

Seismic Testing and Certification of the EON Model EL3 and UltraLITE Model ELU Emergency Lighting Inverters

To what standard were the EON and UltraLITE models tested, and what standards do they satisfy?
Testing and reporting was completed to the following standard:

ICC - AC156: "Acceptance Criteria for Seismic Certification by Shake-Table Testing of Nonstructural Components and Systems"

This standard satisfies, CBC 2016 as well as IBC 2015. This means that the EON and UltraLITE models carry verification testing that most of the country recognizes when seismic certification is required.

Is this seismic test "pass/fail" or tested to a certain level?

The seismic testing is performed to a certain S_{DS} level (S_{DS} is the design level for the spectral response acceleration; essentially how fast the ground moves during an earthquake). S_{DS} is determined by USGS maps of the United States and varies depending on proximity to a fault line, ground composition and several other factors. The worst case S_{DS} level in the United States is 2.0 (see page 2 for a map of the seismic hazard levels across the U.S.).

The following table displays the S_{DS} values to which the EON and UltraLITE models were tested.

Test Performed	S_{DS}	Z/H	I_p
ICC-ES AC 156	1.6	1	1.5
(All Models and options)	2.56	0	

The term Z/H is a height ratio of where the equipment will be installed vs. the overall height of the building. For example, ground level would be 0 and the roof would be 1. I_p is the importance factor as defined by ASCE standard 7-10. If the equipment must stay operative after the seismic event, then the I_p must be 1.5. This is the case involving life safety and supporting equipment. This (I_p) number plays into the equations that determine how much force the unit must withstand during the seismic testing.

Are the EON and UltraLITE models custom-designed to meet the certified S_{DS} level?

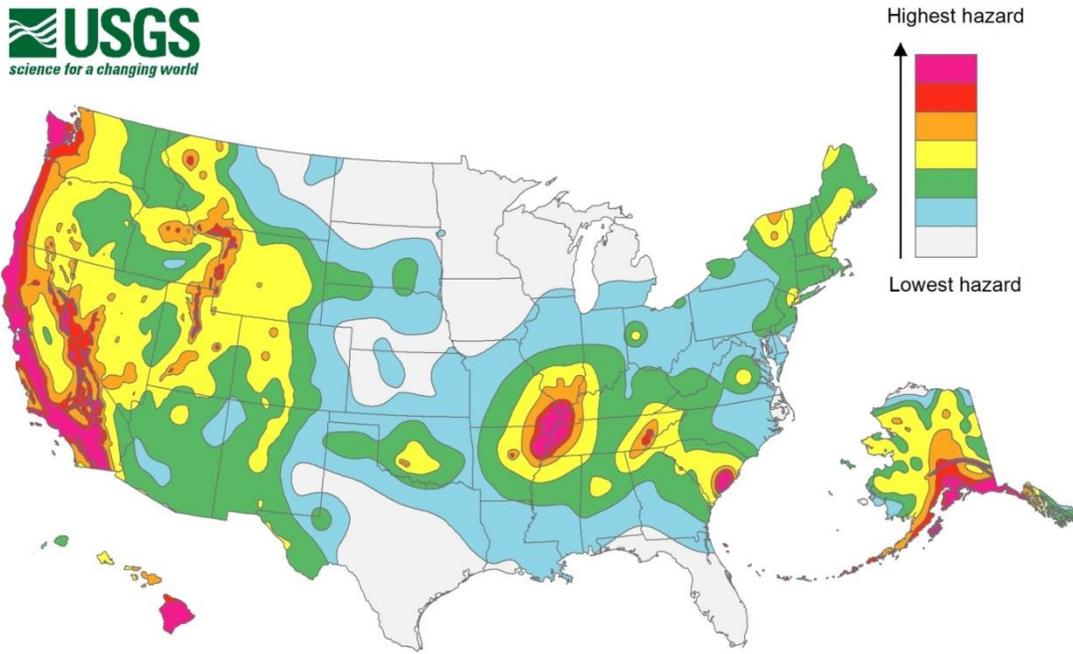
Certified models do require factory modifications to the cabinet frame and internal structure. These models need to be specified at the time of quotation and order. In addition, the mounting configuration is specific to these seismic-certified models. The unit must be rigid base mounted with 1/2" grade 5 (or better) hardware, have seismic mounting brackets installed, and specific torque ratings on inverter-to-battery connection points (where applicable). Mounting instructions are provided with each unit.

Products covered:

EON	-	L	L	X	-	10KW	-	*S**
	-	N	N			13KW		
	-	V	V			14KW		
						15KW		
						16KW		
						17KW		
						20KW		
						22KW		
						24KW		
						26KW		
						28KW		
						30KW		
						33KW		

ELU	-	A	A	X	-	1.5KW	-	1S**
		D	G			2.2KW		
		E	J			3KW		
		G	L			3.5KW		
		J	V			4.2KW		
		L	Y			5KW		
		V				6KW		
						7KW		
						7.5KW		
						8.5KW		
						10KW		
						12.5KW		
						13.5KW		
						14KW		

* Indicates monitor and breaker option



Seismic hazard levels across the United States

Web links:

[EON Product Page](#)

[ELU Product Page](#)

[Seismic Certificate of Compliance](#)