

Clark & Enersen | 2020 Baltimore Avenue Suite 300 Kansas City MO 64108-1914 United States

PROJECT: UAMS Biomed Bldg Viv Reno 769-017-22 DATE SENT: 4/1/2025

SUBJECT: 233423-05 - Exhaust Fan Schedule_Rev1_Cx Review Submittal ID: 233423-05

TYPE: Submittal TRANSMITTAL ID: 00221

PURPOSE: Approved VIA: Email

SPEC SECTION: 23 34 23

FROM

NAME	COMPANY	EMAIL	PHONE
Lance Nozik	Clark & Enersen	Lance.Nozik@clarkenersen.com	816.474.8237

TO

NAME	COMPANY	EMAIL	PHONE
Tamara Barron	UAMS	TBarron@uams.edu	

REMARKS:

CONTENTS

QUANTITY: 1 DATED: 4/1/2025 NUMBER:

DESCRIPTION:

Submittal ID 233423-05 - Submittal ID 233423-05 - 233423-05 - Exhaust Fan Schedule_Rev1_Cx Review.pdf

ACTION:

REMARKS:

Bernhard Commissioning Submittal Review

Project Name
UAMS CAMID



- Reviewed - Comments
- Reviewed - No Comments
- Not in Scope
- For Information Only

BY mpool **DATE** 2/27/2025

SUBMITTAL # 233423 **SPEC**

This submittal has been reviewed by the Commissioning Provider for general conformance related to the commissioning requirements in the contract documents and Owner's Project Requirements document. This review is not intended to verify overall equipment compliance of the design intent and no design direction shall be inferred or implied. The Designer of Record shall verify overall compliance of the design intent according to the contract documents.

- REVIEWED
- REVIEWED AND NOTED
- REVISE AND RESUBMIT
- REJECTED

Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with requirements of the drawings and specifications. This check is only for review of general conformance with design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication process and techniques of construction; coordinating their work with that of all other trades; and performing their work in a safe and satisfactory manner.

CLARK & ENERSEN

By Chris Sharp Date 3/31/2025



CDI CONTRACTORS CDI Contractors, LLC
 3000 Cantrell Road
 Little Rock AR 72202

Transmittal
No 2025.02.26-1

PROJECT: UAMS- CAMID

DATE: Feb 26, 2025

To: UAMS
 4301 W MARKHAM ST. SLOT 545
 LITTLE ROCK AR 72205
 US

RE: 233423-05 Exhaust Fan Schdule

ATTN: TAMARA BARRON

JOB: 240147

WE ARE SENDING:		SUBMITTED FOR:		ACTION TAKEN:	
<input type="checkbox"/>	Shop Drawings	<input checked="" type="checkbox"/>	Approval	<input type="checkbox"/>	Approved as Submitted
<input type="checkbox"/>	Letter	<input type="checkbox"/>	Your Use	<input type="checkbox"/>	Approved as Noted
<input type="checkbox"/>	Prints	<input type="checkbox"/>	As Requested	<input type="checkbox"/>	Returned After Loan
<input type="checkbox"/>	Change Order	<input type="checkbox"/>	Review and Comment	<input checked="" type="checkbox"/>	Resubmit
<input type="checkbox"/>	Plans	<input type="checkbox"/>		<input type="checkbox"/>	Submit
<input type="checkbox"/>	Samples	SENT VIA:		<input type="checkbox"/>	Returned
<input type="checkbox"/>	Specifications	<input type="checkbox"/>	Attached	<input type="checkbox"/>	Separate Cover
<input type="checkbox"/>	Other: Product Data	<input type="checkbox"/>		<input checked="" type="checkbox"/>	Due Mar 07, 2025
<input type="checkbox"/>	Submittal:	<input type="checkbox"/>		<input type="checkbox"/>	Other:

Line	Item	Package	Code	Rev.	QTY	Date	Description	Status
1	Submittal		233423-05	2		Feb 26, 2025	Exhaust Fan Schedule	Submitted

REMARKS:

CC:

Signed: _____
 Scott Treadway

 CDI CONTRACTORS, LLC	
<input type="checkbox"/> APPROVED AS NOTED	<input type="checkbox"/> REJECTED
<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> REVISE
BY treadws	DATE 2/26/2025
SUBMITTAL# 233423-05	SPEC 233423
<small>This submittal has been reviewed for compliance with the contract documents. Approval does not relieve the subcontractor/supplier of the responsibility for conformance to the quality standards as set forth in the contract document, nor does it relieve the responsibility for field verification of all conditions relating to this contract.</small>	

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 2/25/2025
Return Request: 3/10/2025
Project: UAMS (CAMID)
Supplier: Airetech
Manufacturer: Greenheck
Submittal: Power Ventilators Re-Submittal #1
Submittal Number: 23 34 23-01
Drawing # and Installation: Mechanical Drawings

ARCHITECT

Clark Kenersen
2020 Baltimore Avenue, Suite 300
Kansas City, MO 64108
816-474-8237

ENGINEER

Clark Kenersen
2020 Baltimore Avenue, Suite 300
Kansas City, MO 64108
816-474-8237

GENERAL CONTRACTOR

CDI Contractors
3000 Cantrell Rd.
Little Rock, AR 72202
501-666-4300

MECHANICAL SUBCONTRACTOR

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

Notes:

CSUSA PROJECT NO.

22-6069

sean@comfortar.com

9924 Landers Rd.
No. Little Rock, AR 72117



RE- SUBMITTAL DATA

EQUIPMENT: Greenheck Exhaust Fans

TAGS: EF-4, 5, 6 & 7 (Rated in N & N-1 Operation)
EF-10 (Revised Electrical & Coating)

PROJECT: UAMS CAMID
325 Jack Stephens Dr.
LOCATION: Little Rock, Arkansas

ENGINEER: James R. Beecher

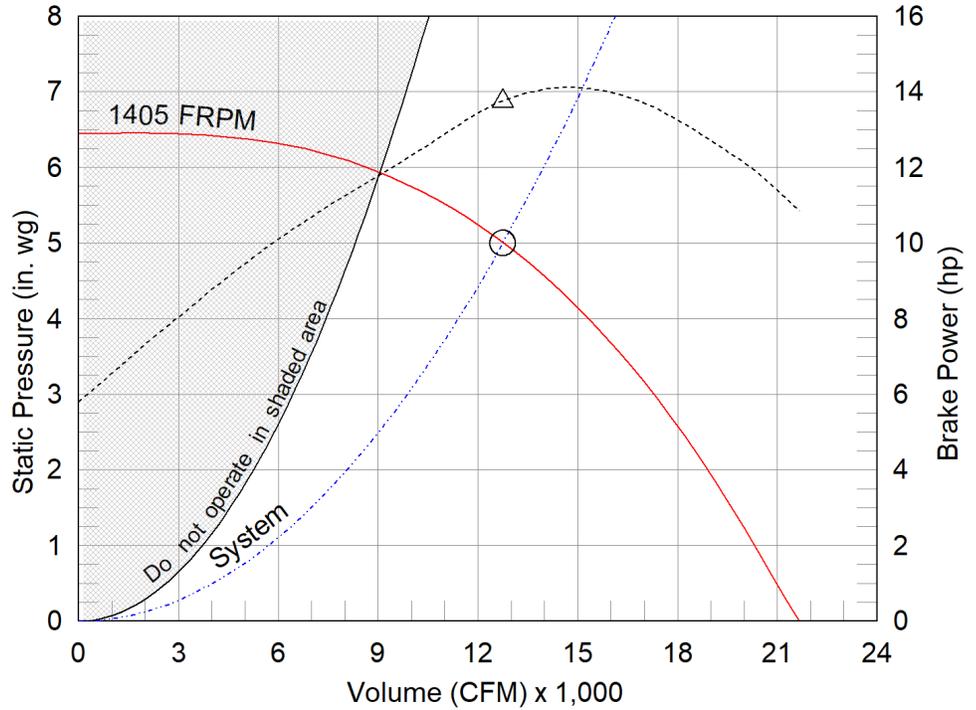
CONTRACTOR: The logo for Comfort Systems USA Arkansas features the words 'COMFORT SYSTEMS' in a bold, black, sans-serif font, followed by 'USA' in a larger, bold, red and blue font. Below this, the word 'ARKANSAS' is written in a smaller, black, sans-serif font, with each letter separated by a space.

DATE: 2/7/2025

SUBMITTED BY: Forrest Moseley
forrest@airetechcorp.com

Performance	
Quantity	1
Volume (CFM)	12,750
Total External SP (in. wg)	5
Operating Power (hp)	13.74
Required Power (hp)	27.49
Fan RPM	1405
Max Fan RPM	2,182
Oper. Frequency (Hz)	48
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

Model: USF-30
Universal Single Width Fan
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	30
Wheel Type	AF
Arrangement	4
Drive Type	Direct
Class	III
Rotation	CCW
Discharge Position	UB
Construction Type	Welded Scroll
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Cone Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	902
Motor/Drive (lb)	579
Accessories (lb)	151
Fan Total (lb)	1,632

Misc Fan Data	
Fan Energy Index (FEI)	1.31
Outlet Velocity (ft/min)	2,462
Static Efficiency (%)	73
Tip Speed (ft/min)	11,032
Shaft Bearing Type	N/A
Bearing Life Calculation	N/A

Motor and Drives	
Motor	Included
Size (hp)	40
RPM	1770
Enclosure	ODP
V/C/P	460/60/3
Frame Size	324T
Max Frame Size	405
Location	Centered
MCA* (Amps)	65
MOP* (Amps)	90
SCCR* (Kiloamps)	5

Nameplate Model: USF-30-5-A2-00-02-02

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	98	97	93	87	83	79	75	75	90	79	34
Outlet	94	93	93	88	84	80	81	81	91	80	36

*Values are estimated and subject to change. Actual values provided on fan at time of manufacture.

LwA - A weighted sound power level, based on ANSI S1.4

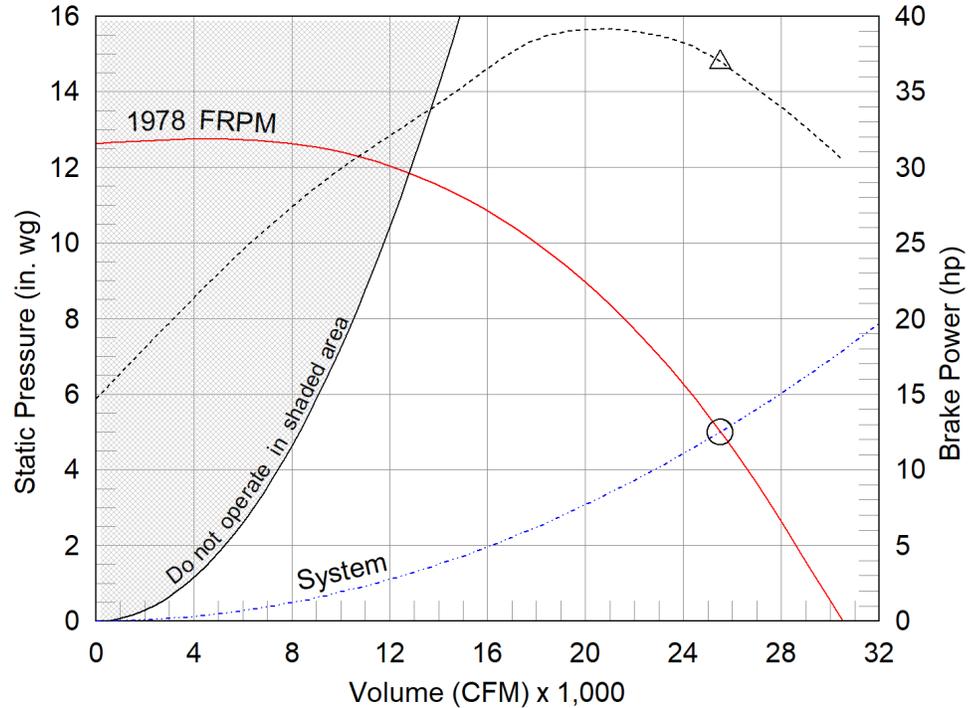
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Sones - calculated using AMCA 301 at 5 ft



Performance	
Quantity	1
Volume (CFM)	25,500
Total External SP (in. wg)	5
Operating Power (hp)	36.92
Required Power (hp)	36.92
Fan RPM	1978
Max Fan RPM	2,182
Oper. Frequency (Hz)	67
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

Model: USF-30
Universal Single Width Fan
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	30
Wheel Type	AF
Arrangement	4
Drive Type	Direct
Class	III
Rotation	CCW
Discharge Position	UB
Construction Type	Welded Scroll
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Cone Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	902
Motor/Drive (lb)	600
Accessories (lb)	151
Fan Total (lb)	1,653

Misc Fan Data	
Fan Energy Index (FEI)	1.16
Outlet Velocity (ft/min)	4,925
Static Efficiency (%)	54
Tip Speed (ft/min)	15,538
Shaft Bearing Type	N/A
Bearing Life Calculation	N/A

Motor and Drives	
Motor	Included
Size (hp)	40
RPM	1770
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	324T
Max Frame Size	405
Location	Centered
MCA* (Amps)	65
MOP* (Amps)	90
SCCR* (Kiloamps)	5

Nameplate Model: USF-30-5-A2-00-02-02

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	105	106	105	101	97	92	87	86	103	91	72
Outlet	106	104	104	101	98	93	90	90	103	92	76

*Values are estimated and subject to change. Actual values provided on fan at time of manufacture.

LwA - A weighted sound power level, based on ANSI S1.4

dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Sones - calculated using AMCA 301 at 5 ft



Model: USF-30

Universal Single Width Fan

Standard Construction Features:

HOUSING: Class II and under feature Perma-Lock construction on sizes 4 - 49 and continuously welded on sizes 54 - 73 and all class III fans - Unit support angles with mounting holes - Adjustable motor plate - Corrosion resistant fasteners - Inlet collars - Outlet flange standard on sizes 27 - 73 and all class III fans - Untreated steel parts are processed through a multi-stage cleaning and pre-treatment and then finished with a high-performance powder coating. Sizes 24 and less are rotatable in 45 deg. increments. Sizes 27 to 40 are rotatable in 90 deg. increments. Sizes greater than 40 and all class III are not rotatable.

BEARINGS, SHAFT, AND WHEEL: Air handling quality, self-aligning, ball bearing in pillow block housing - Polished, solid steel shafts with rust inhibitor - Centrifugal wheel

Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted & Wired

Motor with Aegis Shaft Grounding

Motor with Class B or Greater Insulation

Finish - Coated

Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories

Isolation Base, Factory Mounted, Isolator-Spring, Free Standing, 1 Inch, Indoor Use Only, Base

Coating - Permatecor

Housing - Welded Scroll

Arrangement - 4

Wheel - Airfoil

UL Listed for UL/cUL-705 - "Power Ventilators"

Access Door - Bolted

Drain Connection - 1 inch threaded female

Inlet Connection, Slip Fit

Outlet Flange, Punched

Motor Cover - Steel Construction

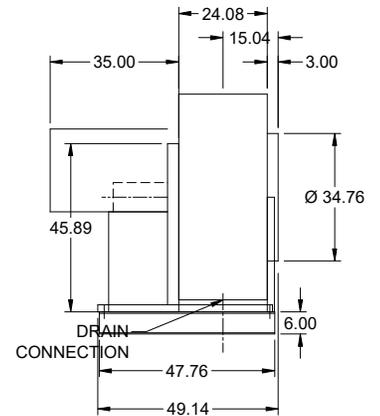
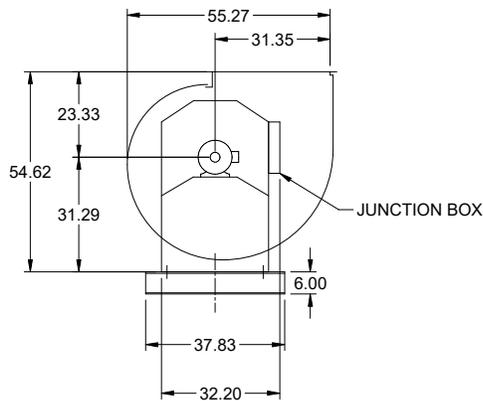
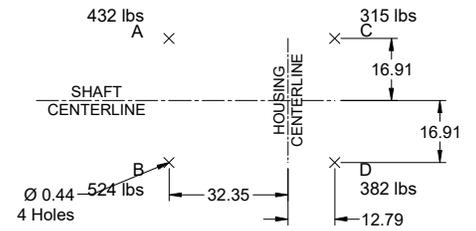
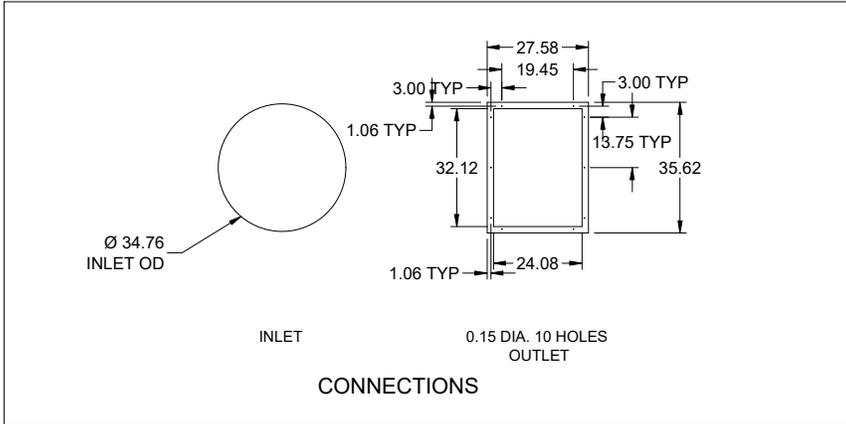
Fasteners - Stainless

Factory Vibration Test, 0.1 in/sec, Peak, Filter-in as measured at the fan RPM

Unit Warranty: 1 Yr (Standard)

Model: USF-30

Universal Single Width Fan



Notes: All dimensions shown are in units of in.

Isolation Base

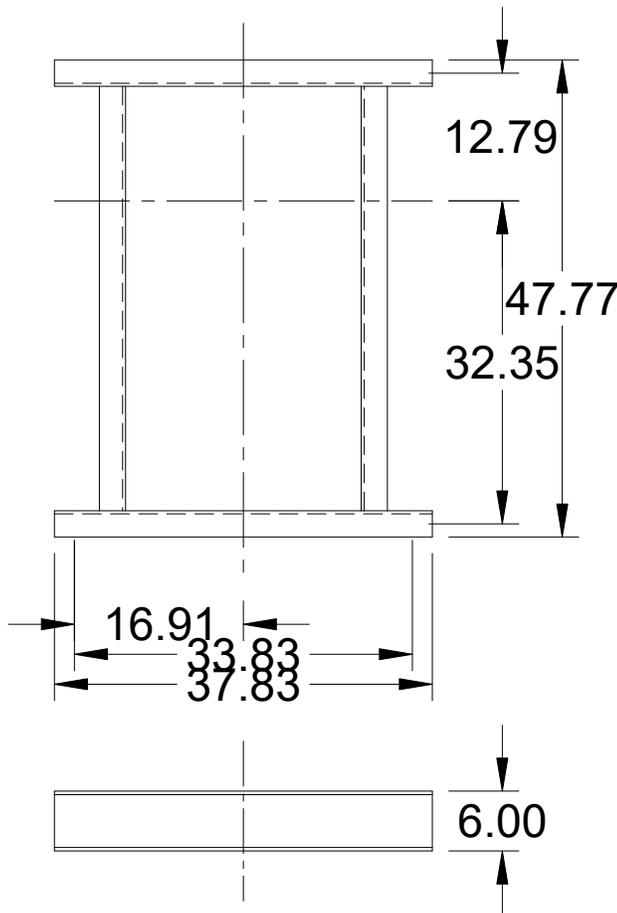
Type: Isolation Base

Standard Construction Features:

-Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

W/W Fan Configuration

Model:	USF-30	Class:	III
Arrangement:	4	Motor Frame Size:	324T
Rotation:	CCW	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Motor Position:	Centered	Corner Weight A (lb):	432
Corner Weight A (lb):	432	Corner Weight B (lb):	524
Corner Weight C (lb):	315	Corner Weight D (lb):	382



Notes: All dimensions shown are in units of in.

Isolators

Type: Spring, Free Standing, 1 Inch

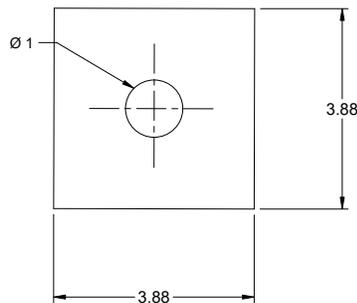
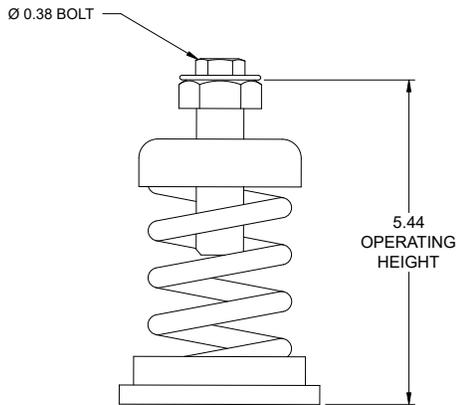
Standard Construction Features:

Laterally stable spring mounts. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

Fan Configuration

Model: USF-30
Arrangement: 4
Rotation: CCW
Motor Position: Centered
Isolator Color A: Green
Isolator Color C: Green
Isolator Description A: FDS-1-450
Isolator Description C: FDS-1-450
Isolator Manufacturer: Kinetics

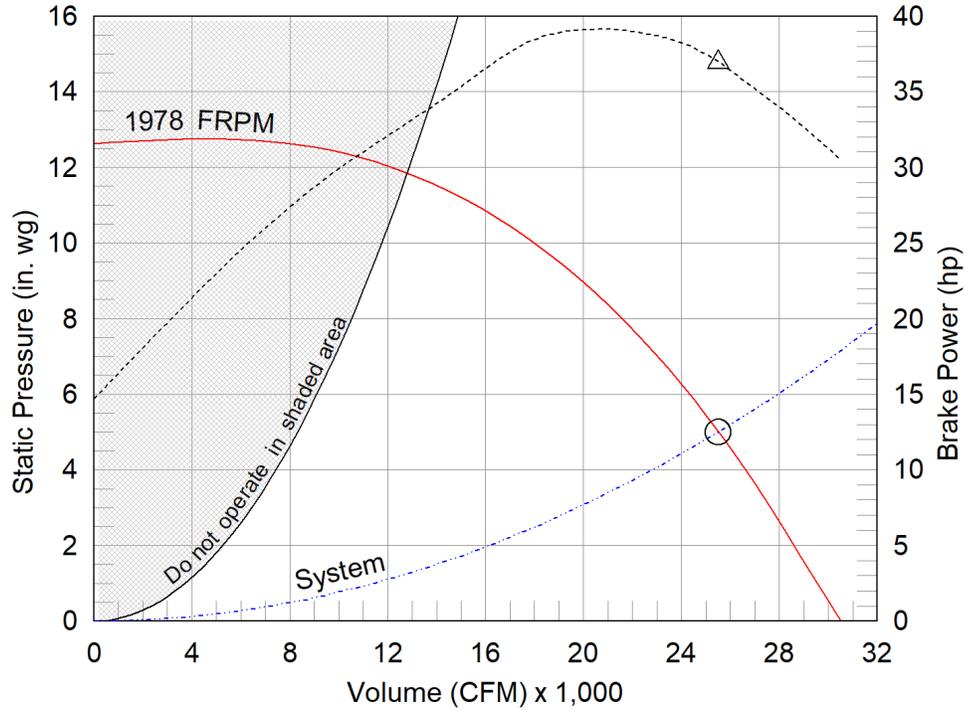
Discharge Position: UB
Class: III
Motor Frame Size: 324T
Isolator/Deflection: Spring, Free Standing, 1 Inch
Isolator Color B: Black
Isolator Color D: Green
Isolator Description B: FDS-1-625
Isolator Description D: FDS-1-450



Notes: All dimensions shown are in units of in.

Performance	
Quantity	1
Volume (CFM)	25,500
Total External SP (in. wg)	5
Operating Power (hp)	36.92
Required Power (hp)	36.92
Fan RPM	1978
Max Fan RPM	2,182
Oper. Frequency (Hz)	67
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

Model: USF-30
Universal Single Width Fan
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	30
Wheel Type	AF
Arrangement	4
Drive Type	Direct
Class	III
Rotation	CW
Discharge Position	UB
Construction Type	Welded Scroll
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Cone Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	902
Motor/Drive (lb)	600
Accessories (lb)	151
Fan Total (lb)	1,653

Misc Fan Data	
Fan Energy Index (FEI)	1.16
Outlet Velocity (ft/min)	4,925
Static Efficiency (%)	54
Tip Speed (ft/min)	15,538
Shaft Bearing Type	N/A
Bearing Life Calculation	N/A

Motor and Drives	
Motor	Included
Size (hp)	40
RPM	1770
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	324T
Max Frame Size	405
Location	Centered
MCA* (Amps)	65
MOP* (Amps)	90
SCCR* (Kiloamps)	5

Nameplate Model: USF-30-5-A2-00-02-02

Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	105	106	105	101	97	92	87	86	103	91	72
Outlet	106	104	104	101	98	93	90	90	103	92	76

*Values are estimated and subject to change. Actual values provided on fan at time of manufacture.

LwA - A weighted sound power level, based on ANSI S1.4

dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Sones - calculated using AMCA 301 at 5 ft



Model: USF-30

Universal Single Width Fan

Standard Construction Features:

HOUSING: Class II and under feature Perma-Lock construction on sizes 4 - 49 and continuously welded on sizes 54 - 73 and all class III fans - Unit support angles with mounting holes - Adjustable motor plate - Corrosion resistant fasteners - Inlet collars - Outlet flange standard on sizes 27 - 73 and all class III fans - Untreated steel parts are processed through a multi-stage cleaning and pre-treatment and then finished with a high-performance powder coating. Sizes 24 and less are rotatable in 45 deg. increments. Sizes 27 to 40 are rotatable in 90 deg. increments. Sizes greater than 40 and all class III are not rotatable.

BEARINGS, SHAFT, AND WHEEL: Air handling quality, self-aligning, ball bearing in pillow block housing - Polished, solid steel shafts with rust inhibitor - Centrifugal wheel

Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted & Wired

Motor with Aegis Shaft Grounding

Motor with Class B or Greater Insulation

Finish - Coated

Coating - Permatector, Concrete Gray-RAL 7023, Fan and Attached Accessories

Isolation Base, Factory Mounted, Isolator-Spring, Free Standing, 1 Inch, Indoor Use Only, Base

Coating - Permatector

Housing - Welded Scroll

Arrangement - 4

Wheel - Airfoil

UL Listed for UL/cUL-705 - "Power Ventilators"

Access Door - Bolted

Drain Connection - 1 inch threaded female

Inlet Connection, Slip Fit

Outlet Flange, Punched

Motor Cover - Steel Construction

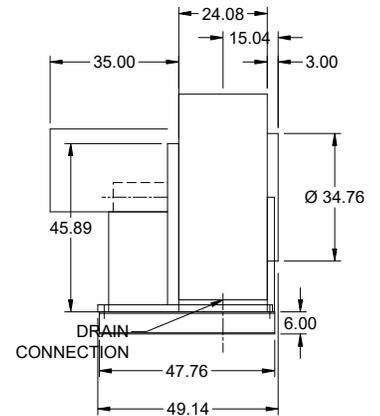
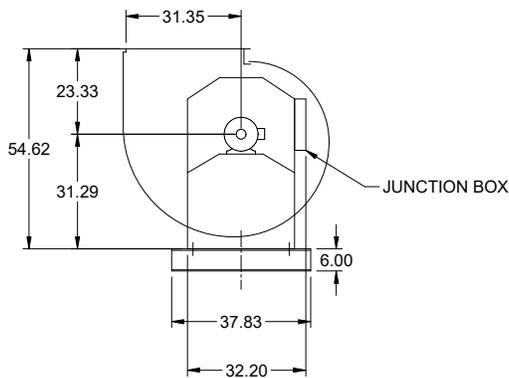
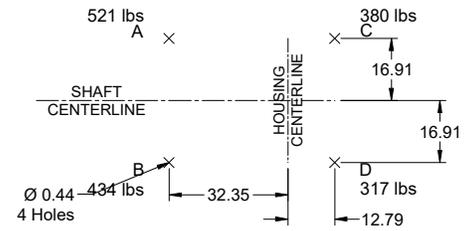
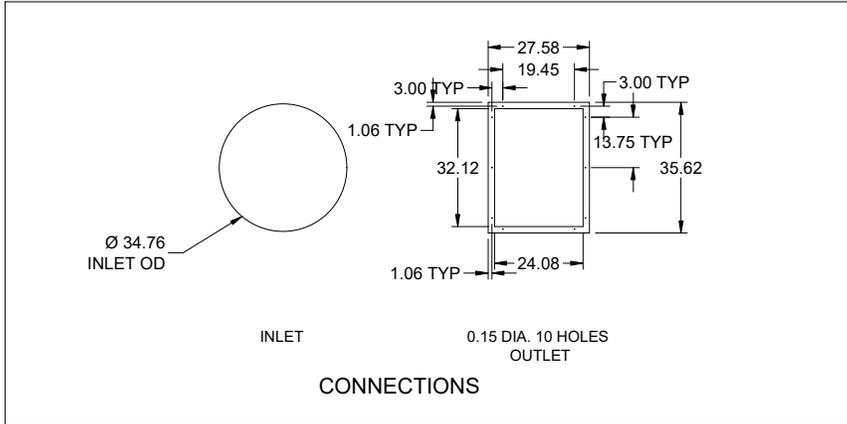
Fasteners - Stainless

Factory Vibration Test, 0.1 in/sec, Peak, Filter-in as measured at the fan RPM

Unit Warranty: 1 Yr (Standard)

Model: USF-30

Universal Single Width Fan



Notes: All dimensions shown are in units of in.

Isolation Base

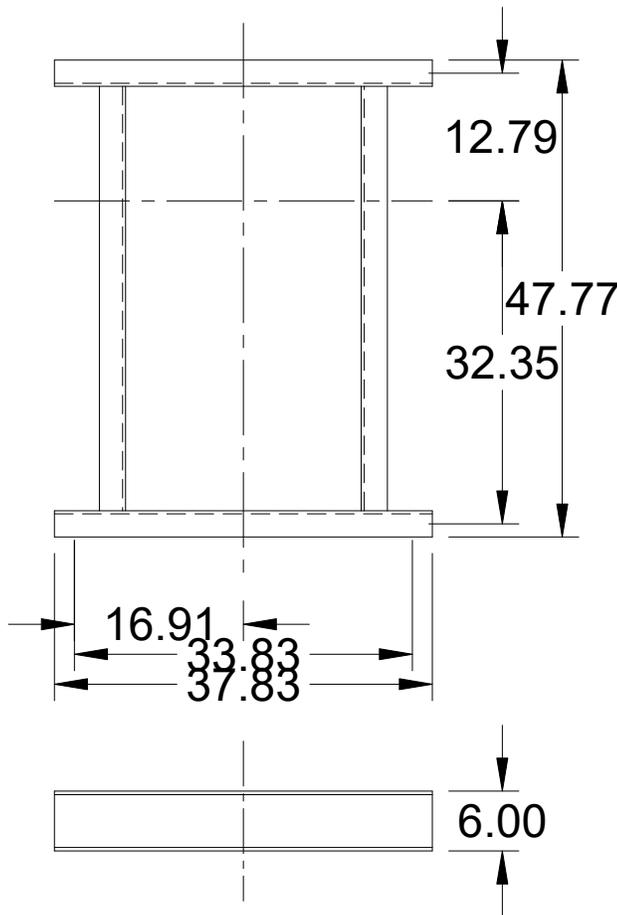
Type: Isolation Base

Standard Construction Features:

-Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

Fan Configuration

Model:	USF-30	Class:	III
Arrangement:	4	Motor Frame Size:	324T
Rotation:	CW	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Motor Position:	Centered	Corner Weight A (lb):	521
Corner Weight A (lb):	521	Corner Weight B (lb):	434
Corner Weight C (lb):	380	Corner Weight D (lb):	317



Notes: All dimensions shown are in units of in.

Isolators

Type: Spring, Free Standing, 1 Inch

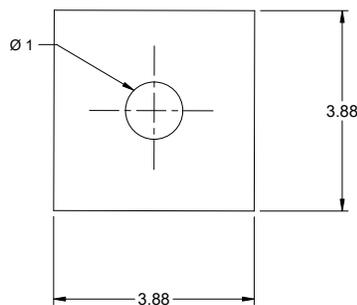
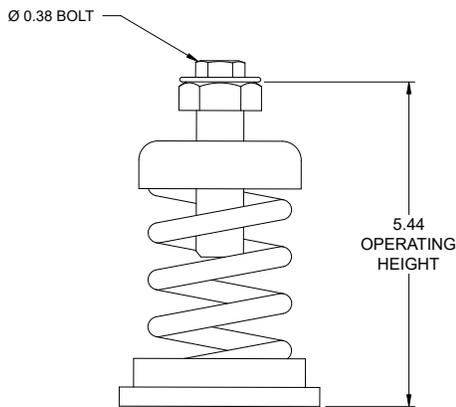
Standard Construction Features:

Laterally stable spring mounts. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

Fan Configuration

Model: USF-30
Arrangement: 4
Rotation: CW
Motor Position: Centered
Isolator Color A: Black
Isolator Color C: Green
Isolator Description A: FDS-1-625
Isolator Description C: FDS-1-450
Isolator Manufacturer: Kinetics

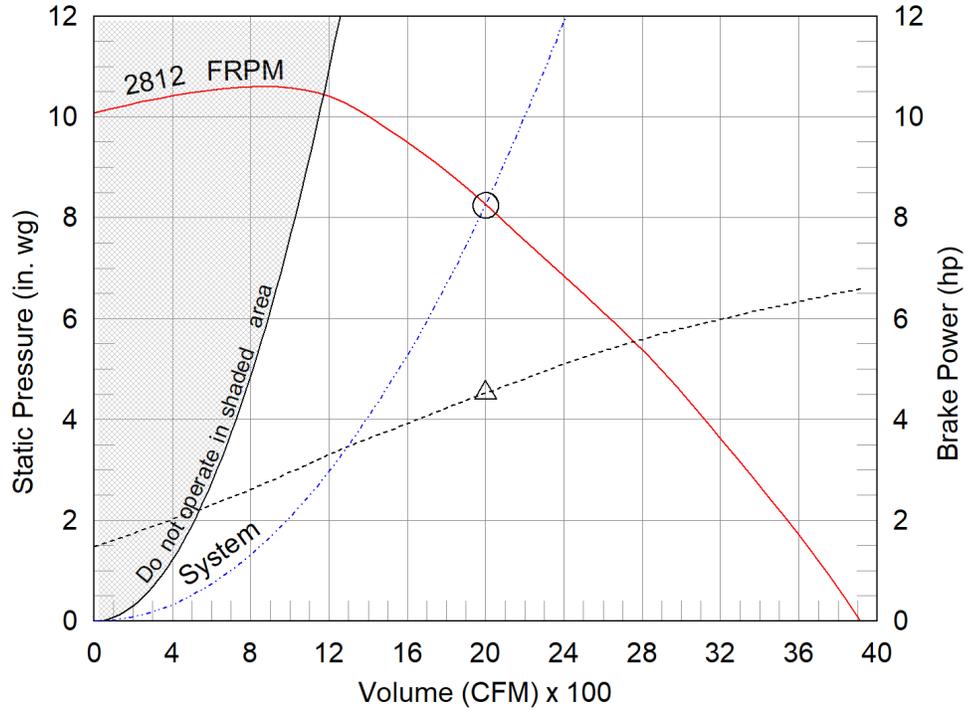
Discharge Position: UB
Class: III
Motor Frame Size: 324T
Isolator/Deflection: Spring, Free Standing, 1 Inch
Isolator Color B: Green
Isolator Color D: Green
Isolator Description B: FDS-1-450
Isolator Description D: FDS-1-450



Notes: All dimensions shown are in units of in.

Performance	
Quantity	2
Volume (CFM)	2,000
Total External SP (in. wg)	8.25
Operating Power (hp)	4.53
Required Power (hp)	8.73
Fan RPM	2812
Max Fan RPM	3,500
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

Model: IP-9
Air Handling Wheel
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	9
Wheel Type	A
Arrangement	4
Drive Type	Direct
Rotation	CW
Discharge Position	UB
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Plate Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	161
Motor/Drive (lb)	253
Accessories (lb)	61

Misc Fan Data	
Fan Energy Index (FEI)	1.16
Outlet Velocity (ft/min)	4,515
Static Efficiency (%)	57
Tip Speed (ft/min)	11,504

Motor and Drives	
Motor	Included
Size (hp)	15
RPM	3500
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	254T
Max Frame Size	256
Location	Centered

Nameplate Model: IP-9-2-A1-00-01-01



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA
Inlet	107	103	95	90	83	79	74	70	93	82
Outlet	108	108	105	100	92	86	80	75	102	90

LwA - A weighted sound power level, based on ANSI S1.4

dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Performance	
Quantity	2
Volume (CFM)	4,000
Total External SP (in. wg)	8.25
Operating Power (hp)	13.89
Required Power (hp)	13.89
Fan RPM	3766
Max Fan RPM	4,156
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

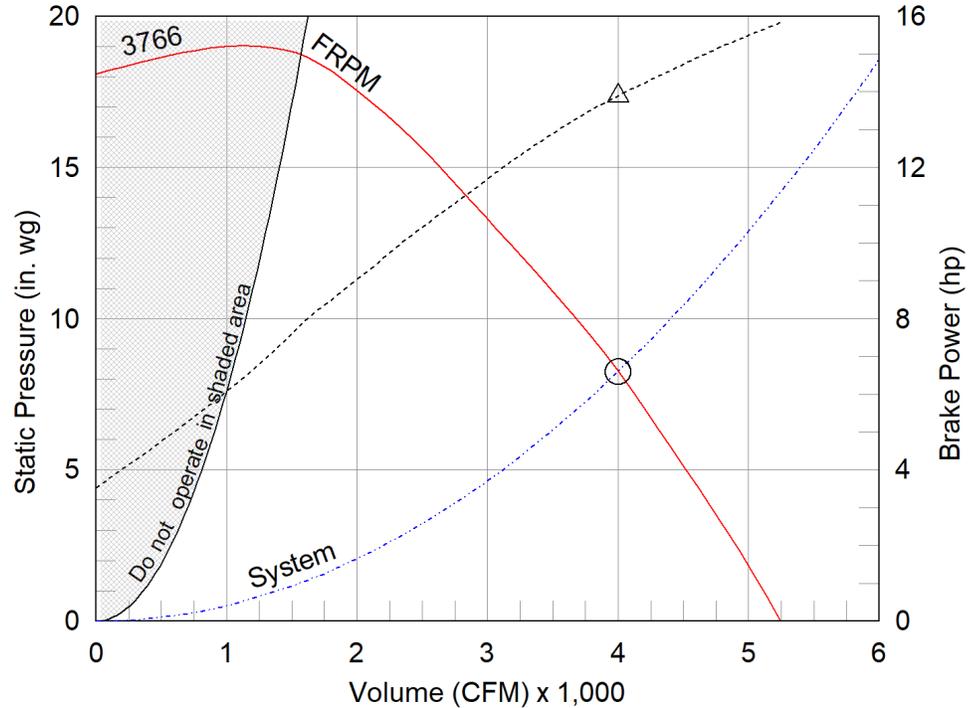
Fan Configuration	
Size	9
Wheel Type	A
Arrangement	8
Drive Type	Direct
Rotation	CW
Discharge Position	UB
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Plate Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	254
Motor/Drive (lb)	253
Accessories (lb)	108

Misc Fan Data	
Fan Energy Index (FEI)	0.99
Outlet Velocity (ft/min)	9,029
Static Efficiency (%)	37
Tip Speed (ft/min)	15,404

Motor and Drives	
Motor	Included
Size (hp)	15
RPM	3500
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	254T
Max Frame Size	256
Location	Centered

Model: IP-9
Air Handling Wheel
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Nameplate Model: IP-9-3-A1-00-01-01



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA
Inlet	113	111	105	104	95	91	88	84	104	93
Outlet	115	116	114	112	103	98	91	86	112	101

LwA - A weighted sound power level, based on ANSI S1.4

dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Model: IP-9

Air Handling Wheel

Standard Construction Features:

HOUSING: Heavy gauge, continuously welded steel housing - Constructed of welded formed steel parts to be rigid and prevent vibration - Steel components are cleaned and coated with Permatecor - Corrosion resistant fasteners.

BEARINGS, SHAFT, AND WHEEL: Heavy duty, self-aligning ball or roller pillow block bearings - Polished, solid steel shafts - Welded, heavy gauge dynamically balanced wheel.

Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated

Motor with Shaft Grounding

Motor with Class B or Greater Insulation

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate

Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories

Ht. Saving Isolation Base, Factory Mounted, Isolator-Spring, Restrained, 1 Inch, Indoor / Outdoor

Use

Arrangement - 8

Discharge Position - UB

Access Door - Bolted

Drain Connection - Without Plug

Inlet Connection - Slip Fit

Outlet Connection - Punched

Motor Cover - Steel

ShaftGuard - TE, Steel

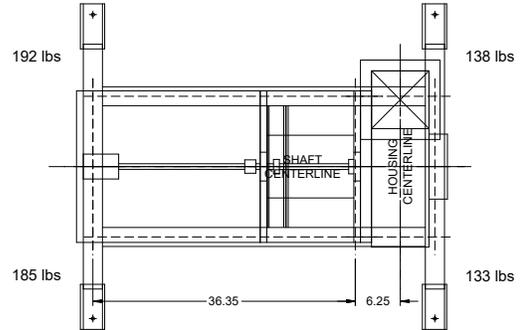
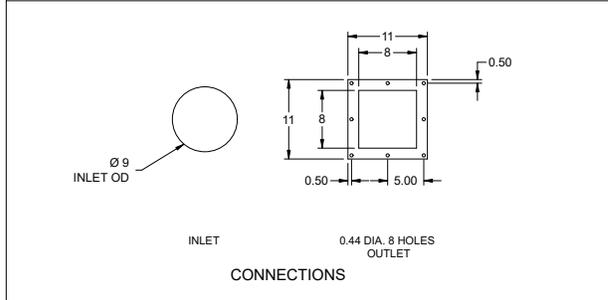
Fasteners - Stainless

Unit Warranty: 1 Yr (Standard)

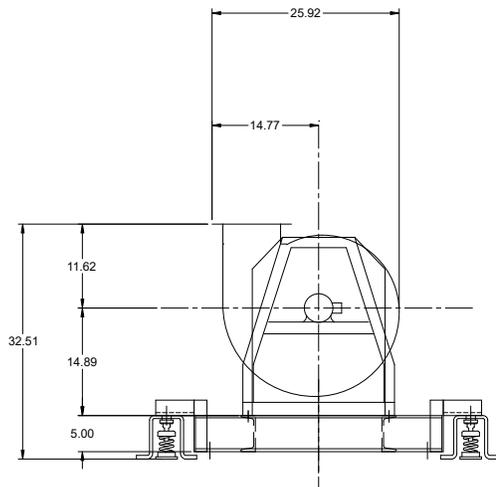
Not available to ship to California

Model: IP-9

Air Handling Wheel

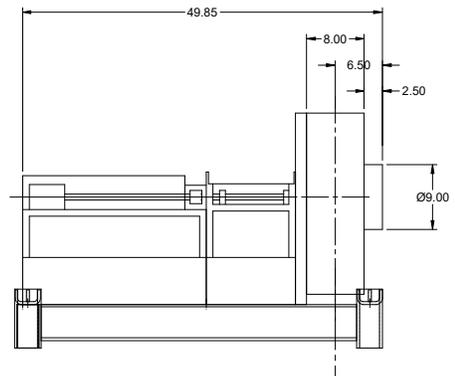


FAN FOOTPRINT



SIDE VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE



END VIEW

Notes: All dimensions shown are in units of in.

Isolation Base

Type: Ht. Saving Isolation Base

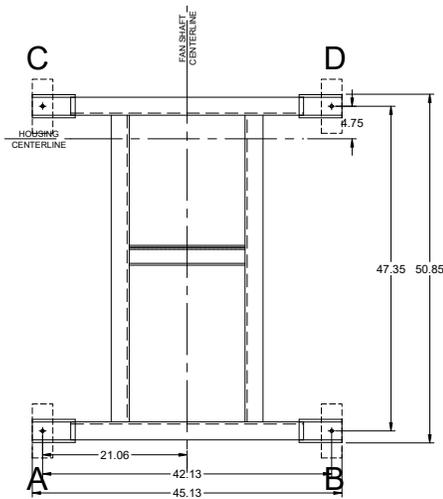
Standard Construction Features:

- Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Height savings brackets for isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

Fan Configuration

Model: IP-9
Arrangement: 8
Rotation: CW
Motor Position: Centered

Discharge Position: UB
Motor Frame Size: 254T
Isolator/Deflection: Spring, Restrained, 1 Inch



Notes: All dimensions shown are in units of in.

Isolators

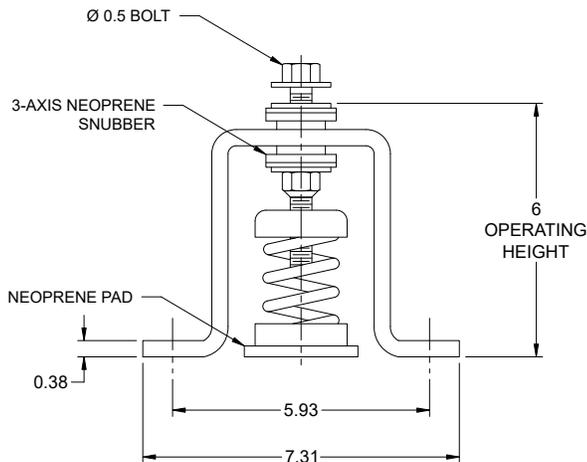
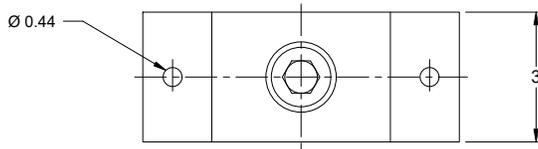
Type: Spring, Restrained, 1 Inch

Standard Construction Features:

Designed for horizontal and vertical restraint. Housings can be bolted or welded to supporting structure. Housings may be used for blocking during installation. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

Fan Configuration

Model:	IP-9	Discharge Position:	UB
Arrangement:	8	Motor Frame Size:	254T
Rotation:	CW	Isolator/Deflection:	Spring, Restrained, 1 Inch
Motor Position:	Centered		
Isolator Color A:	Brown	Isolator Color B:	Brown
Isolator Color C:	Brown	Isolator Color D:	Brown
Isolator Description:	FHS-1-220	Isolator Manufacturer:	Kinetics

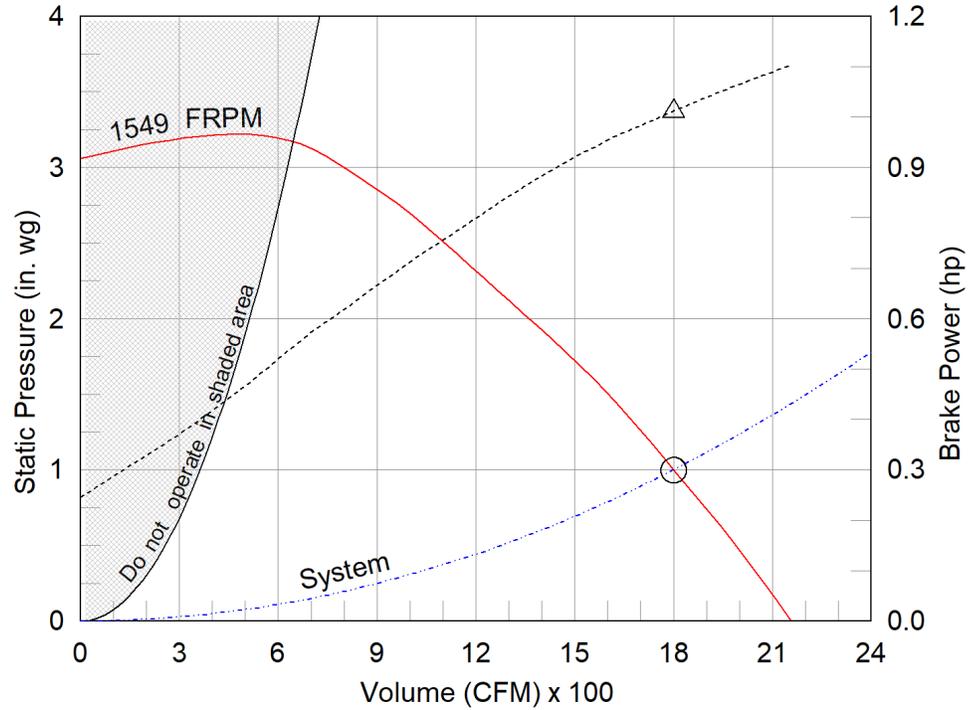


Notes: All dimensions shown are in units of in.

**Isolator dimensions may vary with all aluminum, aluminum airstream, or Spark A construction, external inlet vane damper or with an outlet damper accessory. Consult factory for details.

Performance	
Quantity	1
Volume (CFM)	1,800
Total External SP (in. wg)	1
Operating Power (hp)	1.01
Required Power (hp)	1.01
Fan RPM	1549
Max Fan RPM	2,425
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

Model: IP-9
Air Handling Wheel
Operating Performance



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	9
Wheel Type	A
Arrangement	4
Drive Type	Direct
Rotation	CW
Discharge Position	UB
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Plate Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	131
Motor/Drive (lb)	105
Accessories (lb)	52

Misc Fan Data	
Fan Energy Index (FEI)	1.19
Outlet Velocity (ft/min)	4,063
Static Efficiency (%)	28
Tip Speed (ft/min)	6,338

Motor and Drives	
Motor	Included
Size (hp)	1 1/2
RPM	1170
Enclosure	TEFC
V/C/P	208/60/3
Frame Size	182T
Max Frame Size	256
Location	Centered

Nameplate Model: IP-9-1-A1-00-01-01



Sound Power by Octave Band

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA
Inlet	99	94	88	81	73	70	65	60	84	73
Outlet	97	98	94	84	77	71	65	60	89	77

LwA - A weighted sound power level, based on ANSI S1.4

dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

Model: IP-9

Air Handling Wheel

Standard Construction Features:

HOUSING: Heavy gauge, continuously welded steel housing - Constructed of welded formed steel parts to be rigid and prevent vibration - Steel components are cleaned and coated with Permatecor - Corrosion resistant fasteners.

BEARINGS, SHAFT, AND WHEEL: Heavy duty, self-aligning ball or roller pillow block bearings - Polished, solid steel shafts - Welded, heavy gauge dynamically balanced wheel.

Selected Options & Accessories:

Motor VFD Rated

Motor with Shaft Grounding

Motor with Class B or Greater Insulation

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate

Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories

Ht. Saving Isolation Base, Factory Mounted, Isolator-Spring, Free Standing, 1 Inch, Indoor Use Only

Arrangement - 4

Discharge Position - UB

Access Door - Bolted

Drain Connection - Without Plug

Inlet Connection - Slip Fit

Outlet Connection - Punched

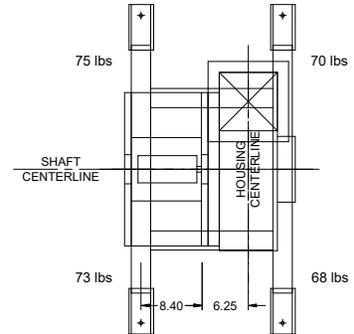
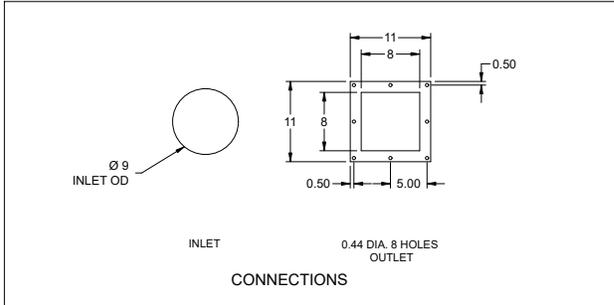
Fasteners - Stainless

Unit Warranty: 1 Yr (Standard)

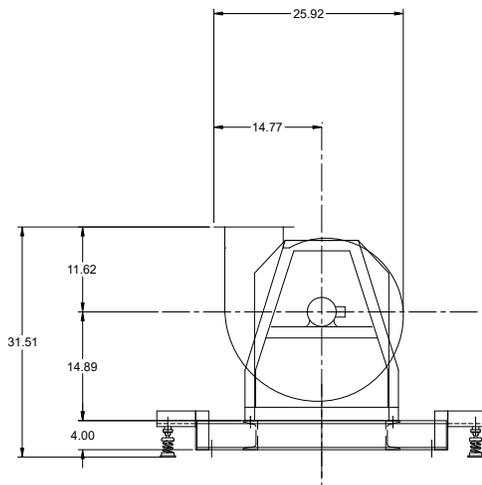
Not available to ship to California

Model: IP-9

Air Handling Wheel

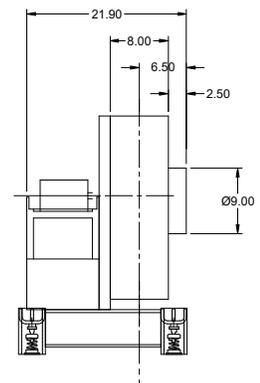


FAN FOOTPRINT



SIDE VIEW

*SIDE VIEW IS VIEWED FROM DRIVE SIDE



END VIEW

Notes: All dimensions shown are in units of in.

Isolation Base

Type: Ht. Saving Isolation Base

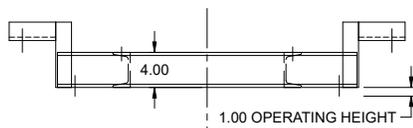
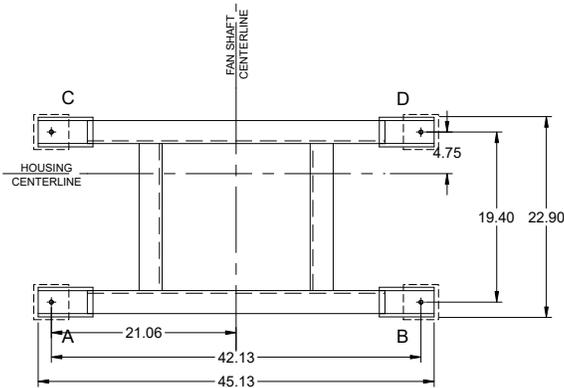
Standard Construction Features:

- Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Height savings brackets for isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

Fan Configuration

Model: IP-9
Arrangement: 4
Rotation: CW
Motor Position: Centered

Discharge Position: UB
Motor Frame Size: 182T
Isolator/Deflection: Spring, Free Standing, 1 Inch



Notes: All dimensions shown are in units of in.

Isolators

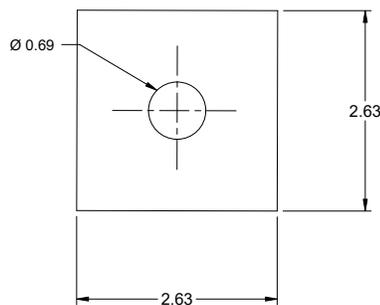
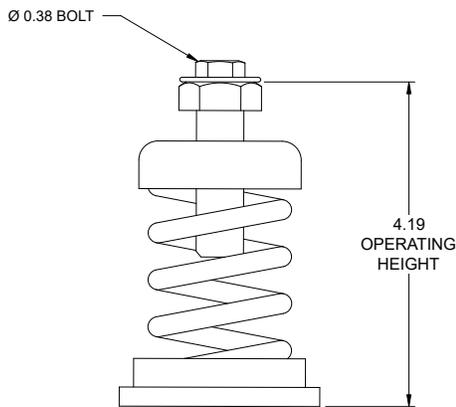
Type: Spring, Free Standing, 1 Inch

Standard Construction Features:

Laterally stable spring mounts. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

Fan Configuration

Model:	IP-9	Discharge Position:	UB
Arrangement:	4	Motor Frame Size:	182T
Rotation:	CW	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Motor Position:	Centered		
Isolator Color A:	Gray	Isolator Color B:	Gray
Isolator Color C:	Green	Isolator Color D:	Green
Isolator Description A:	FDS-1-120	Isolator Description B:	FDS-1-120
Isolator Description C:	FDS-1-70	Isolator Description D:	FDS-1-70
Isolator Manufacturer:	Kinetics		



Notes: All dimensions shown are in units of in.

**Isolator dimensions may vary with all aluminum, aluminum airstream, or Spark A construction, external inlet vane damper or with an outlet damper accessory. Consult factory for details.