# APPLICATION FOR HCAI SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

**APPLICATION #: OSP-0375**

## HCAI Special Seismic Certification Preapproval (OSP)

**Type:** ☐ New ☒ Renewal

## Manufacturer Information

Manufacturer: Cummins Power Generation

Manufacturer's Technical Representative: Vyshnav Raveendran

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

Telephone: (763) 574-5000 Email: Vyshnav.Raveendran@cummins.com

## Product Information

Product Name: Gas Generator Sets and Diesel Generator Sets

Product Model Number(s): See Attachments

Product Category: Emergency and Standby Power Systems

Product Sub-Category: Generators

General Description: Diesel generators consisting of various fuel tanks, engines, alternators, enclosures, chassis/skids and controllers.

Mounting Description: Base Mounted Rigid -

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: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

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

Title: President

## 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: CLARK TESTING LABORATORY, INC.

Contact Person: Davon 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: UNIVERSITY OF CALIFORNIA, BERKELEY (PEER)

Contact Person: Amarnath Kasalanati

Mailing Address: 325 Davis Hall, Berkeley CA 94720-1729

Telephone: (510) 643-6475 Email: amarnath1@berkley.edu

## Seismic Parameters

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

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

$a_p$ (Amplification factor) = 1.0

$R_p$ (Response modification factor) = 2.5

$\Omega_0$ (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



## HCAI Approval (For Office Use Only) - Approval Expires on 06/25/2030

Date: 6/25/2024

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: $S_{DS}$ (g) = 2.0 z/h = 1

Condition of Approval (if applicable):

# Table 1a - Certified Diesel Generator Sets Off Tanks

| Model | Power Rating [ kW ] | Configuration | Max Dimensions [ in ] | | | Max Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|
| | | | Length | Width | Height[1] | | |
| C10D6 | 10 | Open | 66 | 34 | 45 | 900 | UUT-1a |
| C10D6 | 10 | Open | 66 | 34 | 45 | 847 | Interpolated |
| | | Enclosed | 82 | 34 | 46 | 1,040 | Interpolated |
| C15D6 | 15 | Open | 66 | 34 | 45 | 949 | Interpolated |
| | | Enclosed | 82 | 34 | 46 | 1,080 | Interpolated |
| C20D6 | 20 | Open | 66 | 34 | 45 | 1,012 | Interpolated |
| | | Enclosed | 82 | 34 | 46 | 1,200 | Interpolated |
| C20D6 | 20 | Enclosed | 82 | 34 | 46 | 1,190 | UUT-2a |
| C25D6 | 25 | Open | 88 | 34 | 45 | 1,161 | Interpolated |
| | | Enclosed | 104 | 34 | 46 | 1,380 | Interpolated |
| C25D6 | 25 | Enclosed | 94 | 34 | 46 | 1,370 | UUT-3a |
| C30D6 | 30 | Open | 88 | 34 | 45 | 1,224 | Interpolated |
| | | Enclosed | 104 | 34 | 46 | 1,420 | Interpolated |
| C35D6 | 35 | Open | 88 | 34 | 45 | 1,267 | Interpolated |
| | | Enclosed | 104 | 34 | 46 | 1,450 | Interpolated |
| C40D6 | 40 | Open | 88 | 34 | 45 | 1,298 | Interpolated |
| | | Open | 88 | 34 | 45 | 1,370 | UUT-20 |
| | | Enclosed | 104 | 34 | 46 | 1,630 | Interpolated |
| C50D6 | 50 | Open | 88 | 34 | 45 | 1,480 | Interpolated |
| | | Enclosed | 104 | 34 | 46 | 1,626 | Interpolated |
| C60D6 | 60 | Open | 88 | 34 | 45 | 1,596 | Interpolated |
| | | Enclosed | 104 | 34 | 46 | 1,742 | Interpolated |
| C60D6 | 60 | Open | 88 | 34 | 45 | 1,660 | UUT-4a |
| C50D6C | 50 | Open | 98 | 40 | 52 | 2,113 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 2,523 | Interpolated |
| C60D6C | 60 | Open | 98 | 40 | 52 | 2,217 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 2,570 | Interpolated |
| C80D6C | 80 | Open | 98 | 40 | 52 | 2,324 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 2,620 | Interpolated |
| C100D6C | 100 | Open | 98 | 40 | 52 | 2,439 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 2,796 | Interpolated |
| C125D6C | 125 | Open | 98 | 40 | 52 | 2,586 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 2,880 | Interpolated |
| C125D6D | 125 | Open | 113 | 40 | 56 | 3,240 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 3,922 | Interpolated |
| C150D6D | 150 | Open | 113 | 40 | 56 | 3,240 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 3,922 | Interpolated |
| C175D6D | 175 | Open | 113 | 40 | 56 | 3,240 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 3,922 | Interpolated |
| C200D6D | 200 | Open | 113 | 40 | 56 | 3,240 | Interpolated |
| | | Enclosed | 136 | 40 | 58 | 3,924 | Interpolated |

**Notes**:

1. Heights do not include extruding vent/pipes.

# Table 1b - Certified Diesel Generator Sets On Tanks

| Model | Power Rating [ kW ] | Configuration | Max Dimensions [ in ] | | | Max Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|
| | | | Length | Width | Height[1] | | |
| C10D6 | 10 | Open | 66 | 34 | 58 | 1,510 | UUT-1c |
| C10D6 | 10 | Open | 88 | 34 | 68 | 2,494 | Interpolated |
| | | Enclosed | 98 | 34 | 69 | 2,687 | Interpolated |
| C15D6 | 15 | Open | 88 | 34 | 77 | 3,276 | Interpolated |
| | | Enclosed | 98 | 34 | 78 | 3,407 | Interpolated |
| C20D6 | 20 | Open | 88 | 34 | 77 | 3,339 | Interpolated |
| | | Enclosed | 98 | 34 | 78 | 3,527 | Interpolated |
| C20D6 | 20 | Enclosed | 88 | 34 | 61 | 2,390 | UUT-2c |
| C25D6 | 25 | Open | 121 | 34 | 75 | 4,122 | Interpolated |
| | | Enclosed | 131 | 34 | 76 | 4,341 | Interpolated |
| C25D6 | 25 | Enclosed | 121 | 34 | 88 | 5,544 | UUT-3c |
| C30D6 | 30 | Open | 121 | 34 | 87 | 5,408 | Interpolated |
| | | Enclosed | 131 | 34 | 88 | 5,604 | Interpolated |
| C35D6 | 35 | Open | 121 | 34 | 87 | 5,451 | Interpolated |
| | | Enclosed | 131 | 34 | 88 | 5,634 | Interpolated |
| C40D6 | 40 | Open | 121 | 34 | 87 | 5,482 | Interpolated |
| | | Enclosed | 131 | 34 | 88 | 5,814 | Interpolated |
| C50D6 | 50 | Open | 121 | 34 | 87 | 5,664 | Interpolated |
| | | Enclosed | 131 | 34 | 88 | 5,810 | Interpolated |
| C60D6 | 60 | Open | 121 | 34 | 87 | 5,779 | UUT-14 |
| | | Enclosed | 131 | 34 | 88 | 5,925 | Interpolated |
| C60D6 | 60 | Open | 121 | 34 | 87 | 6,052 | UUT-4c |
| C50D6C | 50 | Open | 154 | 40 | 98 | 8,584 | Interpolated |
| | | Enclosed | 170 | 40 | 104 | 8,994 | Interpolated |
| C60D6C | 60 | Open | 154 | 40 | 98 | 8,688 | Interpolated |
| | | Enclosed | 170 | 40 | 104 | 9,041 | Interpolated |
| C80D6C | 80 | Open | 154 | 40 | 98 | 8,795 | Interpolated |
| | | Enclosed | 170 | 40 | 104 | 9,091 | Interpolated |
| C80D6C | 80 | Enclosed | 170 | 40 | 104 | 9,040 | UUT-9 |
| C100D6C | 100 | Open | 154 | 40 | 98 | 8,910 | Interpolated |
| | | Enclosed | 170 | 40 | 104 | 9,267 | Interpolated |
| C125D6C | 125 | Open | 154 | 40 | 98 | 9,057 | Inteprolated |
| | | Enclosed | 170 | 40 | 104 | 9,351 | Inteprolated |
| C125D6C | 125 | Enclosed | 154 | 40 | 104 | 9,300 | UUT-10 |
| C125D6D | 125 | Open | 180 | 66 | 92 | 14,283 | Inteprolated |
| | | Enclosed | 180 | 71 | 94 | 14,965 | Interpolated |
| C150D6D | 150 | Open | 180 | 66 | 92 | 14,283 | Interpolated |
| | | Enclosed | 180 | 71 | 94 | 14,965 | Interpolated |
| C175D6D | 175 | Open | 180 | 66 | 92 | 14,283 | Interpolated |
| | | Enclosed | 180 | 71 | 94 | 14,965 | Interpolated |
| C200D6D | 200 | Open | 180 | 66 | 92 | 14,283 | Interpolated |
| | | Enclosed | 180 | 71 | 94 | 14,715 | UUT-19 |
| C200D6D | 200 | Enclosed | 196 | 71 | 110 | 16,020 | UUT-13a |

**Notes**:

1. Heights do not include extruding vent/pipes.
2. 20-40kW Gensets with EGR are certified on tank based on comparison to UUT-20

## Table 2 - Certified Subcomponents - Enclosures

| Model Number | Sound Level Type | MFR | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|---|
| | | | | Length | Width | Height | | |
| GD02-P1-ENCL | SL1 | Cummins | 12 Gauge 5052-0 Aluminum and Plastic | 72 | 34 | 46 | 125 | Extrapolated |
| GG02-P1-ENCL | SL2 | | | 82 | 34 | 46 | 132 | Extrapolated |
| GD03C-P2-ENCL | SL1 | | | 94 | 34 | 46 | 145 | Extrapolated |
| GG02-P2-ENCL | SL2 | | | 104 | 34 | 46 | 152 | Extrapolated |
| GG03-P1-ENCL | SL1 | | | 94 | 40 | 46 | 150 | Extrapolated |
| GG06-P1-ENCL-SND | SL2 | | | 104 | 40 | 46 | 160 | UUT-9 |
| GG06-P1-ENCL-WTHR | Weather | | | 94 | 40 | 46 | 120 | UUT-10 |
| GG09-P1-ENCL-WTHR | Weather | | 12 Gauge 5052-H32 Aluminum | 113 | 40 | 72 | 244 | Interpolated[1] |
| GG09-P1-ENCL-S1 | SL1 | | | 142 | 40 | 72 | 319 | Interpolated[1] |
| GG09-P1-ENCL-S2 | SL2 | | | 166 | 40 | 72 | 352 | UUT-13a |

**Notes:**

1. SL1 enclosure type is identical to SL2 type, except SL1 deletes a sound attenuation baffle on the air inlet end. Weather type enclosure is similar to SL1 and SL2 types, but without sound insulation and without inlet and outlet attenuation ducts.

## Table 3 - Certified Subcomponents - Diesel Engines

| Model Number | MFR | Size | kW Range | Material | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|
| D1703 (3cyl) | Kubota | 1.7L | 10-15 | Cast Iron | 329 | UUT-1a, UUT-1c |
| V2203 (4cyl) | | 2.2L | 20 | | 397 | UUT-2a, UUT-2c |
| 4BT3.3-G5 | Cummins | 3.3L | 25-40 | | 591 | UUT-3a, UUT-3c |
| 4BT3.3-G5 (EGR) | | 3.3L | 25-40 | | 630 | UUT-20 |
| 4BTAA3.3-G7 | | 3.3L | 50-60 | | 591 | UUT-4a, UUT-4c, UUT-14 |
| QSB5 G5 | | 4.5L | 50-100 | | 776 | UUT-9 |
| QSB5 G6 | | 4.5L | 125 | | 776 | UUT-10 |
| QSB7 G5 | | 6.7L | 125-200 | | 1,069 | UUT-13a, UUT-15 |

## Table 4 - Certified Subcomponents - Controls

| Model Number | MFR | Material | Applicable kW Range | Weight [ lb ] | UUT |
|---|---|---|---|---|---|
| PCC1.1 | Cummins | Carbon Steel and Plastic | 10-100 | 1.97 | UUT-20 |
| PCC2.3 | | | 50-150 | 3.55 | UUT-9, UUT-10 |
| PCC3.3 | | | 125-200 | 5.17 | UUT-13a, UUT-13b |

# Table 5a - Certified Subcomponents - Tanks

| Model Number | Applicable Generator kW | Max Dimensions [ in ] | | | Tank Capacity [ gal ] | Material | Weight [ lb ] | | | | UUT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length | Width | Height[2] | | | MFR: Henning (Dry) | MFR: UPP (Dry) | MFR: UA (Dry) | Max Wet | MFR: Henning | MFR: UPP | MFR: UA |
| A045T328 | 10-20 | 68 | 34 | 13 | 46 | A36 Steel | N/A | 304 | N/A | 633 | N/A | UUT-1c[1] | Extrapolated |
| A045T330 | 10-60 | 88 | 34 | 15 | 74 | A36 Steel | 501 | 399 | 401 | 1,030 | UUT-2c | Interpolated | UUT-14 |
| A045T340 | 25-60 | 121 | 34 | 11 | 74 | A36 Steel | 458 | 399 | N/A | 987 | Interpolated | Interpolated | N/A |
| A045T334 | 10-20 | 68 | 34 | 23 | 91 | A36 Steel | N/A | 577 | N/A | 1,228 | N/A | Interpolated | N/A |
| A045T332 | 10-60 | 88 | 34 | 23 | 132 | A36 Steel | 741 | 585 | 587 | 1,685 | Interpolated | Interpolated | Interpolated |
| A045T342 | 25-60 | 121 | 34 | 16 | 132 | A36 Steel | 668 | 533 | N/A | 1,612 | Interpolated | Interpolated | N/A |
| A045T336 | 10-60 | 88 | 34 | 32 | 195 | A36 Steel | 1,010 | 794 | 796 | 2,404 | Interpolated | Interpolated | Interpolated |
| A045T344 | 25-60 | 121 | 34 | 22 | 195 | A36 Steel | 886 | 701 | N/A | 2,280 | Interpolated | Interpolated | N/A |
| A053L909 | 50-125 | 154 | 40 | 18 | 250 | A569 Steel | 1,129 | N/A | N/A | 2,917 | Extrapolated | N/A | N/A |
| A045D209 | 10-60 | 88 | 34 | 42 | 263 | A36 Steel | 1,259 | 975 | 977 | 3,139 | Interpolated | Interpolated | Interpolated |
| A046U786 | 25-60 | 121 | 34 | 30 | 263 | A36 Steel | 1,159 | 910 | N/A | 3,039 | Interpolated | Interpolated | N/A |
| A053L909 | 50-60 | 154 | 40 | 22 | 270 | A36 Steel | N/A | N/A | 1338 | 3,536 | Interpolated | Interpolated | Interpolated |
| A056Y392 | 125-250 | 180 | 71 | 21 | 351 | A569 Steel | 1,477 | N/A | 1477 | 4,129 | Interpolated | N/A | Interpolated |
| A046U828 | 25-60 | 121 | 34 | 42 | 389 | A36 Steel | 1,550 | 1,200 | N/A | 4,331 | UUT-4c1 | UUT-3c | N/A |
| A053L911 | 50-125 | 154 | 40 | 32 | 425 | A569 Steel | 1,499 | N/A | 1658 | 4,941 | Extrapolated | N/A | Interpolated |
| A053L912 | 50-125 | 154 | 40 | 46 | 625 | A569 Steel | 1,987 | N/A | 2096 | 6,889 | UUT-9 | N/A | Interpolated |
| A053L912 | 50-125 | 154 | 40 | 46 | 625 | A569 Steel | 1,987 | N/A | 2096 | 6,889 | UUT-10 | N/A | Interpolated |
| A056Y394 | 125-250 | 180 | 71 | 42 | 737 | A569 Steel | 2,302 | N/A | 2302 | 7,868 | Interpolated | N/A | Interpolated |
| A073K181 | 125-250 | 180 | 71 | 37 | 1,055 | A569 Steel | 3,552 | N/A | 3304 | 11,095 | UUT-13a | N/A | Interpolated |
| A073K181 | 125-250 | 180 | 71 | 37 | 1,055 | A569 Steel | 3,552 | N/A | 3304 | 11,095 | UUT-13b | N/A | Interpolated |
| A073K181 | 125-250 | 180 | 71 | 37 | 1,055 | A569 Steel | 3,552 | N/A | 3304 | 11,095 | UUT-13c | N/A | Interpolated |
| A055S002 | 125-250 | 180 | 71 | 35 | 1,161 | A569 Steel | N/A | N/A | 3304 | 10,791 | N/A | N/A | UUT-19 |

**Notes:**

1. UUT-1, UUT-4, UUT-13a, and UUT-13b tested with optional undertank inspection risers under tank mounting pads.
2. Height does not include tank risers.

## Table 5b - Certified Subcomponents - Optional Tank Features

| Model Number | MFR | Feature | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|---|
| | | | | Length | Width | Height | | |
| 9095DS0200 AV | Morrison Bros | Overfill Protection Valve | Carbon Steel w/ Brass and Aluminum | 24 | 4 | 4 | 17 | UUT-2c, UUT-4c |
| 516D-0200 ACPW | | Spill Containment Box | Carbon Steel | 17 | 13 | 13 | 17 | UUT-2c, UUT-4c |
| A046K280 | Cummins | Vent Extension (1 or 2 Normal & 2 Emergency) *NOTE: Brackets Add 15 lb | | 2.5 | 2.5 | 123 | 15 | UUT-9, UUT-10 |
| A046K282 | | | | 3.5 | 3.5 | 123 | 24 | Interpolated |
| A046U902 | | | | 4.5 | 4.5 | 123 | 37 | UUT-9, UUT-10 |
| A046K278 | | | | 2.5 | 2.5 | 147 | 18 | UUT-2c |
| A046K281 | | | | 3.5 | 3.5 | 147 | 29 | UUT-2c |
| A057B403 | | | | 5.5 | 5.5 | 147 | 45 | UUT-13a, UUT-13b, UUT-13c |
| A046V178 | | Riser Blocks/Barrier | Aluminum w/ Carbon Steel | 2 | 2 | 6 | 19 | UUT-1c |
| A046V483 | | | | 2 | 2 | 6 | 24 | UUT-4c, UUT-9, UUT-10 |
| A057X133 | | | | 2 | 2 | 6 | 24 | UUT-13a, UUT-13b, UUT-13c |
| A046K278 | | 2' Vent Extension Pipes (Normal & 2 Emergency) | Carbon Steel | 2.5 | 2.5 | 27 | 4 | UUT-2c, UUT-4c |
| A046K281 | | | | 3.5 | 3.5 | 27 | 6 | UUT-2c |
| A046U900 | | | | 4.5 | 4.5 | 27 | 10 | UUT-4c |
| A057B403 | | | | 5.5 | 5.5 | 27 | 11 | UUT-13a, UUT-13b, UUT-13c |
| A057R717 | | Mechanical Fuel Gauge | Stainless Steel | 0.4 | 0.4 | 18 | 4 | Extrapolated[1] |
| A054G163 | | | | 0.4 | 0.4 | 20 | 4 | Extrapolated[1] |
| A054G164 | | | | 0.4 | 0.4 | 32 | 4 | Extrapolated[1] |
| A057S038 | | | | 0.4 | 0.4 | 34 | 4 | Extrapolated[1] |
| A057R719 | | | | 0.4 | 0.4 | 40 | 4 | Extrapolated[1] |
| A054G165 | | | | 0.4 | 0.4 | 44 | 4 | UUT-9, UUT-10 |
| 4025 | OEM | Normal Vent | Carbon Steel | 4 | 4 | 15 | 2 | UUT-1c, UUT-3c, UUT-9, UUT-10 |

**Notes:**

1. Two identical tallest mechanical fuel gauges were tested, of the least seismic withstand capacity. The shorter gauges are extrapolated.

## Table 5b - Certified Subcomponents - Optional Tank Features, Continued

| Model Number | MFR | Feature | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|---|
| | | | | Length | Width | Height | | |
| 0367-03-30HF | Clay & Bailey | Emergency Vent | Aluminum | 6 | 6 | 3 | 3 | UUT-1c, UUT-3c, UUT-9, UUT-10 |
| 0367-03-40HF | | | | 4.5 | 4.5 | 2.5 | 4 | UUT-1c, UUT-3c |
| 0366-03-50HF | | | | 7 | 7 | 3.6 | 5 | UUT-13a, UUT-13b, UUT-13c |
| 1780100AC | Morrison Bros | Sealed Locking Fuel Cap | Cast Iron | 4 | 4 | 2 | 6 | UUT-9, UUT-10 |
| A046T244 | Cummins | Low Fuel Switch | Stainless Steel | 5 | 1.5 | 1.5 | 3 | Extrapolated |
| A046T246 | | | | 7 | 1.5 | 1.5 | 3 | UUT-2c |
| A046T248 | | | | 14 | 1.5 | 1.5 | 3.5 | Interpolated |
| A046T250 | | | | 20 | 1.5 | 1.5 | 4 | UUT-4c |
| A054J422 | | | | 14 | 1.5 | 1.5 | 3.5 | Extrapolated[1] |
| A054J424 | | | | 19 | 1.5 | 1.5 | 4 | Extrapolated[1] |
| A054J425 | | | | 28 | 1.5 | 1.5 | 4 | UUT-9, UUT-10 |
| A057T420 | | | | 12 | 1.5 | 1.5 | 3.5 | UUT-13a, UUT-13b, UUT-13c |
| A057T422 | | | | 24 | 1.5 | 1.5 | 4 | UUT-13a, UUT-13b, UUT-13c |
| A057T423 | | | | 20 | 1.5 | 1.5 | 4 | UUT-13a, UUT-13b, UUT-13c |
| A046T700 | | Rupture Switch | Polymer | 5 | 1.5 | 1.5 | 0.25 | UUT-2c, UUT-4c |
| A054D642 | | | Stainless Steel | 20 | 0.4 | 0.4 | 3 | Extrapolated[2] |
| A054D639 | | | | 30 | 0.4 | 0.4 | 3 | Extrapolated[2] |
| A054D638 | | | | 44 | 0.4 | 0.4 | 3 | UUT-9, UUT-10 |
| A057W697 | | | | 18 | 0.4 | 0.4 | 3 | UUT-13a, UUT-13b, UUT-13c |
| A057W698 | | | | 39 | 0.4 | 0.4 | 3 | |
| A057W699 | | | | 33 | 0.4 | 0.4 | 3 | |
| A046U484 | | High Fuel Level Switch | Stainless Steel | 3 | 1.5 | 1.5 | 3 | UUT-2c, UUT-4c |
| A046U486 | | | | 4.5 | 1.5 | 1.5 | 3 | |
| A054J324 | | | | 5.5 | 1.5 | 1.5 | 3 | UUT-9, UUT-10, UUT-13a, UUT-13b |
| A057R146 | | | | 6.5 | 1.5 | 1.5 | 3 | UUT-13a,13b, 13c |
| A057R148 | | | | 6 | 1.5 | 1.5 | 3 | |
| 144TA-0100-KO | OPW | High Fuel Alarm Panel | Polymer | 5 | 5 | 3 | 2 | UUT-2c, UUT-4c |

**Notes:**

1. Two identical low fuel switches were tested, of the least seismic withstand capacity. Two smaller low fuel switches are extrapolated.
2. Two identical stainless steel rupture switches were tested, of the least seismic withstand capacity. The two smaller supture switches are extrapolated.

## Table 5b - Certified Subcomponents - Optional Tank Features, Continued

| Model Number | MFR | Feature | Material(s) | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|---|
| | | | | Length | Width | Height | | |
| A046U808 | Cummins | Fill Drop Tube | Carbon Steel | 6 | 2.5 | 2.5 | 3.5 | Extrapolated |
| A046U799 | | | | 10 | 2.5 | 2.5 | 4 | UUT-2c |
| A046U790 | | | | 10 | 2.5 | 2.5 | 4 | Interpolated |
| A046U810 | | | | 10 | 2.5 | 2.5 | 4 | Interpolated |
| A046U793 | | | | 18 | 2.5 | 2.5 | 7 | Interpolated |
| A046U801 | | | | 18 | 2.5 | 2.5 | 7 | Interpolated |
| A046U812 | | | | 18 | 2.5 | 2.5 | 7 | Interpolated |
| A046U795 | | | | 26 | 2.5 | 2.5 | 10 | Interpolated |
| A046U803 | | | | 26 | 2.5 | 2.5 | 10 | Interpolated |
| A046U814 | | | | 26 | 2.5 | 2.5 | 10 | Interpolated |
| A046U797 | | | | 36 | 2.5 | 2.5 | 14 | Interpolated |
| A046U816 | | | | 36 | 2.5 | 2.5 | 14 | UUT-4c, UUT-14 |
| A054E925 | | | | 19 | 2.5 | 2.5 | 7 | Interpolated |
| A054E924 | | | | 29 | 2.5 | 2.5 | 10 | Interpolated |
| A054E921 | | | | 43 | 2.5 | 2.5 | 15 | UUT-9, UUT-10 |
| A057S740 | | | | 19.5 | 2.5 | 2.5 | 7 | UUT-13a, UUT-13b, UUT-13c, UUT-15 |
| A057S741 | | | | 41 | 2.5 | 2.5 | 15 | |
| A057S742 | | | | 34 | 2.5 | 2.5 | 14 | |

## Table 6 - Certified Subcomponents - Alternators

| Model Number | MFR | Material | Weight [ lb ] | UUT |
|---|---|---|---|---|
| CA115-D14 | Cummins | Copper Windings w/ Steel Lamination; Steel and Aluminum Frame | 203 | UUT-1a, UUT-1c |
| CA115-H14 | | | 254 | Interpolated |
| CA115-J12 | | | 276 | Interpolated |
| CA115-J14 | | | 276 | Interpolated |
| CA115-M12 | | | 309 | Interpolated |
| CA115-L14 | | | 315 | UUT-2a, UUT-2c, UUT-3a, UUT-3c |
| CA115-P12 | | | 331 | Interpolated |
| CA115-P14 | | | 331 | Interpolated |
| CA115-R12 | | | 340 | Interpolated |
| CA115-R14 | | | 353 | Interpolated |
| CA115-S14 | | | 353 | Interpolated |
| CA115-T12 | | | 386 | Interpolated |
| CA115-V14 | | | 401 | UUT-20 |
| CA125-G14 | | | 463 | Interpolated |
| CA125-J14 | | | 485 | Interpolated |
| CA125-L14 | | | 522 | Interpolated |
| CA135-E12 | | | 536 | Interpolated |
| CA125-P14 | | | 639 | UUT-4a, UUT-4c, UUT-14 |
| UC224E | | | 684 | UUT-9 |
| UC224F | | | 741 | Interpolated |
| UC224G | | | 843 | Interpolated |
| UC274C | | | 893 | Interpolated |
| UC274D | | | 948 | Interpolated |
| UC274E | | | 1,082 | Interpolated |
| UC274F | | | 1,166 | UUT-10 |
| UC274G | | | 1,276 | Interpolated |
| UC274H | | | 1,378 | Interpolated |
| UC274J | | | 1,603 | Interpolated |
| UC274K | | | 1,603 | UUT-13a, UUT-13b, UUT-15 |

# Table 7 - Certified Subcomponents - Radiators

| Model Number | MFR | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|
| | | | Depth | Width | Height | | |
| A045S776 | Enterex | Tank: Nylon 6 Core: Aluminum | 2.6 | 21.3 | 25.9 | 20 | UUT-1a, UUT-1c, UUT-2a, UUT-2c |
| A044G912 | | | 3.3 | 28.2 | 29.3 | 22 | UUT-3a, UUT-3c, UUT-4a, UUT-4c, UUT-14 |
| A044D176 | | | 2.6 | 21.3 | 25.9 | 20 | Interpolated |
| A042V597 | | | 3.3 | 28.2 | 29.3 | 18 | Interpolated |
| A042V593 | | | 3.3 | 28.2 | 29.3 | 22 | Interpolated |
| A048U087 | | | 3 | 30.4 | 42 | 36 | UUT-9, UUT-10 |
| A058F021 | | | 3 | 30.4 | 42 | 36 | UUT-13a, UUT-13b, UUT-15 |
| A066X580 | Tata Toyo Radiator Ltd. (TTRL) | | 7.2 | 32.8 | 31.8 | 48 [1] | UUT-15 |
| A066X602 | | | 7.5 | 32.8 | 30.5 | 49 | Interpolated |
| A066X607 | | | 11.6 | 32.8 | 31.8 | 58 | Interpolated |
| A066X609 | | | 12.9 | 32.8 | 31.8 | 68 | Interpolated |
| A066X613 | | | 11.1 | 32.8 | 35 | 62 | UUT-20 |
| A066X617 | | | 12.9 | 32.8 | 35 | 75 [1] | UUT-16 |
| A052Y063, A048F760 | Modine | | 17.1 | 36 | 51.6 | 202 [1] | UUT-17 |
| A053Y720, A055E514 | | | 17.1 | 36 | 51.6 | 203 | Interpolated |
| A059U352 | | | 17.1 | 36 | 51.6 | 210 [1] | UUT-18 |

**Notes:**

1. Tested UUT-weights include skid weight

## Table 8 - Certified Subcomponents - Mufflers

| Model Number | MFR | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|
| | | | Depth | Width | Height | | |
| A014T136 | Nelson | 18 Gauge Aluminized Carbon Steel | 5.1 | 7.9 | 20.5 | 35.3 | UUT-1a, UUT-1c |
| A053P721 | | 19 Gauge Aluminized Carbon Steel | 5.1 | 7.9 | 20.5 | 35.3 | UUT-10 |
| A050B660 | | 22 Gauge Dual Wall Aluminized Carbon Steel | 7.4 | 13.7 | 32.8 | 27.6 | UUT-9 |
| A053S158 | | 14 Gauge Aluminized Carbon Steel | 12 | 14.6 | 26.5 | 60 | Interpolated |
| A056H923 | | 14 Gauge Aluminized Carbon Steel | 12.2 | 20.1 | 26.9 | 60 | Interpolated |
| A053S148 | | 22 Gauge Dual Wall Aluminized Carbon Steel | 16.1 | 20.5 | 31.1 | 70 | UUT-13a, UUT-15 |
| A043T869 | Cummins | 20 Gauge Aluminized Carbon Steel | 7.4 | 13.7 | 32.8 | 27.6 | Interpolated |
| A044J810 | | | 7.4 | 13.7 | 32.8 | 27.6 | UUT-2a, UUT-2c |
| A043V771 | | | 10 | 13 | 32.8 | 35.3 | UUT-3a, UUT-3c, UUT-4a, UUT-4c, UUT-14 |

## Table 9 - Certified Subcomponents - Chassis

| Model Number | MFR | Material | Dimensions [ in ] | | | Weight [ lb ] | UUT |
|---|---|---|---|---|---|---|---|
| | | | Depth | Width | Height | | |
| GD02-P1-SKID | Cummins | 10 Gauge Carbon Steel; Self Piercing Rivet Joints | 4.5 | 32.6 | 65.7 | 102 | UUT1a, UUT 1c, UUT2a, UUT 2c |
| GG02-P1-SKID | | | 4.5 | 32.6 | 65.7 | 102 | Interpolated |
| GD03C-P2-SKID | | | 4.5 | 32.6 | 87.6 | 111 | UUT3a, UUT 3c, UUT4a, UUT 4c, UUT-14, UUT-20 |
| GG02-P2-SKID | | | 4.5 | 32.6 | 87.6 | 104 | Interpolated |
| GG06-P1-SKID | | | 6.7 | 40 | 98 | 184 | UUT 9, UUT 10 |
| GG09-P1-SKID | | | 6.7 | 40 | 113 | 205 | UUT 13a, UUT13b, UUT-15 |

# UNIT UNDER TEST (UUT)
## Summary Sheet

**UUT-1a**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C10 D6 | Cummins |

**Product Construction Summary**

10 Gauge Carbon Steel Skid with Self Piercing Rivets

**Options / Subcomponent Summary**

Engine: Kubota; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Nelson

**UUT Properties**

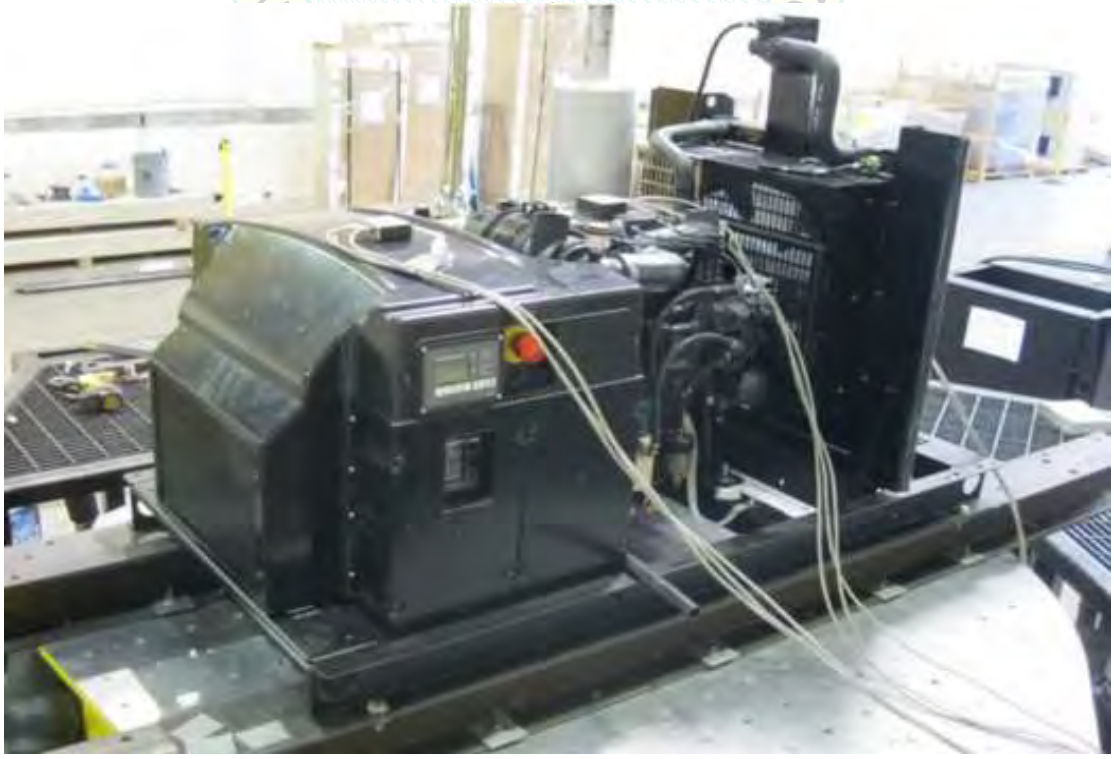
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 900 | 66.0 | 34.0 | 45.0 | 8.0 | 7.5 | 19.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fixture using four (4) 5/8" 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-1c**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C10 D6 | Cummins |

**Product Construction Summary**

10 Gauge Carbon Steel Skid with Self Piercing Rivets

**Options / Subcomponent Summary**

Engine: Kubota; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Nelson; Tank: UPP;
Normal Vent: OEM; Emergency Vent: Clay & Bailey; Riser Blocks/Barrier: Cummins

**UUT Properties**

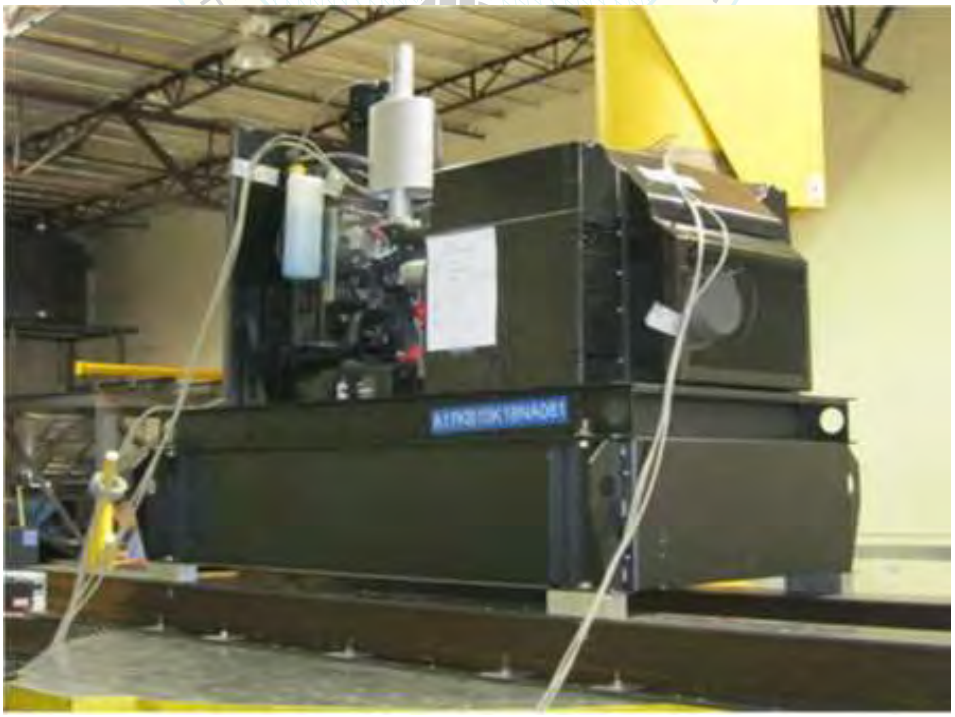
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 1,510 | 66.0 | 34.0 | 58.0 | 7.5 | 5.6 | 17.8 |

**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 2022 | ICC-ES AC156 | 2.00 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using four (4) 5/8" grade 8 bolts. The fuel tank was mounted to the fixture using four (4) 5/8" 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-2a**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C20 D6 | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Kubota; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins; Enclosure: Cummins

**UUT Properties**

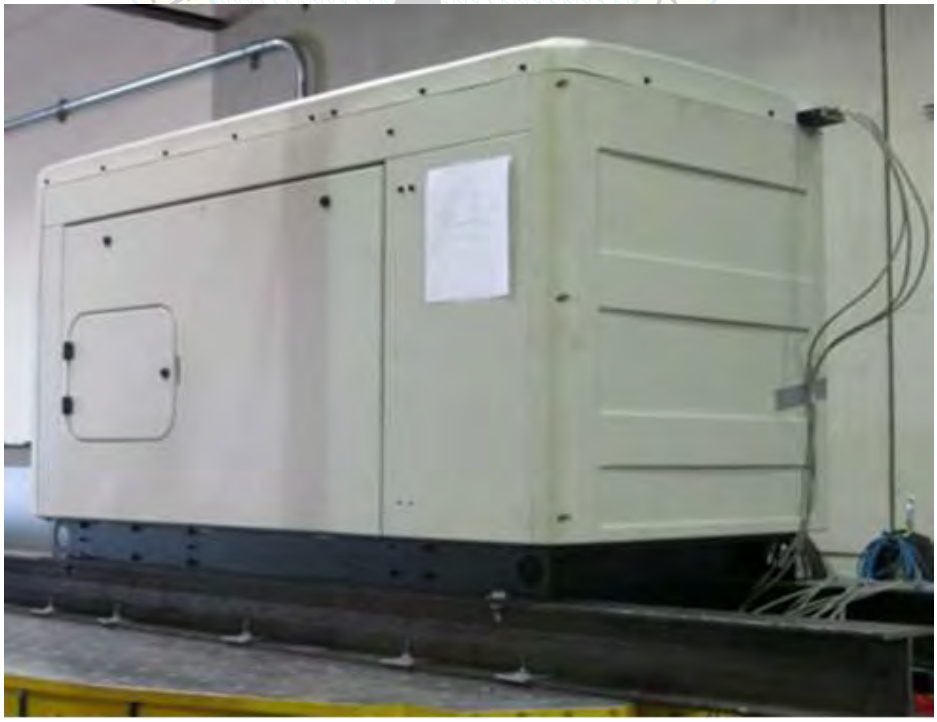
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 1,190 | 82.0 | 34.0 | 46.0 | 7.8 | 6.5 | 17.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fixture using four (4) 5/8" 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-2c**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C20 D6 | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Kubota; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins; Enclosure: Cummins; Tank: Henning; Overfill Protection Valve: Morrison Bros; Spill Containment Box: Morrison Bros; Vent Extension: Cummins; 2' Vent Extension Pipes: Cummins; Low Fuel Switch: Cummins; High Fuel Level Switch: Cummins; Fill Drop Tube: Cummins; High Fuel Alarm Panel: OPW

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 2,390 | 88.0 | 34.0 | 61.0 | 7.8 | 6.5 | 16.0 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using four (4) 5/8" grade 8 bolts. The fuel tank was mounted to the fixture using four (4) 5/8" 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-3a**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C25 D6 | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins; Enclosure: Cummins;

**UUT Properties**

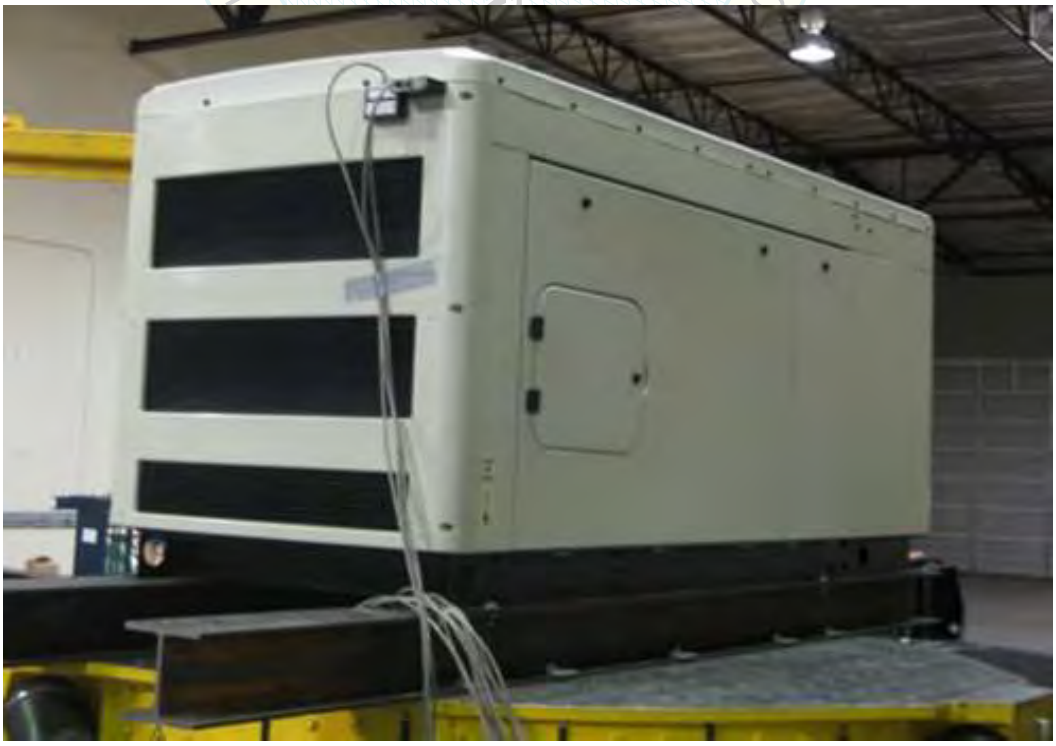
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 1,370 | 94.0 | 34.0 | 46.0 | 6.5 | 5.3 | 15.5 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fixture using four (4) 5/8" 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-3c**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C25 D6 | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins; Enclosure: Cummins; Tank: UPP; Normal Vent: OEM; Emergncy Vent: Clay & Bailey; Mechanical Fuel Gauge: Cummins;

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 5,544 | 121.0 | 34.0 | 88.0 | 5.3 | 4.0 | 14.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using four (4) 5/8" grade 8 bolts. Fuel tank was mounted to the fixture using six (6) 5/8" 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-4a**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C60 D6 | Cummins |

**Product Construction Summary**

10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins

**UUT Properties**

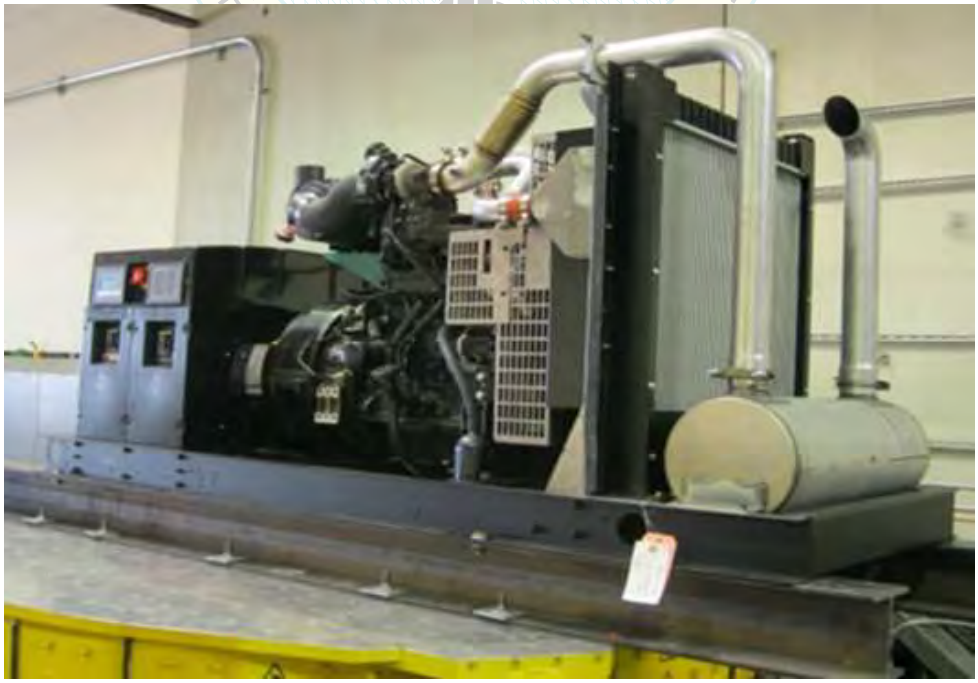
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 1,660 | 88.0 | 34.0 | 45.0 | 6.5 | 5.5 | 12.8 |

**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 2022 | ICC-ES AC156 | 2.00 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fixture using four (4) 5/8" 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-4c**

DCL 77789-1302

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C60 D6 | Cummins |

**Product Construction Summary**

10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Cummins; Tank: Henning; Overfill Protection Valve: Morrison Bros; Spill Containment Box: Morrison Bros; Riser Blcoks/Barrier: Cummins; 2' Vent Extension Pipes: Cummins; Low Fuel Switch: Cummins; Rupture Switch: Cummins: High Level Fuel Switch: Cummins: High Fuel Alarm Panel: Cummins; Fill Drop Tube: Cummins

**UUT Properties**

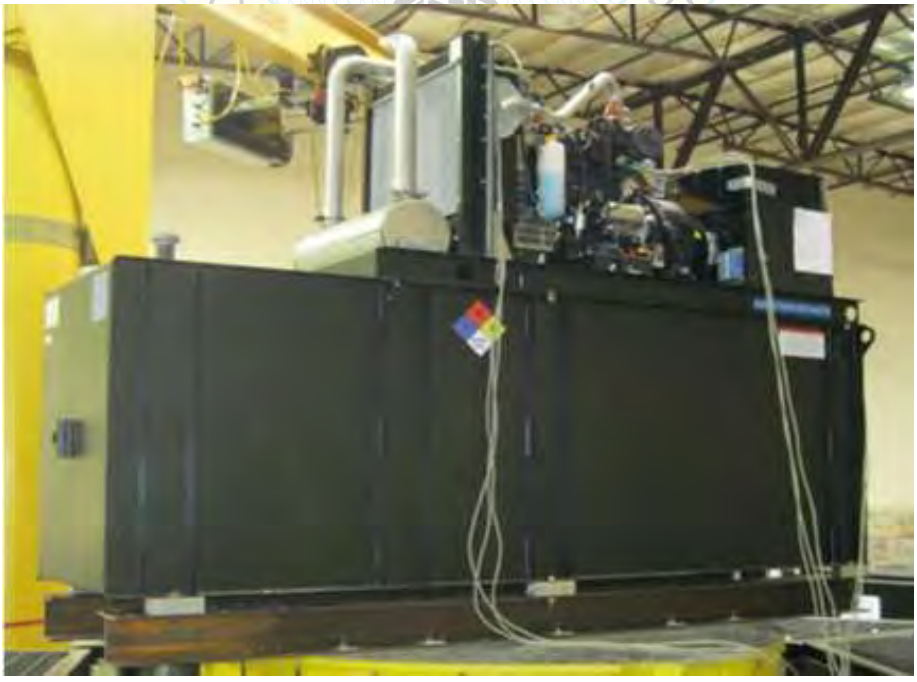
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 6,052 | 121.0 | 34.0 | 87.0 | 5.5 | 3.8 | 12.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using four (4) 5/8" grade 8 bolts. Fuel tank was mounted to the fixture using six (6) 5/8" 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-9**

DCL 33817-1501

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C80 D6C | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Nelson; Enclosure: Cummins; Tank: Henning; Controller: Cummins; Normal Vent: OEM; Emergency Vent: Clay & Bailey; Low Level Fuel Switch: Cummins; Rupture Switch: Cummins; Overfill Protection Valve: Cummins; Vent Extensions: Cummins; Riser Blocks/Barrier: Cummins; Mechanical Fuel Gauge: Cummins; Sealed Locking Fuel Cap: Morrison Bros

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 9,040 | 170.0 | 40.0 | 104.0 | 8.3 | 4.5 | 9.8 |

**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 2022 | ICC-ES AC156 | 2.00 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using six (6) M16 grade 8.8 bolts. The fuel tank was mounted to the fixture using ten (10) 5/8" 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-10**

DCL 33817-1501

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C125 D6C | Cummins |

**Product Construction Summary**

12 Gauge 5052-0 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Nelson; Enclosure: Cummins; Controller: Cummins; Tank: Henning; Normal Vent: OEM; Emergency Vent: Clay & Bailey; Low Fuel Switch: Cummins; Rupture Switch: Cummins; Fill Drop Tube: Cummins; Overfill Protection Valve: Cummins; Vent Extension: Cummins; Riser Blocks/Barrier: Cummins; Sealed Locking Fuel Cap: Morrison Bros

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 9,300 | 154.0 | 40.0 | 104.0 | 9.0 | 6.0 | 10.5 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using six (6) M16 grade 8.8 bolts. The fuel tank was mounted to the fixture using ten (10) 5/8" 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-13a**

DCL 38323-1701

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C200 D6 | Cummins |

**Product Construction Summary**

12 Gauge 5052-H32 Aluminum and Plastic Enclosure, 10 Gauge Carbon Steel Skid with Self Piercing Rivet Joints

**Options / Subcomponent Summary**

Engine: Cummins; Radiator: Enterex; Chassis: Cummins; Alternator: Cummins; Muffler: Nelson; Enclosure: Cummins; Controller: Cummins; Tank: Henning; 10' Vent Extensions: Cummins; Riser Blocks/Barrier: Cummins; Normal Vent: OEM; Emergency Vent: Clay & Bailey; Low Fuel Switch: Cummins; Rupture Switch: Cummins; High Fuel Level Switch: Cummins; Fill Drop Tube: Cummins

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 16,020 | 196.0 | 71.0 | 110.0 | 3.5 | 9.0 | 11.0 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted to the fuel tank using six (6) M16 grade 8.8 bolts. The fuel tank was mounted to the fixture using sixteen (16) 5/8" 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-13b**

DCL 38323-1701

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C200 D6 | Cummins |

**Product Construction Summary**

UL142 Rectangular Double Wall Tank with A569 Carbon Steel

**Options / Subcomponent Summary**

Tank: Henning; 4' Vent Extensions: Cummins; Riser Blocks/Barrier: Cummins; Normal Vent: OEM; Emergency Vent: Clay & Bailey; Low Fuel Switch: Cummins; Rupture Switch: Cummins; High Fuel Level Switch: Cummins; Fill Drop Tube: Cummins

**UUT Properties**

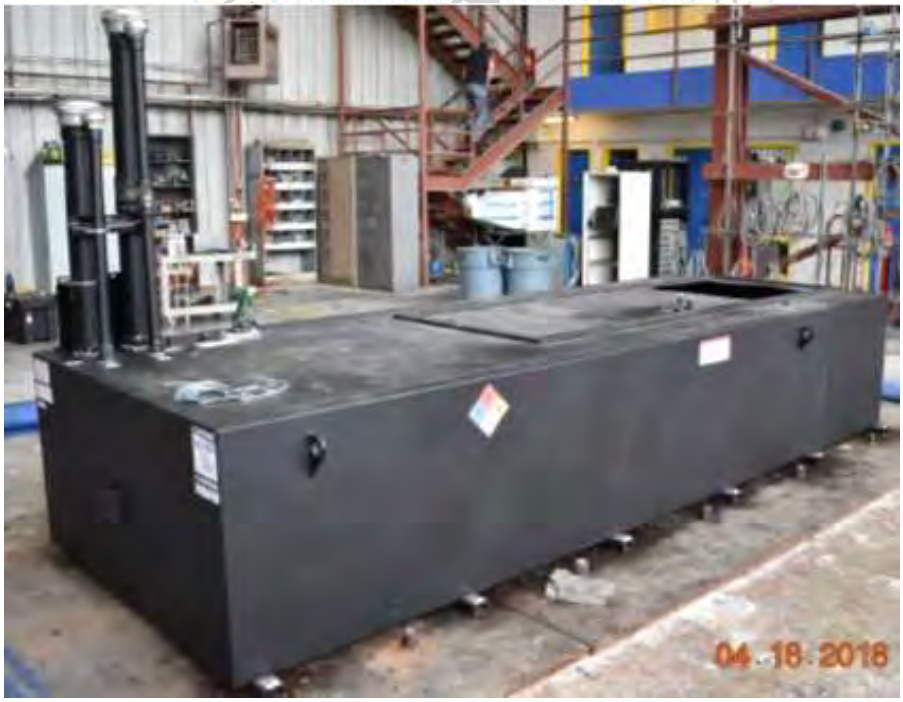
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 11,890 | 180.0 | 71.0 | 37.0 | >33.3 | >33.3 | 22.0 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

The fuel tank was mounted to the fixture using sixteen (16) 5/8" 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-13c**

DCL 38323-1701

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C200 D6 | Cummins |

**Product Construction Summary**

UL142 Rectangular Double Wall Tank with A569 Carbon Steel

**Options / Subcomponent Summary**

Tank: Henning; 3' Baffled Vent Extensions: Cummins; Riser Blocks/Barrier: Cummins; Normal Vent: OEM; Emergency Vent: Clay & Bailey; Low Fuel Switch: Cummins; Rupture Switch: Cummins; High Fuel Level Switch: Cummins; Fill Drop Tube: Cummins

**UUT Properties**

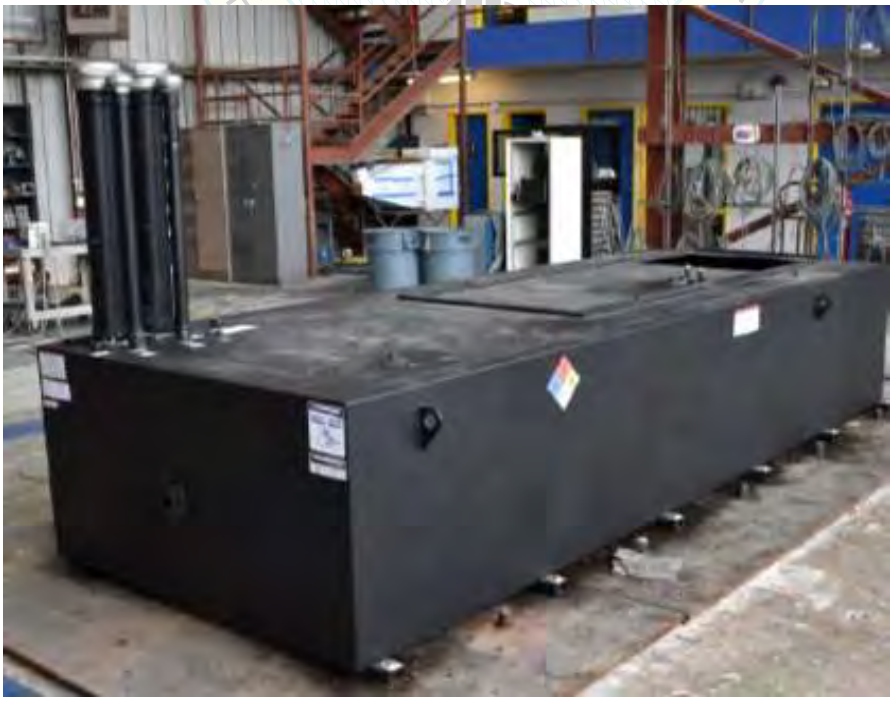
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 11,880 | 180.0 | 71.0 | 37.0 | >33.3 | >33.3 | 22.0 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

The fuel tank was mounted to the fixture using sixteen (16) 5/8" 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-14**

Clark JID 23-00486 Rev. 1

| Model Line | Model Number | Fuel Tank Manufacturer |
|---|---|---|
| Diesel Generator Sets | CPG A045T330 (Cummins Power Generation Model C60 D6). Serial Number: G03522436. | United Alloy (UA) |

**Product Construction Summary**

UL-142 Carbon Steel Fuel Tank.

**Options / Subcomponent Summary**

Sub-Base Fuel Tank with Genset above. Genset has previously been tested as UUT-4C.

**UUT Properties**

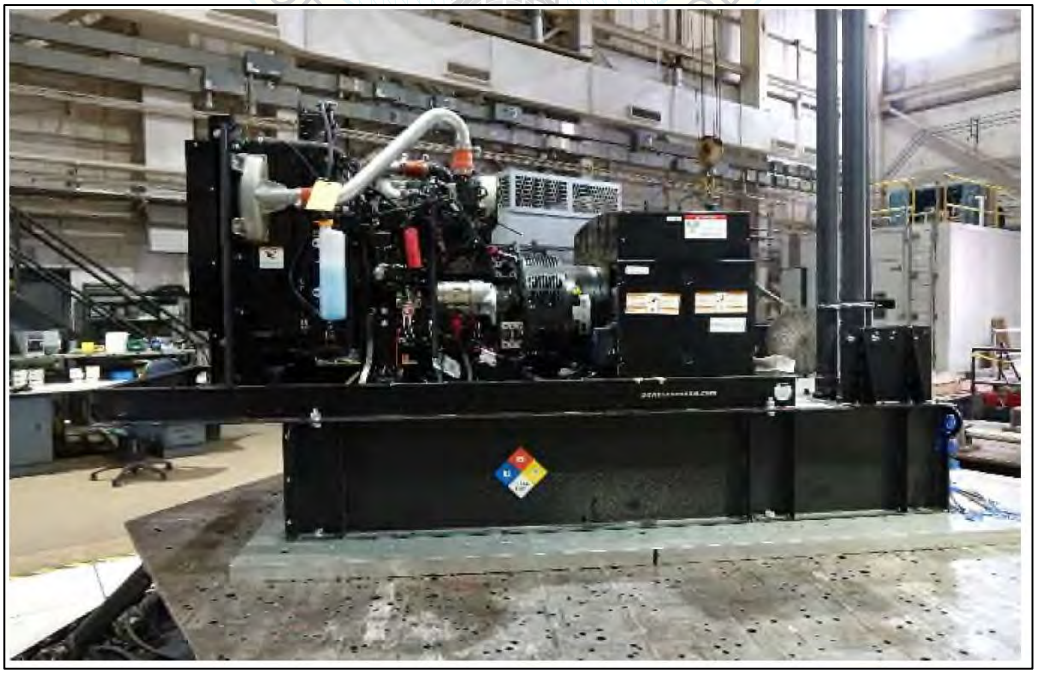
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| Genset: 1660 | 88.0 | 34.0 | 45.0 | N/A | N/A | N/A |
| Tank: 1030 (Wet) | 88.0 | 38.0 | 15.0 | 21.7 | 25.2 | N/A |

**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 | 2.00 | 1.00 | 1.50 | 3.20 | 2.40 | 1.68 | 0.68 |

**Test Mounting Details**

UUT was base mounted to the fixture using four (4) 3/4" SAE Grade 5 bolts.



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

# UNIT UNDER TEST (UUT)
## Summary Sheet

**UUT-15**

DCL 35261-2101b; UUT-1

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Radiator for Diesel Generator Sets | A066X580 | Tata Toyo Radiator Ltd. |

**Product Construction Summary**

Nylon Tank; Aluminum Core
Note: Shall be installed with generator set, all connections to the generator set shall be flexible

**Options / Subcomponent Summary**

Radiator Only Dimensions:
Weight: 48 lbs.
LxWxL: 7.2" x 32.8" x 31.8"

**UUT Properties**

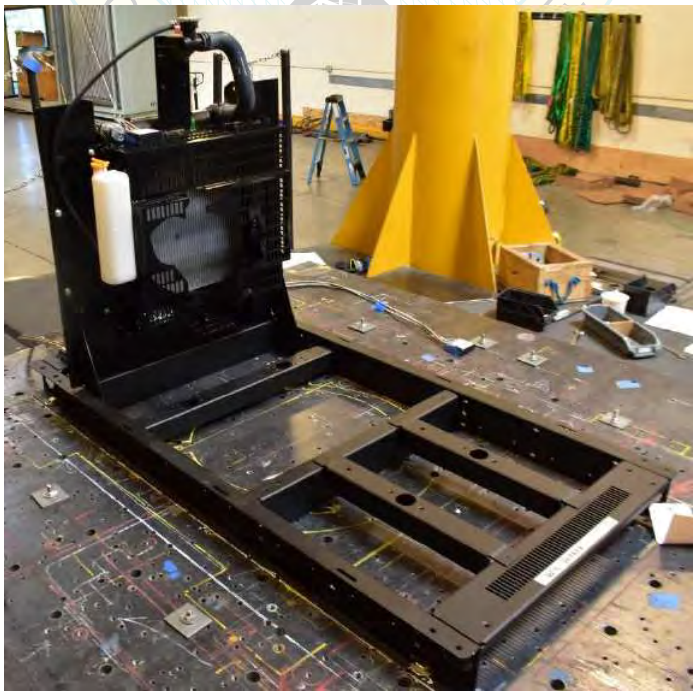
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 170 | 66.0 | 34.0 | 46.0 | >33.3 | 16.0 | >33.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

Radiator attached directly to skid with (10) M12 Class 8.8 bolts. Skid attached directly to shake table using (4) 5/8" 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-16**

DCL 35261-2101b; UUT-2

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Radiator for Diesel Generator Sets | A066X617 | Tata Toyo Radiator Ltd. |

**Product Construction Summary**

Nylon Tank; Aluminum Core
Note: Shall be installed with generator set, all connections to the generator set shall be flexible

**Options / Subcomponent Summary**

Radiator Only Dimensions:
Weight: 75 lbs.
LxWxL: 12.9" x 32.8" x 35"

**UUT Properties**

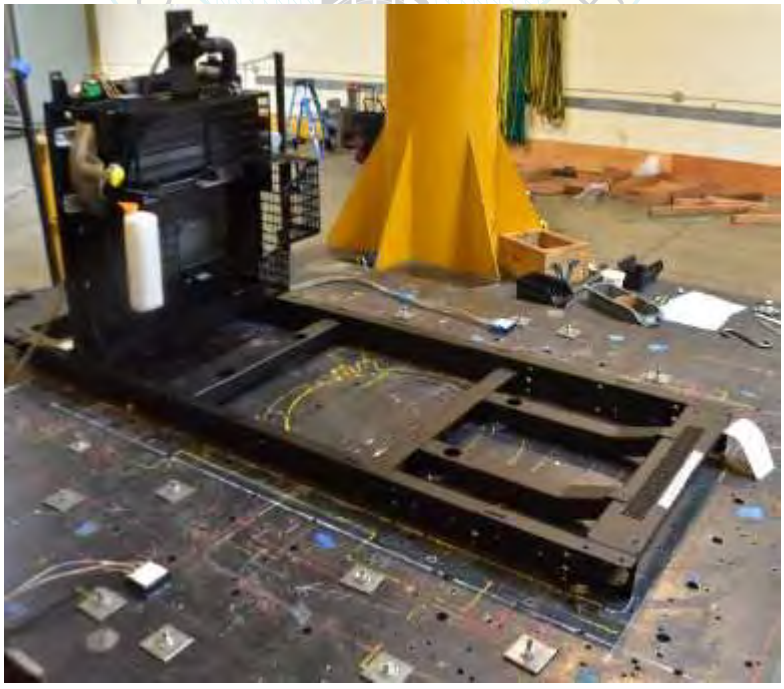
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 230 | 87.5 | 34.0 | 46.0 | 24.5 | 14.5 | >33.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

Radiator attached directly to skid with (10) M12 Class 8.8 bolts. Skid attached directly to shake table using (4) 5/8" 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-17**

DCL 35261-2101b, UUT-3

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Radiator for Diesel Generator Sets | A052Y063 | Modine |

**Product Construction Summary**

Nylon Tank; Aluminum Core
Note: Shall be installed with generator set, all connections to the generator set shall be flexible

**Options / Subcomponent Summary**

Radiator Only Dimensions:
Weight: 202 lbs.
LxWxL: 17.1" x 36" x 51.6"

**UUT Properties**

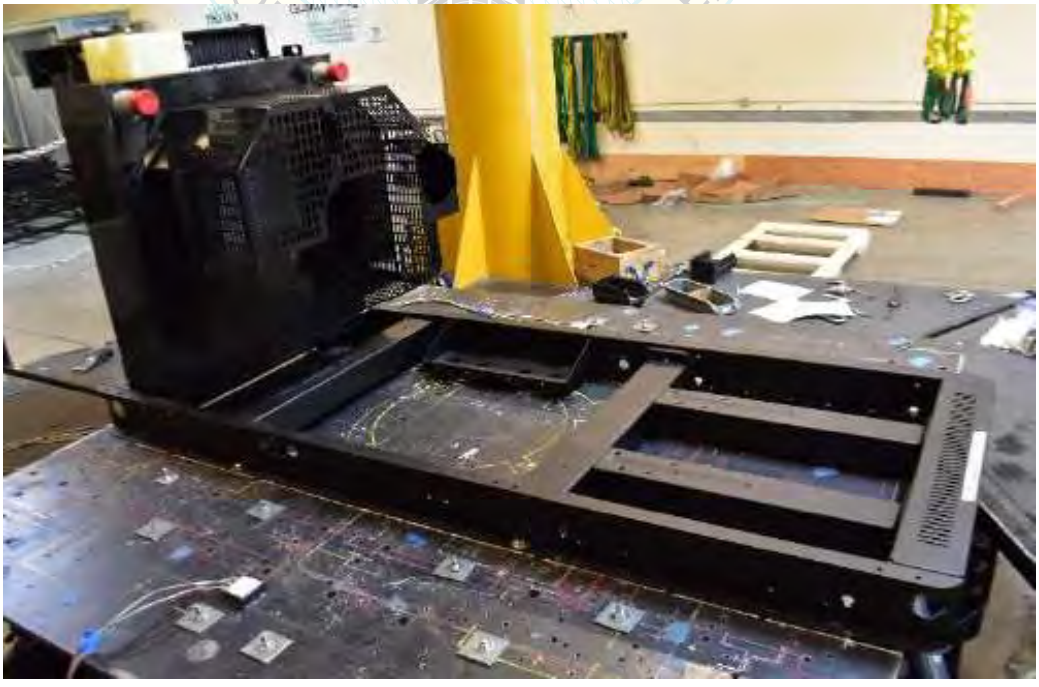
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 340 | 98.0 | 40.0 | 51.0 | 10.5 | 7.5 | 28.5 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

Radiator attached directly to skid with (6) M12 Class 8.8 bolts. Skid attached directly to shake table using (4) 5/8" 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-18**

DCL 35261-2101b; UUT-4

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Radiator for Diesel Generator Sets | A059U352 | Modine |

**Product Construction Summary**

Nylon Tank; Aluminum Core
Note: Shall be installed with generator set, all connections to the generator set shall be flexible

**Options / Subcomponent Summary**

Radiator Only Dimensions:
Weight: 210 lbs.
LxWxL: 17.1" x 36" x 51.6"

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 390 | 113.0 | 40.0 | 55.0 | 8.0 | 15.0 | >33.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

Radiator attached directly to skid with (6) M12 Class 8.8 bolts. Skid attached directly to shake table using (6) 5/8" 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**

Clark JID 23-00486 Rev. 1

| Model Line | Model Number | Fuel Tank Manufacturer |
|---|---|---|
| Diesel Generator Sets | CPG A055S002 (Cummins Power Generation C200 D6D Genset). Serial Number F69487540. | United Alloy (UA) |

**Product Construction Summary**

UL-142 Carbon Steel Fuel Tank.

**Options / Subcomponent Summary**

Sub-Base Fuel Tank with Genset above. Genset has previously been tested as UUT-13a.

**UUT Properties**

| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| Genset: 3924 | 136.0 | 40.0 | 58.0 | N/A | N/A | N/A |
| Tank : 10,791 (Wet) | 180.0 | 75.0 | 41.0 | 11.5 | 17.7 | 11.3 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.68 | 0.68 |

**Test Mounting Details**

UUT was base mounted to the fixture using twelve (12) 5/8" SAE Grade 5 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**

DCL 23688-2401

| Model Line | Model Number | Manufacturer |
|---|---|---|
| Diesel Generator Sets | C40D6 | Cummins |

**Product Construction Summary**

Open Genset

**Options / Subcomponent Summary**

4BT3.3-G5 (EGR) Engine: Cummins, Controls: Cummins, Alternator: Cummins, Radiator: Tata Toyo Radiator Ltd., Chassis: Cummins

**UUT Properties**

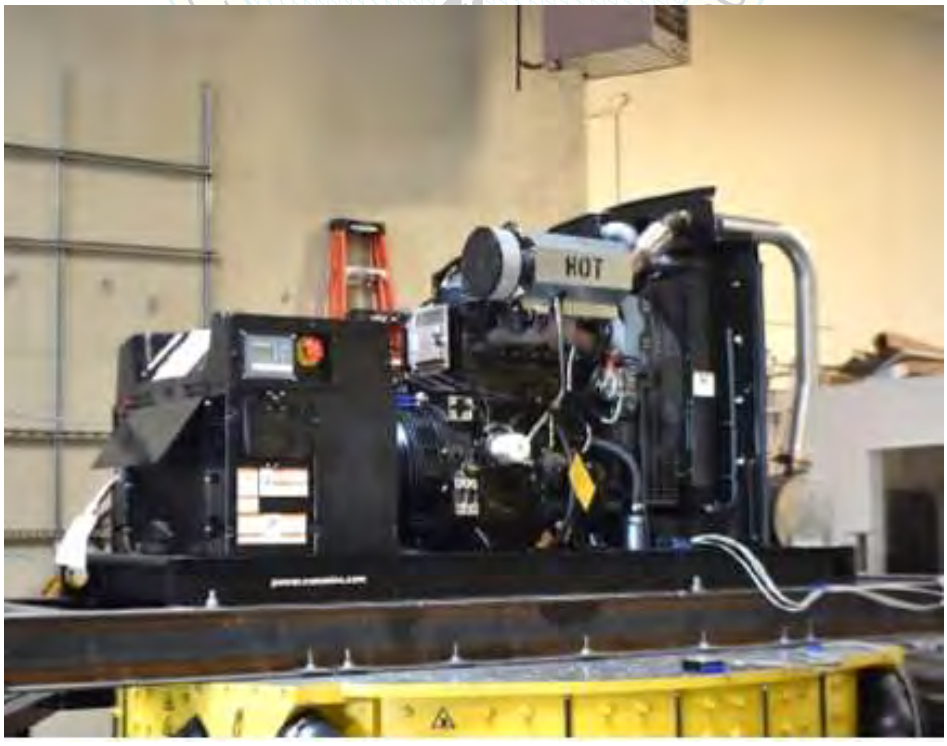
| Weight [ lbs ] | Dimensions [ in ] | | | Lowest Nat. Freq. [ Hz ] | | |
|---|---|---|---|---|---|---|
| | Length | Width | Height | F-B | S-S | V |
| 1,370 | 87.5 | 34.0 | 44.5 | 5.5 | 6.5 | 15.0 |

**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 | 1.00 | 1.50 | 3.20 | 2.40 | 1.33 | 0.53 |

**Test Mounting Details**

UUT was mounted using (4) 5/8" Grade 5 bolts.




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