



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0496 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Myers Power Products, Inc.

Manufacturer's Technical Representative: Bruce Steigerwald

Mailing Address: 44 South Commercial Way, Bethlehem, PA 18017

Telephone: 610.868.3500 Email: bruce.steigerwald@myerspower.com

Product Information

Product Name: Illuminator Series LV

Product Type: Lighting Inverter System

Product Model Number: Various (See Attachment)

(List all unique product identification numbers and/or part numbers)

General Description: Emergency Lighting Inverter System. *Seismic enhancements made to the test units
and modifications required to address the anomalies observed during the tests shall be incorporated into the production units.*

Mounting Description: Rigid Floor Mounted, Flush & Recess Wall Mounted

Applicant Information

Applicant Company Name: SEESudio, Inc.

Contact Person: Dan Junker, SE

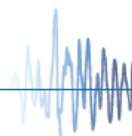
Mailing Address: 1281 9th Ave. San Diego, CA 92101, Suite 1101

Telephone: 619.606.5058 Email: djunker@seestudioinc.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: 12-27-16

Title: Principal Engineer Company Name: SEESudio, Inc.





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

Company Name: SEESudio, Inc.

Name: Dan Junker, SE California License Number: S6178

Mailing Address: 1281 9th Ave. san Diego, CA 92101, Suite 1101

Telephone: 619.606.5058 Email: djunker@seestudioinc.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): _____

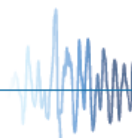
Testing Laboratory

Company Name: Clark Dynamic Test Laboratory, Inc.

Contact Name: Robert Francis, General Manager

Mailing Address: 1801 Route 51 Jefferson Hills, PA 15025

Telephone: 412-387-1004 Email: rfrancis@clarktesting.com





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

Seismic Parameters

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

Design Basis of Equipment or Components (F_p/W_p) = 1.44

S_{DS} (Design spectral response acceleration at short period, g) = 2.0

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 1.0

Equipment or Component Natural Frequencies (Hz) = See Attachment

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

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): SEES Certified Component Summary

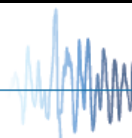
OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Ali Sumer Date: March 13, 2017

Print Name: Ali Sumer Title: DSE

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.0 z/h = 1.0

Condition of Approval (if applicable): _____



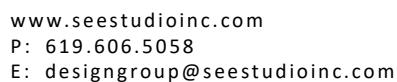


TABLE 1

TABLE DESCRIPTION: Lighting Inverters

S_{DS} at z/h = 1.0: S_{DS} = 2.0g

S E E T O M O R R O W B U I L T T O D A Y

Page 4 of 11

SPECIAL SEISMIC CERTIFICATION

CERTIFIED SUB-COMPONENTS

 TABLE **2**
MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

TABLE DESCRIPTION: Transformers, Subassemblies, Batteries, Circuit Breakers, PCB's

CONSTRUCTION SUMMARY:
CERTIFICATION PARAMETERS:
Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$
 S_{DS} at $z/h = 1.0$: $S_{DS} = 2.0g$
OPTIONS SUMMARY:
MOUNTING SUMMARY:
NOTES:

Mounted in component. Certified mounting shall be identical to mounting of sub-component in UUT's.

Sub-Component	Manufacturer	Model	Description	UUT
Main Transformers	Galaxy	XF-FM115055	Copper windings	1,2
		XF-FM115054		
		XF-FM115053		4
		XF-FM115063		3,5
AC Subassembly Inverter Module	Myers Power Products, Inc.	SA-404227-xx		1,2
		SA-404228-xx		4
		SA-404229-xx		3,5
Batteries	Genesis	NP33-12		1,2,4
	CSB	GP12340		3,5
Power Module Circuit Board	Precision Graphics	PCB404125xxx		1,3
	Teamwise			2,4,5
Control Circuit Board	Precision Graphics	PCB404128xxx		1,3,4
	Teamwise			2,5
Indicator/Test Circuit Board	Precision Graphics	PCB404174xxx		1,3,4
	Teamwise			2,5
Circuit Breaker Circuit Board	Precision Graphics	PCB404178xxx		3,4
	Teamwise			5
Circuit Breaker	CBI	C-Frame MKIV		3,4,5
	Tyco	W67 Series		3,5
System Metering Circuit Board	Precision Graphics	PCB404171xxx		1,3,4
	Teamwise			2,5
USB Storage Circuit Board	Precision Graphics	PCB404203xxx		1,3
	Teamwise			2,4
Ethernet Communication Circuit Board	Texas Instruments	PCB404348xxx		4



TABLE 2

TABLE DESCRIPTION: Transformers, Subassemblies, Batteries, Circuit Breakers, PCB's

Mounted in component. Certified mounting shall be identical to mounting of sub-component in UUT's.

S E E T O M O R R O W B U I L T T O D A Y

Page 6 of 11

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **1**

MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

MODEL NUMBER: LV-1

CONSTRUCTION SUMMARY:

Powder-coated cold-rolled carbon steel enclosure. Hardware secured cover.

OPTIONS SUMMARY:

Galaxy XF-FM115055 Transformer, Myers Power Products SA-404227-xx Subassembly, Genesis NP33-12 Batteries, Precision Graphics PCB404125xxx Power Module Circuit Board, Precision Graphics PCB404128xxx Control Circuit Board, Precision Graphics PCB404174xxx Indicator/Test Circuit Board, Precision Graphics PCB404171xxx System Metering Circuit Board, Precision Graphics PCB404158xxx System Display Circuit Board, Precision Graphics Input/Output Relay Circuit Board

TEST PARAMETERS:

Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$

Test Criteria: AC-156

MOUNTING SUMMARY:

Rigid recess wall mount. Unit mounted to wall mount fixture using four (4) 1/2"-20 grade 5 hex head bolts, washers, and lock washers.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Depth	Width	Height		F-B	S-S	Vert
6.50	14.25	17.75	55	N/A	N/A	>33.3

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **2**

MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

MODEL NUMBER: LV-1

CONSTRUCTION SUMMARY:

Powder-coated cold-rolled carbon steel enclosure. Hardware secured cover.

OPTIONS SUMMARY:

Galaxy XF-FM115055 Transformer, Myers Power Products SA-404227-xx Subassembly, Genesis NP33-12 Batteries, Teamwise PCB404125xxx Power Module Circuit Board, Teamwise PCB404128xxx Control Circuit Board, Teamwise PCB404174xxx Indicator/Test Circuit Board, Teamwise PCB404171xxx System Metering Circuit Board, Teamwise PCB404203xxx USB Storage Circuit Board, Teamwise PCB404158xxx System Display Circuit Board, Teamwise Input/Output Relay Circuit Board

TEST PARAMETERS:

Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$

Test Criteria: AC-156

MOUNTING SUMMARY:

Rigid flush wall mount. Unit mounted to wall mount fixture using four (4) 1/2"-20 grade 5 hex head bolts, washers, and lock washers.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Depth	Width	Height		F-B	S-S	Vert
9.25	19.00	22.00	111	N/A	N/A	25.5

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{DS} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **3**

MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

MODEL NUMBER: LV-4

CONSTRUCTION SUMMARY:

Powder-coated cold-rolled carbon steel enclosure. Hardware secured cover.

OPTIONS SUMMARY:

Galaxy XF-FM115063 Transformer, Myers Power Products SA-404229-xx Subassembly, CSB GP12340 Batteries, Precision Graphics PCB404125xxx Power Module Circuit Board, Precision Graphics PCB404128xxx Control Circuit Board, Precision Graphics PCB404174xxx Indicator/Test Circuit Board, Precision Graphics PCB404171xxx System Metering Circuit Board, Precision Graphics PCB404348xxx Ethernet Communication Circuit Board, Precision Graphics PCB404158xxx System Display Circuit Board

TEST PARAMETERS:

Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$

Test Criteria: AC-156

MOUNTING SUMMARY:

Rigid flush wall mount. Unit mounted to wall mount fixture using four (4) 5/16"-18 grade 5 hex head bolts, washers, and lock washers.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Depth	Width	Height		F-B	S-S	Vert
9.25	25.25	22.00	188	N/A	N/A	12.7

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **4**

MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

MODEL NUMBER: LV-3

CONSTRUCTION SUMMARY:

Powder-coated cold-rolled carbon steel enclosure. Hardware secured cover.

OPTIONS SUMMARY:

Galaxy XF-FM115053 Transformer, Myers Power Products SA-404228-xx Subassembly, Genesis NP33-12 Batteries, Teamwise PCB404125xxx Power Module Circuit Board, Precision Graphics PCB404128xxx Control Circuit Board, Precision Graphics PCB404174xxx Indicator/Test Circuit Board, Precision Graphics PCB404178xxx Circuit Breaker Circuit Board, CBI C-Frame MKIV Circuit Breaker, Precision Graphics PCB404171xxx System Metering Circuit Board, Teamwise PCB404348xxx Ethernet Communications Circuit Board, Precision Graphics PCB404158xxx System Display Circuit Board

TEST PARAMETERS:

Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$

Test Criteria: AC-156

MOUNTING SUMMARY:

Rigid floor mount. Unit mounted to shake table platen using four (4) 5/8"-11 grade 5 hex head bolts, washers, and lock washers.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Depth	Width	Height		F-B	S-S	Vert
9.25	19.00	22.00	111	23.9	24.8	>33.3

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53

SPECIAL SEISMIC CERTIFICATION

UNIT UNDER TEST (UUT) DESCRIPTION

UUT **5**

MANUFACTURER: Myers Power Products, Inc.

MODEL LINE: Illuminator Series LV

MODEL NUMBER: LV-4

CONSTRUCTION SUMMARY:

Powder-coated cold-rolled carbon steel enclosure. Hardware secured cover.

OPTIONS SUMMARY:

Galaxy XF-FM115063 Transformer, Myers Power Products SA-404229-xx Subassembly, CSB GP12340 Batteries, Teamwise PCB404125xxx Power Module Circuit Board, Teamwise PCB404128xxx Control Circuit Board, Teamwise PCB404174xxx Indicator/Test Circuit Board, Teamwise PCB404178xxx Circuit Breaker Circuit Board, CB IC-Frame MKIV Circuit Breaker, Tyco W67 Series Circuit Breaker, Teamwise PCB404171xxx System Metering Circuit Board, Teamwise PCB404203xxx USB Storage Circuit Board, Teamwise PCB404158xxx System Display Circuit Board

TEST PARAMETERS:

Building Code: CBC 2016

Component Importance Factor: $I_p = 1.5$

Test Criteria: AC-156

MOUNTING SUMMARY:

Rigid floor mount. Unit mounted to shake table platen using four (4) 5/8"-11 grade 5 hex head bolts, washers, and lock washers.

NOTES:

Contents were included in testing per operating conditions.

UUT IMAGE



UUT PROPERTIES

Dimensions (in)			Weight (lb)	First Natural Frequency (Hz)		
Depth	Width	Height		F-B	S-S	Vert
9.25	25.25	22.00	188	23.9	24.8	>33.3

UNIT MAINTAINED STRUCTURAL INTEGRITY AND REMAINED OPERATIONAL

PER MANUFACTURER REQUIREMENT WHEN SUBJECTED TO THE FOLLOWING TEST PARAMETERS

S_{Ds} (g)	z/h	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
2.0	1.0	3.20	2.40	1.33	0.53