



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0282

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Generac Power Systems Inc.

Manufacturer's Technical Representative: Richard Ansley

Mailing Address: S45 W29290 Hwy 59,, Maukesha, WI 53189

Telephone: (262) 544-4851

Email: Richard.Ansley@generac.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Type: Generators

Product Model Number: See Tables 1A and 1B

General Description: 35-350kW Diesel or Bi-Fuel Generators, both with or without factory supplied sound enclosure and/or UL142 base fuel tank. 35-500kW Gas Generators, both with or without factory supplied sound enclosure.

Mounting Description: Internally isolated, Rigid floor mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

Applicant Information

Applicant Company Name: Buehler Engineering, Inc.

Contact Person: Gillian Montgomer

Mailing Address: 600 Q Street, Sacramento, CA 95811

Telephone: (916) 443-0303

Email: gmontgomery@buehlerengineering.com

Title: _____





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: BUEHLER

Name: Scott Hooker

California License Number: S3937

Mailing Address: 600 Q St., Suite 200, Sacramento, CA 95811

Telephone: (916) 443-0303

Email: shooker@bbse.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: U.S. ARMY ENGINEER RESEARCH AND DEVELOPMENT CENTER, CONSTRUCTION ENGINEERING
RESEARCH LABORATORY (CERL)

Contact Person: Jim Wilcoski

Mailing Address: 2902 Newmark Dr., Champaign IL 61826

Telephone: (217) 373-6763

Email: james.wilcoski@usace.army.mil

Company Name: QUALTECH/CURTISS WRIGHT/TRENTEC

Contact Person: Daniel Mikow

Mailing Address: 4600 East Tech Drive, Cincinnati OH 45245

Telephone: (513) 201-2143

Email: dmikow@curtisswright.com

Company Name: UNIVERSITY OF BUFFALO (SEESL)

Contact Person: Mark Pitman

Mailing Address: 212 Ketter Hall, Buffalo NY 14260

Telephone: (716) 645-4377

Email: mpitman@buffalo.edu





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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = See Application

S_Ds (Design spectral response acceleration at short period, g) = See Application

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 2.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Application

Overall dimensions and weight = See Application

OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025

Date: 1/19/2021

Name: Timothy Piland

Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: S_Ds (g) = See Above

z/h = See Above

Condition of Approval (if applicable):

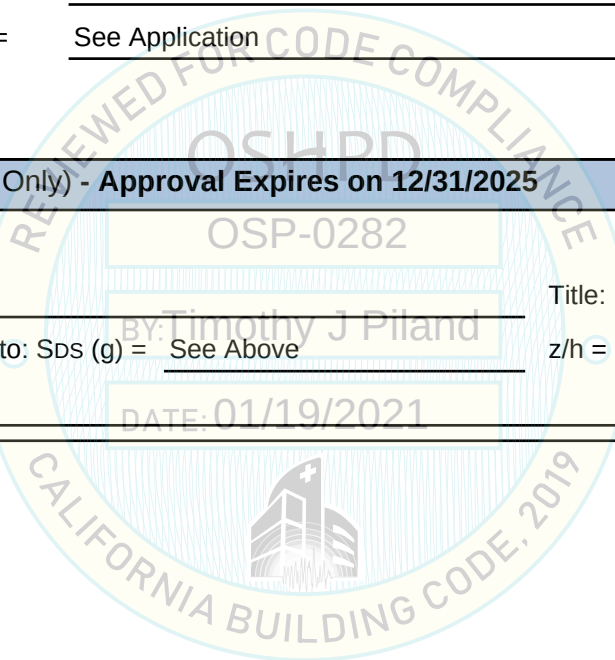


Table 1A. Diesel and Bi-Fuel Generator Certified Product Matrix

$S_{DS} = 1.50g$ @ $z/h = 1.0$ $F_p / W_p = 3.38$
 $S_{DS} = 1.60g$ @ $z/h = 0.0$ $F_p / W_p = 1.20$

Model Number ²	Kw Rating	Tested / Interpolated	OPEN SET			
			Unit Dimensions (mm)			Operating Weight (lbs)
			H	W	L	
SD35	35	UUT-1A	1147	950	1930	1,850
SD40	40	Interpolated	1147	950	1930	1,850
SD50	50	Interpolated	1147	950	1930	1,850
SD60	60	Interpolated	1250	1016	2360	2,425
SD80	80	Interpolated	1250	1016	2360	2,425
SD100	100	Interpolated	1313	1016	2795	3,545
SD125/130	130	Interpolated	1313	1016	2795	3,545
SD150	150	Interpolated	1453	1262	2960	3,980
SD175	175	Interpolated	1453	1262	2960	3,980
SD200	200	Interpolated	1467	1357	3250	4,465
SD230	230	Interpolated	1467	1357	3250	4,465
SD250	250	Interpolated	1467	1357	3250	4,465
SD275 ¹	275	Interpolated	1723	1463	3455	5,816
SD300 ¹	300	Interpolated	1723	1463	3455	5,816
SD350¹	350	UUT-2A	1723	1463	3455	6,400

- Available in Prime Modular (MPS) configuration (MD vs SD). See Nomenclature.
- Available in Bi-Fuel configuration (SB vs SD). See Nomenclature.

Model Number ²	Kw Rating	Tested / Interpolated	STD Enclosure				Level 1A Enclosure				Level 2A Enclosure			
			Unit Dimensions			Operating Weight (lbs)	Unit Dimensions			Operating Weight (lbs)	Unit Dimensions			Operating Weight (lbs)
			H	W	L		H	W	L		H	W	L	
SD35	35	UUT-1B & 1C	-	-	-	-	1258	965	2857	2,413	-	-	-	-
		Interpolated	1258	965	2409	2,312	-	-	-	-	1574	965	2409	2,498
SD40	40	Interpolated	1258	965	2409	2,312	1258	965	2857	2,413	1574	965	2409	2,498
SD50	50	Interpolated	1258	965	2409	2,312	1258	965	2857	2,413	1574	965	2409	2,498
SD60	60	Interpolated	1427	1028	2840	2,850	1427	1028	3287	2,875	1742	1028	2840	3,050
SD80	80	Interpolated	1427	1028	2840	2,850	1427	1028	3287	2,875	1742	1028	2840	3,050
SD100	100	Interpolated	1627	1028	3371	4,054	1627	1028	3915	4,295	2054	1028	3671	4,545
SD125/130	130	Interpolated	1627	1028	3371	4,054	1627	1028	3915	4,295	2054	1028	3671	4,545
SD150	150	Interpolated	1732	1280	3633	4,845	1732	1280	4279	5,230	2330	1280	3633	5,430
SD175	175	Interpolated	1732	1280	3633	4,845	1732	1280	4279	5,230	2330	1280	3633	5,430
SD200	200	Interpolated	1770	1371	3923	5,416	1770	1371	4569	5,720	2372	1371	3923	7,200
SD230	230	Interpolated	1770	1371	3923	5,416	1770	1371	4569	5,720	2372	1371	3923	7,200
SD250	250	Interpolated	1770	1371	3923	5,416	1770	1371	4569	5,720	2372	1371	3923	7,200
SD275 ¹	275	Interpolated	1977	1463	4439	6,430	1977	1463	5084	7,405	2726	1463	4588	8,380
SD300 ¹	300	Interpolated	1977	1463	4439	6,430	1977	1463	5084	7,405	2726	1463	4588	8,380
SD350¹	350	UUT-2B & 2C	-	-	-	-	-	-	-	-	2726	1463	4588	9,050

- Available in Prime Modular (MPS) configuration (MD vs SD). See Nomenclature.
- Available in Bi-Fuel configuration (SB vs SD). See Nomenclature.

Operating weight does not include weight of tank and tank contents.

Table 1B. Gas Generator Certified Product Matrix

$S_{DS} = 0.80g$ @ $z/h = 1.0$ $F_p / W_p = 1.80$
 $S_{DS} = 2.44g$ @ $z/h = 0.0$ $F_p / W_p = 1.83$

Model Number	Kw Rating	Tested / Interpolated	OPEN SET				STD Enclosure					Level 1A Enclosure				
			Unit Dimensions (mm)			Operating Weight (lbs)	Unit Dimensions (mm)			Operating Weight (lbs)		Unit Dimensions (mm)			Operating Weight (lbs)	
			H	W	L		H	W	L	Steel	Alum	H	W	L	Steel	Alum
SG0035*G54 ¹	35	Interpolated	1176	950	1930	1,575	1258	965	2409	2,100	1,864	1258	965	2857	-	1,877
		UUT-5	-	-	-	-	-	-	-	-	-	1258	965	2857	-	1,877
SG0035*G54 ¹	35	UUT-3	-	-	-	-	-	-	-	-	-	1258	965	2857	2,179	-
		Interpolated	1176	950	1930	1,575	1258	965	2409	2,100	1,864	1258	965	2857	2,140	1,877
SG0035*G45 ¹	35	Interpolated	1128	946	1983	1,675	1461	965	2409	2,172	1,904	1461	965	2409	2,268	1,999
SG0040*G54 ¹	40	Interpolated	1176	950	1930	1,575	1258	965	2409	2,100	1,864	1258	965	2857	2,140	1,877
SG0040*G45 ¹	40	Interpolated	1128	946	1983	1,675	1461	965	2409	2,172	1,904	1461	965	2409	2,268	1,999
SG0045*G54 ¹	45	Interpolated	1176	950	1930	1,575	1258	965	2409	2,100	1,864	1258	965	2857	2,140	1,877
SG0045*G45 ¹	45	Interpolated	1128	946	1983	1,675	1461	965	2409	2,172	1,904	1461	965	2409	2,268	1,999
SG0050*G54 ¹	50	Interpolated	1176	950	1930	1,575	1258	965	2409	2,100	1,948	1258	965	2857	2,140	1,964
SG0050*G45 ¹	50	Interpolated	1128	946	1983	1,675	1461	965	2409	2,172	1,904	1461	965	2409	2,268	1,999
SG0050*G68 ¹	50	Interpolated	1191	1016	2360	1,929	1406	1016	2840	2,370	2,199	1406	1016	3287	2,590	2,377
SG0060*G45 ¹	60	Interpolated	1170	1016	2365	1,874	1779	1028	2839	2,315	2,144	1779	1028	2839	2,535	2,276
SG0060*G68 ¹	60	Interpolated	1191	1016	2360	1,929	1406	1016	2840	2,370	2,133	1406	1016	3287	2,590	2,331
SG0070*G45 ¹	70	Interpolated	1170	1016	2365	1,874	1779	1028	2839	2,315	2,144	1779	1028	2839	2,535	2,276
SG0070*G68 ¹	70	Interpolated	1191	1016	2360	1,929	1406	1016	2840	2,370	2,133	1406	1016	3287	2,590	2,331
SG0080*G45 ¹	80	Interpolated	1170	1016	2365	1,874	1779	1028	2839	2,315	2,144	1779	1028	2839	2,535	2,276
SG0080*G68 ²	80	Interpolated	1330	1013	2795	2,600	1627	1028	3371	3,100	2,790	1627	1028	3915	3,350	3,015
SG0080*G90 ²	80	Interpolated	1250	1016	2360	2,218	1427	1028	2840	2,659	2,515	1427	1028	3287	2,879	2,630
SG0100*G68 ²	100	Interpolated	1330	1013	2795	2,600	1627	1028	3371	3,100	2,790	1627	1028	3915	3,350	3,015
SG0100*G90 ²	100	Interpolated	1250	1016	2360	2,218	1427	1028	2840	2,659	2,630	1427	1028	3287	2,879	2,701
SG0130*G68 ²	130	Interpolated	1330	1013	2795	2,600	1627	1028	3371	3,100	2,790	1627	1028	3915	3,350	3,015
SG0130*G90 ²	130	Interpolated	1192	1013	2795	2,400	1627	1028	3371	2,900	2,802	1627	1028	3915	3,150	2,873
SG0150*G68 ²	150	Interpolated	1356	1249	2960	2,940	1732	1280	3633	3,790	3,411	1732	1280	4279	3,990	3,591
SG0150*G90 ²	150	Interpolated	1192	1249	2960	2,800	1732	1280	3633	3,650	2,802	1732	1280	4279	3,850	2,873
SG0150*G129 ²	150	Interpolated	1583	1357	3250	5,756	1770	1371	3909	6,577	n/a	1770	1371	4575	6,990	n/a
SG0150*G133 ²	150	Interpolated	1619	1463	3455	5,200	1946	1463	4437	6,575	n/a	1946	1463	5084	7,491	n/a
SG0150*G142 ²	150	Interpolated	1583	1357	3250	5,460	1772	1371	3923	6,440	5,890	1772	1371	3250	6,650	6,021
SG0175*G129 ²	175	Interpolated	1583	1357	3250	5,756	1770	1371	3909	6,577	n/a	1770	1371	4575	6,990	n/a
SG0175*G133 ²	175	Interpolated	1619	1463	3455	5,200	1946	1463	4437	6,575	n/a	1946	1463	5084	7,491	n/a
SG0175*G142 ²	175	Interpolated	1583	1357	3250	5,460	1772	1371	3923	6,440	5,890	1772	1371	3250	6,650	6,021
SG0200*G129 ²	200	Interpolated	1583	1357	3250	5,756	1770	1371	3909	6,577	n/a	1770	1371	4575	6,990	n/a
SG0200*G133 ²	200	Interpolated	1619	1463	3455	5,200	1946	1463	4437	6,575	n/a	1946	1463	5084	7,491	n/a
SG0200*G142 ²	200	Interpolated	1583	1357	3250	5,460	1772	1371	3923	6,440	5,974	1772	1371	3250	6,650	6,104
SG0200*G142 ²	200	Interpolated	1724	1450	3455	5,985	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		UUT-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SG0230*G129 ²	230	Interpolated	1728	1463	3455	6,360	1946	1463	4437	7,538	n/a	1946	1463	5084	8,224	n/a
SG0230*G133 ²	230	Interpolated	1747	1463	3455	6,390	1946	1463	4437	7,249	n/a	1946	1463	5084	8,224	n/a
SG0230*G142 ²	230	Interpolated	1724	1450	3455	5,460	1976	1463	4437	7,448	6,671	1976	1463	4569	7,911	6,870
SG0250*G129 ²	250	Interpolated	1728	1463	3455	6,360	1946	1463	4437	7,538	n/a	1946	1463	5084	8,224	n/a
SG0250*G133 ²	250	Interpolated	1747	1463	3455	6,390	1946	1463	4437	7,249	n/a	1946	1463	5084	8,224	n/a
SG0250*G142 ²	250	Interpolated	1724	1450	3455	5,985	1976	1463	4437	6,600	6,801	1976	1463	4569	7,911	7,000
SG0250*G142 ²	250	Interpolated	1724	1450	3455	5,985	1976	1450	4437	7,465	6,717	1976	1450	4569	7,947	7,152
SG0275*G129 ²	275	Interpolated	1728	1463	3455	6,612	1946	1463	4437	7,790	n/a	1946	1463	5084	8,476	n/a
SG0275*G133 ²	275	Interpolated	1747	1463	3455	6,390	1946	1463	4437	7,249	n/a	1946	1463	5084	8,224	n/a
SG0275*G142 ²	275	Interpolated	1724	1450	3455	5,985	1976	1463	4437	7,550	6,756	1976	1463	4569	7,836	6,957
SG0300*G129 ²	300	Interpolated	1728	1463	3455	6,612	1976	1463	4437	7,790	n/a	1976	1463	5084	8,476	n/a
SG0300*G133 ²	300	Interpolated	1724	1450	3455	6,390	-	-	-	-	-	-	-	-	-	-
		UUT-4	1747	1463	3455	6,390	-	-	-	-	-	-	-	-	-	-
		Interpolated	1747	1463	3455	6,390	1976	1463	4437	7,249	1,864	1976	1463	5084	8,224	1,877
SG0300*G142 ²	300	Interpolated	1724	1450	3455	5,985	1976	1463	4437	7,550	7,042	1976	1463	4569	7,836	7,242
SG0350*G219 ²	350	Interpolated	1782	1803	3923	7,574	2032	1803	5268	9,990	8,820	2032	1803	5084	10,690	9,170
SG0350*W219 ²	350	Interpolated	1782	1803	3923	8,274	2032	1803	5268	10,690	9,520	2032	1803	5084	11,470	9,870
SG0400*G219 ²	400	UUT-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Interpolated	1782	1803	3923	7,574	2032	1803	5268	9,990	8,820	2032	1803	5084	10,690	9,170
SG0400*G219 ²	400	Interpolated	1782	1803	3923	8,274	2032	1803	5268	10,690	9,520	2032	1803	5084	11,470	9,870
SG0450*G219 ²	450	Interpolated	1782	1803	3923	9,690	2032	1803	5268	10,690	9,520	2032	1803	5084	11,470	9,870
SG0500*G258 ²	500	Interpolated	1903	1803	3923	9,739	2032	1803	5268	11,929	10,841	2032	1803	6287	12,936	11,274
		UUT-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- Available in Prime Modular (MPS) configuration (MG vs SG). See Nomenclature.
- Available in MPS configuration (MG vs SG) AND in Olympian Brand (LG) and Caterpillar Brand (BG). See Nomenclature.

Table 1B. Gas Generator Certified Product Matrix Cont.

$S_{DS} = 0.80g$ @ $z/h = 1.0$ $F_p / W_p = 1.80$
 $S_{DS} = 2.44g$ @ $z/h = 0.0$ $F_p / W_p = 1.83$

Model Number	Kw Rating	Tested / Interpolated	Level 2A Enclosure						Level 3 Enclosure					
			Unit Dimensions (mm)			Operating Weight (lbs)			Unit Dimensions (mm)			Operating Weight (lbs)		
			H	W	L	Steel	Alum		H	W	L	Steel	Alum	
SG0035*G54 ¹	35	Interpolated	1574	965	2409	2,328	1,974		n/a	n/a	n/a	n/a	n/a	
		UUT-5	-	-	-	-	-		n/a	n/a	n/a	n/a	n/a	
SG0035*G54 ¹	35	UUT-3	-	-	-	-	-		-	-	-	-	-	
		Interpolated	1574	965	2409	2,328	1,974		n/a	n/a	n/a	n/a	n/a	
SG0035*G45 ¹	35	Interpolated	1461	965	2409	2,353	2,083		n/a	n/a	n/a	n/a	n/a	
SG0040*G54 ¹	40	Interpolated	1574	965	2409	2,328	1,974		n/a	n/a	n/a	n/a	n/a	
SG0040*G45 ¹	40	Interpolated	1461	965	2409	2,353	2,083		n/a	n/a	n/a	n/a	n/a	
SG0045*G54 ¹	45	Interpolated	1574	965	2409	2,328	1,974		n/a	n/a	n/a	n/a	n/a	
SG0045*G45 ¹	45	Interpolated	1461	965	2409	2,353	2,083		n/a	n/a	n/a	n/a	n/a	
SG0050*G54 ¹	50	Interpolated	1574	965	2409	2,328	2,070		n/a	n/a	n/a	n/a	n/a	
SG0050*G45 ¹	50	Interpolated	1461	965	2409	2,353	2,083		n/a	n/a	n/a	n/a	n/a	
SG0050*G68 ¹	50	Interpolated	1722	1016	2840	2,811	2,499		n/a	n/a	n/a	n/a	n/a	
SG0060*G45 ¹	60	Interpolated	1779	1028	2839	2,756	2,475		n/a	n/a	n/a	n/a	n/a	
SG0060*G68 ¹	60	Interpolated	1722	1016	2840	2,811	2,530		n/a	n/a	n/a	n/a	n/a	
SG0070*G45 ¹	70	Interpolated	1779	1028	2839	2,756	2,475		n/a	n/a	n/a	n/a	n/a	
SG0070*G68 ¹	70	Interpolated	1722	1016	2840	2,811	2,530		n/a	n/a	n/a	n/a	n/a	
SG0080*G45 ¹	80	Interpolated	1779	1028	2839	2,756	2,475		n/a	n/a	n/a	n/a	n/a	
SG0080*G68 ²	80	Interpolated	2054	1028	3671	3,600	3,240		n/a	n/a	n/a	n/a	n/a	
SG0080*G90 ²	80	Interpolated	1743	1028	2840	3,100	2,802		n/a	n/a	n/a	n/a	n/a	
SG0100*G68 ²	100	Interpolated	2054	1028	3671	3,600	3,240		n/a	n/a	n/a	n/a	n/a	
SG0100*G90 ²	100	Interpolated	1743	1028	2840	3,100	2,756		n/a	n/a	n/a	n/a	n/a	
SG0130*G68 ²	130	Interpolated	2054	1028	3671	3,600	3,240		n/a	n/a	n/a	n/a	n/a	
SG0130*G90 ²	130	Interpolated	2054	1028	3671	3,400	2,928		n/a	n/a	n/a	n/a	n/a	
SG0150*G68 ²	150	Interpolated	2330	1280	3633	4,190	3,771		n/a	n/a	n/a	n/a	n/a	
SG0150*G90 ²	150	Interpolated	2330	1280	3633	4,050	2,928		n/a	n/a	n/a	n/a	n/a	
SG0150*G129 ²	150	Interpolated	2372	1371	3923	7,236	n/a		n/a	n/a	n/a	n/a	n/a	
SG0150*G133 ²	150	Interpolated	2726	1463	4588	8,000	n/a		n/a	n/a	n/a	n/a	n/a	
SG0150*G142 ²	150	Interpolated	2370	1371	3923	6,980	6,122		3274	1617	5269	10,602	8,273	
SG0175*G129 ²	175	Interpolated	2372	1371	3923	7,236	n/a		n/a	n/a	n/a	n/a	n/a	
SG0175*G133 ²	175	Interpolated	2726	1463	4588	8,000	n/a		n/a	n/a	n/a	n/a	n/a	
SG0175*G142 ²	175	Interpolated	2370	1371	3923	6,980	6,122		3274	1617	5269	10,602	8,273	
SG0200*G129 ²	200	Interpolated	2372	1371	3923	7,236	n/a		n/a	n/a	n/a	n/a	n/a	
SG0200*G133 ²	200	Interpolated	2726	1463	4588	8,000	n/a		n/a	n/a	n/a	n/a	n/a	
SG0200*G142 ²	200	Interpolated	2370	1371	3923	6,980	6,206		3274	1617	5269	10,602	8,386	
SG0200*G142 ²	200	Interpolated	2726	1463	4588	8,395	6,731		3274	1617	5269	10,905	9,096	
SG0200*G142 ²	200	UUT-6	2726	1463	4588	8,395	-		-	-	-	-	-	
SG0230*G129 ²	230	Interpolated	2726	1463	4588	9,169	n/a		n/a	n/a	n/a	n/a	n/a	
SG0230*G133 ²	230	Interpolated	2726	1463	4588	9,200	n/a		n/a	n/a	n/a	n/a	n/a	
SG0230*G142 ²	230	Interpolated	2726	1463	4588	8,251	7,117		3274	1617	5269	10,602	9,618	
SG0250*G129 ²	250	Interpolated	2726	1463	4588	9,169	n/a		n/a	n/a	n/a	n/a	n/a	
SG0250*G133 ²	250	Interpolated	2726	1463	4588	9,200	n/a		n/a	n/a	n/a	n/a	n/a	
SG0250*G142 ²	250	Interpolated	2726	1463	4588	8,251	7,247		3274	1617	5269	10,905	9,793	
SG0250*G142 ²	250	Interpolated	2726	1450	4588	8,502	7,652		3274	1617	5269	11,080	10,340	
SG0275*G129 ²	275	Interpolated	2726	1463	4588	9,421	n/a		n/a	n/a	n/a	n/a	n/a	
SG0275*G133 ²	275	Interpolated	2726	1463	4588	9,200	n/a		n/a	n/a	n/a	n/a	n/a	
SG0275*G142 ²	275	Interpolated	2726	1463	4588	8,502	7,201		3274	1617	5269	10,990	9,731	
SG0300*G129 ²	300	Interpolated	2726	1463	4588	9,421	n/a		n/a	n/a	n/a	n/a	n/a	
SG0300*G133 ²	300	UUT-4	-	-	-	-	-		-	-	-	-	-	
		Interpolated	2726	1463	4588	9,200	1,974		n/a	n/a	n/a	n/a	n/a	
SG0300*G14.2 ²	300	Interpolated	2726	1463	4588	8,502	7,487		3274	1617	5269	11,080	10,118	
SG0350*G219 ²	350	Interpolated	2899	1803	5268	11,100	9,510		3281	1954	5890	13,577	11,888	
SG0350*W219 ²	350	Interpolated	2899	1803	5268	11,808	10,210		3281	1954	5890	14,285	12,763	
SG0400*G219 ²	400	UUT-7	-	-	-	-	-		3281	1954	5890	-	10,635	
		Interpolated	2899	1803	5268	11,100	9,510		3281	1954	5890	13,577	11,888	
SG0400*G219 ²	400	Interpolated	2899	1803	5268	11,808	10,210		3281	1954	5890	14,285	12,763	
SG0450*G219 ²	450	Interpolated	2899	1803	5268	11,808	10,210		3281	1954	5890	14,285	12,763	
SG0500*G258 ²	500	Interpolated	2899	1803	5268	13,274	11,419		3281	1954	5890	15,635	14,274	
		UUT-8	-	-	-	-	-		3281	1954	5890	15,635	-	

1. Available in Prime Modular (MPS) configuration (MG vs SG). See Nomenclature.

2. Available in MPS configuration (MG vs SG) AND in Olympian Brand (LG) and Caterpillar Brand (BG). See Nomenclature.

Table 2A. Diesel or Bi-Fuel Generator - Open Set - Certified Subcomponent List

$S_{DS} = 1.50g @ z/h = 1.0$ $F_p / W_p = 3.38$

$S_{DS} = 1.60g @ z/h = 0.0$ $F_p / W_p = 1.20$

In accordance with section 4.5 of AC 156, below is a list and rationale of major subassemblies/ components. In accordance with item 14 of PIN 55 of OSHPD OSP approval process, components exempt from certification per CBC Section 1705A.13.3.1 need not be listed. These components include, but not necessarily limited to piping; electric motors, pumps or compressors less than 20 hp; electrical controllers, switches, transformers, circuit breakers, or fuses up to 10 lbs to 10 amperes.

Motor					
Engine Size	Nominal capacity (max HP)	Engine Dry Weight (lbs)	Manufacturer	Material	Interpolated / Included With Test
D4.5L	79	922	FPT	Cast Iron	UUT-1
D4.5L	90	992	FPT	Cast Iron	Interpolated
D4.5L	128	1102	FPT	Cast Iron	Interpolated
D6.7L	198	1441	FPT	Cast Iron	Interpolated
D6.7L	279	1389	FPT	Cast Iron	Interpolated
D8.7L	389	2690	FPT	Cast Iron	Interpolated
D10.3L	449	2447	FPT	Cast Iron	Interpolated
D12.9L	530	2707	FPT	Cast Iron	UUT-2

Alternator			
Capacity	Manufacturer	Material	Interpolated / Included With Test
35 kW	Generac	Steel Laminations & Copper windings	UUT-1
40 kW	Generac	Steel Laminations & Copper windings	Interpolated
45 kW	Generac	Steel Laminations & Copper windings	Interpolated
50 kW	Generac	Steel Laminations & Copper windings	Interpolated
60 kW	Generac	Steel Laminations & Copper windings	Interpolated
80 kW	Generac	Steel Laminations & Copper windings	Interpolated
100 kW	Generac	Steel Laminations & Copper windings	Interpolated
125/130 kW	Generac	Steel Laminations & Copper windings	Interpolated
150 kW	Generac	Steel Laminations & Copper windings	Interpolated
175 kW	Generac	Steel Laminations & Copper windings	Interpolated
200 kW	Generac	Steel Laminations & Copper windings	Interpolated
230 kW	Generac	Steel Laminations & Copper windings	Interpolated
250 kW	Generac	Steel Laminations & Copper windings	Interpolated
275 kW	Generac	Steel Laminations & Copper windings	Interpolated
288 kW	Generac	Steel Laminations & Copper windings	Interpolated
300 kW	Generac	Steel Laminations & Copper windings	Interpolated
350 kW	Generac	Steel Laminations & Copper windings	UUT-2

Radiator System			
Part Number	Material	Manufacturer	Interpolated / Included With Test
35 kW	Copper(Fins)-Steel(Mounting Flanges)-Brass(Tanks, Support Pl & Tubes)	Generac	UUT-1
40 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
45 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
50 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
50 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
60 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
70 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
80 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
100 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
130 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
150 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
175 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
200 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
150 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
175 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
200 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
230 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
250 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
275 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
300 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
350 kW	Copper(Fins)-Steel(Mounting Flanges)-Brass(Tanks, Support Pl & Tubes)	Generac	UUT-2

Battery				
Part Number	Voltage	Manufacturer	Material	Interpolated / Included With Test
HP-31E	12V	Exide	Carbon steel, Al, Cu and plastic	UUT-1
COM8D-P	24V	Exide	Carbon steel, Al, Cu and plastic	UUT-2

Control Panel				
Nomenclature Designation	Description	Manufacturer	Material	Interpolated / Included With Test
H	Generac Digital H-Panel	Generac	Carbon steel enclosure and electrical components	UUT-1
G	Generac Digital G-Panel	Generac	Carbon steel enclosure and electrical components	UUT-2

Table 2A. Diesel or Bi-Fuel Generator - with Enclosure and/or Fuel Tank - Certified Subcomponent List

$S_{DS} = 1.50g @ z/h = 1.0$ $F_p / W_p = 3.38$
 $S_{DS} = 1.60g @ z/h = 0.0$ $F_p / W_p = 1.20$

Enclosure				
Part Number	Description	Manufacturer	Material	Interpolated / Included With Test
Y	Standard	Generac	Carbon Steel	Extrapolated
S	Level 1 Sound Attenuated	Generac	Carbon Steel	UUT-1B & 1C
L	Level 2 Sound Attenuated	Generac	Carbon Steel	UUT-2B & 2C

Fuel Tank					
Part Number	Description	Gallons	Material	Manufacturer	Interpolated / Included With Test
0J4283076R	1 ft Tall	54	Carbon Steel	Generac	UUT-1B (empty) UUT-1C (full)
0J1123076R	1 ft Tall	79	Carbon Steel	Generac	Interpolated
0J1126076R	1 ft Tall	90	Carbon Steel	Generac	Interpolated
0J1129076R	1 ft Tall	134	Carbon Steel	Generac	Interpolated
0J1108076R	1 ft Tall	153	Carbon Steel	Generac	Interpolated
0J1155076R	1 ft Tall	183	Carbon Steel	Generac	Interpolated
0J4284078R	2 ft Tall	132	Carbon Steel	Generac	Interpolated
0J1124078R	2 ft Tall	189	Carbon Steel	Generac	Interpolated
0J1127078R	2 ft Tall	220	Carbon Steel	Generac	Interpolated
0J1130078R	2 ft Tall	322	Carbon Steel	Generac	Interpolated
0J1109078R	2 ft Tall	372	Carbon Steel	Generac	Interpolated
0J1156078R	2 ft Tall	438	Carbon Steel	Generac	Interpolated
0J4285080R	3 ft Tall	212	Carbon Steel	Generac	Interpolated
0J1125080R	3 ft Tall	300	Carbon Steel	Generac	Interpolated
0J1128080R	3 ft Tall	350	Carbon Steel	Generac	Interpolated
0J1131080R	3 ft Tall	510	Carbon Steel	Generac	Interpolated
0J1110080R	3 ft Tall	589	Carbon Steel	Generac	Interpolated
0J1157080R	3 ft Tall	693	Carbon Steel	Generac	Interpolated
0J4490080R	3 ft Tall Extended	300	Carbon Steel	Generac	Interpolated
0H9386080R	3 ft Tall Extended	350	Carbon Steel	Generac	Interpolated
0J4491080R	3 ft Tall Extended	510	Carbon Steel	Generac	Interpolated
0H8549080R	3 ft Tall Extended	510	Carbon Steel	Generac	Interpolated
0H8896080R	3 ft Tall Extended	510	Carbon Steel	Generac	Interpolated
0H9277080R	3 ft Tall Extended	589	Carbon Steel	Generac	Interpolated
0H9212080R	3 ft Tall Extended	589	Carbon Steel	Generac	Interpolated
0F4613F80R	3 ft Tall Extended	693	Carbon Steel	Generac	Interpolated
0J0792080R	3 ft Tall Extended	693	Carbon Steel	Generac	Interpolated
0H8371080R	3 ft Tall Extended	693	Carbon Steel	Generac	Interpolated
0J0490080R	3ft Tall Extended	946	Carbon Steel	Generac	Interpolated
0J0615080R	3ft Tall Extended	1325	Carbon Steel	Generac	UUT-2B (empty) UUT-2C (full)

Muffler			
Description	Manufacturer	Material	Interpolated / Included With Test
0J3222024R	Generac	Carbon Steel	UUT-1B & 1C
0H4164024R	Generac	Carbon Steel	Interpolated
0H2765024R	Generac	Carbon Steel	Interpolated
0H3104024R	Generac	Carbon Steel	Interpolated
0J3370024R	Generac	Carbon Steel	Interpolated
0H6255024R	Generac	Carbon Steel	Interpolated
0H6256024R	Generac	Carbon Steel	Interpolated
0H4315024R	Generac	Carbon Steel	Interpolated
0H4316024R	Generac	Carbon Steel	UUT-2B & 2C

Table 2B. Gas Generator Certified Subcomponent List

$S_{DS} = 0.80g$ @ $z/h = 1.0$ $F_p / W_p = 1.80$

$S_{DS} = 2.44g$ @ $z/h = 0.0$ $F_p / W_p = 1.83$

In accordance with section 4.5 of AC 156, below is a list and rationale of major subassemblies/components. In accordance with item 14 of PIN 55 of OSHPD OSP approval process, components exempt from certification per CBC Section 1705A.13.3.1 need not be listed. These components include, but not necessarily limited to piping; electric motors, pumps or compressors less than 20 hp; electrical controllers, switches, transformers, circuit breakers, or fuses up to 10 lbs to 10 amperes.

Enclosures				
Part Number	Description	Manufacturer	Material	Interpolated / Included With Test
Y	Standard	Generac	Carbon Steel	Extrapolated
S	Level 1A Sound Attenuated	Generac	Carbon Steel	UUT-3
L	Level 2A Sound Attenuated	Generac	Carbon Steel	Interpolated
E	Level 3 Sound Attenuated	Generac	Carbon Steel	UUT-8
Y	Standard	Generac	Aluminum	Extrapolated
S	Level 1A Sound Attenuated	Generac	Aluminum	UUT-5
L	Level 2A Sound Attenuated	Generac	Aluminum	Interpolated
E	Level 3 Sound Attenuated	Generac	Aluminum	UUT-7

Engine					
Engine Size	Nominal capacity (max HP)	Engine Dry Weight (lbs)	Manufacturer	Material	Interpolated / Included With Test
G5.4L	82	527	Generac	Cast Iron	UUT-3, 5
G4.5L	140	590	Generac	Cast Iron	Interpolated
G6.8L	231	640	Generac	Cast Iron	Interpolated
G9.0L	150	630	Generac	Cast Iron	Interpolated
G12.9L	308	2425	Generac	Cast Iron	Interpolated
G12.9L	379	2425	Generac	Cast Iron	Interpolated
G13.3L	468	2160	Generac	Cast Iron	UUT-4
G14.2L	379	2480	Generac	Cast Iron	UUT-6
G21.9L	636	3130	Generac	Cast Iron	UUT-7
G25.8L	777	4076	Generac	Cast Iron	UUT-8

Alternator			
Nominal capacity	Manufacturer	Material	Interpolated / Included With Test
35 kW	Generac	Steel Laminations & Copper windings	UUT-3, 5
40 kW	Generac	Steel Laminations & Copper windings	Interpolated
45 kW	Generac	Steel Laminations & Copper windings	Interpolated
50 kW	Generac	Steel Laminations & Copper windings	Interpolated
60 kW	Generac	Steel Laminations & Copper windings	Interpolated
70 kW	Generac	Steel Laminations & Copper windings	Interpolated
80 kW	Generac	Steel Laminations & Copper windings	Interpolated
100 kW	Generac	Steel Laminations & Copper windings	Interpolated
130 kW	Generac	Steel Laminations & Copper windings	Interpolated
150 kW	Generac	Steel Laminations & Copper windings	Interpolated
175 kW	Generac	Steel Laminations & Copper windings	Interpolated
200 kW	Generac	Steel Laminations & Copper windings	Interpolated
230 kW	Generac	Steel Laminations & Copper windings	Interpolated
250 kW	Generac	Steel Laminations & Copper windings	Interpolated
275 kW	Generac	Steel Laminations & Copper windings	Interpolated
288 kW	Generac	Steel Laminations & Copper windings	Interpolated
300 kW	Generac	Steel Laminations & Copper windings	UUT-4
350 kW	Generac	Steel Laminations & Copper windings	Interpolated
400 kW	Generac	Steel Laminations & Copper windings	UUT-7
200 kW	WEG	Steel Laminations & Copper windings	UUT-6
250 kW	WEG	Steel Laminations & Copper windings	Interpolated
350 kW	WEG	Steel Laminations & Copper windings	Interpolated
400 kW	WEG	Steel Laminations & Copper windings	Interpolated
450 kW	WEG	Steel Laminations & Copper windings	Interpolated
500 kW	WEG	Steel Laminations & Copper windings	UUT-8

Mufflers			
Description	Manufacturer	Material	Interpolated / Included With Test
G5.4L Exhaust	Generac	Carbon Steel	UUT-3, 5
G4.5L Exhaust	Generac	Carbon Steel	Interpolated
G6.8L Exhaust	Generac	Carbon Steel	Interpolated
G6.8L Exhaust	Generac	Carbon Steel	Interpolated
G9.0L Exhaust	Generac	Carbon Steel	Interpolated
G12.9L Exhaust	Generac	Carbon Steel	Interpolated
G13.3L Exhaust	Generac	Carbon Steel	UUT-4
G14.2L Exhaust	Generac	Carbon Steel	UUT-6
G21.9L Exhaust	Generac	Carbon Steel	UUT-7
G25.8L Exhaust	Generac	Carbon Steel	UUT-8

Table 2B. Gas Generator Certified Subcomponent List Cont.

$S_{DS} = 0.80g @ z/h = 1.0$ $F_p / W_p = 1.80$
 $S_{DS} = 2.44g @ z/h = 0.0$ $F_p / W_p = 1.83$

Radiator System			
Part Number	Material	Manufacturer	Interpolated / Included With Test
35 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	UUT-3
40 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	Interpolated
45 kW		Generac	Interpolated
50 kW		Generac	Interpolated
50 kW		Generac	Interpolated
60 kW		Generac	Interpolated
70 kW		Generac	Interpolated
80 kW		Generac	Interpolated
100 kW		Generac	Interpolated
130 kW		Generac	Interpolated
150 kW		Generac	Interpolated
175 kW		Generac	Interpolated
200 kW		Generac	Interpolated
150 kW		Generac	Interpolated
175 kW		Generac	Interpolated
200 kW		Generac	Interpolated
230 kW		Generac	Interpolated
250 kW		Generac	Interpolated
275 kW		Generac	Interpolated
300 kW	Copper(Fins) - Steel(Mounting Flanges) Brass(Tanks, Support Plate & Tubes)	Generac	UUT-4
35 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	UUT-5
40 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	Interpolated
45 kW		Generac	Interpolated
50 kW		Generac	Interpolated
60 kW		Generac	Interpolated
70 kW		Generac	Interpolated
80 kW		Generac	Interpolated
100 kW		Generac	Interpolated
130 kW		Generac	Interpolated
150 kW		Generac	Interpolated
175 kW		Generac	Interpolated
200 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	UUT-6
230 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	Interpolated
250 kW		Generac	Interpolated
275 kW		Generac	Interpolated
300 kW		Generac	Interpolated
350 kW		Generac	Interpolated
400 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	UUT-7
450 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	Interpolated
500 kW	Aluminum(Fins) - Steel(Mounting Flanges) Aluminum(Tanks, Support Plate & Tubes)	Generac	UUT-8

Battery				
Part Number	Voltage	Manufacturer	Material	Interpolated / Included With Test
HP-31E	12V	Exide	carbon steel, aluminum, copper and plastic	UUT-3
COM8D-P	24V	Exide	carbon steel, aluminum, copper and plastic	UUT-4, UUT-8
115-2422	12V	Caterpillar	carbon steel, aluminum, copper and plastic	UUT-6 UUT-5
153-5710	12V	Caterpillar	carbon steel, aluminum, copper and plastic	UUT-7

Control Panels				
Nomenclature	Description	Manufacturer	Material	Interpolated / Included With Test
H	Generac Digital H-Panel	Generac	carbon steel enclosure and electrical components	UUT-3, UUT-5
G	Generac Digital G-Panel	Generac	carbon steel enclosure and electrical components	UUT-4
n/a	Caterpillar Digital EMCP	Generac	carbon steel enclosure and electrical components	UUT-7
n/a	Generac Digital PowerZone	Generac	carbon steel enclosure and electrical components	UUT-8

UUT-1A Test Summary

Testing Lab: US Army Corp Lab
Testing Report: 2012-0211.00
Testing Unit Num: UUT-3A

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)
SD0035AG174.5D18HBNN3	35 kW	1,850	Base - Rigid Mount	X	Front-Back	10.0	1930	950
				Y	Side-Side	6.6		
				Z	Vertical	17.0		

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Four (4) - 5/8"Ø grade 8 front and back of unit (8 total).	Seismic Parameters							
		Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Seismic Modifications	none	CBC 2019	AC 156	2.00g	0.68	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Test Anomaly	none					3.20g	1.88g	1.34g	0.54g



Figure 1A.1: Unit on the shake table

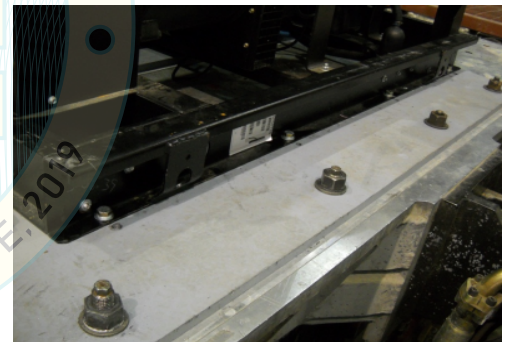


Figure 1A.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-1A Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	922 lbs	D4.5L	FPT	Cast Iron
Alternator	n/a	35 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	35 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	HP-31E	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital H-Panel	Generac	Carbon steel enclosure and electrical components

UUT-1B Test Summary

Testing Lab: US Army Corp Lab

Testing Report: 2012-0211.00

Testing Unit Num: UUT-3B - Empty Tank

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)
SD0035AG174.5D18HBSN3	35 kW	2,900	Base - Rigid Mount	X	Front-Back	9.1	2857	965
				Y	Side-Side	6.5		
				Z	Vertical	16.0		

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Four (4) - 5/8"Ø grade 8 front and back of unit (8 total) to fuel tank. Fuel tank to structure with four (4) - 5/8"Ø grade 8 bolts front and back of unit (8 total).	Seismic Parameters							
		Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Seismic Modifications	none					A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Test Anomaly	none	CBC 2019	AC 156	2.00g	0.68	3.20g	1.88g	1.34g	0.54g



Figure 1B.1: Unit on the shake table



Figure 1B.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-1B Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	922 lbs	D4.5L	FPT	Cast Iron
Alternator	n/a	35 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	35 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	HP-31E	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital H-Panel	Generac	Carbon steel enclosure and electrical components
Enclosure	n/a	S - Level 1	Generac	Carbon Steel
Fuel Tank	n/a	1ft - 0J4283076R - empty	Generac	Carbon Steel
Mufflers	n/a	0J3222024R	Generac	Carbon Steel

UUT-1C Test Summary

Testing Lab: US Army Corp Lab

Testing Report: 2012-0211.00

Testing Unit Num: UUT-3C - Full Tank

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)
SD0035AG174.5D18HBSN3	35 kW	3,350	Base - Rigid Mount	X	Front-Back	8.7	2857	965
				Y	Side-Side	6.3		
				Z	Vertical	16.0		

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Four (4) - 5/8"Ø grade 8 front and back of unit (8 total) to fuel tank. Fuel tank to structure with four (4) - 5/8"Ø grade 8 bolts front and back of unit (8 total).	Seismic Parameters							
		Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Seismic Modifications	none					A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Test Anomaly	none	CBC 2019	AC 156	2.00g	0.68	3.20g	1.88g	1.34g	0.54g



Figure 1C.1: Unit on the shake table



Figure 1C.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-1C Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	922 lbs	D4.5L	FPT	Cast Iron
Alternator	n/a	35 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	35 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	HP-31E	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital H-Panel	Generac	Carbon steel enclosure and electrical components
Enclosure	n/a	S - Level 1	Generac	Carbon Steel
Fuel Tank	n/a	1ft - 0J4283076R - full	Generac	Carbon Steel
Mufflers	n/a	0J3222024R	Generac	Carbon Steel

UUT-2A Test Summary

Testing Lab: US Army Corp Lab

Testing Report: 2012-0211.00

Testing Unit Num: UUT-4A

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (in)	Width (in)	Height (in)
MD0350KG1712.90D18GPNN3	350 kW	6,400	Base - Rigid Mount	X	Front-Back	8.1	3455	1463
				Y	Side-Side	5.6		
				Z	Vertical	14.0		

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Five (5) - 5/8"Ø grade 8 front and back of unit (10 total)	Seismic Parameters							
Seismic Modifications	none	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
						A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Test Anomaly	none	CBC 2019	AC 156	2.00g	0.68	3.20g	1.88g	1.34g	0.54g



Figure 2A.1: Unit on the shake table



Figure 2A.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-2A Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	2707 lbs	D12.9L	FPT	Cast Iron
Alternator	n/a	350 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	350 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	COM8D-P	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital G-Panel	Generac	Carbon steel enclosure and electrical components

UUT-2B Test Summary

Testing Lab: US Army Corp Lab

Testing Report: 2012-0211.00

Testing Unit Num: UUT-4B - Empty Tank

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction		Frequency (Hz)	Length (in)	Width (in)	Height (in)
MD0350KG1712.90D18GPLN3	350 kW	13,450	Base - Rigid Mount	X	Front-Back	5.4	7055	1463	3726
				Y	Side-Side	4.1			
				Z	Vertical	12.0			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Seismic Parameters
Five (5) - 5/8"Ø grade 8 front and back of unit (10 total) to fuel tank. Fuel tank to structure with eight (8)-3/4"Ø grade 8 bolts front and back (16 total)	Building Code
Seismic Modifications	Test Criteria
Test Anomaly	S _{DS} (g)
	z/h
	Horizontal
	Vertical
	A _{FLX-H}
	A _{RIG-H}
	A _{FLX-V}
	A _{RIG-V}
	CBC 2019
	AC 156
	2.00g
	0.68
	3.20g
	1.88g
	1.34g
	0.54g



Figure 2B.1: Unit on the shake table



Figure 2B.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-2B Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	2707 lbs	D12.9L	FPT	Cast Iron
Alternator	n/a	350 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	350 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	COM8D-P	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital G-Panel	Generac	Carbon steel enclosure and electrical components
Enclosure	n/a	L - Level 2	Generac	Carbon Steel
Fuel Tank	n/a	3ft X - 0J0615080R - empty	Generac	Carbon Steel
Mufflers	n/a	0H4316024R	Generac	Carbon Steel

UUT-2C Test Summary

Testing Lab: US Army Corp Lab

Testing Report: 2012-0211.00

Testing Unit Num: UUT-4C - Full Tank

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction		Frequency (Hz)	Length (in)	Width (in)	Height (in)
MD0350KG1712.90D18GPLN3	350 kW	24,700	Base - Rigid Mount	X	Front-Back	4.9	7055	1463	3726
				Y	Side-Side	4.1			
				Z	Vertical	12.0			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Five (5) - 5/8"Ø grade 8 front and back of unit (10 total) to fuel tank. Fuel tank to structure with eight (8)-3/4"Ø grade 8 bolts front and back (16 total)	Seismic Parameters							
		Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
						A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Seismic Modifications	none	CBC 2019	AC 156	1.50g	1.0	2.40g	1.80g	1.07g	0.43g
Test Anomaly	none			1.60g	0.0				



Figure 2C.1: Unit on the shake table



Figure 2C.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-2C Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Motor	2707 lbs	D12.9L	FPT	Cast Iron
Alternator	n/a	350 kW	Generac	Steel Laminations & Cooper Windings
Radiator System	n/a	350 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	COM8D-P	Exide	Carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital G-Panel	Generac	Carbon steel enclosure and electrical components
Enclosure	n/a	L - Level 2	Generac	Carbon Steel
Fuel Tank	n/a	3ft X - 0J0615080R - full	Generac	Carbon Steel
Mufflers	n/a	0J3222024R	Generac	Carbon Steel

UUT-3 Test Summary

Testing Lab:	QualTech NP
Testing Report:	Q1218.0 - Rev2 and amendment dated 09/12/2019
Testing Unit Num:	Q1218-01-01-01 with enclosure

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction		Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
SG0035AG035.4N18HBSNA	35 kW	2,179	Base - Rigid Mount	X	Front-Back	4.5	2857	965	1258
				Y	Side-Side	5.2			
				Z	Vertical	14.6			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Four (4) - 5/8"Ø grade 8 bolts front and back (8 total)	Seismic Parameters							
Seismic Modifications	none	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
						A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
Test Anomaly	none	CBC 2019	AC 156	2.44	0.0	2.44g	0.98g	1.63g	0.66g



Figure 3.1: Unit on the shake table



Figure 3.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity (at S_{DS} = 2.0g, z/h = 1.0 equivalent to S_{DS} = 2.44g, z/h = 0).
Unit remained functional per manufacture requirements after final unit shake table test (S_{DS} = 2.98g, z/h = 1.00). Bolt of alternator sheared off at S_{DS} = 2.98g, z/h=1.0 test.

UUT-3 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Enclosure	n/a	S - Level 1A	Generac	Carbon Steel
Engine	527 lbs	G5.4L	Generac	Cast Iron
Alternator	n/a	35 kW	Generac	Steel Laminations & Cooper Windings
Mufflers	n/a	G5.4L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	35 kW	Generac	Copper(Fins)-Steel(Mounting Flanges)-Brass(Tanks, Support PI & Tubes)
Battery	n/a	HP-31E	Exide	carbon steel, aluminum, copper and plastic
Control Panel	n/a	Generac Digital H-Panel	Generac	carbon steel enclosure and electrical components

UUT-4 Test Summary

Testing Lab: QualTech NP
Testing Report: Q1218.0 - Rev2
Testing Unit Num: Q1218-02-01-01 w/out enclosure

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
MG0300KG1313.3N23GPNYE	300 kW	6,390	Base - Rigid Mount	X Front-Back	7.4	3455	1463	1747
				Y Side-Side	6.3			
				Z Vertical	14.7			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Five (5) - 5/8"Ø grade 8 bolts front and back (10 total)	Seismic Parameters							
Seismic Modifications	none	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Test Anomaly	none	CBC 2019	AC 156	2.50	1.0	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
						4.00g	3.00g	1.68g	0.68g



Figure 4.1: Unit on the shake table

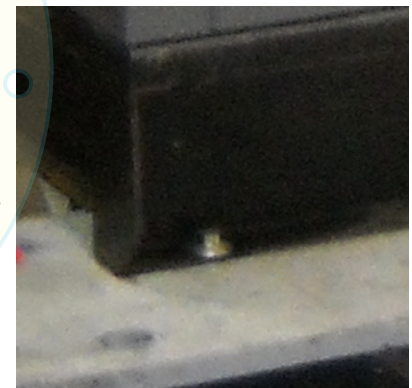


Figure 4.2: Mounting Detail

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity with exception of enclosure which partially opened during the seismic test. Subcomponent was removed from justification. Unit remained functional per manufacture requirements after shake table test

UUT-4 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Engine	2160 lbs	G13.3L	Generac	Cast Iron
Alternator	n/a	300 kW	Generac	Steel Laminations & Cooper Windings
Mufflers	n/a	G13.3L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	300 kW	Generac	Copper(Fins)-Steel(Mounting Flanges)-Brass(Tanks, Support Pl & Tubes)
Battery	n/a	COM8D-P	Exide	carbon steel, aluminum, copper and plastic
Control Panel	n/a	Generac Digital G-Panel	Generac	carbon steel enclosure and electrical components

UUT-5 Test Summary

Testing Lab: University of Buffalo

Testing Report: UB CSEE/SEESL-2019-05 - Rev2

Testing Unit Num: UUT-5

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
SG0035KG035.4N18HBSY	35 kW	1,877	Base - Rigid Mount	X Front-Back	9.1	2857	965	1258
				Y Side-Side	5.4			
				Z Vertical	14.6			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Four (4) - 5/8"Ø grade 5 bolts front and back (8 total)	Seismic Parameters							
Seismic Modifications	none	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Test Anomaly	none	CBC 2019	AC 156	2.50	1.0	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
						4.00g	3.00g	1.68g	0.68g

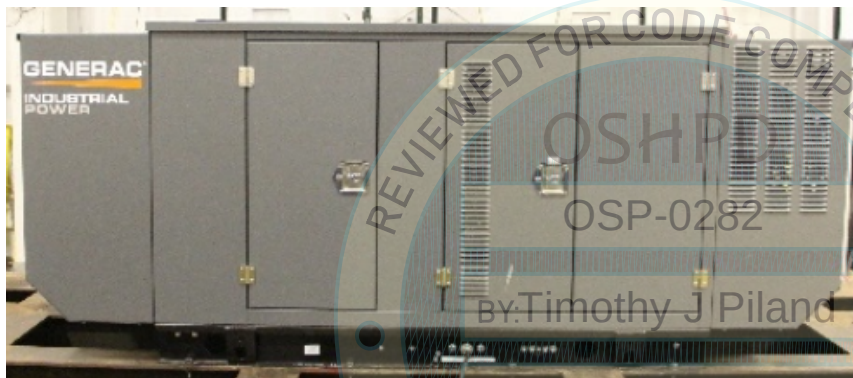
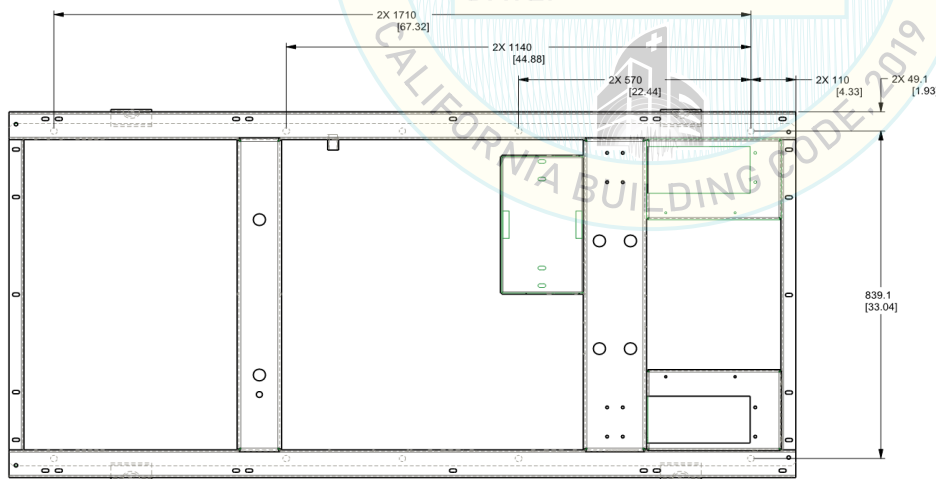


Figure 5.1: Unit on the shake table



DIMENSIONS ARE IN MILLIMETERS (INCHES)

Figure 5.2: Mounting Detail



Figure 5.3: Mounting Detail

Notes: The UUTs were full of contents during the test.

Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-5 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Enclosure	n/a	S - Level 1A	Generac	Aluminium
Engine	82 lbs	G5.4L	Generac	Cast Iron
Alternator	n/a	35 kW	Generac	Steel Laminations & Cooper Windings
Mufflers	n/a	G5.4L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	35 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	115-2422	Caterpillar	carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital H-Panel	Generac	carbon steel enclosure and electrical components

UUT-6 Test Summary

Testing Lab: University of Buffalo

Testing Report: UB CSEE/SEESL-2019-05 - Rev2

Testing Unit Num: UUT-6

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
SG0200GG2014.2S18PPLY	200 kW	8,395	Base - Rigid Mount	X Front-Back	8.8	4588	1463	2726.0
				Y Side-Side	6.8			
				Z Vertical	16.0			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Five (5) - 5/8"Ø grade 5 bolts front and back (10 total)	Seismic Parameters							
Seismic Modifications	none	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Test Anomaly	Enclosure door and control panel door opened during test.					A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
	These elements included as mass only - removed from list								
	and justified from alternate test.								
		CBC 2019	AC 156	2.50	1.0	4.00g	3.00g	1.68g	0.68g



Figure 6.1: Unit on the shake table

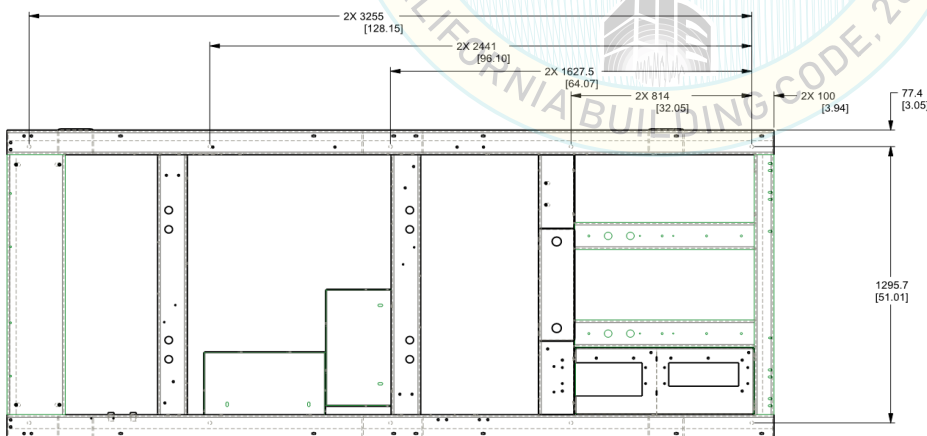


Figure 6.2: Mounting Detail



Figure 6.3: Mounting Photo

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-6 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Enclosure	not evaluated - mass equivalent included			
Engine	379 lbs	G14.2L	Generac	Cast Iron
Alternator	n/a	200 kW	WEG	Steel Laminations & Cooper Windings
Mufflers	n/a	G14.2L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	200 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	115-2422	Caterpillar	carbon steel, aluminum, copper and plastic
Control Panel	not evaluated - mass equivalent included			

UUT-7 Test Summary

Testing Lab: University of Buffalo

Testing Report: UB CSEE/SEESL-2019-05 - Rev2

Testing Unit Num: UUT-7

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
SG0400KG3021.9S18KPEY	400 kW	10,635	Base - Rigid Mount	X Front-Back	8.4	5890	1954	3281
				Y Side-Side	5.0			
				Z Vertical	16.6			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Seismic Parameters
Six (6) - 5/8"Ø grade 5 bolts front and back (12 total)	Building Code Test Criteria S _{DS} (g) z/h Horizontal Vertical
Seismic Modifications Enclosure modified by extending closure rod.	CBC 2019 AC 156 2.44 0.0 2.44g 0.98g 1.63g 0.66g
Test Anomaly none	



Figure 7.1: Unit on the shake table

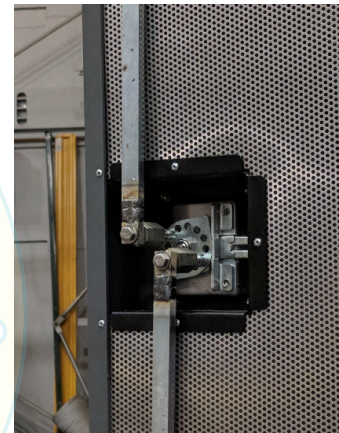


Figure 7.2: Modification

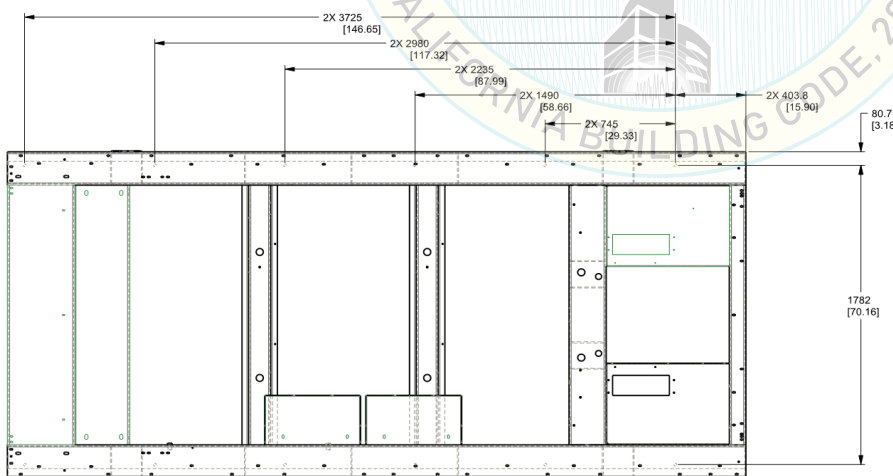


Figure 7.3: Mounting Detail



Figure 7.4: Mounting Photo

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

UUT-7 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Enclosure	n/a	E - Level 3	Generac	Aluminum
Engine	636 lbs	G21.9L	Generac	Cast Iron
Alternator	n/a	400 kW	Generac	Steel Laminations & Cooper Windings
Mufflers	n/a	G21.9L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	400 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	153-5710	Caterpillar	carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital EMCP	Generac	carbon steel enclosure and electrical components

UUT-8 Test Summary

Testing Lab: University of Buffalo

Testing Report: UB CSEE/SEESL-2019-05 - Rev2

Testing Unit Num: UUT-8

Model Number	Nominal Capacity	Measured Operating Weight (lbs)	Mounting	Excitation Direction	Frequency (Hz)	Length (mm)	Width (mm)	Height (mm)
SG0500GG3025.8S18PPEY	500 kW	15,635	Base - Rigid Mount	X Front-Back	4.9	5890	1954	3281
				Y Side-Side	7.0			
				Z Vertical	13.6			

Notes: Frequencies are for units prior to ICC ES AC-156 testing.
Refer to Nomenclature for model breakdown.

Attachment Method	Six (6) - 5/8"Ø grade 5 bolts front and back (12 total)	Seismic Parameters							
Seismic Modifications	Enclosure modified by extending closure rod.	Building Code	Test Criteria	S _{DS} (g)	z/h	Horizontal		Vertical	
Test Anomaly	none	CBC 2019	AC 156	2.44	0.0	A _{FLX-H}	A _{RIG-H}	A _{FLX-V}	A _{RIG-V}
						2.44g	0.98g	1.63g	0.66g



Figure 8.1: Unit on the shake table

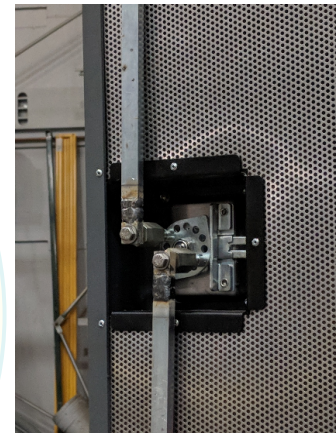


Figure 8.2: Modification

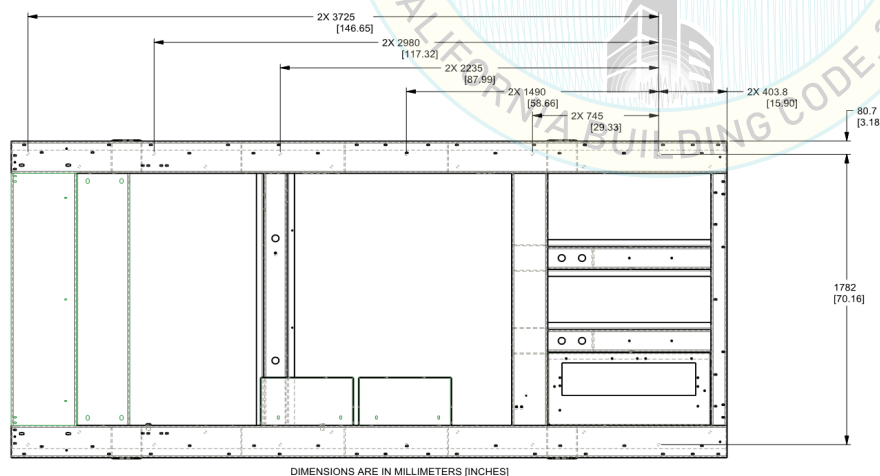


Figure 8.3: Mounting Detail



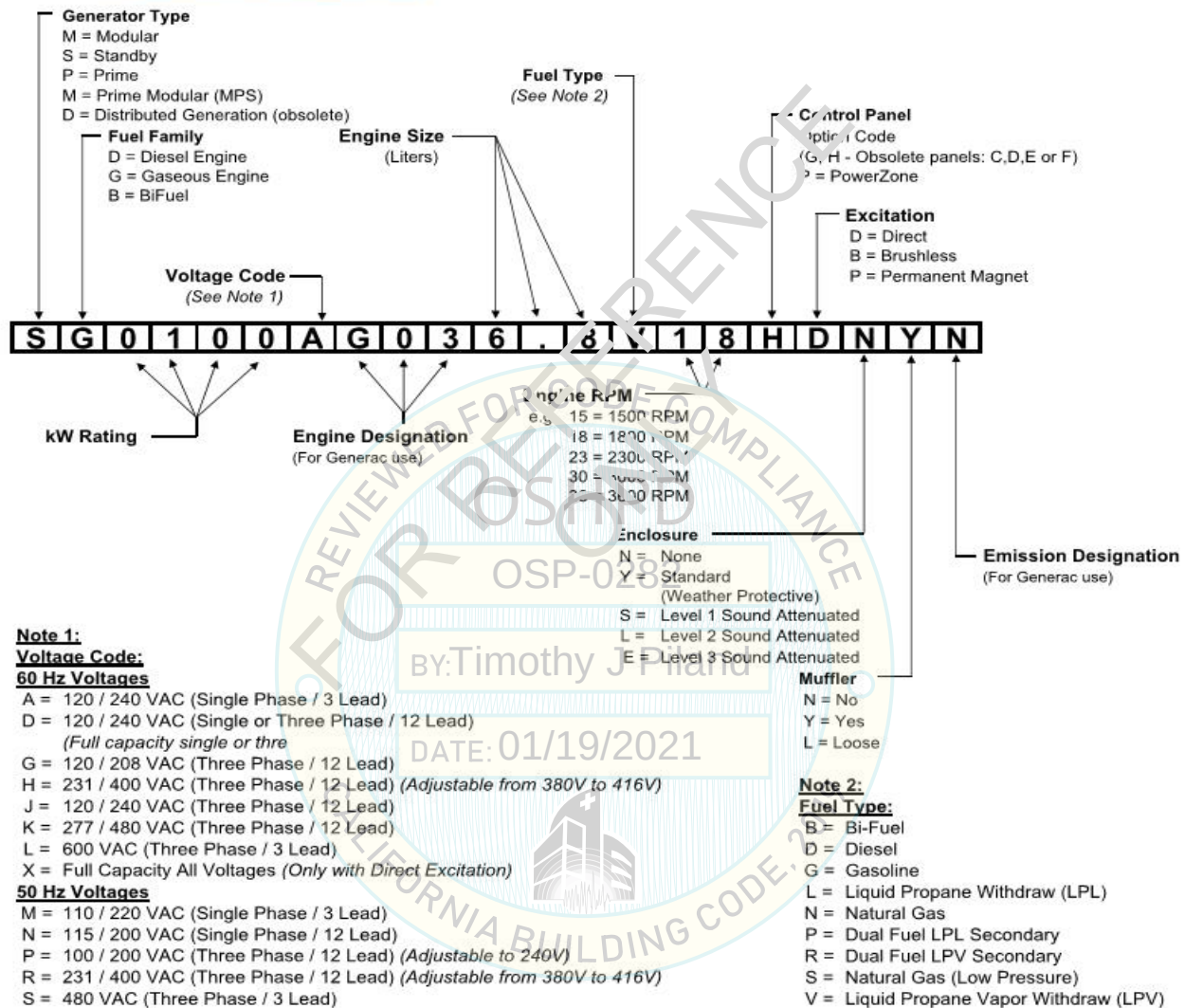
Figure 8.4: Mounting Photo

Notes: The UUTs were full of contents during the test.
Unit maintained structural integrity and remained functional per manufacture requirements after shake table test

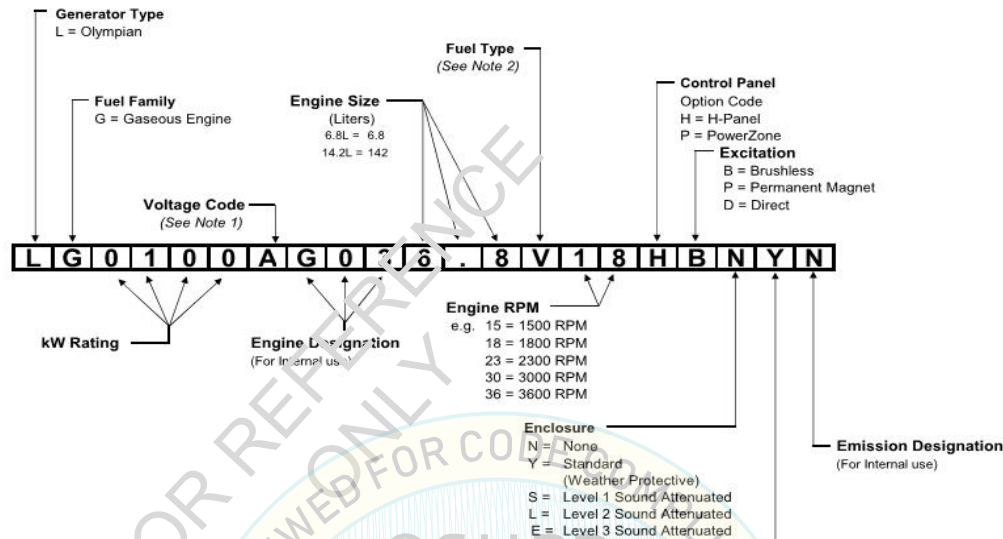
UUT-8 Summary Tested Sub-Component

Sub-Component	Weight	Part Number	Manufacturer	Material
Enclosure	n/a	E - Level 3	Generac	Aluminum
Engine	777 lbs	G25.8L	Generac	Cast Iron
Alternator	n/a	500 kW	WEG	Steel Laminations & Cooper Windings
Mufflers	n/a	G25.8L	Generac	Aluminized Steel and Stainless Components
Radiator System	n/a	500 kW	Generac	Al (Fins) - Steel (Mounting Flanges) - Al (Tanks, Support PI & Tubes)
Battery	n/a	COM8D-P	Exide	carbon steel, aluminum, copper and plastic
Control Panel	n/a	Digital PowerZone	Generac	carbon steel enclosure and electrical components

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Note 1:

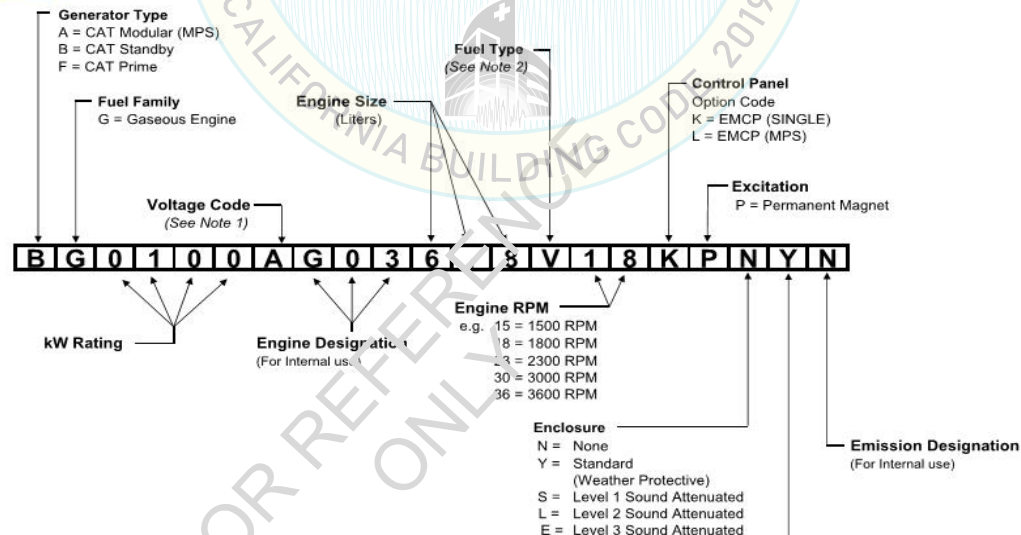
Voltage Code:

60 Hz Voltages

A = 120 / 240 VAC (Single Phase / 3 Lead)
D = 120 / 240 VAC (Single or Three Phase)
(Full capacity single or three phase; cannot be reconnected for 277/480V)
G = 120 / 208 VAC (Three Phase / 12 Lead)
J = 120 / 240 VAC (Three Phase / 12 Lead)
K = 277 / 480 VAC (Three Phase / 12 Lead)
L = 600 VAC (Three Phase / 3 Lead)

50 Hz Voltages

M = 110 / 220 VAC (Single Phase / 3 Lead)
R = 231 / 400 VAC (Three Phase / 12 Lead) (Adjustable from 380V to 416V)



Note 1:

Voltage Code:

60 Hz Voltages

A = 120 / 240 VAC (Single Phase / 3 Lead)
D = 120 / 240 VAC (Single or Three Phase / 12 Lead)
(Full capacity single or three phase; cannot be reconnected for 277/480V)
G = 120 / 208 VAC (Three Phase / 12 Lead)
J = 120 / 240 VAC (Three Phase / 12 Lead)
K = 277 / 480 VAC (Three Phase / 12 Lead)
L = 600 VAC (Three Phase / 3 Lead)

50 Hz Voltages

M = 110 / 220 VAC (Single Phase / 3 Lead)
R = 231 / 400 VAC (Three Phase / 12 Lead) (Adjustable from 380V to 416V)

Note 2:

Fuel Type:

L = Liquid Propane Withdraw (LPL)
N = Natural Gas
P = Dual Fuel LPL Secondary
R = Dual Fuel LPV Secondary
S = Natural Gas (Low Pressure)
V = Liquid Propane Vapor Withdraw (LPV)