



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

**APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0646**

**OSHPD Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: KONE

Manufacturer's Technical Representative: Jorge Torres

Mailing Address: 450 Century Parkway, Allen, TX 75013

Telephone: ON FILE Email: ON FILE

**Product Information**

Product Name: Elevator Equipment

Product Type: Elevator Controllers

Product Model Number: LCE Traction Elevator Logic and Drive Controller w/ KDM90 Drive

General Description: Electronic motion control system for the operation of people-moving elevators.

Mounting Description: Rigid, Floor/Wall Mounted

**Applicant Information**

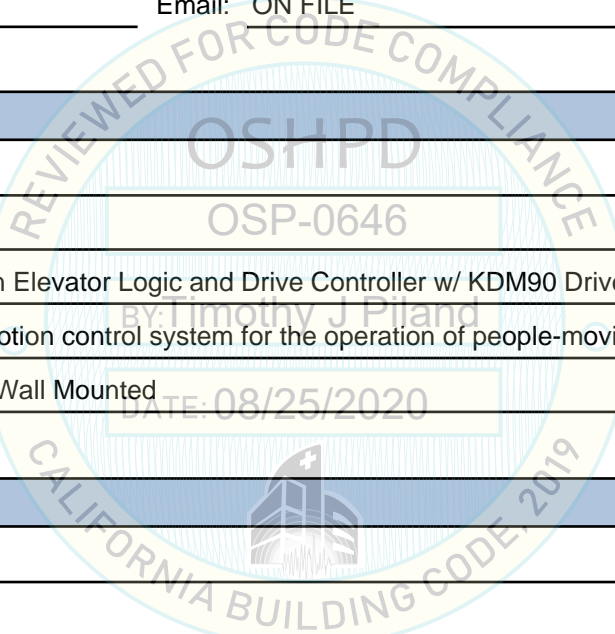
Applicant Company Name: EASE

Contact Person: Jonathan Roberson

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA 91709

Telephone: (909) 606-7622 Email: jon@easeco.com

Title: \_\_\_\_\_





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

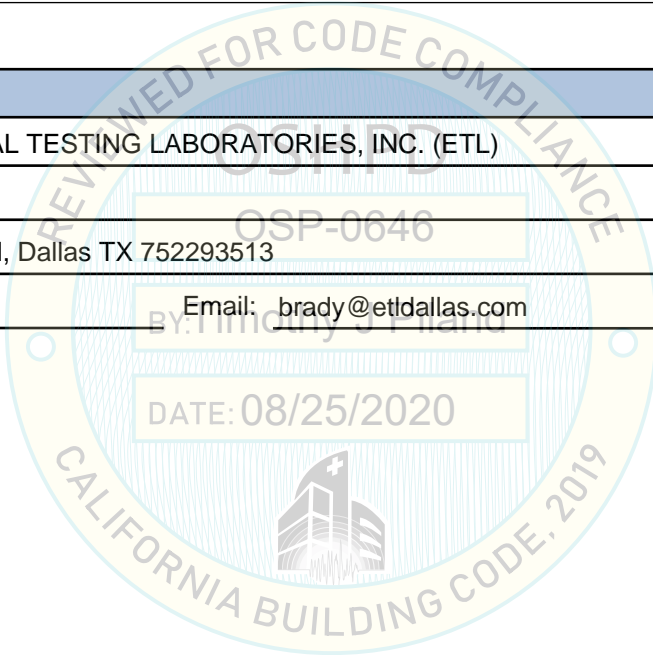
Company Name: EASE  
Name: Jonathan Roberson California License Number: S4197  
Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709  
Telephone: (951) 295-1892 Email: jon@EASECo.com

**Certification Method**

GR-63-Core       ICC-ES AC156       IEEE 344       IEEE 693       NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)  
Contact Person: Brady Richard  
Mailing Address: 11034 Indian Trail, Dallas TX 752293513  
Telephone: (972) 247-9657 Email: brady@etldallas.com





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**Seismic Parameters**

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

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SDS (Design spectral response acceleration at short period, g) = 2.0

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$a_p$  (Amplification factor) = 1

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$R_p$  (Response modification factor) = 2.5

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$\Omega_0$  (System overstrength factor) = 2.0

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$I_p$  (Importance factor) = 1.5

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$z/h$  (Height ratio factor) = 1

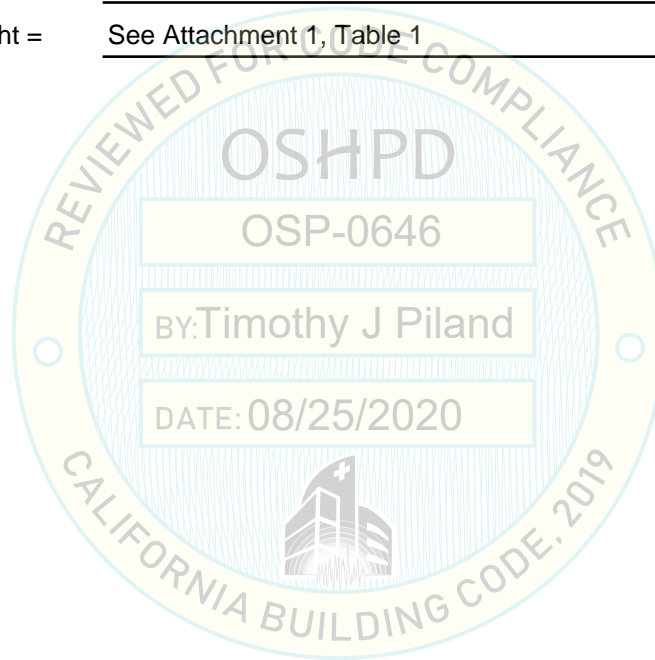
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Natural frequencies (Hz) = See Attachment 2

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Overall dimensions and weight = See Attachment 1, Table 1

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**OSHPD Approval (For Office Use Only) - Approval Expires on 12/31/2025**

Date: 8/25/2020

Name: Timothy Piland Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: SDS (g) = 2.00  $z/h$  = 1

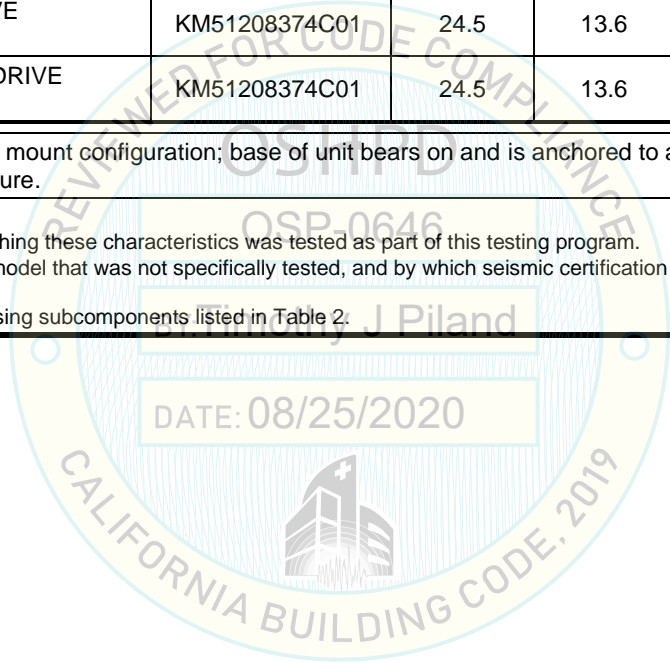
Condition of Approval (if applicable): \_\_\_\_\_



**ATTACHMENT 1:**

**TABLE 1: CERTIFIED COMPONENTS**

<i>Manufacturer</i>	<b>KONE</b>							
<i>Product Line</i>	<b>LCE Traction Elevator Logic and Drive Controller w/KDM90 Drive</b>							
COMPONENT	MODEL NO.	DIMENSIONS (IN.)			APPROX. WT. (LB.)	MOUNT	BASIS	
		W	D	H				
KCM831 - LCE TRACTION ELEVATOR LOGIC AND DRIVE CONTROLLER WITH KDM90 DRIVE MODULE	KM51208374C01	24.5	13.6	79	365	Wall / Floor	UUT1807-1 UUT1807-2	
ReSolve 400 - LCE TRACTION ELEVATOR LOGIC AND DRIVE CONTROLLER WITH KDM90 DRIVE MODULE	KM51208374C01	24.5	13.6	79	365	Wall / Floor	INT	
<i>Mount</i>	Wall/Floor: combined rigid base and rigid wall mount configuration; base of unit bears on and is anchored to a supporting structure at its base. Additionally, unit is anchored above the base to a rigid wall structure.							
<i>Notes</i>	<ol style="list-style-type: none"> <li>BASIS: <ul style="list-style-type: none"> <li>UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.</li> <li>INT (Interpolate/Extrapolate): Indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line.</li> </ul> </li> <li>Seismic certification limited to components using subcomponents listed in Table 2.</li> </ol>							



**TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS**

SUBCOMPONENT DESCRIPTION	MANUFACTURER	PART NO.	MATERIAL	BASIS
CABINET, CONTROL PANEL (HCP)	KLOECKNER METALS CORPORATION	KM51208389C01	Galvannealed or Galvanized CRS	UUT1807-1 UUT1807-2
LOGIC PANEL consisting of	KONE Inc.	KM51208377C01	Assembly of	UUT1807-1 UUT1807-2
CONTROL MODULE, 230VAC W BYPASS	KONE Inc.	KM51208463G01	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2
INTERCOM MODULE, KDL	KONE Inc.	KM996186G01	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2
TRANSFORMER, CURRENT CONTROL 400V	Pacific Transformers Corp.	KM713383G01	Laminated Steel / Copper / Varnished / Open Core	UUT1807-1 UUT1807-2
PCB, LCEREC RECTIFIER MULTIFUSE	Eutron	KM713140G08	FR4 PCB	UUT1807-1 UUT1807-2
ASSEMBLY, EBR4 MX14/20 NMX14	KONE Inc.	KM51490275G02	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2
MODULE OPT1, 1 INPUT ONLY AND 1 IO BOARD	KONE Inc.	KM51223522G01	Galvanized CRS / FR4 PCB	UUT1807-1 UUT1807-2
MODULE OPT1, 2 INPUT ONLY	KONE Inc.	KM51223522G03	Galvanized CRS / FR4 PCB	INT
MODULE, OPT2 W/EAQ&LCEOPT	KONE Inc.	KM51223521G01	Galvanized CRS / FR4 PCB	UUT1807-1 UUT1807-2
MODULE, LCEGTW	KONE Inc.	KM51223523G01	Galvanized CRS / FR4 PCB	UUT1807-2
MODULE, OPT2 W/TWO LCEGTWO	KONE Inc.	KM51223500G02	Galvanized CRS / FR4 PCB	UUT1807-2
ETSL MODULE, 1 BOARD	KONE Inc.	KM51223501G01	Galvanized CRS / FR4 PCB	UUT1807-1
ETSL MODULE, 2 BOARDS	KONE Inc.	KM51223501G02	Galvanized CRS / FR4 PCB	UUT1807-2
EXTRA OPTIONAL BOARD	KONE Inc.	KM51223502G01	Galvanized CRS / FR4 PCB	UUT1807-1 UUT1807-2
EXTRA OPTIONAL BOARD	KONE Inc.	KM51223502G01	Galvanized CRS / FR4 PCB	UUT1807-2
EXTRA OPTIONAL BOARD	KONE Inc.	KM51223502G01	Galvanized CRS / FR4 PCB	UUT1807-2
CABLE SET, LCE W/KDM	Unities Alliance Group	KM51208385C01	Copper / Plastic	UUT1807-1 UUT1807-2
POWER PANEL, LCE KDM consisting of	KONE Inc.	KM51208380C01	Assembly of	UUT1807-1 UUT1807-2
AC DRIVE, KR7 90A IP23	Vacon	KM997160	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2
VENT HOOD FOR KDM	KLOECKNER METALS CORPORATION	KM51208408H01	Galvannealed or Galvanized CRS	UUT1807-1 UUT1807-2
KDA MODULE, BCM25, KDM90, MR, LCE, NA	Scanfil Suzhou	KM987078G14	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2

Table continues on next page

**TABLE 2: SEISMIC CERTIFIED SUBCOMPONENTS**

SUBCOMPONENT DESCRIPTION	MANUFACTURER	PART NO.	MATERIAL	BASIS
KDA MODULE FOR ASYNC, NA	Scanfil Suzhou	KM1368628G14	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1403-1 UUT1403-2
TERMINAL MODULE, TB1 TO TB4	KONE Inc.	KM51208414G02	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-1 UUT1807-2
MODULE, FSP/TSD ES PHOENIX	Phoenix Contact	KM783040G01	Copper / Plastic	UUT1807-1 UUT1807-2
POWER MODULE, 24VDC	KONE Inc.	KM51223512G01	Galvanized CRS / Copper / Plastic / FR4 PCB	UUT1807-2
HIGH HARNESS, LOGIC TO JUNCTION BOX	Wallace Electronics	KM51196801V001	Galvanized CRS / Copper / Plastic	UUT1807-1 UUT1807-2
LOW HARNESS, LOGIC TO JUNCTION BOX	Wallace Electronics	KM51196800V001	Galvanized CRS / Copper / Plastic	UUT1807-1 UUT1807-2
TB2 KDM	Weidmuller	KM51208413G03	Galvanized CRS / Copper / Plastic	UUT1807-1 UUT1807-2
BRAKE CONTROL MODULE, 400V 10A MX32	Enics Eesti AS	KM825580G06	Formed Aluminum / Galvanized CRS / Copper / FR4 PCB	UUT1807-2
BRAKE CONTROL, KDHBCM for Geared Machine Brake	Enics Eesti AS	KM825580G05	Formed Aluminum / Galvanized CRS / Copper / FR4 PCB	UUT1403-2
AUTOTRANSFORMER, 230/120VAC	Trafomic Oy	KM808156	Laminated Steel / Copper / Varnished / Open Core	UUT1403-1 UUT1403-2
TRACTION LOSS RESET SWITCH	KONE Inc.	KM50071398G01	Galvanized CRS / Plastic	UUT1403-1 UUT1403-2
MODULE, BCXIFB, w/ Brake > 2.5 amps	Enics Finland Oy	KM50028924G01	Galvanized CRS / FR4 PCB	UUT1403-2
Notes	<p>1. BASIS:</p> <ul style="list-style-type: none"> <li>• UUT#: Indicates that a test specimen matching these characteristics was tested as part of this testing program.</li> <li>• INT (Interpolate/Extrapolate): indicates a model that was not specifically tested, and by which seismic certification is established through evaluation of testing of other, similar models in the product line.</li> <li>• PT: Indicates that a test specimen matching these characteristics was tested as part of a previous testing program. (UUT-#) further indicates UUT in the previous test report.</li> </ul> <p>2. Seismic Certification is limited to subcomponents identified, when installed as part of a complete assembly of the equipment defined in Table 1.</p> <p>3. CRS = Cold-Rolled Sheet-Steel.</p> <p>4. FR4 PCB = Copper-clad, epoxy-fiberglass substrate, printed circuit board (PCB) material.</p>			

**ATTACHMENT 2: TEST SPECIMEN SUMMARY**

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<b>UUT1807-1 KCM 831 LCE Logic Drive Controller Assembly w/ KDM90 Drive (Min. Config.)</b>						
<i>Manufacturer:</i>		KONE				
<i>Identification:</i>		Part No.: KM51208374C01 Serial No.: 43354852 (UUT-1)				
<i>Description:</i>		See Attachment 1, Table 2.				
<i>Mounting:</i>		Rigid Wall/Floor mount using: (4) – 3/8" diam. ASTM J429 Grade 5 bolts at base. (4) – 1/4" diam. HWH self-tapping, self-threading sheet metal screws through each of (2) –Top Brackets (KONE P/N: KM51634643V000) to 16 ga. steel backing plate (36T125-54).				
<b>Dimensions (in.)</b>				<b>Lowest Resonant Frequency (Hz.)</b>		
Width	Depth	Height	Weight (lb.)	(S/S) X-Axis	(F/B) Y-Axis	(Vert.) Z-Axis
24.5	13.6	79	355	7.93	8.61	22.20
<b>ICC-ES AC156 SHAKE TABLE TEST PARAMETERS</b>						<b>CODE: 2019 CBC</b>
S <sub>DS</sub> (G)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (G)	A <sub>RIG-H</sub> (G)	A <sub>FLX-V</sub> (G)	A <sub>RIG-V</sub> (G)
2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



<b>UUT1807-2 KCM 831 LCE Logic Drive Controller Assembly w/ KDM90 Drive (Max. Config.)</b>						
<i>Manufacturer:</i>		KONE				
<i>Identification:</i>		Part No.: KM51208374C01 Serial No.: 43354852 (UUT-2)				
<i>Description:</i>		See Attachment 1, Table 2.				
<i>Mounting:</i>		Rigid Wall/Floor mount using: (4) – 3/8" diam. ASTM J429 Grade 5 bolts at base. (4) – 1/4" diam. HWH self-tapping, self-threading sheet metal screws through each of (2) –Top Brackets (KONE P/N: KM51634643V000) to 16 ga. steel backing plate (36T125-54).				
<b>Dimensions (in.)</b>				<b>Lowest Resonant Frequency (Hz.)</b>		
Width	Depth	Height	Weight (lb.)	(S/S) X-Axis	(F/B) Y-Axis	(Vert.) Z-Axis
24.5	13.6	79	363	7.91	8.38	23.58
<b>ICC-ES AC156 SHAKE TABLE TEST PARAMETERS</b>						<b>CODE: 2019 CBC</b>
S <sub>DS</sub> (G)	z/h	I <sub>p</sub>	A <sub>FLX-H</sub> (G)	A <sub>RIG-H</sub> (G)	A <sub>FLX-V</sub> (G)	A <sub>RIG-V</sub> (G)
2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



**ATTACHMENT 2: TEST SPECIMEN SUMMARY**

<b>UUT1403-1 ReSolve 400 LCE Logic and KDM90 Drive Controller Assembly</b>						
<i>Manufacturer:</i>		KONE Inc.				
<i>Identification:</i>		Model No.: 50304404D20				
<i>Description:</i>		ReSolve 400 LCE Logic and KDM90 Drive Controller Assembly: Inputs: Control: 208-480 Vac, 1-ph, 50/60 Hz, 6 A; Drive Input: 400Vac, 3-ph, 50/60 Hz, 82 A. Outputs: motor circuit 0 - 400 Vac, 3-ph, 0-250 Hz, 90 A nominal, 37 kW/50 hp at 360V, brake circuits (Main) 200 Vdc, 3 A pick, 1.5 A hold, (Secondary) 120 Vac, 1-ph, 50/60 Hz, 6A; door circuit 230 Vac, 1-ph, 50/60 Hz; 6 A, safety circuit 120/230 Vac, 1-ph, 50/60 Hz; 1 A, logic circuits (3) 24 Vdc, 3 A.				
<i>Mounting:</i>		<u>Rigid Base mount using:</u> (4) – 3/8" diam. ASTM A754 Allen head cap screws.				
<b>Dimensions (in.)</b>				<b>Lowest Resonant Frequency (Hz.)</b>		
Width	Depth	Height	Weight (lb.)	(S/S) X-Axis	(F/B) Y-Axis	(Vert.) Z-Axis
24	14.5	79	373	5.8	5.9	14.9
<b>ICC-ES AC156 SHAKE TABLE TEST PARAMETERS</b>						<b>CODE: 2019 CBC</b>
S <sub>DS</sub> (G)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub> (G)	A <sub>RIG-H</sub> (G)	A <sub>FLX-V</sub> (G)	A <sub>RIG-V</sub> (G)
2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						



<b>UUT1403-2 KCM 831 LCE Traction Elevator Logic and KDM90 Drive Controller Assembly</b>						
<i>Manufacturer:</i>		KONE Inc.				
<i>Identification:</i>		Model No.: 50304404D20				
<i>Description:</i>		KCM 831 LCE Traction Elevator Logic and KDM90 Drive Controller Assembly: Input: 400 Vac, 3-ph, 50/60 Hz, 82 A; Outputs: motor circuit 0 - 400 Vac, 3-ph, 0-250 Hz, 90 A nominal, 45 kW/60hp at 400V, brake circuits (2) 200 Vdc, 3 A pick, 1.5 A hold; door circuit 230 Vac, 1-ph, 50/60 Hz; 6 A, safety circuit 120/230 Vac, 1-ph, 50/60 Hz; 1 A, logic circuits (3) 24 Vdc, 3 A.				
<i>Mounting:</i>		<u>Rigid Base mount using:</u> (4) – 3/8" diam. ASTM A754 Allen head cap screws.				
<b>Dimensions (in.)</b>				<b>Lowest Resonant Frequency (Hz.)</b>		
Width	Depth	Height	Weight (lb.)	(S/S) X-Axis	(F/B) Y-Axis	(Vert.) Z-Axis
24	14.5	79	363	7.0	6.1	14.9
<b>ICC-ES AC156 SHAKE TABLE TEST PARAMETERS</b>						<b>CODE: 2019 CBC</b>
S <sub>DS</sub> (G)	z/h	I <sub>P</sub>	A <sub>FLX-H</sub> (G)	A <sub>RIG-H</sub> (G)	A <sub>FLX-V</sub> (G)	A <sub>RIG-V</sub> (G)
2.0	1.0	1.5	3.2	2.4	1.34	0.54
Unit satisfied AC156 requirements for structural integrity and manufacturer requirements for functionality after AC156 test.						

