APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0603

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: **Danfoss**

Manufacturer's Technical Representative: Tabrez Mahamad

Mailing Address: 8800 W. Bradley Road, Milwaukee, WI. 53224

Telephone: (888) 326-3677 Email: tabrez.mahamad@danfoss.com

Product Information

Product Name: **VLT NEMA 3R Panels**

Product Type: Variable Frequency Drives

Product Model Number: See Attachment 1
(List all unique product identification numbers and/or part numbers)

General Description: Drive for variable speed control of 3 phase induction motor with or without bypass backup. Seismic enhancements incorporated into the test units and modifications required to address anomalies observed during testing shall be incorporated into the certified units.

Mounting Description: Rigid wall mount or flexible wall mount.

Applicant Information

Applicant Company Name: **EASE**

Contact Person: Jonathan Roberson, S.E.

Mailing Address: 5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: j.roberson@easeco.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Date: April 22, 2019

Title: Principal Structural Engineer Company Name: **EASE**

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: **EASE**

Name: Jonathan Roberson, S.E. California License Number: S4197

Mailing Address: 5877 Pine Ave, Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: j.roberson@easeco.com

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: ☒ ICC-ES AC156

☐ Other (Please Specify):

Testing Laboratory

Company Name: Environmental Testing Laboratory, Inc.

Contact Name: Brady Richard

Mailing Address: 11034 Indian Trail, Dallas, TX. 75229-3513

Telephone: (972) 247-9657 Email: brady@etldallas.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = **1.87 (Rigid Wall) / 4.68 (Flexible Wall)**

S_{DS} (Design spectral response acceleration at short period, g) = **2.60**

a_p (In-structure equipment or component amplification factor) = **1 (Rigid Wall) / 2½ (Flexible Wall)**

R_p (Equipment or component response modification factor) = **2½ (Rigid Wall) / 2½ (Flexible Wall)**

Ω_0 (System overstrength factor) = **2**

I_p (Importance factor) = **1.5**

z/h (Height factor ratio) = **1**

Equipment or Component Natural Frequencies (Hz) = **See Attachment 2**

Overall dimensions and weight (or range thereof) = **See Attachment 1**

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ 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) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

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

☒ Test Report(s) ☐ Drawings ☐ Calculations ☐ Manufacturer's Catalog

☒ Other(s) (Please Specify): Attachments 1 & 2

OSHPD Approval (For Office Use Only) – **Approval Expires on January 10, 2028**

Signature: _____ Date: January 10, 2022

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to: S_{DS} (g) = 2.60 z/h = 1

Condition of Approval (if applicable):

TABLE 1: SEISMIC CERTIFIED COMPONENTS

Manufacturer	**DANFOSS DRIVES**
Product Line	**Danfoss Type 3R Enclosed VLT Drive (New Generation)**
Identification [2]	**DRIVE CATEGORY** [5] / **BASE DRIVE MODEL** / **PANEL MODEL** Danfoss VLT HVAC Drives / FC102 / FC103 / S102 / S103 Danfoss VLT AQUA Drives / FC202 / S202

Panel Frame	Dimensions (in.) [3] W	D	H	Max. Wt. (lb.)	Voltage	HP Range	Drive Frame	Basis [1]	Panel Type Codes [2]
1	29.0	14.2	30.3	128	208/230V	0.5 – 10	A2 / A3	UUT1901-3 / UUT1901-4	S102005T1E3R3CMN2XXCXXZ2XGXXXXXXXGKXXXXX
					208/230V	7.5 – 10	B1 [4]	INT	See Figure 1
					460/600V	0.5 – 10	A2 / A3	UUT1901-1 / UUT1901-2	S102010T4E3R3CCD13XDGFZ2XGXXXXXXXK0XXXXE
					460/600V	15 – 25	B1 [4]	INT	See Figure 1
2 / 3	37.2	14.5	38.4	225	208/230V	7.5 – 10	B1	INT	See Figure 1
					208/230V	15 – 20	B2	INT	See Figure 1
					460/600V	15 – 25	B1	INT	See Figure 1
					460/600V	30 – 40	B2	INT	See Figure 1
4	44.4	17.9	47.4	300	208/230V	25 – 30	C1	INT	See Figure 1
					460/600V	50 – 75	C1	INT	See Figure 1
5	46.2	17.9	60.2	540	208/230V	40 – 60	C2	INT	See Figure 1
					460/600V	100 – 125	C2	UUT1901-5 / UUT1901-6	S102125T4E3R3CMN23XSXXZ2XGXXXXXXXK0XXXX0
								UUT1901-7 / UUT1901-9	S102125T4E3R3CCD23XCXXZ2XGXXXXXXXK0XXXX0

Enclosure	14ga. Carbon steel. NEMA Type 3R by Hoffmann Enclosures.
Mounting	WALL (RIGID or FLEXIBLE): component is rigidly mounted to the surface of a wall or other vertical support. Support structure may be rigid or flexible.
Notes	1. Basis: • UUT#: Indicates a unit matching these characteristics was tested. • INT (Interpolate or Extrapolate): indicates a configuration not specifically tested, and by which seismic qualification is established through evaluation of testing of similar units in the product line. 2. Type Code defines the configuration of the panel. Each alphanumeric character defines a configurable option in the panel. For a complete listing of the Type Code characters recognized and accepted by this OSP, see Figure 1. For cases in which the Type Code character does not uniquely identify the corresponding subcomponent, the variations accepted by this OSP are listed in Table 2. 3. All units tested included enhancements to standard manufactured products to improve seismic performance. Danfoss states all modifications became part of all standard manufactured products produced after March 31, 2020. 4. B1 Drive Frames in Panel Size 1 are limited to non-bypass without options or bypass without options. 5. Differences in function between each drive category are accomplished through software/programming specific to each.

FIGURE 1: CERTIFIED PANEL TYPE CODES

• INDICATES PARAMETER VALUE OF UUT CONFIGURATION, ALL OTHER ALLOWED VALUES ARE INTERPOLATED.

S		0					T		E	3	R							X				Z			G	X	X	X					X							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Panel Options																						Options Internal to Drive																			

Character	Parameter	Allowed Value	Description	UUT1901-__							
				1	2	3	4	5	6	7	9
1	Prefix	S	Danfoss	•	•	•	•	•	•	•	•
2-4	Drive Category	102	HVAC Drive	•	•	•	•	•	•	•	•
		103	Refrigeration Drive								
		202	AQUA Drive								
5-7	Power Size	H50	.5 hp								
		H75	.75 hp								
		001	1 hp								
		1H5	1.5 hp								
		002	2 hp								
		003	3 hp								
		005	5 hp			•	•				
		7H5	7.5 hp								
		010	10 hp	•	•						
		015	15 hp								
		020	20 hp								
		025	25 hp								
		030	30 hp								
		040	40 hp								
		050	50 hp								
		060	60 hp								
		075	75 hp								
		100	100 hp								
		125	125 hp					•	•	•	•
8-9	Voltage	T1	208 Volt			•	•				
		T2	230 Volt								
		T4	460 Volt	•	•			•	•	•	•
		T6	600 Volt								
10-12	Enclosure Type	E3R	Nema 3R	•	•	•	•	•	•	•	•

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ATTACHMENT 1: SEISMIC CERTIFIED COMPONENTS

Character	Parameter	Allowed Value	Description	UUT1901-__							
				1	2	3	4	5	6	7	9
13-14	Bypass Circuit	NO	No Bypass								
		2C	2 Contactor Bypass								
		3C	3 Contactor Bypass	●	●	●	●	●	●	●	●
15	Switches	D	Drive Disconnect Switch								
		M	Main Disconnect Switch			●	●	●	●		
		C	Main Circuit Breaker	●	●					●	●
		N	Main & Drive Disconnect Switches								
		F	Main Circuit Breaker & Drive Disconnect Switch								
16	Power Fusing	X	None								
		D	Drive Fusing	●	●					●	●
		M	Main & Drive Fusing								
		N	100 kAIC SCCR			●	●	●	●		
17	Control Selection A	X	None								
		1	ECB Package	●	●						
		2	EMB 2 Package			●	●	●	●	●	●
18	Reactors	X	None			●	●				
		3	3% Input Line Reactor	●	●			●	●	●	●
		D	Output Filter dV/dt Filter								
19	Power Rating Style	X	P Style Power Rating	●	●	●	●	●	●	●	●
20	Motor Quantity	S	Single Motor					●	●		
		D	Dual Motor	●	●						
		C	Contactor Motor Select			●	●			●	●
21 / 22	Motor 1 / Motor 2	A	.5 hp								
		B	.75 hp								
		C	1 hp								
		D	1.5 hp								
		E	2 hp								
		F	3 hp	●	●						
		G	5 hp	●	●						
		H	7.5 hp								
		I	10 hp								
		J	15 hp								
		K	20 hp								
		L	25 hp								
		M	30 hp								

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Character	Parameter	Allowed Value	Description	UUT1901-__							
				1	2	3	4	5	6	7	9
21 / 22 (continued)	Motor 1 / Motor 2 (continued)	N	40 hp								
		O	50 hp								
		P	60 hp								
		Q	75 hp								
		R	100 hp								
		S	125 hp								
		X	NONE (not applicable)			●	●	●	●	●	●
23	Future Option	Z	NONE (No Future Option)	●	●	●	●	●	●	●	●
24	RFI Filter	X	Standard RFI								
		1	Class A1/B								
		2	Standard Filter	●	●	●	●	●	●	●	●
		3	Class A1/B (Reduced Cable Len)								
		4	Class A1								
25	Brake & Stop	X	No Brake Chopper	●	●	●	●	●	●	●	●
		B	Brake Chopper								
		T	Safe Stop								
		U	Brake Chopper & Safe Stop								
26	Display	G	Graphical	●	●	●	●	●	●	●	●
27	Coating	X	No Conformal Coating	●	●	●	●	●	●	●	●
28	Adaptation A	X	NONE (No Adaptation)	●	●	●	●	●	●	●	●
29	Adaptation B	X	NONE (No Adaptation)	●	●	●	●	●	●	●	●
30-32	Software	XXX	Latest Release	●	●	●	●	●	●	●	●
		001	Special – Krones								
		002	Special - Ammann								
33	Software Language	X	Standard Language Package	●	●	●	●	●	●	●	●
34	Options A	X	No Option								
		0	MCA-101 Profibus DP V1								
		1	MCA-101 Profibus DP V1 Top Entry								
		2	MCA-101 Profibus DP V2								
		3	MCA-101 Profibus DP V2 Top Entry								
		4	MCA-104 DeviceNet								
		5	MCA-104 DeviceNet Top Entry								
		6	MCA-105 Can Open								
		7	MCA-105 Can Open Top Entry								
		8	MCA - 124 EtherCAT								

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Character	Parameter	Allowed Value	Description	UUT1901-__ 1	2	3	4	5	6	7	9
34 (continued)	Options A (continued)	9	MCA - 124 EtherCAT with address switch								
		E	MCA - 106 Interbus								
		F	MCA - 106 Interbus Top Entry								
		G	MCA-108 LonWorks			●	●				
		H	MCA-108 LonWorks Top Entry								
		J	MCA-109 BACNet								
		K	MCA-109 BACNet Top Entry	●	●			●	●	●	●
		L	MCA-120 Profinet SRT								
		M	MCA-120 Profinet SRT Top Entry								
		N	MCA-121 Ethernet IP								
		P	MCA-121 Ethernet IP Top Entry								
		Q	MCA-122 Modbus TCP								
		R	MCA-122 Modbus TCP Top Entry								
35	Options B	X	No Option								
		0	Analog I/O MCB 109	●	●			●	●	●	●
		K	MCB-101 General Purpose I/O			●	●				
		M	MCB-104 High Precision I/O								
		P	Relay Card MCB 105								
		R	CL Encoder								
		U	CL Resolver								
		V	HVAC Control								
		Y	Extended Cascade Control								
		Z	Safety PLC Interface								
36	Options C1	X	No Selection	●	●	●	●	●	●	●	●
		4	SyncPos								
		5	Advanced Cascade Control								
37	Options C2	X	No Selection	●	●	●	●	●	●	●	●
		A	ProfiSafe-Safe stop								
		P	Input/Output Block								
		M	Mains Synchronization								
		S	ProfiSafe-Safe Speed								

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Character	Parameter	Allowed Value	Description	UUT1901-__							
				1	2	3	4	5	6	7	9
38-39	Options C3	XX	No software option	●	●	●	●	●	●	●	●
		10	Synchro. Control								
		11	Positioning Control								
		12	Center Winder								
		13	Cut-on-the-fly								
40	Options D	X	No option			●	●				
		0	Interface for 24V dc MCB 107					●	●	●	●
		E	ECB24V dc backup	●	●						

TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS

Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Enclosure	10, 11, 12	E3R	Hoffman	185B6490	N/A	1	N/A	1, 2, 3, 4
				185B6493	N/A	2/3	N/A	INT
				185B6494	N/A	4	N/A	INT
				185B6495	N/A	5	N/A	5, 6, 7, 8, 9
Contactor	13 & 14	N0, 2C, 3C	GE	CL00D310TD	10	CL00D3, CL01D3 & CL02D3	1	SAME
				CL01D310TD	13.8		1	SAME
				CL02D310TD	17.5		1	1, 2, 3, 4
				CL25D310TD	22	CL25D3	1	INT
				CL04D310MD	32	CL03D3 & CL04D3	1	INT
				CL05D310MD	34	CL05D3	1 & 2/3	INT
				CL07E311MD	100	CL06D3, CL07D3 & CL08D3	2/3	INT
				CL08E311MD	110		4	INT
				CL09E311MD	120	CL09D3 & CL10D3	4	INT
				CL10E311MD	140		4 & 5	INT
				CK75CA311J	150	CK75C & CK08C	5	SAME
				CK08CA311J	185		5	5, 6, 7, 8, 9
Circuit Breaker	15	C	ABB	XT1NU3015AAA00NXXX	15-125	XT1	1	SAME
				XT1NU3020AAA00NXXX			1	SAME
				XT1NU3025AAA00NXXX			1	SAME
				XT1NU3030AAA00NXXX			1	1 & 2
				XT1NU3040AAA00NXXX			1	SAME
				XT1NU3050AAA00NXXX			1	SAME
				XT1NU3060AAA00NXXX			1	SAME

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Circuit Breaker *(continued)*	15 *(continued)*	C *(continued)*	ABB *(continued)*	XT1NU3070AAA00NXXX	15-125 (continued)	XT1 (continued)	1 & 2/3	SAME
				XT1NU3080AAA00NXXX			2/3	SAME
				XT1NU3090AAA00NXXX			2/3	SAME
				XT1NU3100AAA00NXXX			2/3 & 4	SAME
				XT1NU3125AAA00NXXX			2/3	SAME
				XT3NU3150AFF00NXXX	150-225	XT3	4	INT
				XT3NU3175AFF00NXXX			4	
				XT3NU3200AFF00NXXX			4 & 5	
				XT3NU3225AFF00NXXX			5	
				XT4NU3250AFF00NXXX	250	XT4	5	7, 8, 9
Drive Disconnect	15	D	ABB	OT16F3	20	OT16F3, OT25F3, OT40F3	1 & 2/3	INT
				OT25F3	30		1 & 2/3	
				OT40F3	40		1 & 2/3	
				OT63F3	60	OT63F3, OT80F3	1 & 2/3	INT
				OT80F3	80		2/3	
				OT100F3	100	OT100F3	2/3 & 4	INT
				OT160G03	125	OT160G03	2/3, 3 & 4	INT
				OT200U03	200	OT200U03	5	INT
Mains Disconnect	15	M	ABB	OT30F3	30	OT30F3, OT60F3, OT100F3	1	INT
				OT60F3	60		1 & 2/3	
				OT100F3	100		4	INT
				OT160G03	125	OT160G	4 & 5	INT
				OT200U03	200	OT200U	5	5 & 6

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Mains & Drive Disconnect	15	N	ABB	OS30FAJ12	30	OS30FA	1	3 & 4
				OS60GJ03	60	OS60G	1	INT
				OS60GJ12	60	OS60G	1	INT
				OT100F3	100	OT100F3	2/3	INT
				OT160G03	125	OT160G	4 & 5	INT
				OT200U03	200	OT200U	5	5 & 6
Power Fusing	16	D (Drive Fusing also used in conjuction with M & N options if selected)	Cooper Bussman (Eaton)	JJN-10	10	JJN 1-30	1 & 2/3	SAME
				JJN-15	15		1 & 2/3	SAME
				JJN-20	20		1 & 2/3	SAME
				JJN-30	30		1 & 2/3	3 & 4
				JJN-50	50	JJN 35-60	1 & 2/3	INT
				JJN-60	60		3	INT
				JJN-80	80	JJN 70-100	3	INT
				JJN-125	125	JJN 110-200	4	INT
				JJN-150	150		5	INT
				JJN-200	200		5	INT
				JJN-250	250	JJN 225-400	5	INT
				JJS-6	6	JJS 1-30	1 & 2/3	SAME
				JJS-10	10		1 & 2/3	SAME
				JJS-20	20		1 & 2/3	SAME
				JJS-25	25		1 & 2/3	SAME
				JJS-30	30		1 & 2/3	1 & 2

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Power Fusing *(continued)*	16 *(continued)*	D (Drive Fusing also used in conjuction with M & N options if selected) *(continued)*	Cooper Bussman (Eaton) *(continued)*	JJS-35	35	JJS 35-60	1 & 2/3	INT
				JJS-40	40		1 & 2/3	INT
				JJS-45	45		1 & 2/3	INT
				JJS-50	50		2/3	INT
				JJS-60	60		2/3	INT
				JJS-80	80	JJS 70-100	4	INT
				JJS-100	100		4	INT
				JJS-125	125	JJS 110-200	4	INT
				JJS-150	150		4 & 5	INT
				JJS-175	175		5	INT
				JJS-200	200		5	INT
				JJS-250	250	JJS 225-400	5	5, 6, 7, 8, 9
		M & N (Mains Fusing only)	Cooper Bussman (Eaton)	LPJ-3SP	3	LPJ 1-30	1 & 2/3	SAME
				LPJ-6SP	6		1 & 2/3	SAME
				LPJ-10SP	10		1 & 2/3	SAME
				LPJ-15SP	15		1 & 2/3	SAME
				LPJ-20SP	20		1 & 2/3	SAME
				LPJ-25SP	25		1 & 2/3	SAME
				LPJ-30SP	30		1 & 2/3	3 & 4
				LPJ-35SP	35	LPJ 35-60	1 & 2/3	INT
				LPJ-40SP	40		1 & 2/3	INT
				LPJ-45SP	45		1 & 2/3	INT
				LPJ-50SP	50		1 & 2/3	INT
				LPJ-60SP	60		1 & 2/3	INT

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Power Fusing *(continued)*	16 *(continued)*	M & N (Mains Fusing only) *(continued)*	Cooper Bussman (Eaton) *(continued)*	LPJ-70SP	70	LPJ 70-100	2/3	INT
				LPJ-80SP	80		2/3	INT
				LPJ-90SP	90		3 & 4	INT
				LPJ-100SP	100		3 & 4	INT
				LPJ-110SP	110	LPJ 110-200	4	INT
				LPJ-125SP	125		4	INT
				LPJ-150SP	150		4 & 5	INT
				LPJ-175SP	175		5	INT
				LPJ-200SP	200		5	INT
				LPJ-225SP	225	LPJ 225-400	5	5, 6, 7, 8, 9
				LPJ-250SP	250		5	SAME
				LPJ-300SP	300		5	SAME
Reactor	18	X, 3, D	MTE	RLW-01P103	1	N/A	1 & 2/3	INT
				RLW-01P603	1.6		1 & 2/3	INT
				RLW-01P606			1 & 2/3	INT
				RLW-02P103	2.1		1 & 2/3	INT
				RLW-02P106			1 & 2/3	INT
				RLW-02P105			1 & 2/3	INT
				RLW-03P401	3.4		1 & 2/3	INT
				RLW-03P403			1 & 2/3	INT
				RLW-04P801	4.8		1 & 2/3	INT
				RLW-04P803			1 & 2/3	INT
				RLW-07P601	7.6		1 & 2/3	INT
				RLW-03P405	3.4		1 & 2/3	INT

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Reactor *(continued)*	18 *(continued)*	X, 3, D *(continued)*	MTE *(continued)*	RLW-04P805	4.8	N/A *(continued)*	1 & 2/3	INT
				RLW-04P806			1 & 2/3	INT
				RLW-07P603	7.6		1 & 2/3	INT
				RLW-07P605			1 & 2/3	INT
				RLW-001101	11		1 & 2/3	INT
				RLW-001103			1 & 2/3	INT
				RLW-001105			1 & 2/3	INT
				RLW-001403	14		1 & 2/3	1 & 2
				RLW-001405			1 & 2/3	INT
				RLW-002101	21		1 & 2/3	INT
				RLW-002103			1 & 2/3	INT
				RLW-002105			1 & 2/3	INT
				RLW-002801	28		1 & 2/3	INT
				RLW-002803			1 & 2/3	INT
				RLW-002805			1 & 2/3	INT
				RLW-003503	35		1 & 2/3	INT
				RLW-004601	46		1 & 2/3	INT
				RLW-004603			2/3	INT
				RLW-004605			2/3	INT
				RLW-005501	55		2/3	INT
				RLW-005503			4	INT
				RLW-006501	65		2/3	INT
				RLW-006503			3 & 4	INT
				RLW-008301	83		3 & 4	INT
				RLW-008303			4	INT

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Reactor *(continued)*	18 *(continued)*	X, 3, D *(continued)*	MTE *(continued)*	RLW-010401	104	N/A *(continued)*	4 & 5	INT
				RLW-010403			4	INT
				RLW-010405			4	INT
				RLW-013003	130		5	INT
				RLW-013005			5	INT
				RLW-016001	160		5	INT
				RLW-016003			5	7, 8, 9
				RLW-016005			5	SAME
				RLW-020001	200		5	SAME
Overload	20	S & D	GE	RT1F	1.1	RT1	1	SAME
				RT1G	1.5		1	SAME
				RT1H	1.9		1	SAME
				RT1J	2.7		1	SAME
				RT1K	4.1		1	SAME
				RT1L	6.3		1	1 & 2
				RT1M	8.5		1	1 & 2
				RT1N	12		1	SAME
				RT1P	16		1	SAME
				RT1S	18		1	3 & 4
				RT1T	22		1	SAME
				RT1U	26		1	SAME
				RT1V	32		1	SAME
				RT1W	40		1	SAME

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Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Overload *(continued)*	20 *(continued)*	S & D *(continued)*	GE *(continued)*	RT2E	43	RT2	2/3	INT
				RT2G	55		2/3	INT
				RT2H	65		2/3 & 4	INT
				RT2J	82		4	INT
				RT2L	97		4	INT
				RT2M	110		4 & 5	INT
				RT3D	120	RT3	5	SAME
				RT3E	140		5	SAME
				RT3F	190		5	5, 6, 7, 8, 9
Dual Motor Fusing	21-22	A - S	Cooper Bussman (Eaton)	LPJ-3SP	3	LPJ 1-30	1, 2/3, 4 & 5	SAME
				LPJ-6SP	6		1, 2/3, 4 & 5	SAME
				LPJ-10SP	10		1, 2/3, 4 & 5	SAME
				LPJ-15SP	15		1, 2/3, 4 & 5	SAME
				LPJ-20SP	20		1, 2/3, 4 & 5	SAME
				LPJ-25SP	25		2/3, 4 & 5	SAME
				LPJ-30SP	30		2/3, 4 & 5	3 & 4
				LPJ-35SP	35	LPJ 35-60	2/3, 4 & 5	INT
				LPJ-40SP	40		2/3, 4 & 5	INT
				LPJ-45SP	45		2/3, 4 & 5	INT
				LPJ-50SP	50		2/3, 4 & 5	INT
				LPJ-60SP	60		2/3, 4 & 5	INT
				LPJ-70SP	70	LPJ 70-100	2/3, 4 & 5	INT
				LPJ-80SP	80		2/3, 4 & 5	INT
				LPJ-90SP	90		2/3, 4 & 5	INT
				LPJ-100SP	100		2/3, 4 & 5	INT

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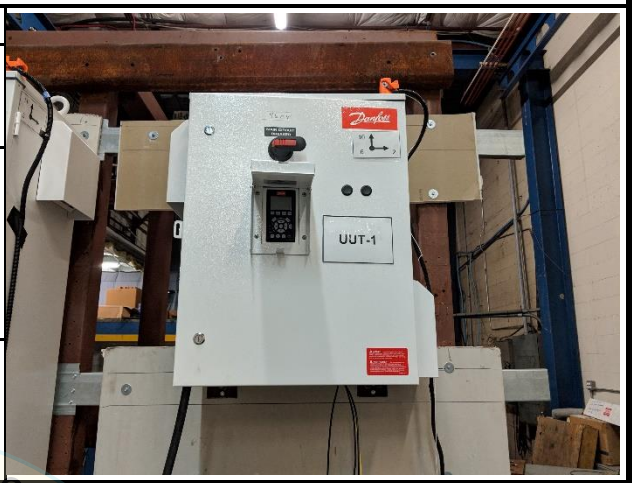
Subcomponent Name	Type Code Sequence Position(s)	Type Code Sequence Character(s)	Manufacturer	Manufacturer Part Number	Rating (Amps/kVA)	Subcomponent Frame Size	Frame Size Application	Basis [1]
Dual Motor Fusing *(continued)*	21-22 *(continued)*	A – S *(continued)*	Cooper Bussman (Eaton) *(continued)*	LPJ-110SP	110	LPJ 110-200	4 & 5	INT
				LPJ-125SP	125		4 & 5	INT
				LPJ-150SP	150		4 & 5	INT
				LPJ-175SP	175		5	INT
				LPJ-200SP	200		5	INT
				LPJ-225SP	225	LPJ 225-400	5	5, 6, 7, 8, 9
				LPJ-250SP	250		5	SAME
				LPJ-300SP	300		5	SAME
Transformer	N/A	N/A	GE	9T58K0086	0.2 KVA	8200	1 & 2/3	3 & 4
				9T58K0046	0.2 KVA	8175	1 & 2/3	1 & 2
				9T58K0049G38	0.375 KVA	8250	2/3, 4 & 5	INT
				9T58K2826	0.2 KVA	8175	1 & 2/3	INT
				9T58K2828	0.3 KVA	8200	2/3, 4 & 5	INT
				9T58K0089G38	0.375 KVA	10225	2/3, 4 & 5	5, 6, 7, 8, 9

Notes

1. BASIS:
   - #: Indicates that a test specimen (UUT1901-#) matching these characteristics was tested as part of this testing program.
   - SAME: Indicates component is physically, mechanically, and electrically the same as another test specimen with differences limited to model number, color, and/or software.
   - INT (Interpolate or Extrapolate): indicates a configuration not specifically tested, and by which seismic qualification is established through evaluation of testing of similar units in the product line.
2. Certification in this table is limited to devices identified when installed as part of a complete assembly of the Enclosed Drives defined in Table 1.

UUT1901-1 Frame 1: 10HP Drive / 460V w/ Options (Rigid Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102010T4E3R3CCD13XDGFZ2XGXXXXXXXK0XXXXE Material No.: 178U6029 Serial No.: 643504Y069
Description:	10HP/460V FC-102 VLT drive (A3 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman 3 Contactor Bypass / Electronic Control Bypass Dual Motor / Line Reactor BACNet (Top Entry) Option A Card
Mounting:	Rigid Wall mounted using (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom.



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
29	14.18	30.34	125	N/A (Governed by test fixture)		

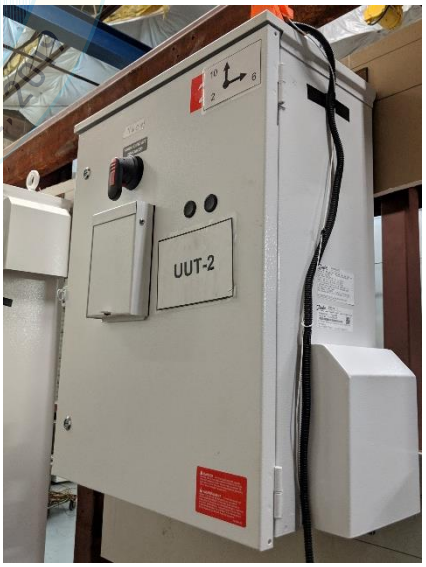
ICC-ES AC156 Shake Table Test Parameters — **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-2 Frame 1: 10HP Drive / 460V w/ Options (Flexible Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102010T4E3R3CCD13XDGFZ2XGXXXXXXXK0XXXXE Material No.: 178U6029 Serial No.: 643504Y069
Description:	10HP/460V FC-102 VLT drive (A3 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman 3 Contactor Bypass / Electronic Control Bypass Dual Motor / Line Reactor BACNet (Top Entry) Option A Card
Mounting:	Flexible Wall mounted using (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom. Wall test fixture mounted on Mason Industries SSLFH-1000 * spring isolator w/ (4) – 5/8" dia. Grade 8 Bolts. One isolator at each corner of test frame (4 isolators total)



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
29	14.18	30.34	125	N/A (Governed by test fixture)		

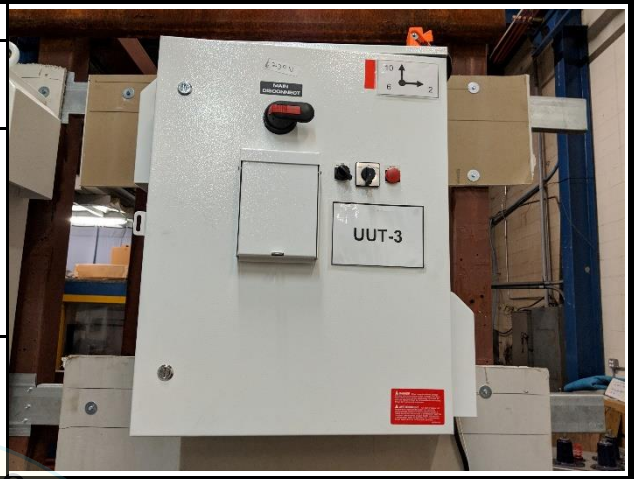
ICC-ES AC156 Shake Table Test Parameters — **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-3 Frame 1: 5HP Drive / 208V w/ Options (Rigid Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102005T1E3R3CMN2XXCXXZ2XGXXXXXXXGKXXXXX Material No.: 178U6032 Serial No.: 643404Y069
Description:	5HP/208V FC-102 VLT drive (A3 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman 3 Contactor Bypass / Main Disconnect Electro-Mechanical Bypass Package Contactor Motor Select Lon Works & MCB101 Option Card A & B.
Mounting:	Rigid Wall mounted using (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom.



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
29	14.18	30.34	127.5	N/A (Governed by test fixture)		

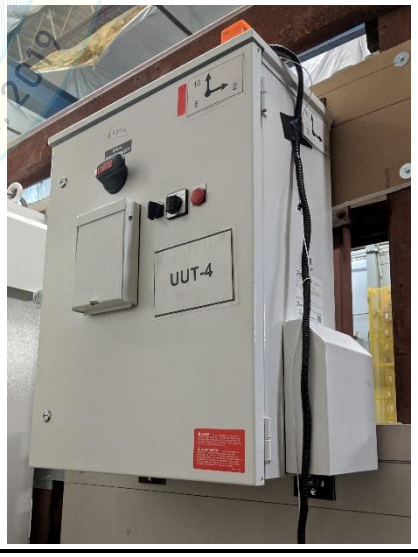
ICC-ES AC156 Shake Table Test Parameters **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-4 Frame 1: 5HP Drive / 208V w/ Options (Flexible Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102005T1E3R3CMN2XXCXXZ2XGXXXXXXXGKXXXXX Material No.: 178U6032 Serial No.: 643404Y069
Description:	5HP/208V FC-102 VLT drive (A3 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman 3 Contactor Bypass / Main Disconnect Electro-Mechanical Bypass Package / Contactor Motor Select Lon Works & MCB101 Option Card A & B.
Mounting:	Flexible Wall mounted using (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (2) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom. Wall test fixture mounted on Mason Industries SSLFH-1000 * spring isolator w/ (4) – 5/8" dia. Grade 8 Bolts. One isolator at each corner of test frame (4 isolators total)



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
29	14.18	30.34	127.5	N/A (Governed by test fixture)		

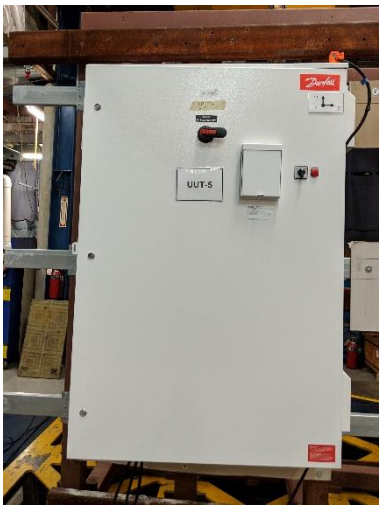
ICC-ES AC156 Shake Table Test Parameters **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-5 Frame 5: 125HP Drive / 460V / Config 1 (Rigid Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102125T4E3R3CMN23XSXXZ2XGXXXXXXXK0XXXX0 Material No.: 178U5517 Serial No.: 582804Y059
Description:	125HP/460V FC-102 VLT drive (C2 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman. Main Disconnect / Single Motor Electro-Mechanical Bypass Package / Line Reactor BACNet (Top Entry), MCB 109 & MCB 107 Option cards A, B & C.
Mounting:	Rigid Wall mounted using (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom.



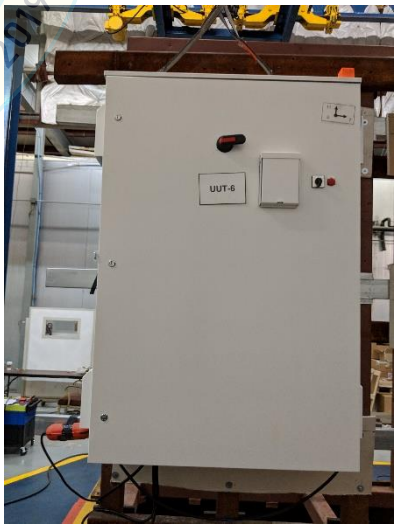
Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
46.18	17.83	62.37	526	N/A (Governed by test fixture)		

ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-6 Frame 5: 125HP Drive / 460V Config 1 (Flexible Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102125T4E3R3CMN23XSXXZ2XGXXXXXXXK0XXXX0 Material No.: 178U5517 Serial No.: N/A
Description:	125HP/460V FC-102 VLT drive (C2 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman. Main Disconnect / Single Motor Electro-Mechanical Bypass Package / Line Reactor BACNet (Top Entry), MCB 109 & MCB 107 Option cards A, B & C.
Mounting:	Flexible Wall mounted using (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom. Wall test fixture mounted on Mason Industries SSLFH-1000 * spring isolator w/ (4) – 5/8" dia. Grade 8 Bolts. One isolator at each corner of test frame (4 isolators total)



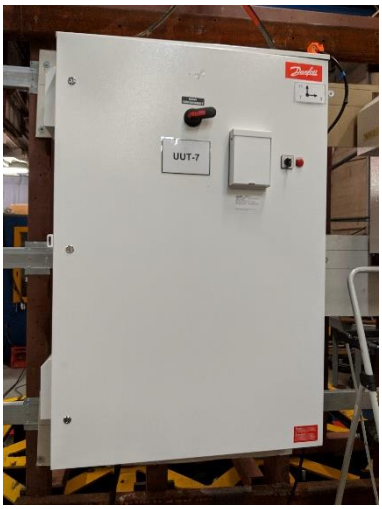
Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
46.18	17.83	62.37	529	N/A (Governed by test fixture)		

ICC-ES AC156 Shake Table Test Parameters						Code: 2019 CBC
S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-7 Frame 5: 125HP Drive / 460V Config 2 (Rigid Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102125T4E3R3CCD23XCXXZ2XGXXXXXXXK0XXXX0 Material No.: N/A Serial No.: N/A
Description:	125HP/460V FC-102 VLT drive (C2 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman. Circuit Breaker / Electro-Mechanical Bypass Package Line Reactor / Contactor Motor Select MCB 109 & MCB 107 Option cards A, B & C.
Mounting:	Rigid Wall mounted using (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom.



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
46.18	17.83	32.37	539.5	N/A (Governed by test fixture)		

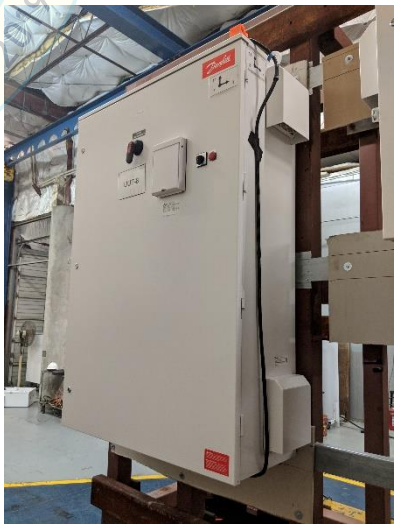
ICC-ES AC156 Shake Table Test Parameters — **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.

UUT1901-9 Frame 5: 125HP Drive / 460V Config 2 (Flexible Mount)

Manufacturer:	Danfoss Drives
Identification:	T/C: S102125T4E3R3CCD23XCXXZ2XGXXXXXXXK0XXXX0 Material No.: N/A Serial No.: N/A
Description:	125HP/460V FC-102 VLT drive (C2 Drive Frame) IP20 Chassis Painted, 14ga. carbon steel NEMA 3R enclosure by Hoffman. Circuit Breaker / Electro-Mechanical Bypass Package Line Reactor / Contactor Motor Select MCB 109 & MCB 107 Option cards A, B & C.
Mounting:	Flexible Wall mounted using (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ std washers at top. (3) – 3/8" dia. SAE J429 Grade 5 bolts w/ plate washers (1" x 1.5"x1/8") at bottom. Wall test fixture mounted on Mason Industries SSLFH-1000 * spring isolator w/ (4) – 5/8" dia. Grade 8 Bolts. One isolator at each corner of test frame (4 isolators total)



Dimensions (in.)				Lowest Resonant Frequency (Hz.)		
Width	Depth	Height	Weight (lb.)	Side-Axis	Front-Axis	Vert-Axis
46.18	17.83	32.37	539.5	N/A (Governed by test fixture)		

ICC-ES AC156 Shake Table Test Parameters — **Code: 2019 CBC**

S_{DS} (G)	z/h	I_P	A_{FLX-H} (G)	A_{RIG-H} (G)	A_{FLX-V} (G)	A_{RIG-V} (G)
2.6	1	1.5	4.16	3.12	1.74	0.7

Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.