



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

APPLICATION FOR HCAI SPECIAL SEISMIC
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP-0848

HCAI Special Seismic Certification Preapproval (OSP)

Type: ☒ New ☐ Renewal

Manufacturer Information

Manufacturer: Cummins Power Generation

Manufacturer's Technical Representative: Vyshnav Reveendran

Mailing Address: 1400 73rd Ave, NE, Fridley, MN 55432

Telephone: (763) 586-3000

Email: Vyshnav.Raveendran@cummins.com

Product Information

Product Name: Emergency and Standby Power Systems

Product Model Number(s): OTPC, BTPC, OTEC, OTECSE, CBL

Product Category: Emergency and Standby Power Systems

Product Sub-Category: Automatic Transfer Switches

General Description: Automatic transfer switches for transferring power between utility and generator.

Mounting Description: Several - See Certified Product Tables -

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: 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@thvmcgroup.com

Certification Method

☐ GR-63-Core

☒ ICC-ES AC156

☐ IEEE 344

☐ IEEE 693

☐ NEBS 3

☐ Other (Please Specify):

Testing Laboratory

Company Name: CLARK TESTING LABORATORY, INC.

Contact Person: Devon Lohr

Mailing Address: 1801 Route 51, Jefferson Hills PA 15025

Telephone: (412) 387-1001

Email: dlohr@clarktesting.com

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

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)

Contact Person: Jeremy Lange

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

Telephone: (972) 247-9657

Email: jeremy@etldallas.com

Company Name: TWIN CITY FAN COMPANIES LABORATORY

Contact Person: Matt Settergren

Mailing Address: 5959 Trenton Lane North, Minneapolis MN 55442

Telephone: (763) 551-7600

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Seismic Parameters

Design Basis of Equipment or Components (F_p/W_p) = 1.39 ($z/h=1$), 0.98 ($z/h=0$)

SDs (Design spectral response acceleration at short period, g) = 1.85 at $z/h=1$, 2.17 at $z/h=0$

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 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

HCAI Approval (For Office Use Only) - Approval Expires on 06/09/2031

Date: 6/9/2025

Name: Timothy Piland

Title: Senior Structural Engineer

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

z/h = 1 and 0

Condition of Approval (if applicable):

Table 1A: Certified Transfer Switches – Rigid Wall Mounted

Model	Rating [Amps]	Frame	NEMA Rating	Mechanism Type	Switch Type	Max Dimensions [in]			Max Weight [lbs]	Installation	UUT
						Height	Width	Depth			
OTEC	40, 70, 125	A	1, 3R, 4, 4X, 12	Open, Delayed	3-Pole	46	32	16	307	Rigid Wall	Extrapolated
					4-Pole	46	32	16	336		Extrapolated
OTEC	150, 225, 260	B	1, 3R, 4, 4X, 12	Open, Delayed	3-Pole	46	32	16	336		Extrapolated
					4-Pole	46	32	16	336		Extrapolated
OTEC	300, 400, 600	C	1, 3R, 4, 4X , 12	Open, Delayed	3-Pole	74	32	20	521		Extrapolated
					4-Pole	73.8	32.3	19.5	440		UUT-12
OTEC	800, 1000	D	1, 3R, 4, 4X, 12	Open, Delayed	3-Pole	74	33	21	589		Interpolated
					4-Pole	74	33	21	589		Interpolated
OTPC ²	1000	D	1	Open, Delayed	4-Pole	68	30	21	362		UUT-02
OTECSE	40, 70, 100, 125	A-SE	1, 3R, 12	Open, Delayed	3-Pole	44	32	16	364		Interpolated
OTECSE	150, 200, 225, 250	B-SE	1, 3R, 12	Open, Delayed	3-Pole	74	34	20	611		Interpolated
					4-Pole	74	34	20	611		Interpolated
OTECSE	300, 400, 600	C-SE	1, 3R , 12	Open, Delayed	3-Pole	74	34	22	600		Interpolated
					4-Pole	74.3	34.3	20	600		UUT-14

1. The difference between OTEC and OTECSE is the addition of an integral service disconnect (circuit breaker) which is cabled or bussed to the normal side of the mechanism. OTEC and OTECSE have the same mechanism and control components. The SE versions are in larger cabinets to accommodate the service disconnect.
2. OTEC and OTPC are identical except for use of different controllers; OTEC uses EC Type controller and OTPC uses PC Type controller. OTPC models are obsolete

Table 1B: Certified Transfer Switches – Rigid Base Mounted

Model	Rating [Amps]	Frame	NEMA Rating	Mechanism Type	Switch Type	Max Dimensions [in]			Max Weight [lbs]	Installation	UUT
						Height	Width	Depth			
BTPC	150 - 260	B	1, 3R, 4, 12	Open, Delayed, Closed Momentary	3-Pole	72	36	23	564	Rigid Base	Extrapolated
					4-Pole	72	36	23	564		Extrapolated
BTPC	300 - 600	C	1, 3R, 4, 12	Open, Delayed, Closed Momentary	3-Pole	84	36	23	639		Extrapolated
					4-Pole	84	36	23	639		Extrapolated
BTPC	800 - 1000	D	1, 3R , 4, 12	Open, Delayed, Closed Momentary	3-Pole	90	48	28	1,100		UUT-07
					4-Pole	90	48	28	1,100		Interpolated
Zeus CBL	150 - 600	C	1, 3R, 4, 12	Open, Delayed, Closed Momentary	3-Pole	84	36	23	810		Interpolated
					4-Pole	84	36	23	810		Interpolated
Zeus CBL	800 - 1000	D	1, 3R, 4, 12	Open, Delayed, Closed Momentary	3-Pole	90	48	28	1,100		Interpolated
					4-Pole	90	48	28	1,100		Interpolated
OTEC	1200	E	1, 3R, 4, 12, 4X	Open, Delayed	3-Pole	93.3	39	27.5	891		Interpolated
				Open, Delayed	4-Pole	92	39	26.5	790		UUT-13A
					4-Pole	92	39	25	810		UUT-17A
OTECSE	800, 1000	D-SE	1, 3R , 12	Open, Delayed	3-Pole	93.3	39	27.8	1,034		Interpolated
					4-Pole	92	39	26.1	940		UUT-15A

1. The difference between OTEC and OTECSE is the addition of an integral service disconnect (circuit breaker) which is cabled or bussed to the normal side of the mechanism. OTEC and OTECSE have the same mechanism and control components. The SE versions are in larger cabinets to accommodate the service disconnect.

Table 1C: Certified Transfer Switches – Combination Rigid Base and Wall Mounted

Model	Rating [Amps]	Frame	NEMA Rating	Mechanism Type	Switch Type	Max Dimensions [in]			Max Weight [lbs]	Installation	UUT
						Height	Width	Depth			
OTEC	1200	E	1, 3R, 4, 12, 4X	Open, Delayed	3-Pole	93.3	39	27.5	891	Combination Rigid Base and Wall	Interpolated
					4-Pole	92	39	26.5	790		UUT-13B
				Open, Delayed	4-Pole	92	39	25	810		UUT-17B
OTECSE	800, 1000	D-SE	1, 3R , 12	Open, Delayed	3-Pole	93.3	39	27.8	940		Extrapolated
					4-Pole	92	39	26.1	940		UUT-15B

1. The difference between OTEC and OTECSE is the addition of an integral service disconnect (circuit breaker) which is cabled or bussed to the normal side of the mechanism. OTEC and OTECSE have the same mechanism and control components. The SE versions are in larger cabinets to accommodate the service disconnect.

Table 3A: Certified Subcomponents – Wall Mounted Units

Component [MFR]	Model	Description	Weight [lbs]	UUT
Transfer Switch [Cummins]	0306-5196-01 - 0306-5196-05	OTECSEA 40A 3Poles	20	Extrapolated
	0306-5196-06 - 0306-5196-10	OTECSEA 70A 3Poles	20	Extrapolated
	A035F150 -A035F154	OTECSEA 100A 3Poles	20	Extrapolated
	0306-5196-11 - 0306-5196-15	OTECSEA 125A 3Poles	20	Extrapolated
	0306-5023-01 - 0306-5023-05	OTECA 40A 3Pole	20	Extrapolated
	0306-5327-02 - 0306-5327-05	OTECA 40A 4Pole	49	Extrapolated
	0306-5024-01 - 0306-5024-05	OTECA 70A 3Pole	20	Extrapolated
	0306-5328-02 - 0306-5328-05	OTECA 70A 4Pole	49	Extrapolated
	0306-5025-01 - 0306-5025-05	OTECA 125A 3Pole	20	Extrapolated
	0306-5321-02 - 0306-5321-05	OTECA 125A 4Pole	49	Extrapolated
	0306-5200-01 - 0306-5200-05	OTECSE B 150A 3Poles	49	Extrapolated
	0306-5202-02 - 0306-5202-05	OTECSE B 150A 4Poles	49	Extrapolated
	A035F155,A035F157 -A035F160	OTECSE B 200A 3Poles	49	Extrapolated
	A035F163,A035F164,A035F167,A035F170	OTECSE B 200A 4Poles	49	Extrapolated
	0306-5200-06 - 0306-5200-10	OTECSE B 225A 3Poles	49	Extrapolated
	0306-5202-07 - 0306-5202-10	OTECSE B 225A 4Poles	49	Extrapolated
	0306-5200-11 - 0306-5200-15	OTECSE B 250A 3Poles	49	Extrapolated
	0306-5202-12 - 0306-5202-15	OTECSE B 250A 4Poles	49	Extrapolated
	0306-5026-01 - 0306-5026-05	OTEC B 150A 3Pole	49	Extrapolated
	0306-5029-02 - 0306-5029-05	OTEC B 150A 4Pole	49	Extrapolated
	0306-5027-01 - 0306-5027-05	OTEC B 225A 3Pole	49	Extrapolated
	0306-5030-02 - 0306-5030-05	OTEC B 225A 4Pole	49	Extrapolated
	0306-5028-01 - 0306-5028-05	OTEC B 260A 3Pole	49	Extrapolated
	0306-5031-02 - 0306-5031-05	OTEC B 260A 4Pole	49	Extrapolated
	0306-5204-01 - 0306-5204-06	OTECSE C 300A 3Poles	82	Extrapolated
	0306-5206-02 - 0306-5206-06	OTECSE C 300A 4Poles	95	Extrapolated
	0306-5204-07 - 0306-5204-12	OTECSE C 400A 3Poles	82	Extrapolated
	0306-5206-08 - 0306-5206-12	OTECSE C 400A 4Poles	95	Extrapolated
	0306-5204-13 - 0306-5204-18	OTECSE C 600A 3Poles	82	Extrapolated
	0306-5206-14 - 0306-5206-18	OTECSE C 600A 4Poles	95	UUT-14
	0306-5038-01 - 0306-5038-06	OTEC C 300A 3Pole	82	Extrapolated
	0306-5041-02 - 0306-5041-06	OTEC C 300A 4Pole	95	Extrapolated
	0306-5039-01 - 0306-5039-06	OTEC C 400A 3Pole	82	Extrapolated
	0306-5042-02 - 0306-5042-05	OTEC C 400A 4Pole	95	Extrapolated
	0306-5040-01 - 0306-5040-06	OTEC C 600A 3Pole	82	Extrapolated
	0306-5043-02 - 0306-5043-06	OTEC C 600A 4Pole	95	UUT-12
	0306-5050-01 - 0306-5050-06	OTEC D 800A 3Pole	165	Extrapolated
	0306-5052-02 - 0306-5052-06	OTEC D 800A 4Pole	165	Extrapolated
	0306-5051-01 - 0306-5051-06	OTEC D 1000A 3Pole	165	Extrapolated
	0306-5053-02 - 0306-5053-06	OTEC D 1000A 4Pole	165	Extrapolated
	0306-5023-01-0306-5336-05	OTPC D 1000A 4Pole	165	UUT-02
Controller [Deep Sea]	PC40 1134-11	Display controller	4	UUT-12, UUT-14
Power Supply [Delta]	DRS-12V50W1NZ	12V Power Supply	12	UUT-12, UUT-14
Power Supply [Emerson¹]	SVL 4-12-100	12V Power Supply	12	UUT-12
Anti-Condensation Heater [Stego]	02811.0-00	For 230V-250W Heater	2	UUT-12, UUT-14
Power Supply Transformer [HAMMOND]	SP150ACP	-	5	UUT-12, UUT-14

Note: 1) ComponentAnd Supplier no longer offered

Table 3A: Certified Subcomponents – Wall Mounted Units (Cont)

Component [MFR]	Model	Description	Weight [lbs]	UUT
Heater Transformer [HAMMOND]	PH500MBMH	-	17	UUT-12, UUT-14
Transformer 600V [HAMMOND ¹]	B1K0-0386-3		35	UUT-12
Comm. Module [Deep Sea]	DSE 855	-	<1	UUT-12, UUT-14
Relay I/O Module [Deep Sea]	2157-001-00	Expansion module DSE 2157	<1	UUT-12, UUT-14
Relays [SCHNEIDER ELECTRIC]	CA3-KN22JD	KNA (Normal relay)	<1	UUT-12, UUT-14
		KEA (Emergency relay)	<1	UUT-12, UUT-14
		KGS (Genset relay)	<1	UUT-12, UUT-14
		ESR (Elevator Signal relay)	<1	UUT-12, UUT-14
	CA3KN22BD	24V Load Shed	<1	Extrapolated
Terminal Block [WEIDMULLER]	2796.6	TB-3	<1	UUT-12, UUT-14
Thermostat [Stego]	01160.0-00	Thermostat for heater	<1	UUT-12, UUT-14

Table 3B: Certified Subcomponents – Base Mounted Units

Component [MFR]	Model	Notes	Weight [lbs]	UUT
Transfer Switch [Cummins]	0306-5135-03	BTPC B / CBL C 150A 3Pole ATS	83	Extrapolated
	0306-5136-03	BTPC B / CBL C 225A 3Pole ATS	83	Extrapolated
	0306-5137-03	BTPC B / CBL C 260A 3Pole ATS	83	Extrapolated
	0306-5138-03	BTPC B / CBL C 150A 4Pole ATS	88	Extrapolated
	0306-5139-03	BTPC B / CBL C 225A 4Pole ATS	88	Extrapolated
	0306-5140-03	BTPC B / CBL C 260A 4Pole ATS	88	Extrapolated
	0306-5148-03	BTPC C / CBL C 300A 3Pole ATS	97	Extrapolated
	0306-5149-03	BTPC C / CBL C 400A 3Pole ATS	97	Extrapolated
	0306-5150-03	BTPC C / CBL C 600A 3Pole ATS	97	Extrapolated
	0306-5151-03	BTPC C / CBL C 300A 4Pole ATS	112	Extrapolated
	0306-5152-03	BTPC C / CBL C 400A 4Pole ATS	112	Extrapolated
	0306-5153-03	BTPC C / CBL C 600A 4Pole ATS	112	Extrapolated
	0306-5132-01	BTPC B / CBL C 150A 3Pole MTS	161	Extrapolated
	0306-5132-01	BTPC B / CBL C 225A 3Pole MTS	161	Extrapolated
	0306-5132-01	BTPC B / CBL C 260A 3Pole MTS	161	Extrapolated
	0306-5161-03	BTPC D / CBL D 800A 3PoleATS	164	Extrapolated
	0306-5162-03	BTPC D 1000A 3PoleATS	164	UUT-07
	0306-5208-02 - 0306-5208-06	OTECSE D 800A 4Poles	165	Extrapolated
	0306-5208-08 - 0306-5208-12	OTECSE D 1000A 4Poles	165	UUT-15A
	0306-5132-02	BTPC B/CBL C 150A 4Pole MTS	169	Interpolated
	0306-5132-02	BTPC B/CBL C 225A 4Pole MTS	169	Interpolated
	0306-5132-02	BTPC B/CBL C 260A 4Pole MTS	169	Interpolated
	0306-5145-01	BTPC C/CBL C 300A 3Pole MTS	183	Interpolated
	0306-5145-01	BTPC C/CBL C 400A 3Pole MTS	183	Interpolated
	0306-5145-01	BTPC C/CBL C 600A 3Pole MTS	183	Interpolated
	0306-5163-03	BTPC D/CBL D 800A 4Pole ATS	195	Interpolated
	0306-5164-03	BTPC D/CBL D 1000A 4PoleATS	195	Interpolated
	0306-5145-02	BTPC C/CBL C 300A 4Pole MTS	205	Interpolated
	0306-5145-02	BTPC C/CBL C 400A 4Pole MTS	205	Interpolated
	0306-5145-02	BTPC C/CBL C 600A 4Pole MTS	205	Interpolated
	A030D541 -A030D551	OTEC E 1200A 3Pole	225	Interpolated
	A030D553 -A030D561	OTEC E 1200A 4Pole	241	UUT-13A, UUT-17A
	0306-5158-01	BTPC D/CBL D 800A 3Pole MTS	344	Interpolated
	0306-5158-01	BTPC D 1000A 3Pole MTS	344	UUT-07

Note: 1) ComponentAnd Supplier no longer offered

Table 3B: Certified Subcomponents – Base Mounted Units (Cont)

Component [MFR]	Model	Notes	Weight [lbs]	UUT
Communication Module [Deep Sea]	DSE 855	-	<1	UUT-13A, UUT-15A, UUT-17A
Controller [Deep Sea]	PC40 1134-11	Display controller	4	UUT-13A, UUT-15A
CBL Controller [Cummins]	PC80	Display controller	4	UUT-16
Power Supply [Delta]	DRF-12V120W1GBA	12V Power Supply	2	Extrapolated
	DRP-24V120W1BA	24V Power Supply	2	Extrapolated
	DRS-12V50W1NZ	12V Power Supply	12	UUT-13A
	DRS-24V50W1NZ	24V Power Supply	12	UUT-17A
Power Supply [Emerson]	SVL 4-12-100	12V Power Supply	12	UUT-15A
	SVL 2-24-100	24V Power Supply	12	UUT-17A
Power Supply [Phoenix ¹]	UNO-PS/1AC/12DC/55W	12V Power Supply	12	UUT-13A
CBL Power Supply [Lambda]	DPP120-24-1	24V Power Supply	2	UUT-17A
CBL Power Supply [MEAN WELL]	EDR-120-24	24V Power Supply	2	UUT-17A
Anti-Condensation Heater [Stego]	02811.9-00	For 120V-250W Heater	2	Interpolated
	02810.9-00	For 120V-400W HEATER	2	Interpolated
	02811.0-00	For 230V-250W Heater	2	UUT-13A, UUT-15A, UUT-17A
Power Supply Transformer [HAMMOND]	SP150ACP	A065S757	5	UUT-13A, UUT-15A, UUT-17A
Transformer for Heater [HAMMOND]	SP150SP	A075G024	5	Extrapolated
	SP150KHP	A075G025	5	Extrapolated
	PH500SP	-	11	UUT-18
	SP500KHP	-	11	Interpolated
	SP500ACP	-	11	UUT-19
	PH500MBMH	-	17	UUT-13A, UUT-15A, UUT-17A
	PH1000AJ	600/480V Transformer	26	Interpolated
	PH1000MGJ	380V Transformer	26	Interpolated
	PH1000SP	416V Transformer	26	UUT-20
Transformer for 600V [HAMMOND]	B1K0-0386-3		35	UUT-13A, UUT-17A
Relay I/O Module [Deep Sea]	2157-001-00	Expansion module DSE 2157	<1	UUT-13A, UUT-15A, UUT-17A
Relays [SCHNEIDER ELECTRIC]	CA3-KN22JD	KNA (Normal relay)	<1	UUT-13A, UUT-15A, UUT-17A
		KEA (Emergency relay)	<1	UUT-13A, UUT-15A, UUT-17A
		KGS (Genset relay)	<1	UUT-13A, UUT-15A, UUT-17A
		ESR (Elevator Signal relay)	<1	UUT-13A, UUT-15A, UUT-17A
	CA3KN22BD	24V Load Shed	<1	Extrapolated
Terminal Block [WEIDMULLER]	2796.6	TB-3	<1	UUT-13A, UUT-15A, UUT-17A
Thermostat [Stego]	01160.0-00	Thermostat for heater	<1	UUT-13A, UUT-15A, UUT-17A

Note: 1) Component And Supplier no longer offered

Table 3C: Certified Subcomponents – Combination Base And Wall Mounted Units

Component [MFR]	Model	Notes	Weight [lbs]	UUT
Transfer Switch [Cummins]	0306-5208-02 - 0306-5208-06	OTECSE D 800A 4Poles	165	Extrapolated
	0306-5208-08 - 0306-5208-12	OTECSE D 1000A 4Poles	165	UUT-15B
	A030D541 -A030D551	OTEC E 1200A 3Pole	225	Interpolated
	A030D553 -A030D561	OTEC E 1200A 4Pole	241	UUT-13B, UUT-17B
Controller [Deep Sea]	PC40 1134-11	Display controller	4	UUT-13B, UUT-15B, UUT-17B
Communication Module [Deep Sea]	DSE 855	-	<1	UUT-13B, UUT-15B, UUT-17B
Power Supply [Delta]	DRS-12V50W1NZ	12V Power Supply	12	UUT-13B
	DRS-24V50W1NZ	24V Power Supply	12	UUT-17B
Power Supply [Emerson]	SVL 4-12-100	12V Power Supply	12	UUT-15B
	SVL 2-24-100	24V Power Supply	12	UUT-17B
Power Supply [Phoenix ¹]	UNO-PS/1AC/12DC/55W	12V Power Supply	12	UUT-13B
Anti-Condensation Heater [Stego]	02811.0-00	For 230V-250W Heater	2	UUT-13B, UUT-15B, UUT-17B
Power Supply Transformer [HAMMOND]	SP150ACP	-	5	UUT-13B, UUT-15B, UUT-17B
Transformer for Heater [HAMMOND]	PH500MBMH	-	17	UUT-13B, UUT-15B, UUT-17B
Transformer for 600V [HAMMOND]	B1K0-0386-3	-	35	UUT-13B, UUT-17B
Relay I/O Module [Deep Sea]	2157-001-00	Expansion module DSE 2157	<1	UUT-13B, UUT-15B, UUT-17B
Relays [SCHNEIDER ELECTRIC]	CA3-KN22JD	KNA (Normal relay)	<1	UUT-13B, UUT-15B, UUT-17B
		KEA (Emergency relay)	<1	UUT-13B, UUT-15B, UUT-17B
		KGS (Genset relay)	<1	UUT-13B, UUT-15B, UUT-17B
		ESR (Elevator Signal relay)	<1	UUT-13B, UUT-15B, UUT-17B
	CA3KN22BD	24V Load Shed	<1	Extrapolated
Terminal Block [WEIDMULLER]	2796.6	TB-3	<1	UUT-13B, UUT-15B, UUT-17B
Thermostat [Stego]	01160.0-00	Thermostat for heater	<1	UUT-13B, UUT-15B, UUT-17B

Note: 1) Component And Supplier no longer offered



UNIT UNDER TEST (UUT) Summary Sheet

UUT-2

Test Report: Clark EL 8169; UUT-4

Model Line	Model Number	Manufacturer
OTPC	OTPC D 1000A	Cummins

Product Construction Summary

Carbon Steel NEMA 1

Options / Subcomponent Summary

Transfer Switch: Cummins

UUT Properties

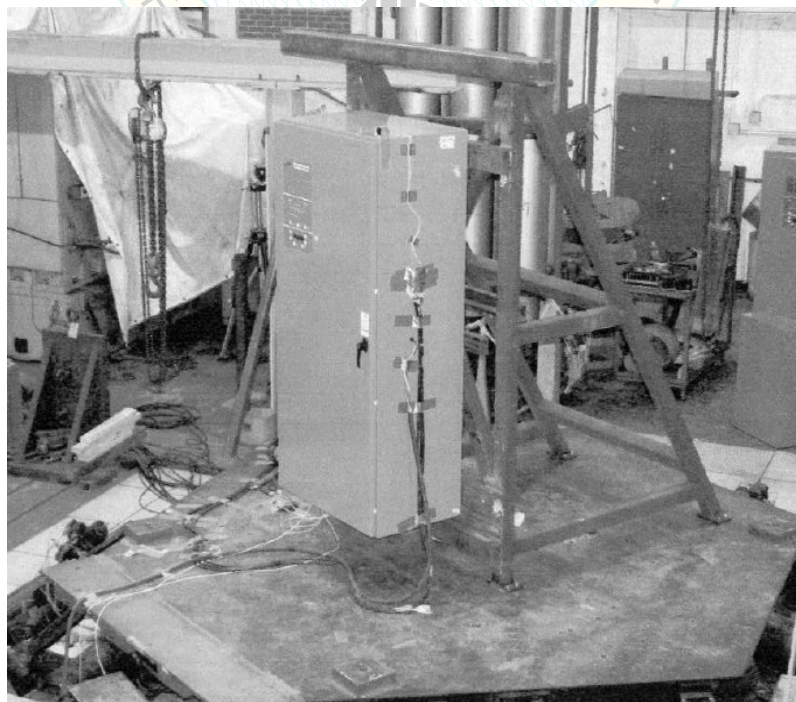
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Depth	Width	Height	F-B	S-S	V
362	30.0	21.0	68.0	N/A	N/A	N/A

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 2022	ICC-ES AC156	2.17	1.0	1.5	3.20	2.40	1.45	0.59
		-	-	-	-	-	-	-

Test Mounting Details

UUT-2 was mounted directly to the wall fixture using (4) 3/8" diameter Hex Head bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-7

Test Report: Clark EL 8642; UUT-1

Model Line	Model Number	Manufacturer
BTPC	BTPC D 1000A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,100	28.0	48.0	90.0	25.8	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 2022	ICC-ES AC156	2.17	1.0	1.5	3.20	2.40	1.45	0.59
		-	-	-	-	-	-	-

Test Mounting Details

UUT-7 was rigidly mounted to the shake table using (4) 5/8" diameter Hex Head bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-12

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC C 600A	Cummins

Product Construction Summary

Stainless Steel NEMA 4X

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Controller: Deep Sea; Power Supply: Delta; Power Supply: Emerson; Anti-Condensation Heater: Stego; Power Supply Tranformer: Hammond; Heater Transformer: Hammond; Transformer 600V: Hammond; Communication Module: Deep Sea; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
440	19.5	32.3	73.8	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-12 was mounted directly to the wall fixture using (4) 3/8" diameter Grade 5 bolts and (2) carbon steel plate washers per bolt.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-13A

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC E 1200A	Cummins

Product Construction Summary

Carbon Steel NEMA 1

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Controller: Deep Sea; Power Supply: Delta; Power Supply: Phoenix; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Transformer for 600V: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
790	26.5	39.0	92.0	7.0	11.5	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-13A was rigidly mounted to the shake table using (4) 1/2" diameter Grade 8 bolts and a carbon steel plate washer per bolt.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-13B

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC E 1200A	Cummins

Product Construction Summary

Carbon Steel NEMA 1

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Controller: Deep Sea; Power Supply: Delta; Power Supply: Phoenix; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Transformer for 600V: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
790	26.5	39.0	92.0	16.5	13.0	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-13B was combination rigid base and wall mounted using (4) 1/2" Grade 8 bolts with carbon steel plate washers at the base and (2) 1/2" Grade 8 bolts with carbon steel plate washers wall mounted at the cabinet top to the test fixture.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-14

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC C-SE 600A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Controller: Deep Sea; Power Supply: Delta; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Heater Transformer: Hammond; Communication Module: Deep Sea; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
600	20.0	34.3	74.3	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-14 was mounted directly to the wall fixture using (4) 3/8" diameter Grade 8 bolts and (2) carbon steel plate washers per bolt.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-15A

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC D-SE 1000A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Controller: Deep Sea; Power Supply: Emerson; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
940	26.1	39.0	92.0	11.0	10.5	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-15A was rigidly mounted to the shake table using (4) 1/2" diameter Grade 8 bolts and a carbon steel plate washer per bolt.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-15B

Test Report: DCL 31988-2201

Model Line	Model Number	Manufacturer
OTEC	OTEC D-SE 1000A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Controller: Deep Sea; Power Supply: Emerson; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
940	26.1	39.0	92.0	19.5	12.5	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-15B was combination rigid base and wall mounted using (4) 1/2" Grade 8 bolts with carbon steel plate washers at the base and (2) 1/2" Grade 8 bolts with carbon steel plate washers wall mounted at the cabinet top to the test fixture.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-16

Test Report: Seismic Test Co. 1801393-TR-001; UUT-3

Model Line	Model Number	Manufacturer
CXR	CXR G8 2000A	Cummins

Product Construction Summary

Stainless Steel NEMA 4X

Options / Subcomponent Summary

CBL Controller: Cummins

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
1,854	55.1	46.4	90.1	7.5	5.1	17.0

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 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		3.20	0.0	1.5	3.20	-	2.14	0.86

Test Mounting Details

UUT-16 was rigidly mounted to the shake table using (6) 5/8" diameter Grade 8 bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-17A

Test Report: DCL 24920-2401

Model Line	Model Number	Manufacturer
OTEC	OTEC E 1200A	Cummins

Product Construction Summary

Stainless Steel NEMA 4X

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Power Supply: Delta; Power Supply: Emerson; CBL Power Supply: Lambda; CBL Power Supply: Mean Well; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Transformer for 600V: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
810	25.0	39.0	92.0	9.0	9.0	25.0

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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-17A was rigidly mounted to the shake table using (4) 1/2" diameter Grade 5 bolts and a carbon steel plate washer per bolt.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-17B

Test Report: DCL 24920-2401

Model Line	Model Number	Manufacturer
OTEC	OTEC E 1200A	Cummins

Product Construction Summary

Stainless Steel NEMA 4X

Options / Subcomponent Summary

Enclosure: Cummins; Transfer Switch: Cummins; Communication Module: Deep Sea; Power Supply: Delta; Power Supply: Emerson; CBL Power Supply: Lambda; CBL Power Supply: Mean Well; Anti-Condensation Heater: Stego; Power Supply Transformer: Hammond; Transformer for Heater: Hammond; Transformer for 600V: Hammond; Relay I/O Module: Deep Sea; Relays: Schneider Electric; Terminal Block: Weidmuller; Thermostat: Stego

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
810	25.0	39.0	92.0	16.0	12.5	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 2022	ICC-ES AC156	2.27	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.68	0.68

Test Mounting Details

UUT-157 was combination rigid base and wall mounted using (4) 1/2" Grade 5 bolts with carbon steel plate washers at the base and (2) 1/2" Grade 5 bolts with carbon steel plate washers wall mounted at the cabinet top to the test fixture.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-18

Test Report: ETL 2000294-TR-002; UUT-4

Model Line	Model Number	Manufacturer
CXR	CXR G8 SE 2000A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Transformer for Heater: Hammond

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
3,380	65.0	71.3	89.6	6.6	>33.3	23.9

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 2022	ICC-ES AC156	1.85	1.0	1.5	2.96	2.22	-	-
		2.96	0.0	1.5	2.96	-	1.98	0.80

Test Mounting Details

UUT-18 was rigidly mounted to the shake table using (16) 3/8" diameter Grade 8 bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-19

Test Report: ETL 2000294-TR-002; UUT-1

Model Line	Model Number	Manufacturer
CXS	CXS B8 SE 400A	Cummins

Product Construction Summary

Carbon Steel NEMA 1

Options / Subcomponent Summary

Transformer for Heater: Hammond

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
510	21.3	33.1	58.9	15.6	19.3	9.5

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 2022	ICC-ES AC156	1.85	1.0	1.5	2.96	2.22	-	-
		2.96	0.0	1.5	2.96	-	1.98	0.80

Test Mounting Details

UUT-19 was rigidly mounted to the shake table using (4) 3/8" diameter Grade 8 bolts.



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



UNIT UNDER TEST (UUT) Summary Sheet

UUT-20

Test Report: ETL 2101252-TR-001; UUT-2

Model Line	Model Number	Manufacturer
CBR	CBR G8 2000A	Cummins

Product Construction Summary

Carbon Steel NEMA 3R

Options / Subcomponent Summary

Transformer for Heater: Hammond

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
4,570	77.0	49.8	92.0	5.8	11.6	17.5

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 2022	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	-	-
		2.50	0.0	1.5	-	-	1.67	0.67

Test Mounting Details

UUT-20 was rigidly mounted to the shake table using (4) 3/4" diameter Grade 5 bolts.



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