

APPLICATION FOR OSHPD SPECIAL SEISMIC	OFFIC	E USE ONLY
CERTIFICATION PREAPPROVAL (OSP)	APPLICATION #:	OSP – 0360
OSHPD Special Seismic Certification Preapproval (OSP)		
Type: 🗌 New 🛛 Renewal		
Manufacturer Information		
Manufacturer: ACME Engineering & Manufacturing Corporation		
Manufacturer's Technical Representative: Adam Sterne		
Mailing Address: <u>1820 North York Street, Muskogee, OK 74403</u>		
Telephone: 918.684.0595	e@acmefan.com	
Product Information	MA	
Product Name: PDU & PNU Centrifugal Exhausters	P1.	
Product Type: Exhaust Fan OSP-0360	- Cri	
Product Model Number: See Attachment 1 (List all unique product identification numbers and/or part numbers) and Stach General Description: Direct drive and belt drive roof exhausters and to the test units shall be incorporated into the production units.021	lin	nic enhancements made
Mounting Description: <u>Rigid base mounted on curb or rigid wall mo</u>	nted.	
	20.	
Applicant Information	ODE	
Applicant Company Name: Manwill Engineering LLCULDING		
Contact Person: Derek Manwill, SE		
Mailing Address: PO Box 1194, Bend, OR 97709		
Telephone: <u>541.241.2102</u> Email: derek@	@manwillSE.com	
I hereby agree to reimburse the Office of Statewide Health I accordance with the California Administrative Code, 2016.	Planning and Devel	opment review fees in
Signature of Applicant:	Dat	e: <u>10/15/2019</u>
Title: President Company Name: Manw	ill Engineering LLC	
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs" STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY	MAM	OSHPD
OSH-FD-759 (REV 12/16/15)	A A A A A A	Page 1 of 3



California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)
Company Name: Manwill Engineering LLC
Name: Derek Manwill, SE California License Number: S6266
Mailing Address: _ PO Box 1194, Bend, OR 97709
Telephone: <u>541.241.2102</u> Email: <u>derek@manwillSE.com</u>
Supports and Attachments Preapproval
 Supports and attachments are preapproved under OPM- (Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required) Supports and attachments are not preapproved
Certification Method
 ☑ Testing in accordance with: ☑ Other (Please Specify): ☑ OSP-0360
BY: William Staehlin
Testing Laboratory DATE: 03/22/2021
Company Name: Environmental Testing Laboratory
Contact Name: Jeremy Lange
Mailing Address:11034 Indian Trail, Dallas, TX 75229
Telephone: _972.247.9657 Email: _jeremy@etIdallas.com

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"



Page 2 of 3

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Seismic Parameters
Design in accordance with ASCE 7-10 Chapter 13: 🛛 Yes 🗌 No
Design Basis of Equipment or Components (Fp/Wp) = <u>1.88</u>
S_{DS} (Design spectral response acceleration at short period, g) = <u>2.50</u>
a_p (In-structure equipment or component amplification factor) = <u>2.5</u>
R _p (Equipment or component response modification factor) = <u>6.0</u>
Ω_0 (System overstrength factor) = 2.0
I _p (Importance factor) = 1.5
z/h (Height factor ratio) = _1
Equipment or Component Natural Frequencies (Hz) = <u>See Attachment 2</u>
Overall dimensions and weight (or range thereof) =See Attachments 1 & 2
Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: Yes X No
Design Basis of Equipment or Components (V/W) =
S_{DS} (Design spectral response acceleration at short period, g) =
S_{D1} (Design spectral response acceleration at 1 second period, g) =
R (Response modification coefficient) =
$Ω_0$ (System overstrength factor) = $_{BY:}$ William Staehlin
C _d (Deflection amplification factor) =
I_p (Importance factor) = 1.5 DATE: 03/22/2021
Height to Center of Gravity above base =
Equipment or Component Natural Frequencies (Hz) =
Overall dimensions and weight (or range thereof) =
Tank(s) designed in accordance with ASME BPVC, 2015: Yes 🖾 No
List of Attachments Supporting Special Seismic Certification
Image: Stratic line of the second strategy Image: Stratic line of the second strategy Image: Stratic line of the second strategy Image: Stratic line of the second strategy Image: Stratic line of the second strategy Image: Stratic line of the second strategy Image: Strategy Image: Strategy
Other(s) (Please Specify): <u>Attachments 1, 2, & 3</u>
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2025
Signature: Date: Date: March 22, 2021
Print Name: <u>William Staehlin</u> Title: <u>Senior Structural Engineer</u>
Special Seismic Certification Valid Up to : S _{DS} (g) = 2.50 z/h = 1
Condition of Approval (if applicable):
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA - HEALTH AND HUMAN SERVICES AGENCY

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED COMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 1 - ROOF EXHAUSTERS

DOCUMENT NO.: 19101CR1.0

PRODUCT F	FAMILY: CENTRI	FUGAL EXH	IAUSTERS				
		DI	MENSIONS	(in)	MAX. WT.		D 4 0 10
MODEL NUI	MBER	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
PDU Direct Dr	ive Centrifugal Roc	of Exhauste	rs	-			
PDU080XXSC)	20.6	20.6	13.1	44		EXTRAP
PDU100XXSC)	20.6	20.6	16.1	57		EXTRAP
PDU110XXSC)	20.6	20.6	16.4	63		EXTRAP
PDU120XXSC)	26.4	26.4	19.5	85		EXTRAP
PDU120RFHS	SC	26.4	26.4	19.5	85		UUT 5
PDU135XXSC	>	26.4	26.4	20.9	80		INTERP
PDU150XXSC)	30.2	30.2	21.9	0.90		INTERP
PDU165XXSC)	30.2	30.2	23.9	101		INTERP
PDU185XXSC		34.7	34.7	25.8	115		INTERP
PDU200XXSC		34.7	34.7	25.8	153	1	INTERP
PDU200RGS0		34.7	34.7	25.8	153	71.	UUT 2
	e Centrifugal Roof			20.0	100		0012
PNU080XXSC		33.7	33.7	SP26.430	60 ₁₅₉	m	EXTRAP
PNU100XXSC		33.7	33.7	26.4	161		EXTRAP
PNU120XXSC		33.7	33.7	20.4	165		EXTRAP
PNU135SESC		33.7	BY 33.7		ae ₁₅₈ n		UUT 12
PNU135XXSC		33.7	33.7	27.4	194		EXTRAP
PNU135RGH		33.7	33.7	27.4	194		UUT 3
PNU150XXSC		38.0	DA _{38.0}	B/25.92	2 224		INTERP
PNU155XXSC		38.0	38.0	25.6	247	61	INTERP
PNU160XXSC		38.0	38.0	25.6	249	0	INTERP
PNU165XXSC		38.0	38.0	25.9	255		INTERP
PNU185XXSC		39.8	39.8	31.6	297	× /	INTERP
PNU200XXSC		39.8	39.8	31.6	331		INTERP
PNU235XXSC		44.8	44.8	35.0	422		INTERP
PNU240XXSC		44.8	44.8	35.0	425		INTERP
PNU245XXSC)	44.8	44.8	38.8	435		INTERP
PNU290XXSC)	55.4	55.4	40.4	556		INTERP
PNU295XXSC)	55.4	55.4	40.4	559		INTERP
PNU300XXSC)	55.4	55.4	42.5	573		INTERP
PNU355XXSC	>	66.0	66.0	44.1	725		INTERP
PNU360XXSC	>	66.0	66.0	44.1	729		INTERP
PNU365XXSC		66.0	66.0	46.0	748		INTERP
PNU425XXSC)	79.8	79.8	53.5	919		INTERP
PNU490RGS0	C	79.8	79.8	58.0	860		UUT 11
PNU490XXSC)	79.8	79.8	58.0	1115		INTERP
PNU490SESC		79.8	79.8	58.0	1115		UUT 1
IOUNTING:	Rigid floor mounted o	n curb.			SEISMIC LEVEL:	$S_{DS} = 2.5g$ for z/h = 1	I _P = 1.5
NOTES:	Options/Subcompor	nents: 8-24in stainless stee	carbon steel I shaft, pillow	curb (height e block bearing	backward cur excludes curb) gs; subcompor	ved wheel (carbon steel available for , inlet guard, grease trough, birdscree nents listed in Table 3.	

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED COMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 2 - WALL EXHAUSTERS

DOCUMENT NO.: 19101CR1.0

MANUFACT	URER: ACME E	NGINEERIN	IG & MANU	FACTURIN	G CORPORA	TION	
PRODUCT F	AMILY: CENTRI	FUGAL EXH	AUSTERS				
MODEL NU	MBER		MENSIONS	<u> </u>	MAX. WT.	DESCRIPTION / NOTES	BASIS
_		DEPTH	WIDTH	HEIGHT	(lb)	Deservir Heit, Notes	BAOIO
PDU Direct Dr	ive Centrifugal Wal	I Exhauste	rs	1			1
PDU080XXW	SC	20.6	20.6	13.1	44		EXTRAP
PDU100XXW	SC	20.6	20.6	16.1	57		EXTRAP
PDU110XXW	SC	20.6	20.6	16.4	63		EXTRAP
PDU120XXW	SC	26.4	26.4	19.5	70		EXTRAP
PDU120RFW	SC	26.4	26.4	19.5	70		UUT 10
PDU135XXW	SC	26.4	26.4	20.9	80		INTERP
PDU150XXW	SC	30.2	30.2	21.9	90		INTERP
PDU165XXW	SC	30.2	30.2	23.9	101		INTERP
PDU185XXW	SC	34.7	34.7	25.8	115		INTERP
PDU200XXW	SC	34.7	34.7	25.8	126	A	INTERP
PDU200RFW	SC	34.7	34.7	25.8	126	2	UUT 7
PNU Belt Drive	e Centrifugal Wall B	Exhausters	\sim		20	N.C.	
PNU080XXW	SC	33.7	33.7	DP26.4 3	DU 94	N TI	EXTRAP
PNU100XXW	SC	33.7	33.7	26.4	96		EXTRAP
PNU120XXW	SC	33.7	33.7	27.4	100		EXTRAP
PNU135XXW	SC	33.7	BY 33.7	12127.4St	aenon		EXTRAP
PNU135RFW	SC	<mark>3</mark> 3.7	33.7	27.4	111		UUT 14
PNU150XXW	SC	38.0	38.0	25.9	140		INTERP
PNU155XXW	SC	38.0	DA _{38.0}	25.6	163		INTERP
PNU160XXW	SC	38.0	38.0	25.6	165	0	INTERP
PNU165XXW	SC	38.0	38.0	25.9	171	6	INTERP
PNU185XXW	SC	39.8	39.8	31.6	213	V	INTERP
PNU200XXW	SC	39.8	39.8	31.6	247		INTERP
PNU235XXW	SC	44.8	44.8	35.0	238		INTERP
PNU240XXW	SC	44.8	44.8	35.0	JG241		INTERP
PNU245XXW	SC	44.8	44.8	38.8	251		INTERP
PNU290XXW	SC	55.4	55.4	40.4	340		INTERP
PNU295XXW	SC	55.4	55.4	40.4	343		INTERP
PNU300XXWSC		55.4	55.4	42.5	357		INTERP
PNU300RGWSC		55.4	55.4	42.5	357		UUT 13
MOUNTING:	Rigid wall mounted.				SEISMIC LEVEL:	$S_{DS} = 2.5g$ for z/h = 1	I _P = 1.5
NOTES:	Product Construction Options/Subcompore Table 4. Nomenclature: See /	nents: Perfor	mance baffle,	grease troug	h, birdscreen, p	billow block bearings; subcomponen	ts listed in

MANW[†]LL engineering

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 3 - ROOF MNT SUBCOMPONENTS

DOCUMENT NO.: 19101CR1.0

MANUFACTURER: ACME ENGINEERING & MANUFACTURING CORPORATION

PRODUCT FAMILY: CENTRIFUGAL EXHAUSTERS

MODEL NUMBER		MENSIONS	<u> </u>	MAX. WT.	DESCRIPTION / NOTES	BASIS
	DEPTH	WIDTH	HEIGHT	(lb)		DASIS
ACME Engineering & Man	ufacturing Corp	Aluminum	Backward	Curved Cen	trifugal Wheels	
235342	10.4	10.4		3.2	PDU080	EXTRAP
235118	10.4	10.4		4.0	PDU100	EXTRAP
235214	11.1	11.1		4.2	PDU110	EXTRAP
235497	12.3	12.3		3.2	PNU080	EXTRAP
235498	12.3	12.3		3.5	PNU100	EXTRAP
235249	12.3	12.3	000	4.5	PDU120	UUT 5
185272	12.3	12.3		4.5	PNU120	INTERP
235243	13.9	13.9		5.0	PDU135	INTERP
185523	13.9	13.9		5.0	PNU135	UUT 3
205009	15.4	15.4	CLE	6.5	PNU150	INTERP
235201	15.5	15.5		6.5	PDU150	INTERP
235488	47.0	17.0		6.5	PNU155	INTERP
235487	Q 17.0	17.0	SP-03	<u>60</u> 7.5	PNU160	INTERP
235244A	17.0	17.0		8.0	PDU165	INTERP
185524	17.0	17.0		8.0	PNU165	INTERP
235250A	19.0	BY:19.0/III	iam St	ae 8.5 m	PDU185	INTERP
185466	19.0	19.0		8.5	PNU185	INTERP
235246	21.0	21.0		9.0	PDU200	UUT 2
185525	21.0	DA110	3/22/20	9.0	PNU200	INTERF
235490	25.5	25.5		11	PNU235	INTERF
235489	25.5	25.5		12	PNU240	INTERF
205014	25.5	25.5		14	PNU245	INTERF
235492	31.0	31.0		12	PNU290	INTERF
235491	31.0	31.0		140	PNU295	INTERF
185475	31.0	31.0		IG 18	PNU300	INTERF
235496	37.5	37.5	UILDI	24	PNU355	INTERF
235495	37.5	37.5		29	PNU360	INTERF
185476	37.5	37.5		35	PNU365	INTERF
185477	43.5	43.5		55	PNU425	INTERF
185478	50.0	50.0		77	PNU490	UUT 11
ACME Engineering & Man			el Backwa			00111
785011	12.3	12.3		6.3	PNU080	EXTRAF
775004	12.3	12.3		7.0	PNU100	EXTRA
685209	12.3	12.3		8.9	PNU120	EXTRAF
705393	13.9	13.9		9.9	PNU120 PNU135	UUT 12
785005	15.4	15.4		12	PNU150	INTERF
705746	17.0	17.0		13	PNU155	
705745	17.0	17.0		16	PNU160	
705389	17.0	17.0		18	PNU165	INTERF
705534	19.0	19.0		21	PNU185	INTERF
705402	21.0	21.0		27	PNU200	INTERF
705750 NOTES: Table continu	25.5	25.5		35	PNU235 ic parameters are shown at the end c	INTERF

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 3 - ROOF MNT SUBCOMPONENTS (continued)

DOCUMENT NO.: 19101CR1.0

MANUFACTURER: ACME ENGINEERING & MANUFACTURING CORPORATION

PRODUCT FAMILY: CENTRIFUGAL EXHAUSTERS

MODEL NUMBER	DI	MENSIONS	(in)	MAX. WT.	DESCRIPTION / NOTES	BASIS
MODEL NUMBER	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
ACME Engineering & Manuf	acturing Corp	Carbon Ste	el Backwa	rd Curved C	entrifugal Wheels (continued)	
705751	25.5	25.5		39	PNU240	INTERP
685181	25.5	25.5		46	PNU245	INTERP
705741	31.0	31.0		49	PNU290	INTERP
785014	31.0	31.0		54	PNU295	INTERP
705404	31.0	31.0		63	PNU300	INTERP
785018	37.5	37.5	000	72	PNU355	INTERP
705743	37.5	37.5	CODE	89	PNU360	INTERP
705371	37.5	37.5	and a second design of the second	107	PNU365	INTERP
705451	43.5	43.5		165	PNU425	INTERP
705527	50.0	50.0	CLD	231	PNU490	UUT 1
McMillan - Direct Drive Moto			STIF		1.	
0.10HP	41			8	6	EXTRAP
0.1011	Q (SP-030	30 Ŭ	Extrapolated sizes	EXTRAP
0.25HP				8		UUT 5
0.2011					Interpolated sizes	INTERP
1.0HP		iby: Wili	îam St	aehdin	Interpolated sizes	UUT 2
Regal - Belt Drive Motors				20		0012
0.25HP				- 12		EXTRAP
0.23HF		DATE: 0	3/22/2(321^{13}	Extrapolated sizes	EXTRAP
0.75HP				27	Extrapolated sizes	UUT 3,12
0.75HF	C V			21	listernelated aizes	INTERP
		-		00	Interpolated sizes	
5.0HP				89		INTERP
				000	Interpolated sizes	INTERP
10.0HP ACME Engineering & Manuf	iaaturing Corn	Beek Droff	Domnoro	220		UUT 1,11
• •			Dampers	NU		
AR8.75	8.8	8.8		4		EXTRAP
AR14	14	14		6		UUT 5
AR18	18	18		7		UUT 3,12
AR22	22	22		9		INTERP
AR28	28	28		15		INTERP
ARH34	34	34		21		INTERP
ARH40	40	40		26		INTERP
ARH54	54	54		37		UUT 1,11
Multi Products - Actuator				· · · · · · · · · · · · · · · · · · ·		
TB2000						UUT 1, 1
Square D - Disconnect Swite	ch	1	1	,		
2510						UUT 2
Hubbell - Disconnect Switch	ו					
13R92D						UUT 3,1
DDI Inc Belt Tensioner						
FS0434						UUT 3,1

ACME ENGINEERING & MANUFACTURING

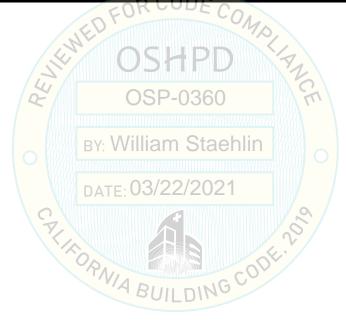
ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 3 - ROOF MNT SUBCOMPONENTS (continued)

DOCUMENT NO.: 19101CR1.0

MANUFACTURER: ACME ENGINEERING & MANUFACTURING CORPORATION **PRODUCT FAMILY: CENTRIFUGAL EXHAUSTERS DIMENSIONS** (in) MAX. WT. **MODEL NUMBER DESCRIPTION / NOTES** BASIS DEPTH WIDTH HEIGHT (lb) Honeywell - Firestats L4029E UUT 3,12 KB Electronics - Speed Control KBWC-16LK UUT 5,12 SEISMIC MOUNTING: Mounted within unit. $S_{DS} = 2.5g$ for z/h = 1 $I_{P} = 1.5$ LEVEL: NOTES: Construction/Options: Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.



ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 4 - WALL MNT SUBCOMPONENTS

DOCUMENT NO.: 19101CR1.0

MANUFACTURER: ACME ENGINEERING & MANUFACTURING CORPORATION

PRODUCT FAMILY: CENTRIFUGAL EXHAUSTERS

	DI	MENSIONS	(in)	MAX. WT.		BASIS
MODEL NUMBER	DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
ACME Engineering & Manufa	acturing Corp	Aluminum	Backward	Curved Cen	trifugal Wheels	
235342	10.4	10.4		3.2	PDU080	EXTRAP
235118	10.4	10.4		4.0	PDU100	EXTRAP
235214	11.1	11.1		4.2	PDU110	EXTRAP
235497	12.3	12.3		3.2	PNU080	EXTRAP
235498	12.3	12.3		3.5	PNU100	EXTRAP
185272	12.3	12.3	COD	4.5	PNU120	EXTRAP
235249	12.3	12.3	(CODE	4.5	PDU120	UUT 10
235243	13.9	13.9	WATER AND A CONTRACT OF A C	5.0	PDU135	INTERP
185523	13.9	13.9		5.0	PNU135	UUT 14
205009	15.4	15.4	CHE	6.5	PNU150	INTERP
235201	15.5	15.5		6.5	PDU150	INTERP
235488	17.0	17.0		6.5	PNU155	INTERP
235487	Q 17.0	17.0	SP-030	<u>60</u> 7.5	PNU160	INTERP
185524	17.0	17.0		8.0	PNU165	INTERP
235244A	17.0	17.0		8.0	PDU165	INTERP
235250A	19.0	BY 19.0	iam St	ael <u>8.5</u> in	PDU185	INTERP
185466	19.0	19.0		8.5	PNU185	INTERP
235246	21.0	21.0		9.0	PDU200	UUT 7
185525	21.0	DA21.0	3/22/20	9.0	PNU200	INTERP
235490	25.5	25.5	NINDER THE	11	PNU235	INTERP
235489	25.5	25.5		12	PNU240	INTERP
205014	25.5	25.5		14	PNU245	INTERP
235492	31.0	31.0		12	PNU290	INTERP
235491	31.0	31.0		140	PNU295	INTERP
185475	31.0	31.0		IG 18	PNU300	UUT 13
McMillan - Direct Drive Motor			ULD	14		
0.10HP				8		EXTRAP
					Extrapolated sizes	EXTRAP
0.25HP				8		UUT 10
					Interpolated sizes	INTERP
1.0HP				20		UUT 7
Regal - Belt Drive Motors	I	I				
0.25HP				13		EXTRAP
		1		-	Extrapolated sizes	EXTRAP
0.75HP				27	· · · · · · · · · · · · · · · · · · ·	UUT 14
		1		1	Interpolated sizes	INTERP
5.0HP				89		UUT 13
Square D - Disconnect Switc	h	1	I			
2510					NEMA 1	UUT 14
Hubbell - Disconnect Switch	I	1	ļ	1		
13R92D					NEMA 3R	UUT 13
	on the next nace	Additional not	tes informativ	n and seismi	c parameters are shown at the end of	

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 1: CERTIFIED SUBCOMPONENTS

SEISMIC COMPLIANCE REPORT

TABLE 4 - WALL MNT SUBCOMPONENTS (continued)

DOCUMENT NO.: 19101CR1.0

MANUFAC	TURER: ACME E	NGINEERIN	IG & MANU	FACTURIN	G CORPOR	ATION	
PRODUCT	FAMILY: CENTRI	FUGAL EXH	IAUSTERS				
	MDED	DIN	MENSIONS	(in)	MAX. WT.	DESCRIPTION / NOTES	BASIS
MODEL NUMBER		DEPTH	WIDTH	HEIGHT	(lb)	DESCRIPTION / NOTES	BASIS
DDI Inc Belt	t Tensioner						
FS0434							UUT 14
Honeywell - F	irestats		•				
L4029E							UUT 7
KB Electronic	s - Speed Control						
KBWC-16LK							UUT 10
MOUNTING:	Mounted within unit.		FOF	CODE	SEISMIC	$S_{DS} = 2.5g$ for z/h = 1	I _P = 1.5
NOTES:	Construction/Option	s: Model nun	nber uniquely	identifies ma	nufacturer, ma	terials, and configuration of subcomp	onents.



ACME ENGINEERING & MANUFACTURING

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SEISMIC COMPLIANCE REPORT

UUT 1

DOCUMENT NO.: 19101CR1.0

••••						
MANUFAC	TURER:	ACME EN	GINEERING	& MANU	FACTUR	RING
MODEL NU						
UNIT FUNC						
SERIAL NU	IMBER:	N/A				
DIN	IENSIONS	(in)	WEIGHT	RES	. FREQ	. (Hz)
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V
79.8	79.8	58.0	1115	6.1	6.0	7.0
CODE & CI		2016 CBC	;	ICC-E	ES AC156	5
-	DRATORY:	-		STING LABORATORY		
	EPORT & DATE:		12819, Rev. 1		August 12, 2013	
S _{DS} (g)	z/h	А _{FLX-Н} (g)	А _{RIG-Н} (g)	A _{FLX-V}	(g) A _F	RIG-V (g)
2.5	1	4.00	3.00 1.68	3	0.68	
2.5	0	4.00	5.00	1.00		
Unit was fu maintained	ull of operatin	tegrity and rei	5 ing the shake mained function			turer
MOUNTING) :	-	d floor mounte lag screws.	əd on 24i	in carbon	steel cu
CONSTRU	CTION:	Rolled alu	minum housir	ng, carbo	n steel ba	ackward
SUBCOMP	ONENTS:		teel wheel (70 ucts - actuato			otor (10.0

UUT 2

0012					2/22/2					
MANUFAC	TURER:	ACME EN	GINEERING	& MANUFAC	TURING -					
MODEL NU	MBER:	PDU200R	GSC							
UNIT FUNC	-	ROOF EX	HAUSTER							
SERIAL NU	MBER:	N/A								
DIN	IENSIONS	(in)	WEIGHT	RES. FR	EQ. (Hz)					
DEPTH	WIDTH	HEIGHT	(lb)	F-B S	-S V					
34.7	34.7	25.8	153	16.9 16	5.7 13.0					
CODE & CRITERIA:		2016 CBC		ICC-ES AC156						
			MENTAL TESTING LABORATORY							
REPORT & DATE:		12819, Re	v. 1	August 12	, 2013					
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)					
2.5	1	4.00	3.00	1.68	0.68					
2.5	0	4.00	5.00	1.00	0.00					
Unit was fu maintained	ull of operating	tegrity and rei	ing the shake	table test. Ur onal per man						
MOUNTING):	-	d floor mounte lag screws.	ed on 8in cart	oon steel cur					
CONSTRUC	CTION:	Rolled alu	Rolled aluminum housing, aluminum backward curved wheel, grease trough.							
SUBCOMP										

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SEISMIC COMPLIANCE REPORT

UUT 3

	DOCUMENT NO.: 19101CR1.	0
THE		T

MANUFAC	TURER:	ACME ENGINEERING & MANUFACTURING											
MODEL NU	JMBER:	PNU135RGHSC											
UNIT FUNC	CTION:	ROOF EXHAUSTER											
SERIAL NU	JMBER:	N/A											
DIN	IENSIONS	(in)	WEIGHT	RES	RES. FREQ. (Hz								
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V							
33.7	33.7	27.4	194	10.0	10.5	7.1							
CODE & C	RITERIA:	2016 CBC	C ICC-ES AC156										
TEST LAB	ORATORY:	ENVIRONMENTAL TESTING LABORATORY											
REPORT &	DATE:	12819, Re	v. 1	August 12, 2013									
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _l	_{RIG-V} (g)							
2.5	1	4.00	3.00	1.68	,	0.68							
2.5	0	4.00	3.00	1.00		0.00							
IMPORT	ANCE FAC	ΓOR, I _P = 1.	5	E	OKI	JUDY							
Unit was f	ull of operatin	g content duri	ng the shake	table tes	t. Unit								
		tegrity and rer	mained function	onal per r	manufac	turer							
requireme	nt after shake	table test.			requirement after shake table test.								



requirement after shake	e table test.
MOUNTING:	Unit is rigid floor mounted on 24in carbon steel curb using (20) 1/4in screws. Curb is rigid foor mounted to table with (20) 3/8in lag screws.
CONSTRUCTION:	Rolled aluminum housing, aluminum backward curved wheel, hurricane rated construction, inlet guard, heat shield, stainless steel shaft, pillow block bearings.
SUBCOMPONENTS:	ACME - aluminum wheel (185523), Regal - motor (0.75HP 115/200-230V 1-phase), ACME - back draft damper with manual lever (AR18), Hubbell - disconnect switch (13R92D), DDI Inc belt tensioner (FS0434), Honeywell - firestats (L4029E).

UUT 5

DATE: 03/22/2021

MANUFAC	TURER:	ACME EN	GINEERING	& MANUFAC	TURING		C			1	
MODEL NU	JMBER:	PDU120R	FHSC				0				
UNIT FUNC	CTION:	ROOF EX	HAUSTER				SV		Tel P	P. M.	
SERIAL NU	JMBER:	N/A		22		C C	4.1	and the state of t	COLUMN TWO IS		3
DIN	IENSIONS	(in)	WEIGHT	RES. FR	EQ. (Hz)	COM	2	LALI	FC		X
DEPTH	WIDTH	HEIGHT	(lb)	F-B S	S V	NG		undi	-		11-
26.4	26.4	19.5	85	26.9 26	6.9 27.3	1		+	•		A
CODE & CI	RITERIA:	2016 CBC		ICC-ES A	C156				-	I IN I	
TEST LAB	ORATORY:	ENVIRON	MENTAL TE	STING LABO	RATORY	1	-				E
REPORT &	DATE:	12819, Re	v. 1	August 12	, 2013			-	ALC: NO	-	1
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)		TAN.				4
2.5	1	4.00	3.00	1.68	0.68	12				12	
2.5	0	4.00	3.00	1.00	0.00		1		-		A
Unit was f	ANCE FACT ull of operation d structural int nt after shake	g content duri tegrity and rer	ng the shake								
MOUNTING	DUNTING: Unit is rigid floor mounted on 8in carbon steel curb using (16) 1/4in screws. Curb is rigid foor mounted to table with (16) 3/8in screws.										
CONSTRU	CTION:	Rolled alur shield.	Rolled aluminum housing, aluminum backward curved wheel, hurricane rated construction, birdscreen, compartmen shield.								
SUBCOMP	ONENTS:		ACME - aluminum wheel (235249), McMillan - motor (0.25HP 115V 1-phase), ACME - back draft damper (AR14), KB Electronics - speed control (KBWC-16LK).								

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ACME ENGINEERING & MANUFACTURING

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SEISMIC COMPLIANCE REPORT

UUT 7

DOCUMENT NO.: 19101CR1.0

MANUFAC	TURER:	ACME EN	GINEERING	& MANU	FACTUR	ING			
MODEL NU	MBER:	PDU200R	FWSC						
UNIT FUNC	-	WALL EXI	HAUSTER						
SERIAL NU	IMBER:	N/A							
DIM	DIMENSIONS (in)		WEIGHT RES. FREQ. (Hz)						
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V			
34.7	34.7	25.8	126	N/A	N/A	N/A			
CODE & CF	RITERIA:	2016 CBC	CBC ICC-ES AC156			3			
TEST LABO		ENVIRON	ENVIRONMENTAL TESTING LABORATORY						
REPORT &	DATE:	12819, Re	v. 1	Augu	st 12, 201	13			
S _{DS} (g)	z/h	A _{FLX-H} (g)	A _{RIG-H} (g)	A _{FLX-V}	(g) A _F	_{RIG-V} (g)			
2.5	1	4.00	3.00	1.68	8	0.68			
2.5	0	4.00	5.00	1.00		0.00			
		$\Gamma OR, I_P = 1.5$		table to	OKU	,00[
		g content duri tegrity and rer				turor			
	nt after shake		named functi	onal per	manulaci	ulei			
MOUNTING	:	-	d wall mounte o fixture with						
CONSTRU	CTION:	Rolled alu	nounted to fixture with (28) 3/8in Grade 5 bolts.						
SUBCOMP	ONENTS:	ACME - al	uminum whe	el (23524	l6), McMi	llan - mo			

UUT 10

	,				2/22/20	121				
MANUFAC	TURER:	ACME EN	GINEERING	& MANUFAC						
MODEL NU	JMBER:	PDU120R	FWSC			And				
UNIT FUNC	CTION:	WALL EXI	HAUSTER							
SERIAL NU	JMBER:	N/A				2				
DIN	DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)				N Z · · · · · · · · · · · · · · · · · ·					
DEPTH	WIDTH	HEIGHT	(lb)	F-B S	-S V					
26.4	26.4	19.5	70	N/A N	/A N/A	NG ->				
CODE & CI	RITERIA:	2016 CBC		ICC-ES A	C156					
TEST LAB	ORATORY:	ENVIRON	MENTAL TE	STING LABO	RATORY					
REPORT &	DATE:	12819, Re	v. 1	August 12	., 2013					
S _{DS} (g)	z/h	A _{FLX-H} (g)	А _{кід-н} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)					
2.5	1	4.00	3.00	1.68	0.68					
2.5	0	4.00	3.00	1.00	0.00	0				
Unit was fo maintaineo	ANCE FACT ull of operating d structural int nt after shake	g content duri tegrity and rer	ng the shake							
MOUNTING	3 :	Unit is rigid wall mounted to ACME wall mount bracket using (12) 1/4in screws. Wall mount bracket is rigid wall mounted to fixture with (20) 3/8in Grade 5 bolts.								
CONSTRU	CTION:		Rolled aluminum housing, aluminum backward curved wheel, birdscreen.							
SUBCOMP	ONENTS:	ACME - aluminum wheel (235249), McMillan - motor (0.25HP 115V 1-phase), KB Electronics - speed control (KE 16LK).								

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SEISMIC COMPLIANCE REPORT

UUT 11

UUT 1 1	1							DOCUMENT NO.: 19101CR1.0
MANUFAC	TURER:	ACME EN	GINEERING	& MANU	ACTU	RING	PA do	
MODEL NU	JMBER:	PNU490R	GSC					UUTI
JNIT FUNC	CTION:	ROOF EX	HAUSTER					
SERIAL NUMBER: N/A								
DIN	DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)							
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V		
79.8	79.8	58.0	860	6.0	5.8	13.6		
CODE & CI	DDE & CRITERIA: 2016 CBC				S AC15	6		
FEST LAB	ORATORY:	ENVIRON	MENTAL TE	STING LA	BORAT	ORY		
REPORT &	DATE:	13151, Re	v. 0	April 3	0, 2014			
S _{DS} (g)	z/h	А _{FLX-Н} (g)	А _{кід-н} (g)	A _{FLX-V} ((g) A	_{RIG-V} (g)		
2.5	1	4.00	3.00	1.68		0.68		A CAN BE THE STA
2.5	0	4.00	3.00	1.00		0.00		
Unit was fu maintained	ANCE FACT ull of operating d structural int nt after shake	g content duri tegrity and rei	ing the shake			turer	COT S	
MOUNTING	3:	0	d floor mount lag screws.	ed on 24ir	n carbor	n steel cu	urb using (40) 1/4in scre	ews. Curb is rigid foor mounted to table with

requirement after shake	e table test.
MOUNTING:	Unit is rigid floor mounted on 24in carbon steel curb using (40) 1/4in screws. Curb is rigid foor mounted to table with (28) 3/8in lag screws.
CONSTRUCTION:	Rolled aluminum housing, aluminum backward curved wheel, grease trough.
SUBCOMPONENTS:	ACME - aluminum wheel (185478), Regal - motor (10.0HP 200-230/460V 3-phase), ACME - back draft damper (ARH54), Multi Products - actuator (TB2000).

UUT 12

					2/22/2
MANUFAC	TURER:	ACME EN	GINEERING	& MANUFAC	
MODEL NU	MBER:	PNU135SI	ESC		
UNIT FUNC		ROOF EX	HAUSTER		
SERIAL NU	MBER:	N/A			
DIM	DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)				
DEPTH	WIDTH	HEIGHT	(lb)	F-B S	-S V
33.7	33.7	27.4	158	12.5 12	2.8 25.7
CODE & CF	RITERIA:	2016 CBC		ICC-ES AG	C156
TEST LABO	ORATORY:	ENVIRON	MENTAL TES	STING LABO	RATORY
REPORT &	DATE:	13151, Re	v. 0	April 30, 2	014
S _{DS} (g)	z/h	A _{FLX-H} (g)	А _{кід-н} (g)	A _{FLX-V} (g)	A _{RIG-V} (g)
2.5	1	4.00	2.00	4.00	0.00
2.5	0	4.00	3.00	1.68	0.68
Unit was fu maintained	ull of operating	tegrity and rer	5 ing the shake mained functio		
requireme					
•):	Unit is rigio	d floor mounte lag screws.	ed on 24in ca	rbon steel cu
		Unit is rigio (16) 3/8in I	lag screws. minum housir		

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

SEISMIC COMPLIANCE REPORT

UUT 13

DOCUMENT NO.: 19101CR1.0

MANUFAC	TURER:	ACME EN	GINEERING	& MANU	IFACTUR	ING	a long and			RE	LOAT			
MODEL NU	JMBER:	PNU300R	PNU300RGWSC								(Service of the serv			6
UNIT FUNC	CTION:	WALL EX	HAUSTER										-	
SERIAL NU	JMBER:	N/A						_				40		m.
DIN	IENSIONS	(in)	WEIGHT	RES. FREQ. (Hz)										and the second
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V		Maria		· · ·	0 0		inter an and the little	
55.4	55.4	42.5	357	N/A	N/A	N/A		1					Real Provide P	5
CODE & C	RITERIA:	2016 CBC		ICC-E	ES AC156	3								
TEST LAB	ORATORY:	ENVIRONMENTAL TESTING LABORATORY				ORY							A CONTRACT	
REPORT &	DATE:	13151, Re	v. 0	April	il 30, 2014							Ĩ		
S _{DS} (g)	z/h	A _{FLX-H} (g)	А _{кід-н} (g)	A _{FLX-V}	(g) A _F	RIG-V (g)		Til Incia		and the second				6
2.5	1	4.00	3.00	1.68	R	0.68	XX			1	-	1 152	ANC:	
2.5	0	4.00	5.00	1.00		0.00	NI.							
		ΓOR, I _P = 1.		E	OKr	,000	200		-					1
		g content duri	U				Transa of	MA					CALORIN LINPART	
		tegrity and rei	mained function	onal per	manufact	urer								
requireme	nt after shake	e table test.	15		$\square \subseteq$			The second se	2	1			Real Property	
MOUNTING	3 :	-	d wall mounte				acket us	ing (20) 1	/4in scre	ws. Wall	mount b	racket	is rigid wall	
		mounted to fixture with (24) 3/8in Grade 5 bolts.												
CONSTRU	CTION:	Rolled alu	Rolled aluminum housing, aluminum backward curved wheel, grease trough.											
						NAMES OF A		MXXXXXXX						
SUBCOMP	ONENTS:		uminum whe	el (18547	75), Rega			200-230	/460V 3-p	<mark>h</mark> ase), H	ubbell - d	discon	nect switch	
		(13R92D).		BY: V	viilla	11 21	taen	IIN 🖉						

UUT 14

UUT 14	ŀ				22/5			
MANUFACT	FURER:	ACME EN	GINEERING	& MANUFA	CTUR	ing –		
MODEL NU	MBER:	PNU135RFWSC						
UNIT FUNC	TION:	WALL EXH	WALL EXHAUSTER					
SERIAL NU		N/A						
DIM	DIMENSIONS (in) WEIGHT RES. FREQ. (Hz)				(Hz)			
DEPTH	WIDTH	HEIGHT	(lb)	F-B	S-S	V		
33.7	33.7	27.4	111	N/A	N/A	N/A		
CODE & CR	RITERIA:	2016 CBC		ICC-ES	AC156	;LD		
TEST LABC		ENVIRON	MENTAL TES	STING LAB	ORAT	ORY		
REPORT &	DATE:	13151, Re	v. 0	April 30,	, 2014			
S _{DS} (g)	z/h	A _{FLX-H} (g)	А _{RIG-Н} (g)	A _{FLX-V} (g) A _R	_{IG-V} (g)		
2.5	1	4.00	3.00	1.68		0.68		
2.5	0	4.00	3.00	1.00		0.00		
	ANCE FACT							
	Ill of operating		0					
	l structural int nt after shake	0,	nained function	onal per ma	inufact	urer		
MOUNTING		Unit is rigio	d wall mounte					
CONSTRUC	CTION:		mounted to fixture with (16) 3/8in Grade 5 bolts. Rolled aluminum housing, aluminum backward curved wheel, stainless steel shaft, pillow block bearings.					
SUBCOMPO	ONENTS:		uminum whee 01 Inc belt te		. 0			

ACME ENGINEERING & MANUFACTURING

ATTACHMENT 3: MODEL NOMENCLATURE

SEISMIC COMPLIANCE REPORT

PDU ROOF CENTRIFUGAL EXHAUSTERS

DOCUMENT NO.: 19101CR1.0

	JOF CENTRIFUGAL EXHAUSTERS
DIGIT: SAMPLE	1 2 3 4 5 6 7 8 9 10 11
DIGIT	DIGIT DESCRIPTION CODES DEFINITIONS
1-3	Product Family PDU PDU Direct Drive Centrifugal Roof Exhausters
4-6	Model Size 080 Size 080
	Interpolated Sizes (See Table 1)
	200 Size 200
7-8	Application Type RF Roof Exhauster (Aluminum Wheel)
	RG Restaurant Grease Rated Roof Exhauster (Alumunum Wheel)
	SE Smoke Rated Roof Exhauster (Carbon Steel Wheel)
9	Hurricane Rating (optional; Seismic [null] No Hurricane Rated Construction if Character is Not Present
	Construction starts at digit 9 if not present)
10-11	Seismic Construction

PNU ROOF CENTRIFUGAL EXHAUSTERS

DIGIT: SAMPLE	1 2 3 4 5 6 7 8 9 10 : P N U 1 3 5 R G H S	11						
DIGIT		CODES	3 DEFINITIONS					
1-3	Product Family	PNU	PNU Belt Drive Centrifugal Roof Exhausters					
4-6	Model Size	080	Size 080					
	BY: V	villiam	Interpolated Sizes (See Table 1)					
		490	Size 490					
7-8	Application Type	RE / O O	Roof Exhauster (Aluminum Wheel)					
		RG/ZZ/	Restaurant Grease Rated Roof Exhauster (Alumunum Wheel)					
9	Hurricane Rating (optional; Seismic	[null]	No Hurricane Rated Construction if Character is Not Present					
	Construction starts at digit 9 if not present)	Н	Hurricane Rated Construction					
10-11	Seismic Construction	SC	Seismic Construction					



ACME ENGINEERING & MANUFACTURING

ATTACHMENT 3: MODEL NOMENCLATURE

SEISMIC COMPLIANCE REPORT

PDU WALL CENTRIFUGAL EXHAUSTERS

DOCUMENT	NO.: 19101CR1.0

DIGIT: SAMPLE	DIGIT: 1 2 3 4 5 6 7 8 9 10 SAMPLE: P D U 1 2 0 R F W S							11 C	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-			
DIGIT	DIGIT DIGIT DESCRIPTION							(COD	ES	DEFINITIONS																		
1-3	Product Family								F	DU		PDU Direct Drive Centrifugal Wall Exhausters																	
4-6	Model Size						C	80	Size 080																				
					••		Interpolated Sizes (See Table 2)																						
											2	200		Si	ze 2	00													
7-8	Application Type						F	RF	Roof Exhauster (Aluminum Wheel)																				
											F	۲G		Restaurant Grease Rated Roof Exhauster (Alumunum Wheel)															
							S	ε		Smoke Rated Roof Exhauster (Carbon Steel Wheel)																			
9	Mounting							۷	V		W	Wall Mounted with ACME Wall Mount Bracket																	
10-11	Seismic Construction							SC	0	Seismic Construction																			

PNU WALL CENTRIFUGAL EXHAUSTERS

DIGIT: SAMPLE	1 2 3 4 5 6 7 8 : P N U 1 3 5 R F		C C -	
DIGIT			CODES	DEFINITIONS
1-3	Product Family		CPNUP-C	PNU Belt Drive Centrifugal Wall Exhausters
4-6	Model Size		080	Size 080
		by: V	300	Interpolated Sizes (See Table 2)
7-8	Application Type		RF	Roof Exhauster (Aluminum Wheel)
			RG	Restaurant Grease Rated Roof Exhauster (Alumunum Wheel)
9	Mounting	DAIE	$(\psi)/ZZ/$	Wall Mounted with ACME Wall Mount Bracket
10-11	Seismic Construction		SC	Seismic Construction
	T.	ORNI	A BUILI	DING CODE 20

