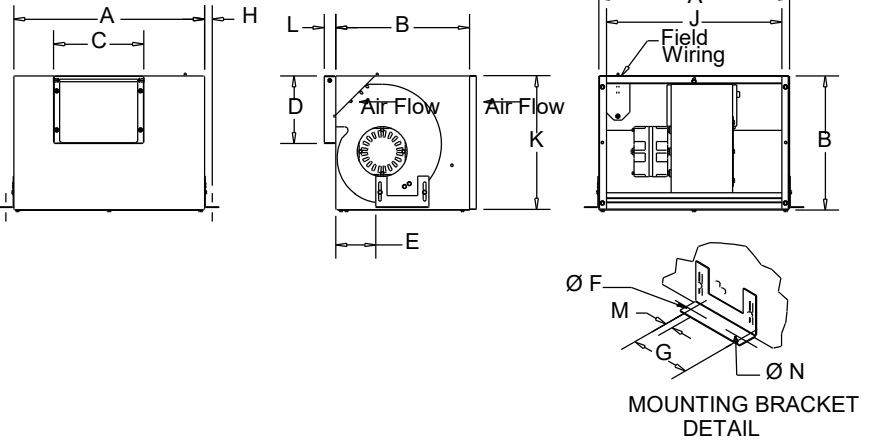
GEMINI Vari-Flow®

Inline Blowers

300, 500, 700 Series

STANDARD CONSTRUCTION FEATURES:

Forward curved galvanized steel fan wheel -
Corrosion resistant galvanized steel fan housing -
Acoustically insulated housing - Aluminum backdraft damper with solid aluminum hinge rod mounted in nylon bushings - Permanently lubricated variable speed electronically commutated motor with built-in electronic overload protection and disconnect plug - Interchangeable panels with removable fasteners allows the intake to be easily changed - Internal wiring box with disconnect receptacle



Performance

Qty	Catalog Number	Flow (CFM)	SP (inwg)	Nominal RPM	Input Watts	Speed Control
1	GNVF-700	200	.250	882	15	EC

Altitude (ft): 1000 Temperature (F): 70

Motor Information

Volts/Ph/Hz	Nameplate Amps
115/1/60	4.4



Motor is electronically/thermally protected.

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
51	53	51	45	43	40	36	31	49	37	1.4

- Distance from Sound source 5 ft

Accessories:

TYPE M1 INTERNAL CRL
DISCONNECT NEMA 1 PRE-WIRED - GEM
GEMINI ISOLATOR KIT - ISOLATORS

Dimensions (inches)

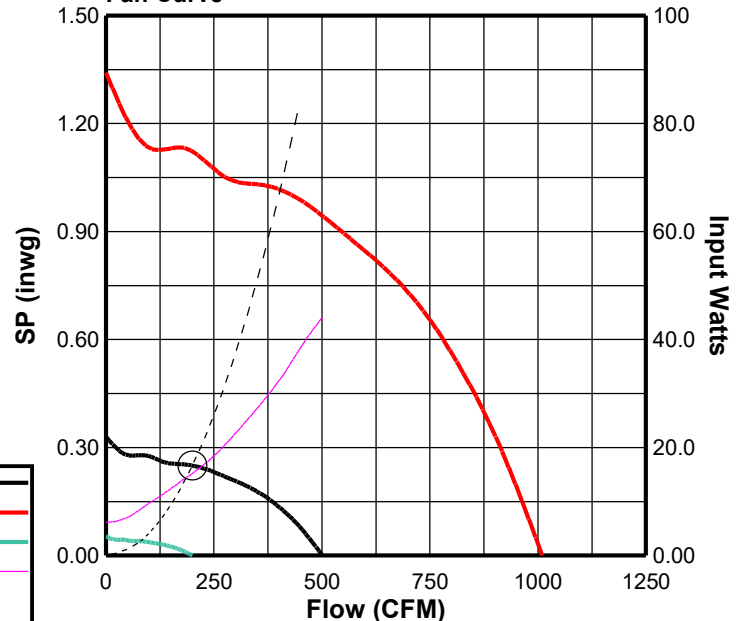
A	21	K-Inlet	11-15/16
B	12	M	1/2
C-Outlet	10-1/2	N	3/16
D-Outlet	4-3/4		
L	1		
E	3-9/16		
F	1/2		
G	4		
H	13/16		
J-Inlet	20-7/8		

NOTE: Accessories may affect dimensions shown.

Weight(lb)***	Shipping	48	Unit	40
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***Includes fan, motor & accessories.

Fan Curve



Fan Curve Legend

CFM vs SP (882)	—
100% EC (1778)	—
Min EC (352)	—
CFM vs Watts	—
Point of Operation	○
System Curve	—



COOK



MARK: EF-7

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

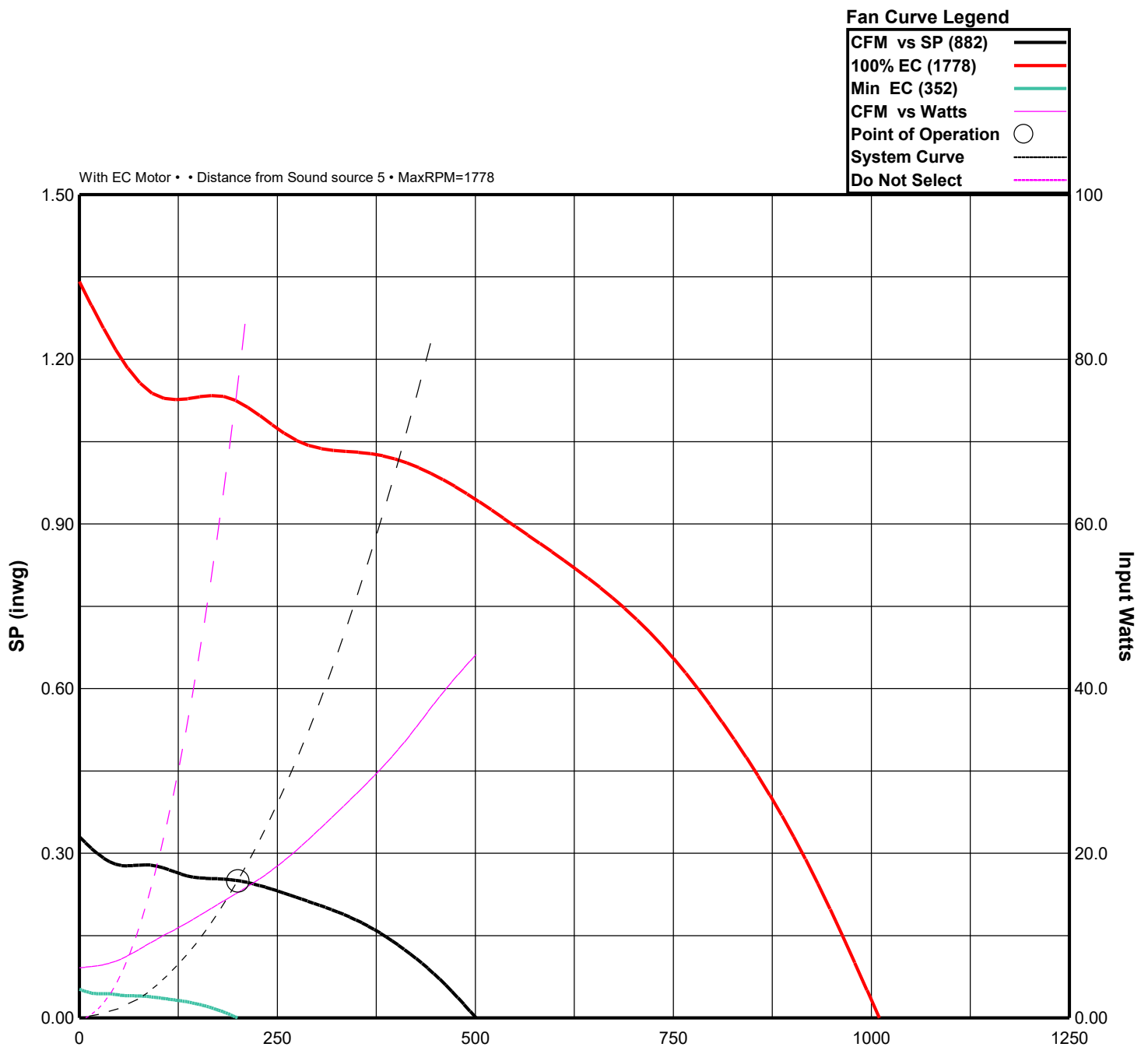
GEMINI Vari-Flow®

Performance

Catalog Number	Flow (CFM)	SP (inwg)	Nominal RPM	Input Watts	OVEL (FPM)	TSPD (FPM)	SE	Temp (°F)	ALT (ft)
GNVF-700	200	.250	882	15	577	1458	48%	70	1000

Sound Data Inlet Sound Power by Octave Band

1	2	3	4	5	6	7	8	LwA	dBA	Sones
51	53	51	45	43	40	36	31	49	37	1.4





COOK

GEMINI Vari-Flow[®]

MARK: EF-7

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

AMCA License Information



Loren Cook Company certifies that the GNVF-700 shown herein is 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.

Performance certified is for installation type B: free inlet, ducted outlet. Speed (RPM/RPS) shown is nominal. Performance is based on actual speed of test. Performance ratings include the effects of inlet grille and backdraft damper. The sound ratings shown are loudness values in spherical sones at 5 ft. in a spherical free field calculated per AMCA Standard 301. Values shown are for Installation type B: free inlet spherical sone levels.



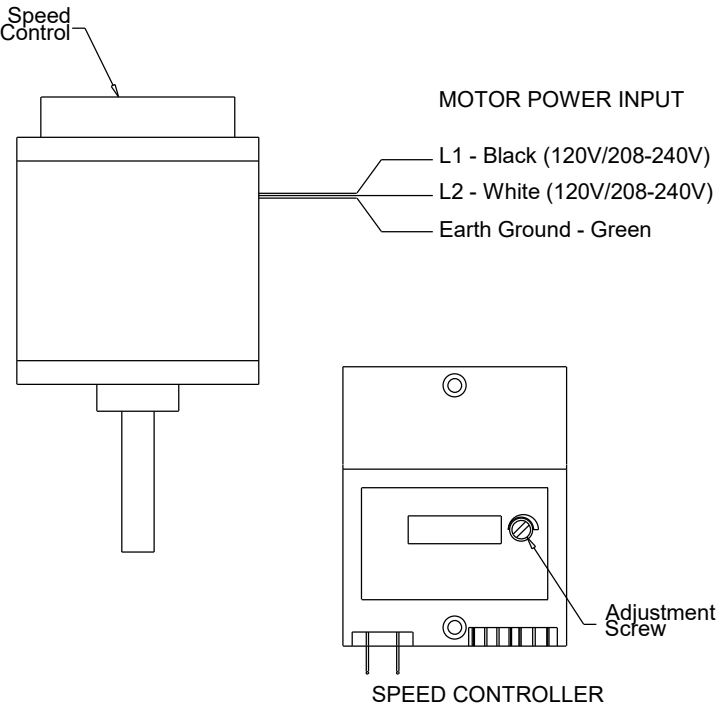
The sound power level ratings shown are in decibels, referred to 10(-12) watts calculated per AMCA Standard 301. Values shown are for inlet Lwi and LwiA sound power levels for installation type B: free inlet, ducted outlet. Ratings do not include the effects of duct end correction. The A-weighted sound ratings shown have been calculated per AMCA Standard 301. The dBA levels shown have been calculated for a distance of 5 ft in a hemispherical free field. The AMCA Certified Ratings Seal applies to sone ratings only. Octave Band, LwA and dBA levels are not AMCA International licensed.



Speed Control

Internal Speed Control
Electronically Commutated (EC) Motor
Type N

STANDARD CONSTRUCTION FEATURES:
Some motors come with a factory programmed maximum RPM for specific applicaitons - Integral potentiometer with slotted screw for speed adjustment.



Dimensions (inches)

Mark	Qty	Description
EF-4	1	OPEN -1/2HP - 115V/1 PH/ 60 1725/0000-EC



BD

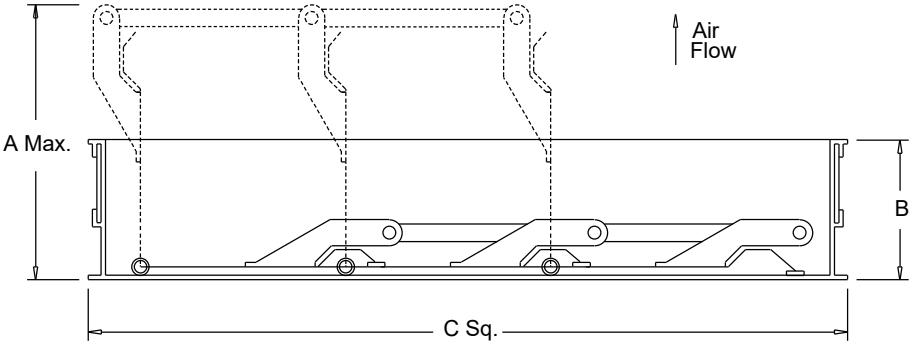
Gravity Backdraft Damper

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)

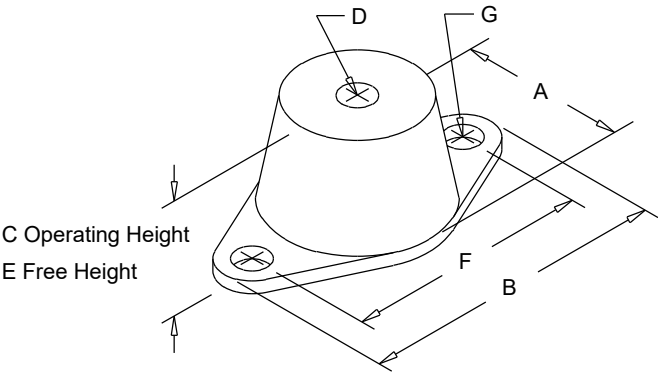
Mark	Qty	Description	A Max.	B	C Sq.	# Panels
EF-4	1	BD-20 DAMPER	5-3/16	1-7/8	19-3/4	1



RIS FLOOR

Rubber-In-Shear
Isolator
Floor Mounted

NOTE:
Dimensions are for informational
purposes only - Not for construction.



Dimensions (inches)

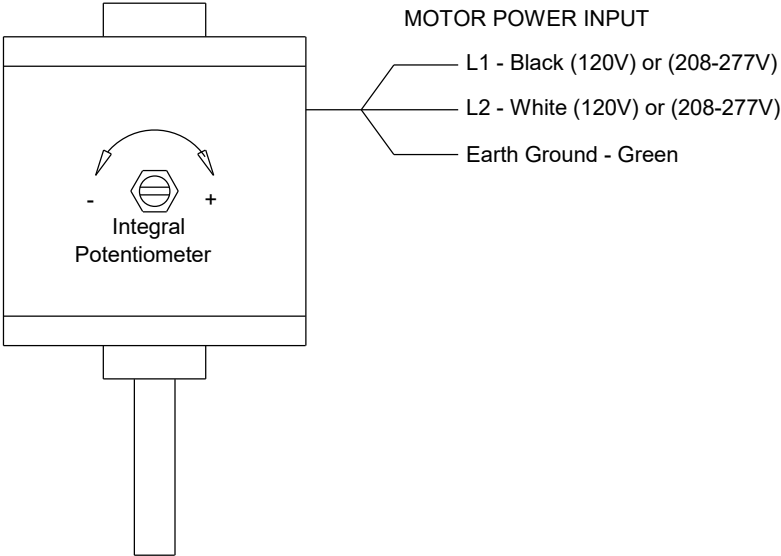
Mark	Qty	Description	A	B	C	D	E	F	G
EF-4	1	RF-55 SET(4)	1-13/16	3-3/16	1-3/32	5/16 UNC	1-1/2	2-3/8	11/32



Speed Control

Internal Speed Control
Electronically Commutated (EC) Motor
Type M1

STANDARD CONSTRUCTION FEATURES:
Integral potentiometer with slotted screw for speed adjustment.



Dimensions (inches)

Mark	Qty	Description
EF-7	1	TYPE M1 INTERNAL CRL



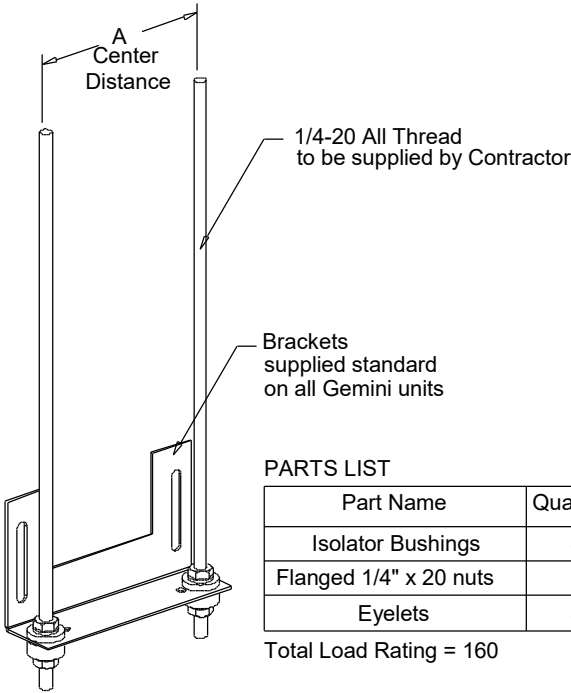
COOK

PROJECT: Highlands Building Rogers

DATE: 06/25/2026

GEMINI

**Gemini Isolator Kit
GIK
Rubber In Shear**



Dimensions (inches)

Mark	Qty	Description	Part #	A
EF-7	1	GEMINI ISOLATO	GIK	4