<i>Faci</i> 400 R	lities Development Division v Street. Suite 200, Sacramento, California 95811-	www.oshpd.ca.gov/fdd -6213 Phone (916) 440-8300 Fax (916) 654-2973
		N FOR PREAPPROVAL CATION OF EQUIPMENT AND COMPONENTS
		heck whether application is: NEW RENEWAL X
	OSP – 0223-10	
1.0	Greenheck Fan Corporation	Brian Mleziva Manufacturer's Technical Representative
		nheck Drive, Schofield, WI 54476
		Mailing Address
	(715) 841-8712 Telephone	Brian.Mleziva@greenheck.com <i>E-mail Address</i>
2.0	QEI, QEID, and VK-H	Mixed Flow and Lab Exhaust Fans
	Product Name	Product Type
		ncluded in this listing: See Certified Product Matrix que product identification numbers and/or serial numbers)
	and exhaust fans. All modifications made	uding mixed flow and centrifugal, inline and rooftop, supply to the tested units before and during the tests and nalies observed during the tests shall be incorporated into
3.0	Greenheck Fan Corporatio	n Tim Kuski
	Applicant Company Name	Contact Person
	1100 Gree	nheck Drive, Schofield, WI 54476
		Mailing Address
	715-355-2232	Tim.Kuski@Greenheck.com
	Telephone	E-mail Address
	eby agree to reimburse the Office of s incurred by the department for revie	Statewide Health Planning and Development for the actual ew.
	withe Downsky	11/01/11
	Signature of Applicant	Date
	General Manager, CVI	Greenheck Fan Corporation
	Title	Company Name
	-FDD 759 1 of 3	State of California – Health and Human Services Agency <i>Edmund G. Brown Jr., Governo</i> Page 1 of 17

Office of Statewide Health Planning and Development

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Office of Statewide Health Planning and Development



Regi	stered Design Professional Prepar	ing the Report	
		ANCO Engineers, Inc.	
		Company Name	
	John C. Stoessel		C 37259
	Contact Name		alifornia License Number
	1965	-A 33 rd St., Boulder, CO 80301	
		Mailing Address	
	(818) 591-9001	john	@ancoengineers.com
	Telephone		E-mail Address
Calif	ornia Licensed Structural Enginee	r Review and Acceptance of the	e Report
	Tobols	ki Watkins Engineering Inc.	
	100013	Company Name	
	Derrick Watkins Contact Name		S 5257
	Contact Name	(California License Number
	3170 Ru	uffin Road, San Diego, CA 92123	
		Mailing Address	
	(858) 381-5843	dwatki	ns@tobolskiwatkins.com
	(000) 301-3043 Telephone		E-mail Address
Anch	orage Pre-Approval		
	Anchorage is pre-approved under (OPA-	
	• • • • •		
	(Separate application for anchorage	e pre-approval is required)	
\ge	Anchorage is not Pre-approved		
Certi	fication Method		
\boxtimes		🖂 ICC-ES AC-156	Other (Please Specify):
	Testing in accordance with:	A ICC-ES AC-150	\Box Other (Flease Specify).
_	Analysia		
	Analysis		
	Experience data		
	Combination of Testing, Analysis, a	and/or Experience Data (Please S	pecify):
-			
esti	ng Laboratory (if applicable)		
	ANCO Engineers, Inc.		Paul Ibanez
	Company Name		Contact Name
	1965-4	33 rd Street, Boulder, CO 80301	
	1900-7	· · ·	
	(303)443-7580 x239	Mailing Address	ul@ancoengineers.com
	ζ, ,	pat	
	Telephone		E-mail:
FDD 1 of		State of California	- Health and Human Services Age Edmund G. Brown Jr., Go

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"Equitable Healthcare Accessibility for California"

Office of Statewide Health Planning and Development



Approval Parameters	
Design in accordance with ASCE 7-05 Chapter 13: 🛛 Yes 🗌	No
Design Basis of Equipment or Components $(F_p/W_p) = 5.1$ (Iso. Floor), 1.7	(Rigid Curb), 4.1(Hung Iso.)
S_{DS} (Spectral response acceleration at short period) = 2.28g	
a_p (In-structure equipment or component amplification factor) =2.5	
R_p (Equipment or component response modification factor) = 2.0 (I	so. Floor), 6.0 (Rigid Curb), 2.5 (Hung Iso.)
I_p (Importance factor) = 1.5	
z/h (Height factor ratio)= 1.0	
Equipment or Component fundamental period(s) = See UUT Spec	cification and Data Sheets
Building period limits (if any) = none	
Overall dimensions and weight (or range thereof) =See Certified	Product Matrix
Equipment or Components @ grade designed in accordance with ASCE 7	7-05 Chapter 15: 🗌 Yes 🔀 No
Design Basis of Equipment or Components (V/W) =	
S_{DS} (Spectral response acceleration at short period) =	
S_1 (Spectral response acceleration at 1 second period) =	
R (Response modification coefficient)=1.0	
Ω_0 (System overstrength factor) =1.0	
C_d (Deflection amplification factor) =1.0	
I_p (Importance factor) =1.5	
Height to Center of Gravity above base =	
Equipment or Component fundamental period(s) = Sec	
Overall dimensions and weight (or range thereof) =	
Tank(s) designed in accordance with ASME BPVC, 2007: 🗌 Yes	🖂 No
D List of attachments supporting the special seismic certification of eq	uipment or components:
	Certified and Tested Unit Descriptions
	Certined and Tested Onit Descriptions
OSHPD Approval (For Office Use Only)	December 31, 2016
Signature & Date	Approval Expiration Date
M. R. Karim, SHFR	S _{DS} (g) = 2.28 z/h = 1.0
Name & Title Condition of Approval (if any):	Special Seismic Certification Valid Up to

			Inline Mixed Flow	Fans For Special Seismic Ce	ertification				
Model	Fan Arrangement	Testing Scope	Mounting	Options/Accessories	Level/Construction	Length*	Width*	Height*	Weight*
QEI-9	9	Interpolated				28.5	34.7	40.25	180
QEI-12	9	UUT #9, #6				30.13	34.7	40.25	190
QEID-12	4	UUT#7				25	18.63	22.88	110
QEI-15	-					31	39.2	47.63	220
QEID-15						25	21.25	26.13	140
QEI-16						34	41.2	50.25	250
QEID-16						26	23.75	28.5	170
QEI-18						39.5	44.2	55.13	320
QEID-18						29	25.38	30.63	200
QEI-20			Horizontal Discharge			41.5	46.2	57.25	370
QEID-20			Base Mounted on			34	27.13	32.75	250
QEI-22			Vibration Isolators with	UL-762, UL-705 HT-UL,		44	49.2	59.88	430
QEID-22			Motor in Positions A,	sitions A, Construction, Sure-Aire,	Belt & Direct Drive, Class I & II,	35.5	29.38	35.38	370
QEI-24			C, G (for Arrangement			49	53.2	66.5	550
QEID-24			9) and Direct Drive	Motor Cover, Mounting	Steel, Spark B & C	41.5	32.63	40.13	480
QEI-27	Arr. 4 & 9		(Arrangement 4)	Rails, Access Door, Inlet	Resistant	53	56.2	69.5	680
QEID-27	(Direct and	Interpolated		Flange, Outlet Flange, Inlet & Outlet Companion	Construction	45	35.13	43	570
QEI-30	Belt Driven)		Suspended From	Flanges, Belt Tube, Belt	Steel and Aluminum	60.5	68.5	77.5	1100
QEID-30			Spring Isolators with	Guard, Inlet Guard, Outlet	Wheel, Steel	50	45.63	47.88	860
QEI-33	-		Motor in Positions E,	Guard, Copper Lube Lines,	Housing	64.5	71.5	81.5	1200
QEID-33			C, and G (for	Extended Life Bearings	5	54	49.75	51.88	1140
QEI-36	-		Arrangement 9) and Direct Drive	C C		69	76.5	87	1500
QEID-36			(Arrangement 4)			58	54.5	57.38	1360
QEI-40			(Anangement 4)			75.5	88.9	96	2000
QEID-40						61	60.75	63.38	1650
QEI-44						80.5	95.6	104	2400
QEID-44						70	66.63	69.38	2190
QEI-49						86.5	101.6	111.5	3100
QEID-49						80.5	72.88	75.5	2700
QEI-54	1					93.5	109.6	121.75	3700
QEID-54	4	UUT #10	1			83	81.13	83.63	3130
QEI-60	9	UUT #5, #8	1			102.4	117.6	126.5	4200

Special Seismic Certification Certified Product Matrix

Note: Weight is less motor and accessories. Size depends on motor size and location.

			Rooftop Lab Exhau	ust Fans for Special S	eismic Certification				
Model	Fan Arrangement	Testing Scope	Mounting	Options/Accessories	Level/Construction	Depth*	Max Width* W/ 3X1 plenum	Height*	Weight* W/ 3X1 plenum
VK-H 9		UUT 4		UL/cUL-705, UL-		39	75.38	146	954
VK-H 10 VK-H 12 VK-H 13 VK-H 16		Interpolated		762, Fan Outlet Nozzle, Attenuating Outlet Nozzle, Access Door, Motor		39 39 42 47	75.38 75.38 81.38 93.38	146 146 146.5 146.5	954 954 1052 1217
VK-H 18		UUT 3	Vertical Upblast Fan	Cover, Bearing Cover, Stack Extension, Sure- Aire, Bypass Air	Belt drive Class II Arrangement 9	53	111.38	146	1517
VK-H 22	-		Rigid Base Mounted			60	129.38	145.25	1865
VK-H 24		Interpolated	on Roof Curb			68	147.38	146	2268
VK-H 30				Plenum, Isolation	Spark B	74	165.38	155.5	2719
VK-H 36	9	UUT 1 & 2	Bypass Air Plenum Configurations 1x1 2x1 3x1	Damper, Bypass Damper, Bypass Damper Weatherhood, Bypass Damper Attenuating Weatherhood, Damper Actuators, Disconnect Switches, Roof Curb	Resistance Construction Aluminum Wheel Steel Housing	82	183.38	167	3336

Note: Weight is less motor and accessories. Size depends on motor size and location.

Greenheck Model Line	Motor Manufacturer	Weight (lbs)	HP	Voltage	Drive	Comment	UUT				
		13	1/3	110V-575V	any	Smallest					
	WEG										
		1302	100	208/230/460	Belt	Largest	5,8				
		20	1/3	110V-575V	any	Smallest					
Mixed Flow (QEI & QEID)		89	7.5	208/230/460	Belt	Largest on Small Fan	6,9				
	Baldor	99	5	208/230/460	Direct	Largest on Small Fan	7				
						·					
		1350	100	110V-575V	any	Largest					
-	Marathon Electric	14	1/3	110V-575V	any	Smallest					
		1400	100	460V	Direct	Largest	10				
	WEG	20	.75	110V-575V		Smallest					
		499	20	208/230/460	Belt	Largest	1&2				
		23	.75	110V-575V	Belt	Smallest					
Lab Exhaust	Baldor	57	2	208/230/460	Belt	Largest on Small Fan	4				
(Vektor-H)		492	20	208/230/460	Belt	Largest	1				
		20	.75	110V-575V	Belt	Smallest					
	Marathon Electric	123	5	208/230/460	Belt	Largest on Small Fan	3				
	Electric										
		500	20	230/460	Belt	Largest	1				

All motors are available in voltages ranging from 110V to 575V based upon customer request.

Item	Unit #	Max Depth (X) [in]	Max Width (Y) [in]	Max Height (Z) [in] ^ª	Item Weight [Ibs]	CG [in] ^b	Mounting
		V	ektor-H La	b Exhaust Fans	;	1	
						91.42324	
1	VK-H-36-A200-X-3x1	184	87	145.5	6038	37.94056	Curb Mount
						61.70495	
						28.8	
2	VK-H-36-X1	58.25	106	145	2321	43.15	Curb Mount
						65.35	
	VK-H-18-A50-UL762-					16.9	
3	1x1	38.5	48.25	124.5	667	21.2	Curb Mount
						36.3	
						11.4	
4	VK-H-9-M20-X-1x1	27	32.5	123.5	363	14.8	Curb Mount
						29.6	
		Mixe	d Flow Inlin	ne Ventilation	Fans		
_		100				53.76233	Spring isolated
5	QEI-60-II-1000-HTUL	106	117.5	101	5678	53.62883	direct
						53.45892	
6		20.5	20.25	26.25	250	14.375	suspended spring
6	QEI-12-I-75-G	30.5	20.25	36.25	250	10	iso
						23.75	
7	QEID-12-50-M50-X	31.25	20.25	22.25	199	13.25 10.125	suspended spring
/	QLID-12-30-10130-X	51.25	20.25	22.25	155	13.325	iso
						53.76233	
8	QEI-60-II-1000-HTUL	106	117.5	101	5678	53.62883	suspended spring
						53.45892	iso
						14.375	
9		00 F	••• • •			10	spring isolated
	QEI-12-I-75-G	30.5	20.25	36.25	250	23.75	direct
						37.95888	
10	QEID-54-75-C1000	86.5	82	80	4350	40.47299 37.19003	spring isolated direct

UUT Specification and Data Sheets

a) Curb height not included

b) 1^{st} line = depth, 2^{nd} line = width, 3^{rd} line = height

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 / .		-/

ANCO Engineers, Inc. 1965A 33rd Street Boulder, CO 80301 (303)443-7580

Unit Under Test (UUT) Summary Sheet

ANCO Project Number: 3298.05

	And The Section Sectio
Manufacturer:	Greenheck Fan Corporation (Schofield, WI, USA)
Model Line:	Vektor-H Lab Exhaust Fans
Model Number:	VK-H-36-A200-X-3x1
Product	Three VK-H-36-A200-X fans with standard nozzle cones mounted on a VK-H-36-A200-X-
Construction	3x1 bypass air plenum which was then mounted on a 3 piece VKCURB-56.63/182.44-
Summary:	S24 Curb mounted on a W8x15 steel I-beam base. Aluminum wheel, Steel Housing,
	Arrangement 9.
Options/	Each fan had a Fan Outlet Nozzle, Access Door, motor cover, bearing cover, 3X1 bypass
Subcomponent	air plenum, disconnect switch, Spark B BISW wheel, isolation damper (controlled),
Summary:	isolation damper actuator, Bypass damper (controlled), bypass damper actuator, drain
	connection, weatherhood (2 full size and one just for the actuator), and 2 of the 3 fans
	had a bypass air damper in the weatherhood. Fan 1: Baldor, 20Hp, 460/230/208V; Fan
	2: Marathon, 20Hp, 460/230V; Fan 3: WEG, 20Hp, 460/230/208V. Belt Drive.
	UL Listing: UL/cUL-705
	UIIT Properties

	our properties									
Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)						
	Depth	Width	Height	Front-Back	Side-Side	Vertical				
6038	184	87	145.5	Fan 1; 7.1,	Fan 1; 7.9,	Fan 1; 15.0,				
				Fan 2; 7.1,	Fan 2; 7.8,	Fan 2; 15.6,				
				Fan.3; 7.1	Fan.3; 7.8	Fan.3; 15.3				

UUT Highest Passed Seismic Run Information

oor mynestr usseu seisine nun mjormution										
Building Code	Test Criteria	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}		
CBC 2010	ICC-ES AC-156	2.28	1.0	1.5	3.65	2.74	2.44	1.83		

Test Mounting Details:



The unit was anchored using fasteners centered on the 5" curb flange with 7.5" center to center between screws. 5/16"-24 Dril-Flex Self Drilling/Tapping Screws with 3/16" Min. thread engagement into A36 steel with 5/8" min. edge distance were used.

Form: UUT, revision 0.0

۸NC	O Enginee						JUT		
		rs, Inc.		Uni	it Und	er Te	st (Ul	JT)	
1965A 33rd Str Boulder, CO 80					Summ	arv 9	Sheet		
(303)443-7580	501				Jumm			Num	DOR: 2200 0E
Manufacturer:	Greenbeck	an Corn	oration	(Schofield, V	νι μεδ)	ANC	O Project	NUIII	ber: 3298.05
Model Line:	Vektor-H La				vi, 03Aj				
Model Number									
Product				th attenuatir	ng nozzle co	ne mour	nted on a \	/K-H-	36-X1
Construction				as then mour	-				
Summary:	•••			luminum Wh					
Options/				utlet Nozzle,					cover, 1x1
Subcomponent			-	nnection, By				-	
Summary: Disconnect Switches,					• •		-		
•	I			IUT Propertie		• *	•		
Weight (lb)	Dimensions (in)			•	Lowest I	Natural F	requency	(Hz)	
-	Depth	Width		Height	Front-Ba	ick S	ide-Side	\	/ertical
2321	58.25	106		145	4.0	5	.0	1	.4.4
	l	JUT High	nest Pas	ssed Seismic	Run Inform	ation			
Building Code	Test Criteria	S _{DS}	z/h	I _P	A_{FLX-H}	A _{RIG-H}	A _{FLX-}	v	A _{RIG-V}
CBC 2010	ICC-ES AC-156	2.28	1.0	1.5	3.65	2.74	2.44		1.83
Test Mounting									7 9

The unit was anchored using fasteners centered on the 5" curb flange with 7.5" center to center between screws. 5/16"-24 Dril-Flex Self Drilling/Tapping Screws with 3/16" Min. thread engagement into A36 steel with 5/8" min. edge distance were used.

Form: UUT, revision 0.0

ANC			ers, Inc.		Ur	nit	Unde	er T		JT # (יטט			
1965A 33rd Str Boulder, CO 80				Summary Sheet									
(303)443-7580				ANCO Project Number: 3298.05									
Manufacturer:		Greenheck	Fan Corpo	oratio	n (Schofield,	WI	, USA)						
Model Line:		Vektor-H La	b Exhaus	t Fans									
Model Numbe	r:	VK-H-18-A5	0-UL762-	1x1									
Product		One VK-H-1	8-A50-UL	.762-1x1 fan with standard nozzle cone mounted on a bypass air									
Construction		plenum whi	ich was th	nen me	ounted on a	GP	FHLV33-G	18 Cu	rb moւ	unted to v	woo	od decking	
Summary:		on the shak	e table. A	Aluminum wheel, steel housing, Arrangement 9. Iozzle, Access Door, Motor Cover, Bearing Cover, Stack Extension,									
Options/		UL-762, Fan	Outlet N	ozzle,	Access Doo	r, N	lotor Cove	er, Bea	aring C	over, Sta	ck E	xtension,	
Subcomponen	t	1x1 Bypass	Air Plenu	m, dra	in connectio	on, I	Disconnec	t Swit	ches, 2	18" Roof	Cur	b (Vented),	
Summary:		Motor: Mar	athon Ele	ectric,	5Hp, 460/23	30/2	208V. Belt	Drive	•				
					UUT Proper	ties							
Weight (lb)	Di	mensions (in)		Lowest				t Natural Frequency (Hz)				
	De	epth	Width		Height		Front-Ba	ck	Side-Side		Vertical		
667	38	-	48.25		124.5		5.0		4.0		1	5.0	
					issed Seismi	1	-	ation				T	
Building Code		Test Criteria	S _{DS}	z/h	I _P		A _{FLX-H}	A _{RIG}		A _{FLX-V}		A _{RIG-V}	
CBC 2010		CC-ES AC-156	2.28	1.0	1.5	3	3.65	2.74	ł	2.44		1.83	
Test Mounting	; De	tails:											

The unit was anchored using eight 3/8" wood lag screws per side through the curb flange into 4x4 backing lumber.

Form: UUT, revision 0.0

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				UUT # 4 Unit Under Test (UUT)									
		ers, Inc.		Ur	nit	: Unde	er 1	Test	(UU)	Г)			
1965A 33rd Str					C	umm	25	, Ch	oot	-			
Boulder, CO 80 (303)443-7580			Summary Sheet										
	1		ANCO Project Number: 3298.05 pration (Schofield, WI, USA)										
Manufacturer:		•		•	, WI	, USA)							
Model Line:	Vektor-H La		t Fans										
Model Numbe	-	-		h standard .						1 C12 Curb			
Product Construction				h standard r on the shak									
Summary:	Arrangeme		ecking	on the shak	le la	ible. Alum	mum	wneel	, steel no	usilig,			
Options/				zzle, Access		or Motor	Cove	r Roor	ing cover	drain			
Subcomponen	-	-		-		-			•	nnect Switch,			
Summary:				dor, 2Hp, 46	-		•	•	(y), Disco				
<u> </u>	12 11001 0			UUT Proper									
Weight (lb)	Dimensions (ir	n)					Vatura	al Fred	uency (H	z)			
	Depth	Width				Front-Back		Side	Vertical				
363	27	32.5		123.5		4.1 4		4.1		11.1			
		UUT High	nest Pa	assed Seism	ic R	un Inform	ation						
Building Code	Test Criteria	S _{DS}	z/h	Ι _Ρ		A _{FLX-H} A _{RI}		RIG-H A _{FLX-V}		A _{RIG-V}			
CBC 2010	ICC-ES AC-156	2.28	1.0	1.5		3.65	2.74	1	2.44	1.83			
Test Mounting	Details:												

The unit was anchored using four 3/8" wood lag screws per side through the curb flange into 4x4 backing lumber.

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Form: UUT, revision 0.0

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Page 1 of 2

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		ers, Inc.		Un	it	: Unde	er 1		JT # (יטט			
1965A 33rd Sti Boulder, CO 80				Summary Sheet								
(303)443-7580					Ŭ		-			ımh	er: 3298.05	
Manufacturer	Greenheck	Fan Corp	oratior	n (Schofield,	W	, USA)	,,		ojectiva		ci. 5250.05	
Model Line:	Mixed Flow	w Inline Ve	entilatio	on Fans								
Model Numbe	r: QEI-60-II-1	.000-HTUL	-									
Product	Belt drive	Mixed Flov	w Inline	e fan base m	ou	nted on a	struct	tural ba	ase on se	ism	ic spring	
Construction Summary:	isolators w	in Pos	ition G. Stee	۱w	heel, stee	l hous	ing, Ar	rangeme	ent 9).		
Options/ Subcomponen Summary:		Base, Inle	t Guarc Drive.	, Extended Li d, Outlet Gua	ard	, Seismic F						
			l	UUT Propert	ies							
Weight (lb)	Dimensions (i			Lowest Natur			-		- T			
	Depth	Width		V		Front-Ba	ck	Side-	Side	-	ertical	
5678	106	117.5	hast De	101 2.6 est Passed Seismic Run Informati		ation	3.2		6.	9		
Building Code	Test Criteria	-	z/h		1	ан ттјоттт А _{ғіх-н}	T		A _{FLX-V}		A _{RIG-V}	
CBC 2010	ICC-ES AC-156	55	1.0	1.5		4.76	А _{кід-н} 3.58		3.17		2.36	
Test Mounting	Anchored to for		SH-1E-2						a grada	85	/8"-11 holt	
				r (one of eac		-			ie graue	55	-11 DOIL	

Form: UUT, revision 0.0

ANC		eers, Inc.		Uni	it	Unde	er T		JT # (יטט)		
1965A 33rd Str Boulder, CO 80			Summary Sheet								
(303)443-7580						•••••	-			mber: 3298.05	
Manufacturer	Greenheo	k Fan Corp	oratio	n (Schofield, V	VI,	, USA)			,		
Model Line:	Mixed Flo	w Inline Ve	ntilati	on Fans							
Model Numbe	r: QEI-12-I-7	75-G									
Product	Belt drive	Mixed Flow	v Inlin	e fan suspend	lec	d from seis	smic s	spring i	solators	with motor in	
Construction	Position E										
Summary:		norte D. D.a!	atourt 1	Construction -	C	ank C Da-!	ot 0 +	Const	untion D	altad Access	
Options/				Construction,							
Subcomponen		tor Cover, l	-		et	Companie		inge, C	opper Lu	be Lines, Belt	
Summary:	Tube, Nic	tor cover, i			~~						
Weight (lb)	Dimensions	:m)		UUT Propertie	25	Lowest N	latur		uonay (U	-)	
weight (ib)	Depth	Width	Height			Lowest Natura Front-Back		Side-		Vertical	
250	30.5	20.25		36.25	N/A		CK	N/A		N/A	
230	50.5		nest Pr		Rı	Run Information					
Building Code	Test Criteri		-		1	-		A _{RIG-H} A _{FLX-V}		A _{RIG-V}	
CBC 2010	ICC-ES AC-15	5	1.0	1.5		3.65 2.			2.44	1.83	
	as anchored to										
	revision 0.0	b" long and	l was a	also restraine	dk	by four VN	VIC SE	-250 si	-	age 1 of 2	

Form: UUT, revision 0.0

ANC	X	Enginee	ers, Inc.		Uni	t Unde	er T		JT # (UU ⁻			
1965A 33rd St Boulder, CO 80 (303)443-7580	0301			Summary Sheet ANCO Project Number: 3298.05								
Manufacturer	: 0	Greenheck	Fan Corpo	oratio	n (Schofield, V	/I, USA)						
Model Line:	Ν	Mixed Flow	Inline Ve	ntilati	on Fans							
Model Numbe	er: C	QEID-12-50	-M50-X									
Product Construction Summary:		Direct drive	Mixed Fl	ow Inl	ine fan susper	ided from s	eismi	c sprin	g isolatoı	rs.		
Options/	В	Bolted Acce	ess Door, l	Univer	sal Mounting	System, UL	/cUL-	705, Su	re Aire F	low probes,		
Subcomponer Summary:	nt E	Extended N	lotor Wiri	ing.		•						
					UUT Propertie	s						
Weight (lb)	Dime	ensions (in				Lowest N	latura	l Freq	uency (H			
	Dept		Width		Height	Front-Ba	ck	Side-	Side	Vertical		
199	31.25	-	20.25		22.25	N/A		N/A		N/A		
			-		issed Seismic	2	r		T			
Building Code		st Criteria	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG}		A _{FLX-V}	A _{RIG-V}		
CBC 2010	ICC	C-ES AC-156	2.28	1.0	1.5	3.65	2.74		2.44	1.83		
JAF SUPPORT BOS TO STRUCTURE TO CRUMO ATTACHMENT THE WIC CROUP STRUCTUREL C CHAINEL THE WIC CROUP STRUCTUREL C CHAINEL		MC EDICS MC	KO STITTER S GROUP DON HANGER KA KA KA	The u ceiling IRS-1D ¾"-10 ong ar	unting Details nit was ancho g fixture using 0-120 spring h threaded rod nd was also re MC SB-250 sw kits.	red to the four VMC angers with cut to 26" strained by						

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ANC	7	Denging	ors Inc		UUT # 8 Unit Under Test (UUT)								
1965A 33rd St			ers, inc.										
Boulder, CO 80					Summary Sheet								
(303)443-7580		-					a	-			ımber: 3298.05		
Manufacturer		Greenheck	Fan Corn	oratio	n (Schofield	W/I	USA)				111001. 3238.03		
Model Line:	-	Mixed Flov				,	,,						
Model Numbe	er:	QEI-60-II-1											
Product Belt drive Mixed Flow					e fan Suspe	nde	d mounte	ed fror	n a stru	uctural ba	ase on seismic		
Construction spring isolators with					•								
Summary:													
Options/		HT-UL, Bol	ted Acces	s Door	, Extended I	Life	Bearings	L(10)-2	200K, E	elt Tube	, Structural		
Subcomponen	Base, Inlet	utlet G	Juard, Seism	nic Fl	lange We	lds, M	otor: V	VEG, 100	Нр,				
Summary:		460/230/2	08V. Belt	Drive.									
					UUT Proper	rties							
Weight (lb)	Di	mensions (ii			Lowest Natural Frequency						z)		
	De	epth	Width		Height		Front-Back		Side-Side		Vertical		
5678	10	6	117.5		101		N/A		N/A		N/A		
					assed Seism	ic R	un Inforn	1	1				
Building Code		Test Criteria	S _{DS}	z/h	I _P		A _{FLX-H}	A _{RIG}		A _{FLX-V}	A _{RIG-V}		
CBC 2010		CC-ES AC-156	2.28	1.0	1.5	3	3.65	2.74	1	1.53	0.62		
Test Mounting													

The unit was anchored to the ceiling fixture using four Mason RW30N-D-2150 spring hangers with ³/₄"-10 threaded rod cut to 26" long and was also restrained by four SCB-4 sway bracing kits with 3/8" diameter Steel Aircraft Cable.

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ANC	X	DEngine	ers. Inc.		11	.:.	مماد			JT #		
1965A 33rd St				Unit Under Test (UUT)								
Boulder, CO 80				Summary Sheet								
(303)443-7580				ANCO Project Number: 3298.05								
Manufacturer		Greenheck	Fan Corpo	oratio	n (Schofield,	wi	. USA)			ojectiva	111501: 5250.05	
Model Line:	-	Mixed Flow	•		•	,	, ,					
Model Numbe	r:	QEI-12-I-75	-G									
Product		Belt drive N	/lixed Flov	v Inlin	e fan, base r	nou	inted on se	eismi	c spring	g isolator	s with motor	
Construction		in Position	A. Alumin	um w	heel, Steel h	ous	ing with al	umin	um inle	et cone, /	Arrangement	
Summary:												
Options/	ark B Resi	stant (Construction	, Sp	ark C Resi	stant	Constr	uction, B	olted Access			
Subcomponen	t	Door, Inlet	& Outlet I	Flange	e, Inlet & Out	tlet	Companio	n Fla	nge, Co	opper Lub	oe Lines, Belt	
Summary:		Tube, Moto	or Cover, I	Drain (Connection,	Mo	tor: Baldo	r, 7.5I	Hp, 460)/230/20	8V. Belt Drive.	
					UUT Propert	ties						
Weight (lb)		mensions (in					Lowest N		· · ·			
		epth	Width		Height		Front-Back		ck Side-Si		Vertical	
250	30		20.25		36.25		5.2		7.2		16.2	
				1	assed Seismi	-	-	1		1		
Building Code	_	est Criteria	S _{DS}	z/h	Ip		A _{FLX-H}			A _{FLX-V}	A _{RIG-V}	
CBC 2010		CC-ES AC-156	2.28	1.0	1.5	3	3.65	2.74	ł	2.44	1.83	
Test Mounting	; De	etails:					Y					



The unit was anchored to the table using four VMC MS-1C-150 spring isolators which were welded to the table surface.

Form: UUT, revision 0.0

		DEngine	ers, Inc.		Uni	it Und	er 1		דע # (יייי)			
1965A 33rd S				Unit Under Test (UUT) Summary Sheet								
Boulder, CO 8		L				Summ	nary	/ Sh	eet			
(303)443-758	0						A	NCO P	roject Nu	mber: 3298.05		
Manufacture	r:				n (Schofield, V	VI, USA)						
Model Line:		Mixed Flow		entilat	ion Fans							
Model Numb	er:	QEID-54-75										
Product Construction Summary:					line fan base r el housing, Arr			MSH-1	LE-1700 s	eismic spring		
Options/		Quick Oper	ning Acces	s Doc	or, Sure-Aire, I	nlet & Outl	et Flan	ige, Inle	et & Outl	et Guards,		
Subcompone	nt	Copper Luk	eLines, N	lotor:	Marathon Ele	ctric, 100H	p, 460	V. Dire	ct Drive.			
Summary:												
					UUT Propertie							
Weight (lb)	Dir	mensions (ir	-				Lowest Natura			1		
		pth	Width		Height	Front-B	ack	Side-Side		Vertical		
4350	86	.5	82		80	3.7		6.1		10.5		
			-	1	assed Seismic	-	1					
Building Code		est Criteria	S _{DS}	z/h	I _P	A _{FLX-H}	A _{RIG}			A _{RIG-V}		
CBC 2010 Test Mountin		CC-ES AC-156	2.28	1.0	1.5	3.65	2.74	1	2.44	1.83		
100												

The unit was anchored using four VMC MSH-1E-1700 seismic spring isolators. The fan was bolted to the isolators using 5/8"-11 bolts into a tapped transfer block (since the fan had a single bolt hole, but the isolators had a 4 bolt pattern) and the isolators were welded to steel plates on the table surface.

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