APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0498

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Kohler Power Systems

Manufacturer's Technical Representative: Brady Eifrid

Mailing Address: N 7650 Lakeshore Road, Sheboygan, WI 53083

Telephone: (920) 457-4441 Email: brady.eifrid@kohler.com

Product Information

Product Name: UPS and Batteries

Product Type: Battery Chargers

Product Model Number: GM87448

General Description: Units are Single Phase 90-265VAC Input Battery Chargers with an Output of 12/24VDC and 10 A

Mounting Description: Unit mounted with and without supports, rigid wall mounted, flexible wall mounted, rigid floor mounted with supports, flexible floor mounted with supports

Tested Seismic Enhancements: None

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: john.giuliano@thevmcgroup.com

Title: President

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

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

Certification Method

☐ GR-63-Core ☒ ICC-ES AC156 ☐ IEEE 344 ☐ IEEE 693 ☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Kelly Laplace

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: Kelly@shaketest.com

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.50 @ SDS = 2.0g ; 1.13 @ SDS = 2.5g

S_{DS} (Design spectral response acceleration at short period, g) = 2.0 @ z/h = 1.0; 2.5 @ z/h = 0.0

a_p (Amplification factor) = 2.5

R_p (Response modification factor) = 6.0

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height ratio factor) = 1

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

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HCAI Approval (For Office Use Only) - Approval Expires on 02/24/2028

Date: 2/24/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

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

Condition of Approval (if applicable):

Table 1 - Certified Product Matrix

Model	Input Voltage [V	Output Voltage [V DC	Output Current [amp]	Outer Dimensions [in]			Weight [lb]	Attachment Scenario	Mounting Configuration	UUT
				Height	Width	Depth				
GM87448	90-265	12 or 24	10	2.8	10.0	6.0	8.0	Case 1	Rigid	UUT-01A-R, UUT-01B-R
									Isolated	UUT-01A-F, UUT-01B-F
								Case 2	Rigid	UUT-02A-R, UUT-02B-R
									Isolated	UUT-02A-F, UUT-02B-F
								Case 3	Rigid	UUT-03A-R, UUT-03B-R
									Isolated	UUT-03A-F, UUT-03B-F
								Case 4	Rigid	UUT-04-R
									Isolated	UUT-04-F
								Case 5	Rigid	UUT-05-R
									Isolated	UUT-05-F
								Case 6	Rigid	UUT-06A-R, UUT-06B-R
									Isolated	UUT-06A-F, UUT-06B-F

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Case 1: battery charger wall mounted to junction box

Case 2: battery charger and GM103340 support bracket wall mounted to junction box

Case 3: battery charger and GM78810 support bracket wall mounted to junction box

Case 4: battery charger and GM94448 support bracket wall mounted to junction box

Case 5: battery charger and GM95027 bracket base mounted to skid

Case 6: battery charger and GM95037 bracket base mounted to skid

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1A-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-1A-R was wall mounted to the junction box using (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1A-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

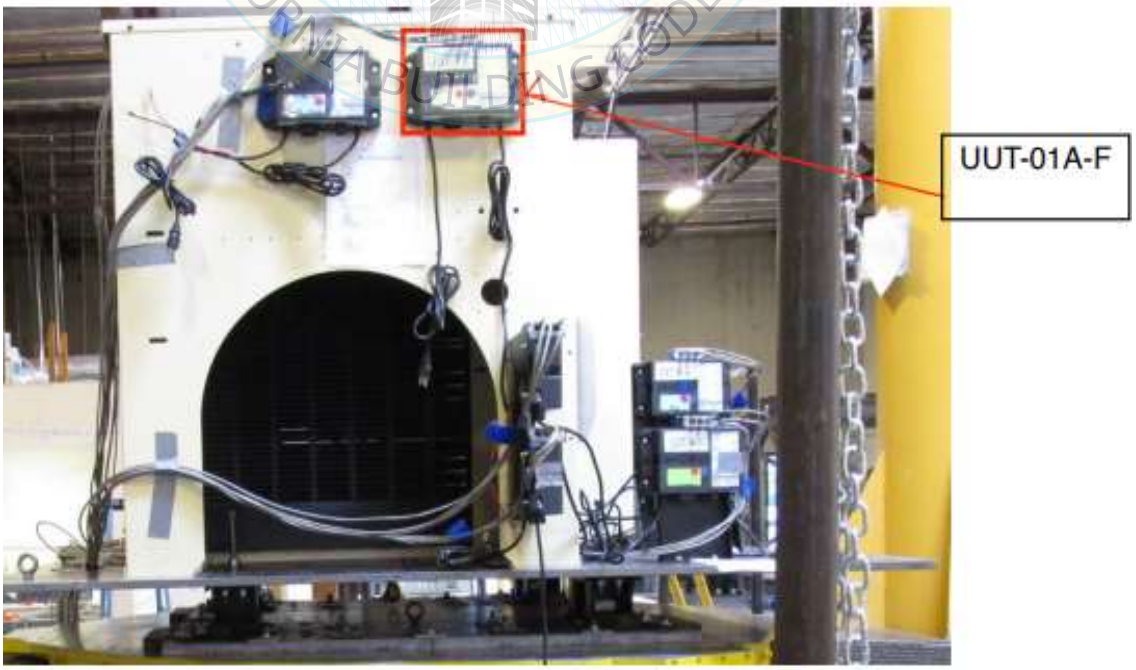
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-1A-F was wall mounted to the junction box using (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1B-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-1B-R was wall mounted to the junction box using (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-1B-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-1B-F was wall mounted to the junction box using (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2A-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

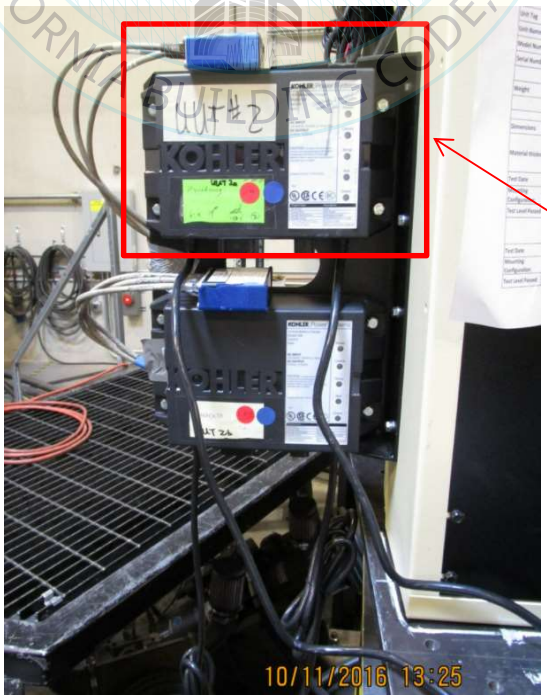
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-2A-R was attached to support bracket GM103340 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2A-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

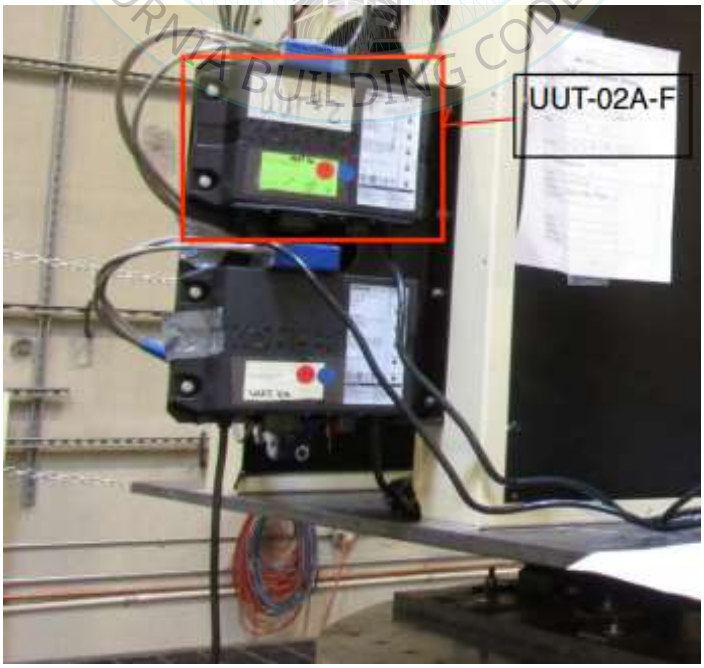
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-2A-F was attached to support bracket GM103340 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2B-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

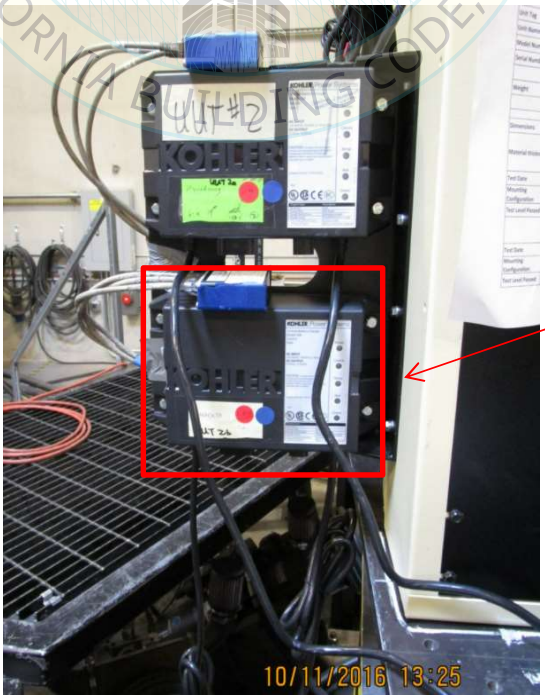
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-2B-R was attached to support bracket GM103340 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



UUT-2B-R

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-2B-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

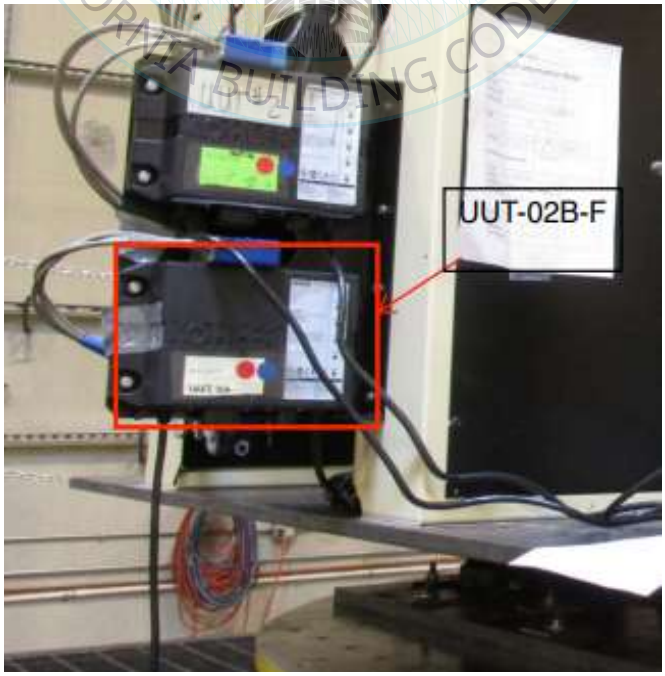
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-2B-F was attached to support bracket GM103340 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3A-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

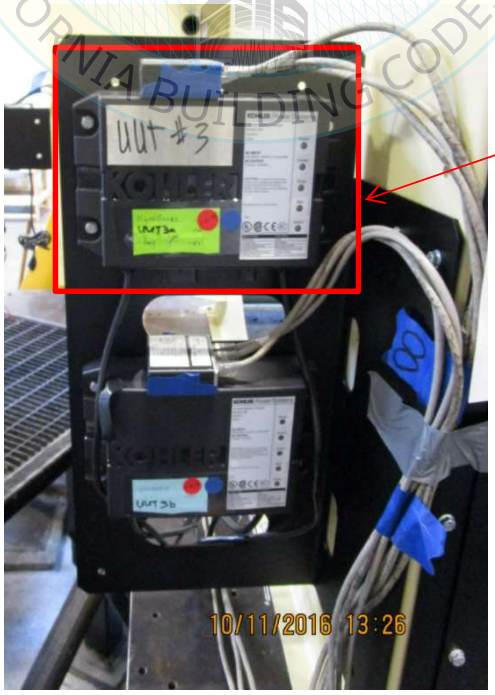
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-3A-R was attached to support bracket GM78810 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



UUT-3A-R

All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3A-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

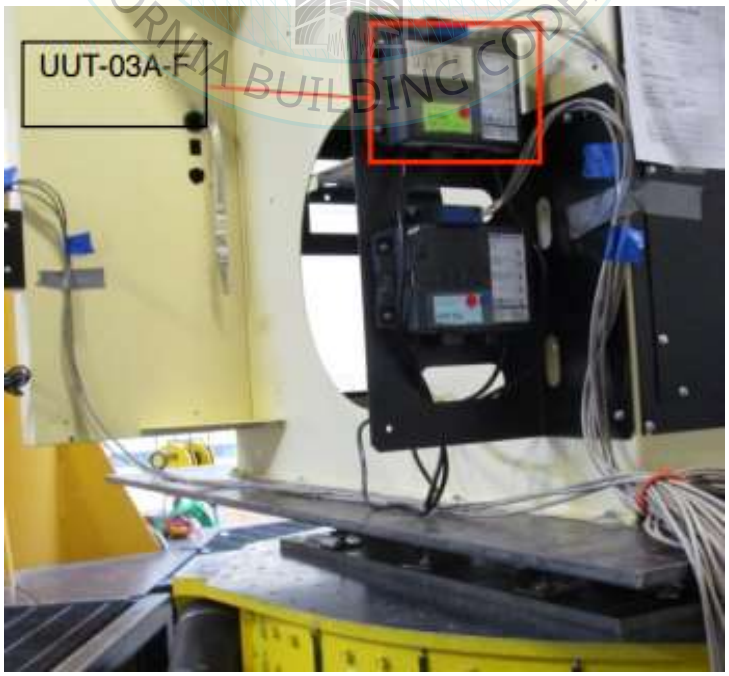
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-3A-F was attached to support bracket GM78810 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3B-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

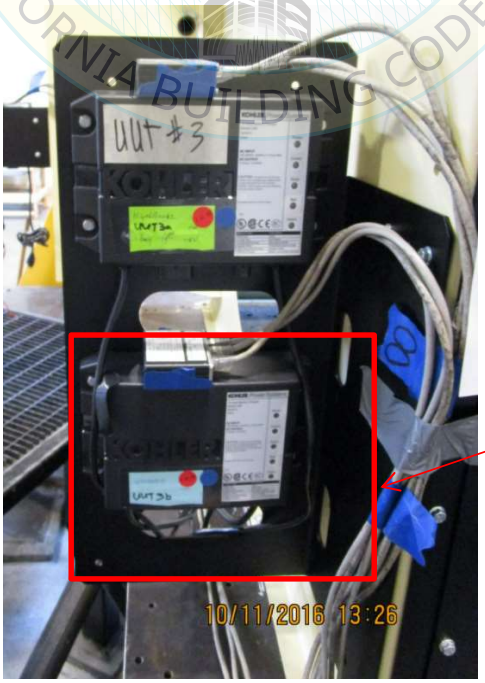
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-3B-R was attached to support bracket GM78810 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3B-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-3B-F was attached to support bracket GM78810 with (4) M6 8.8 bolts and wall mounted to the junction box with (4) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



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DATE: 03/24/2022
CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-4R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-4R was attached to support bracket GM94448 with (4) M6 8.8 bolts and wall mounted to the junction box with (2) M6 8.8 bolts. The junction box was rigidly attached to the shake table using (8) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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ICC-ES
OSP-0498
BY: Mohammad Karim
DATE: 03/24/2022
CALIFORNIA BUILDING CODE, 2019

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-4F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-4F was attached to support bracket GM94448 with (4) M6 8.8 bolts and wall mounted to the junction box with (2) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators and attached to the shake table using (8) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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BY Mohammad Karim
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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-5R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	24.0	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-5R was attached to support bracket GM95027 with (4) M6 8.8 bolts and rigid base mounted to the shake table using (2) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-5F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	23.0	18.8	8.8

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-5F was attached to support bracket GM95027 with (4) M6 8.8 bolts and base mounted to the shake table interface plate using (2) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6A-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	10.8	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-6A-R was attached to support bracket GM95037 with (4) M6 8.8 bolts and rigid base mounted to the shake table using (2) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6A-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	23.0	10.3	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-6A-F was attached to support bracket GM95037 with (4) M6 8.8 bolts and base mounted to the shake table interface plate using (2) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6B-R

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	10.8	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-6B-R was attached to support bracket GM95037 with (4) M6 8.8 bolts and rigid base mounted to the shake table using (2) M6 8.8 bolts.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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CALIFORNIA BUILDING CODE 2019

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-6B-F

Test Report: VMA-50682-01E

Model Line	Model Number	Manufacturer
Battery Charger	GM87448	Kohler

Product Construction Summary

Plastic housing

Options / Subcomponent Summary

AC Input: 100-260VAC, 50/60 Hz, 3.7 Amps RMS
DC Output: 10 Amps, 12/24 VDC

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
8	10.0	6.0	2.8	N/A	N/A	N/A

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2019	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-6B-F was attached to support bracket GM95037 with (4) M6 8.8 bolts and base mounted to the shake table interface plate using (2) M6 8.8 bolts. The system was externally isolated using (4) VMC MSSH-1E-2990N spring isolators.



All units were filled with contents and maintained structural integrity and functionality after AC-156 test.

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