

# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

## OFFICE USE ONLY APPLICATION FOR HCAI SPECIAL SEISMIC **CERTIFICATION PREAPPROVAL (OSP)** APPLICATION #: OSP-0477 HCAI Special Seismic Certification Preapproval (OSP) X Type: New Renewal Manufacturer Information Manufacturer: Armstrong International, Inc. Manufacturer's Technical Representative: Matt Nowak Mailing Address: 816 Maple Street, Three Rivers, MI 49093 Telephone: (269) 279-3323 Email: mnowak@armstronginternational.com Product Information Product Name: Air Conditioning Units Product Type: Humidification Systems Product Model Number: See Certified Product Table attached Humidifier systems of different sizes, weights, and function. General Description: Mounting Description: Rigid, Floor/Wall Mounted Seismic enhancements made to the test units and/or modifications required to address **Tested Seismic Enhancements:** anomalies during the tests shall be incorporated into the production units. **Applicant Information** Applicant Company Name: Dynamic Certification Laboratories Contact Person: Kelly Laplace Mailing Address: 1315 Greg Parkway #109, Sparks, NV 89431 Telephone: (775) 358-5085 Email: Kelly@shaketest.com Title: Business Manager

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"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

STATE OF CALIFORNIA - HEALTH AND HUMAN SERVICES AGENCY

OSP-0477



# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

California Licensed Structural Engine	er Respons	ible for the Engin	eering and Test Repo	rt(s)
Company Name: THE VMC GROUP				
Name: Kenneth Tarlow		California Lice	nse Number: S2851	
Mailing Address: 980 9th Street, 16th Floor,	, Sacramento,	CA 95814		
Telephone: (832) 627-2214	Email:	ken.tarlow@thevm	cgroup.com	
Certification Method				
GR-63-Core X ICC-ES A	C156	IEEE 344	IEEE 693	NEBS 3
Other (Please Specify):				
	FOR	CODE		
Testing Laboratory	FD		6	
Company Name: CLARK TESTING LABOR	ATORY, INC.		4	
Contact Person: Russell Matich			2	
Mailing Address: 1801 Route 51, Bldg 8, Je	fferson Hills P	A 15025	- m	
Telephone: (412) 387-1025	By Email:	rmatich@clarktesti	ng.com	
	DATE:	10/17/2022	6	
P			10	
L'AT				
	PAR			
	DATE: DRNIA BL	JILDING		

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"

HCAi



# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION FACILITIES DEVELOPMENT DIVISION

Seismic Parameters		
Design Basis of Equipment or Compone	ents (Fp/Wp) =	1.5
SDS (Design spectral response ac	celeration at sho	ort period, g) = $2.0$
ap (Amplification factor) =	2.5	

Rp (Response modification factor) =	6.0
$\Omega_0$ (System overstrength factor) =	2.0
Ip (Importance factor) =	1.5
z/h (Height ratio factor) =	1
Natural frequencies (Hz) =	See Attachment
Overall dimensions and weight =	See Attachment ODF

Date:	10/17/2022 OSP-047	7 🛱	
Name:	Mohammad Karim	Title:	Supervisor, Health Facilities
Special S	Seismic Certification Valid Up to: SDS (g) = $2.0$	karim z/h =	1
Conditio	n of Approval (if applicable):	022	
	THEORNIA BUILDIN	G CODE.	





STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

## Special Seismic Certification Table 1 - Certified Components, HC Units (Wall Mounted)



 DCL Project Number:
 21127-2201

 Manufacturer:
 Armstrong International

 Product Line:
 Armstrong Humidifiers

 Mounting Description:
 Wall mounted

unting Description:	Wall mounted											
t Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0											
Model	Part Number	Power (kW)	Voltage (V)	Phase (ф)	Water Type	Di	mensions (	in)	Weig	ht (lb)	Construction Material	Unit
						Width	Depth	Height	Dry	Wet		
HC 6100	D5599	3	208	1	Тар				128	230		UUT1A.1 & UUT1A.2
	D5580	3	208	3	DI							Interpolated
	D5600	3	240	1	Тар							Interpolated
	D5601	3	240	3	Тар							Interpolated
	D78263	3	240	3	DI							Interpolated
	D11406	3	400	3	Тар							Interpolated
	D11410	3	400	3	DI							Interpolated
	D5602	3	480	3	Тар							Interpolated
	D28877	3	480	3	DI							Interpolated
	D5603	3	60	3	Тар							Interpolated
	D5379	3	208	3	Тар							Interpolated
	D11407	6	400	3	Тар							Interpolated
	D5545	9	208	1	Тар							Interpolated
	D13652	9	208	1	DI							Interpolated
	D5543	9	208	3	Тар							Interpolated
	D13732	9	208	3	DI	DDE						Interpolated
	D5604	9	240		Тар		(					Interpolated
	D5605	9	240	3	Тар	XXXXXX		$V \Lambda \Sigma$				Interpolated
	D20060	9	240	3	DL		XXX	11/				Interpolated
	D11408	9	400	3	Тар	$\mathbb{W}^{1}$	ŎXXX		$\vee$ $\wedge$			Interpolated
	D11400	9	400	3	DI	WAW	MWW		$\langle \mathcal{A} \rangle$			Interpolated
	D5380	9	480	3	Тар		X XXXX		V.			Interpolated
	D5581	9	480	3	DI			$\chi\chi\chi\chi\chi\chi\chi$	$\Lambda 7$			Interpolated
	D5381	9	600	3	Тар	0.4-			A 4	5		
				-	DI	-04				-		Interpolated
	D5582	2	600	3		· · · ·	-		1	TI		Interpolated
HC6100/HC6300	D5544	15	208	3	Tap DI	21.0	22.2	32.1	120 150	220.224	Chairdana Chaird	Interpolated
HC6100/HC6300	D94560	15	208		-	21.9	22.3	32.1	128-156	230-234	Stainless Steel	Interpolated
	D5606	15	240	• <u>3/</u> C	Тар	mad	lKar	im				Interpolated
	D11404	15	400	• 3	Тар							Interpolated
	D11409	15	400	3	DI							Interpolated
	D5382	15	480	3	Тар							Interpolated
	D5583	15	480	3	Di	17/2	202	2				Interpolated
	D5383	15	600	3	Тар							Interpolated
	D5584	15	600	3	DI	7777	PPD4	HHH				Interpolated
	D5607	18	208	3	Тар	144	AH	HH		P /		Interpolated
	D23592	18	208	3	DI	MA	MM	MA	' 'V			Interpolated
	D5608	18	240	3	Тар		All S	100×	6.1			Interpolated
	D11412	18	400	3	Тар		NXX	20				Interpolated
	D11414	18	400	3	DI	Martin h	NUL	$\left  \right\rangle$				Interpolated
	D5386	18	480	3	Тар	W(IVIV)						Interpolated
	D5585	18	480	A 3R	DI	ATC	(3)					Interpolated
	D5387	18	600	3	Тар	DIV						Interpolated
	D5586	18	600	3	DI							Interpolated
	D23594	30	208	3	DI	1						Interpolated
	D5610	30	240	3	Тар	1						Interpolated
	D23593	30	240	3	DI	1						Interpolated
	D11413	30	400	3	Тар							Interpolated
	D11415	30	400	3	DI							Interpolated
	D5388	30	400	3	Тар							Interpolated
	D5587	30	480	3	DI							Interpolated
				3								Interpolated
	D5389 D5588	30 30	600 600	3	Tap DI							Interpolated
	D5588 D5609	30	208	3	Di Tap				156	234		UUT1B.1 & UUT1B.2

Notes:

Additional components used in testing:

S29888C - Seismic bottom mount S29888A - Seismic top mount

10/17/2022

### **Special Seismic Certification** Table 2 - Certified Components, HC Units (Base Mounted)



DCL Project Number: 21127-2201 Manufacturer: Armstrong International Product Line: Armstrong Humidifiers

t Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0								144	A (III)		
Model	Part Number	Power (kW)	Voltage (V)	Phase (φ)	Water Type		mensions (i		Weig		Construction Material	Unit
						Width	Depth	Height	Dry	Wet		
HC 6500	D5611	30	208	3	Тар				280	501		UUT3B.1 & UUT3B.2
	D11416	34	400	3	Тар							Interpolated
	D11421	34	400	3	DI							Interpolated
	D5612	40	240	3	Тар							Interpolated
	D5613	45	208	3	Тар							Interpolated
	D11417	48	400	3	Тар							Interpolated
	D11422	48	400	3	DI							Interpolated
	D5390	48	480	3	Тар							Interpolated
	D5589	48	480	3	DI							Interpolated
	D5391	48	600	3	Тар							Interpolated
	D5590	48	600	3	DI							Interpolated
	D11418	50	400	3	Тар							Interpolated
	D11423	50	400	3	DI							Interpolated
HC6500/HC6700	D11423	50	400	3	DI	26.0	30.6	56.0	280-286	501-507		Interpolated
	D7059	60	240	3	Тар						Stainless Steel	Interpolated
	D23595	60	240	3	DI	DDE					Stanless Steel	Interpolated
	D11425	67	400	3	Тар		Cr					Interpolated
	D11427	67	400	3	Di	XXXXXX		11.				Interpolated
	D11420	72	400	3	Тар		XXX	11				Interpolated
	D11424	72	400	3	DI	$\mathbb{W}^{+}\mathbb{W}$			$\sim$			Interpolated
	D5392	72	480	3	Dtap	$M \wedge M$						Interpolated
	D5591	72	480	3	DI	V AXA V	X XXXXX	XXXXXX	Y.			Interpolated
	D5393	72	600	3	Тар	ATVVXXX		XXXXXXX	$\Lambda 7$	-		Interpolated
	D5592	72	600	3		01-	77					Interpolated
	D11426	96	400	3	Тар	104						Interpolated
	D11428	96	400	3	DI			2022020				Interpolated
	D5593	96	480	3	DI	REFER						Interpolated
HC 6700	D5401	96	480	3	Тар	26.0	32.1	56.2	286	507		UUT3A.1 & UUT3A.2
HC6500/HC6700	D5402	96	600	3/10	Тар	26.0	30.6		280-286	501 507		Extrapoloated
nco200/HC6/00	D5594	96	600	3	DI	20.0	30.6	56.0	280-286	501-507		Extrapoloated

- 30 kW - 208/3, 40 kW - 240/3, 45 kW - 208/3, 60 kW - 240/3

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10/17/2022 Additional components used in test: Durakool 30C40 Contactor, D83313 Drain Tempering, A23588 LonWorks Protocessor, A23589 BACnet Protocessor

Outdoor enclosure: 34.6"W x 49.5"D x 70.3"H galvanized cold formed steel w/ P1000H3 Unistrut bar connecting top of unit to sides of outdoor enclosure. ORVIA BUILDING CODE

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## Special Seismic Certification Table 3 - Certified Components, EHU Units (Wall Mounted)



L Project Number:	21127-2201										LABORATORIE
nufacturer:	Armstrong International										
oduct Line:	Armstrong Humidifiers										
ounting Description:	Wall mounted										
st Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0	-									
Model	Part Number	Rate	Voltage (V)	Phase (φ)		imensions (			ht (lb)	Construction Material	Unit
	D608662	4.40	120	1	Width	Depth	Height	Dry	Wet		UUT9.1 & UU
	D608668	4.40	208	1	1					-	Interpolate
	D608680	4.40	240	1	1					-	Interpolate
	D608690	4.40	240	1	-					-	Interpolate
	D608698	6.00	208	3	1					-	Interpolate
	D608098	6.00	208	3	1					-	Interpolate
	D615454	6.00	480	3	1					-	Interpolate
	D606770	6.60	120	1	-					-	Interpolate
	D606774	6.60	120	1	-					-	Interpolate
	D604735	6.60	208	1	-					-	Interpolate
	D608682	6.60	208	1	-					-	Interpolate
	D608692	6.60	240	1						-	Interpolate
	D603992	11.00	120	1	DC	וחח				-	Interpolate
	D603387	11.00	208		n C		FCr			-	
		11.00	208		TANK (XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	()(VXXXX		1/1.		-	Interpolate
	D612566		208	1				V/D		-	Interpolate
	D603389	11.00 11.00	208	3		TANKA V				-	Interpolate
	D604737			1						-	Interpolate
	D610230	11.00	240	1		x XXXXXX	XXXXXXX		1	-	Interpolate
	D608708	11.00	240	3	Осг		77		15	-	Interpolat
	D605338	11.00	277	1	USF	1-04	11			-	Interpolate
	D608694	11.00	277	1	XXXXXXXX	and the			11.	-	Interpolat
	D607249	11.00	480	3						-	Interpolat
	D607253	11.00	480	3	ohan	hmac	Kari	im 👢		-	Interpolat
51111 004	D610226	11.00	480	3 V	4				60	Chairdean Chard	Interpolat
EHU-801	D606750	17.00	208	3	16.3	10.0	25.5	46	60	Stainless Steel	Interpolat
	D608700	17.00	208	3		1471	000			-	Interpolat
	D610994	17.00	208	Аз	t: ⊓	)/   / /	ZUZZ		<b>0</b>	-	Interpolate
	D606829	17.00	240	3	322222	022200	1999996	France	A V	-	Interpolat
	D608729	17.00	480	3		+ 555	7477	4444	0	_	Interpolat
	D608666	17.60	120	1		5 BAR	MM	AB	1 ' V /	-	Interpolat
	D608678	17.60	208	1			NNN		1.		Interpolat
	D608686	17.60	240	1			XXXDD	0			Interpolat
	D608696	17.60	277	1				OY			Interpolat
	D608702	22.00	208	3	DI		1G	-			Interpolate
	D603426	22.00	240	3 [	PUI		10				Interpolat
	D606274	22.00	480	3		- 0 2.					Interpolat
	D609695	22.00	480	3	1						Interpolat
	D612694	22.00	480	3	1						Interpolate
	D604874	33.00	208	3	1						Interpolate
	D608712	33.00	240	3	1						Interpolate
	D617063	33.00	380	3							Interpolate

D607247

D607251

D609697

D611003

D608704

D608714

D608327

D610232

33.00

33.00

33.00

33.00

44.00

44.00

44.00

44.00

480

480

480

600

208

240

480

480

3

3

3

3

3

3

3

3

Interpolated

Interpolated

Interpolated

Interpolated

Interpolated

Interpolated

Interpolated

Interpolated

## Special Seismic Certification Table 3 - Certified Components, EHU Units (Wall Mounted)(cont.)



 DCL Project Number:
 21127-2201

 Manufacturer:
 Armstrong International

 Product Line:
 Armstrong Humidifiers

 Mounting Description:
 Wall mounted

Inting Description:											
Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0					,					
Model	Part Number	Rate	Voltage (V)	Phase (ф)	D Width	imensions ( Depth	n) Height	Weig Dry	wet	Construction Material	Unit
	D608734	11.00	120	1				,			Interpolated
	D608749	11.00	208	1							Interpolated
	D608760	11.00	240	1							Interpolated
	D608736	17.60	120	1							Interpolated
	D608751	17.60	208	1							Interpolated
	D608762	17.60	240	1							Interpolated
	D608738	22.00	120	1							Interpolated
	D608754	22.00	208	1							Interpolated
	D608764	22.00	240	1							Interpolated
	D616047	22.00	480	3							Interpolated
	D608831	33.00	208	3							Interpolated
	D613024	33.00	208	3							Interpolated
	D608740	33.10	120	1	50	<b>ND</b>	-				Interpolated
	D604872	33.10	208		KC		F Cr				Interpolated
	D608766	33.10	208	1		WWXXXX		10			Interpolated
	D608788	44.00	240	3				110			Interpolated
	D613015	44.00	208	3				$\sim$			· · · ·
		44.00	208	3	- 10				4		Interpolated
	D610860		480	3					1		Interpolated
	D607527	44.00						X	1 K		Interpolated
	D608742	44.10	120	1	OSF	P-04	77				Interpolated
	D608756	44.10	208	1					П		Interpolated
	D608768	44.10	240	1							Interpolated
	D607070	55.00	208	3							Interpolated
	D609693	55.00	480	Y 3 M	onan	nmac	Kari	m s			Interpolated
EHU-803	D613273	55.00	480	3	19.6	14.1	31.8	70	126	Stainless Steel	Interpolated
	D625764	55.00	480	3							Interpolated
	D611969	55.00	600		· 1(	)/17/	2022				Interpolated
	D608744	55.10	120								Interpolated
	D608758	55.10	208	1	ATTER A		HHH I	HHH	0		Interpolated
	D608773	55.10	240	1			AAA	HH	$\sim$		Interpolated
	D616034	66.00	208	3		$\square \rightarrow M$	MMM				Interpolated
	D625972	66.00	380	3			MM				Interpolated
	D610236	66.00	480	3			MADLE	$\sim$			Interpolated
	D622098	66.00	480	3							Interpolated
	D644767	66.00	480		8/ <i>I</i> ti	DIC	16				Interpolated
	D625064	77.00	380	3	101	+U	N				Interpolated
	D607531	77.00	480	3							Interpolated
	D610197	77.00	480	3							Interpolated
	D625768	77.00	480	3							Interpolated
	D606325	88.00	480	3							Interpolated
	D610244	88.00	480	3							Interpolated
	D606321	99.00	480	3							Interpolated
	D610234	99.00	480	3							Interpolated
	D620589	99.00	480	3							Interpolated
	D639560	99.00	480	3							Interpolated
	D647788	99.00	600	3							Interpolated
	D608329	110.00	480	3							Interpolated
	D625807	110.00	480	3							Interpolated
	D611971	110.00	600	3							Interpolated

## Special Seismic Certification Table 3 - Certified Components, EHU Units (Wall Mounted)(cont.)



 DCL Project Number:
 21127-2201

 Manufacturer:
 Armstrong International

 Product Line:
 Armstrong Humidifiers

 Mounting Description:
 Wall mounted

						imensions (	in)	Woig	ht (lb)		
Model	Part Number	Rate	Voltage (V)	Phase (φ)	Width		Height		Wet	Construction Material	Unit
	D665716	44.10	208	1	width	Depth	Height	Dry	vvet		Interpolated
	D638684	55.00	208	3							Interpolated
	D638690	55.00	208	3							Interpolated
	D625752	55.00	480	3							Interpolated
	D666540	55.10	208	1							Interpolated
	D666553	55.10	240	1							Interpolated
	D608827	66.00	240	3							Interpolated
	D646759	66.00	208	3							Interpolated
	D666556	66.00	240	3							Interpolated
	D666541	66.10	240	1							Interpolated
	D666554	66.10	240	1							Interpolated
	D666551	66.10	240	1							Interpolated
	D638686	77.00	208	3	50		-				Interpolated
	D638694	77.00	208	3	KC		E Co				Interpolated
	D638694 D611912	77.20	208	1		WXXXX		10			Interpolated
	D611912 D666555	77.20	208	1				175			Interpolated
	D666552	77.20	240	1							
			208	3	- X ()						Interpolated
	D616133	88.00 99.00	208	3					1		Interpolated
	D626804	-						X	K		Interpolated
	D625066	99.00	380	3	OSF	P-04	(				Interpolated
	D606310 D639565	121.00 121.00	480 480	3	V A /V X /V X /V				П		Interpolated Interpolated
	D639363	132.00	480	3	YXXXXX						Interpolated
		132.00	480 480	Y 3 M	obon	hmac	Kari	m			· · · · · · · · · · · · · · · · · · ·
EHU-804	D639567 D609564	132.00	600	3	ohan 31.8	nmaac	33.6	126	240	Stainless Steel	Interpolated
	D650585	143.00	208	3							Interpolated Interpolated
	D606315 D620802	143.00 154.00	480		· 10	)/1//	2022	2 1	<b>3</b> 0		Interpolated Interpolated
	D620802	154.00	480	3							
	D625757	154.00	480	3			HHH	HHH	0		Interpolated
	D605286	165.00	480	3			ANN.	AAA	$\nabla$		Interpolated Interpolated
	D639556	165.00	480	3			MM	NY 1			Interpolated
	D639556	176.00	480	3			MXXD				· · · · · ·
	D620383	176.00	480	3		MAN AND		-0			Interpolated Interpolated
	D639554	176.00	480			THE OWNER	I.C.				Interpolated
	D639334	178.00	480	3	<b>JUI</b>	DIG	10				Interpolated
	D612243	187.00	480	3		-01					Interpolated
	D620373	198.00	480	3							Interpolated
	D612250	198.00	600	3							UUT10.1 & UUT10
	D603373	209.00	480	3							Extrapolated
	D635698	209.00	480	3							Extrapolated
	D635698	209.00	480	3							Extrapolated
	D613674 D620572	220.00	480	3							Extrapolated
	D620572	231.00	480	3							
	D639122 D639558			3							Extrapolated
	D639558	231.00 242.00	480 208	3							Extrapolated Extrapolated
	D638282 D611326	242.00	480	3							Extrapolated
	D011320	242.00	480	5	1		1	1	I		Extrapolated

Notes:

-Part numbers are based on the largest 480 V/3  $\varphi$  unit available

Additional components used in test:

D83309 - 801 Drain Tempering, D83310 - 803 Drain Tempering, D83311 - 804 Drain Tempering

D38502 - LonWorks Protonode, D80688 - BACnet Protonode, D50931 - Remote Information

S29888B - Seismic bottom mount, S29888D - Seismic top mount

DCL Project Number: Manufacturer: Product Line:	ed Components, 21127-2201 Armstrong Internationa Armstrong Humidifiers	1	ection (Base	e Mounted)					NAMIC TIFICATION BRATURIES,LLC
Mounting Description:	Rigid base mount w/ to	p restraint							
Test Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0					Body Height	Weight		
Model	Part Number	Manifold	Duct Width (in)	Min. Depth (in)	Max. Depth (in)	(in)	(lb)	Construction Material	Unit
	D666589				.1				UUT5
	D666592	4							Interpolated
	D666594	4							Interpolated
	D666596	4							Interpolated
	D662432	4							Interpolated
	D666598	4							Interpolated
	D666600								Interpolated
	D666602								Interpolated
	D666604								Interpolated
	D666606	4							Interpolated
	D666608	4		L COL					Interpolated
	D666610	4	50	KCUL	E CO				Interpolated
	D666612		01	AND XXXXXXXXXX					Interpolated
	D506794		EV II						Interpolated
	D666614	2.				$\langle \rangle$			Interpolated
	D666616				5. VI XXXXXX				Interpolated
	D666618	-121							Interpolated
	D666623	41			177				Interpolated
	D666625			001-0	т//		1		Interpolated
1100	D666627	M-1	12.0	8.0	14.0	8.6	20	Stainless Steel	Interpolated
	D666629		DVAN		117 -				Interpolated
	D508418		BY: M	pnamma	ad Karim				Interpolated
	D666631								Interpolated
	D559160	- 1998							Interpolated
	D501890		DATE	· 10/17	7/2022				Interpolated
	D666633						. /		Interpolated
	D506791				FEFFERE	0.48			Interpolated
	D666636				ANANN	$\sim$			Interpolated
	D504771				MANA	4.51			Interpolated
	D666638		P MAR			SY/			Interpolated
	D632001	$ \rightarrow $	1/7						Interpolated
	D504769	4	NIA F	111	NG				Interpolated
	D507814	4		UILD	INC				Interpolated
	D507355	4							Interpolated
	D508410	4							Interpolated
	D618869	4							Interpolated
	D517396	4							Interpolated
	D519846	4							Interpolated
	D508956								Interpolated

Notes:

-Single dispersion tube

-Various orifice sizes, part numbers configured for smallest orifice size available

Additional Components:

A21505 - 1100 SS Fitting, A4967S - 1100 SS Adapter, C1360-1 through 13 - Fittings

Special Seismie Fable 4 - Certif	c Certification fied Components	, Direct Inj	ection (Bas	e Mounted)	(cont.)				
OCL Project Number:	21127-2201								TIFICATION
Aanufacturer:	Armstrong Internationa	I							
roduct Line:	Armstrong Humidifiers								
Nounting Description:	Rigid base mount w/ to	p restraint							
est Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0								
Model	Part Number	Manifold	Duct Width (in)	Min. Depth (in)	Max. Depth (in)	Body Height (in)	Weight (lb)	Construction Material	Unit
	D666649								Interpolated
	D666651								Interpolated
	D586121								Interpolated
	D666654								Interpolated
	D666656								Interpolated
	D666658								Interpolated
	D666662								Interpolated
	D666664								Interpolated
	D666668								Interpolated
	D666670								Interpolated
	D666672								Interpolated
	D506796		.0	r COL	)F				Interpolated
	D666676		FU		- (O)				Interpolated
	D666678		2.0			1			Interpolated
	D590272								Interpolated
	D560246								Interpolated
1200	D538797	M-1	12.0	8.0	14.0	10.3	20	Stainless Steel	Interpolated
	D666680			<u> </u>	-	12			Interpolated
	D520800	74/		DSP-0	477		2		Interpolated
	D512172								Interpolated
	D666682			aaaaaaaaaa					Interpolated
	D666684		RV·M	hamma	ad Karim	22010			Interpolated
	D506792			Unannina	au Naiiii				Interpolated
	D666690								Interpolated
	D610077			. 10/1	2/2022				Interpolated
	D545818		DAIL	: 10/1	7/2022				Interpolated
	D666692	J Z.W		12222222222	1949999999		• /		Interpolated
	D618841				4934693	HA VO			Interpolated
	D666694		MANNI		ANNAN	V, V/			Interpolated
	D666696		NHHH			~~~			Interpolated
	D503051		Pr . UN			$\nabla$			Interpolated
	D527493		VIA .						Interpolated
	D569576		A K	1110					Interpolated

Notes:

-Single dispersion tube

-Various orifice sizes, part numbers configured for smallest orifice size available Additional Components:

A9885 - 1200 SS Fitting, A4967P - 1200 SS Adapter, C924-1 through 13 - Fittings

	ied Components,	Direct Inj	ection (Base	e Mounted)	(cont.)				
CL Project Number:	21127-2201								RTIFICATION
lanufacturer:	Armstrong International								
roduct Line:	Armstrong Humidifiers								
Nounting Description:	Rigid base mount w/ top	restraint							
est Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0								
Model	Part Number	Manifold	Duct Width (in)	Min. Depth (in)	Max. Depth (in)	Body Height (in)	Weight (lb)	Construction Material	Unit
	D666714								Interpolated
	D666718								Interpolated
	D666720								Interpolate
	D666724								Interpolate
	D582101								Interpolate
	D666726								Interpolate
	D666728	1							Interpolate
	D506797	1							Interpolate
	D666732	1							Interpolate
	D666734	1							Interpolate
1300	D625118	M-12	144.0	137.0	148.0	16.3	59	Stainless Steel	Interpolate
	D584899	1		D COL	E	_	-		Interpolate
	D584899 D610095	1	50	KUUL	$(5 \ Co)$				Interpolate
		-	05	TATA DOLONY YYYYX		121-12			
	D625100								Interpolate
	D506793	2							Interpolate
	D666744								Interpolate
	D666751		1		$\Delta = \langle - \rangle \times $				Interpolate
	D666753				4				Interpolate
	D666786		(				0		Interpolate
					T//				interpolate
	D666790	Q //				L \r	7		-
lotes:	D666790 D666792 -Single dispersion tube -Various orifice sizes, par Additional Components:	t numbers con	figured for smalles	ohamma t orifice size availa	ad Karim				Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, Certification ied Components, 21127-2201 Armstrong International	, A4967R - 130	0 SS Adapter, C150	)1-1 through 13 - F	(cont.)				Interpolate Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer: roduct Line:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, Certification ied Components, 21127-2201	A4967R - 130	0 SS Adapter, C150	)1-1 through 13 - F	ittings 2022				Interpolate Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer: roduct Line: lounting Description:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, Certification ied Components, 21127-2201 Armstrong International Armstrong Humidifiers	A4967R - 130	0 SS Adapter, C150	11-1 through 13-F	(cont.)				Interpolate Interpolate
pecial Seismic able 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, Certification ied Components, 21127-2201 Armstrong International Armstrong Humidifiers Rigid base mount w/ top	A4967R - 130	0 SS Adapter, C150	11-1 through 13-F	(cont.)	Body Height (in)	Weight (Ib)		Interpolate Interpolate
Special Seismic Sable 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, <b>Certification</b> <b>ied Components,</b> 21127-2201 Armstrong International Armstrong Humidifiers Rigid base mount w/ top S <sub>05</sub> = 2.00g, z/h = 1.0	Direct Inj	o SS Adapter, C150	e Mounted)	(cont.)			LAB	Interpolate Interpolate
Special Seismic Table 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792 -Single dispersion tube -Various orifice sizes, par Additional Components: A11802 - 1300 SS Fitting, Certification ied Components, 21127-2201 Armstrong International Armstrong Humidifiers Rigid base mount w/ top S <sub>0S</sub> = 2.00g, z/h = 1.0 Part Number	Direct Inj	o SS Adapter, C150	e Mounted) UILD	(cont.) Max. Depth (in)			LAB	Interpolate Interpolate
Special Seismic Sable 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         So <sub>5</sub> = 2.00g, z/h = 1.0         Part Number         D506798         D584122	Direct Inj	o SS Adapter, C150	e Mounted)	(cont.)			LAB	Interpolate Interpolate
Special Seismic Sable 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         So <sub>5</sub> = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126	Direct Inj	o SS Adapter, C150	e Mounted) UILD	(cont.) Max. Depth (in)			LAB	Interpolate Interpolate
Special Seismic Sable 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288	Direct Inj	o SS Adapter, C150	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0			LAB	Interpolate Interpolate
pecial Seismic able 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800	Direct Inj	o SS Adapter, C150	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in)			LAB	Unit Unit Unit Unit Unit Unit Unit Unit
pecial Seismic able 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels: Model	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666806	Direct Inj	0 SS Adapter, C15C	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate
pecial Seismic able 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels:	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666806	Direct Inj	o SS Adapter, C150	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0			LAB	Interpolate Interpolate
pecial Seismic able 4 - Certifi CL Project Number: lanufacturer: roduct Line: lounting Description: est Levels: Model	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666806         D666806         D666808	Direct Inj	0 SS Adapter, C15C	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer: roduct Line: lounting Description: est Levels: <u>Model</u>	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666806         D666806         D666810         D666810	Direct Inj	0 SS Adapter, C15C	e Mounted) UILDO Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer: roduct Line: lounting Description: est Levels: <u>Model</u>	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666808         D666810         D666814         D666816	Direct Inj	0 SS Adapter, C15C	e Mounted) UILD Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate
pecial Seismic able 4 - Certifi <u>CL Project Number:</u> lanufacturer: roduct Line: lounting Description: est Levels: <u>Model</u>	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666806         D666810         D666814         D666816         D666826	Direct Inj	0 SS Adapter, C15C	e Mounted) UILD Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate
pecial Seismic able 4 - Certifi 2L Project Number: anufacturer: oduct Line: ounting Description: ist Levels: Model	D666792         -Single dispersion tube         -Various orifice sizes, par         Additional Components:         A11802 - 1300 SS Fitting,         Certification         ied Components,         21127-2201         Armstrong International         Armstrong Humidifiers         Rigid base mount w/ top         Sos = 2.00g, z/h = 1.0         Part Number         D506798         D584122         D625126         D631288         D666800         D666808         D666810         D666814         D666816	Direct Inj	0 SS Adapter, C15C	e Mounted) UILD Min. Depth (in) 137.0	(cont.) Max. Depth (in) 148.0	(in)	(Ib)	Construction Material	Interpolate Interpolate

-Various orifice sizes, part numbers configured for smallest orifice size available

Additional Components:

A11802 - 1400 SS Fitting, A5002C - 1400 SS Adapter, C9030-5 through 13 - Fittings

	pecial Seismic Certification able 5 - Certified Components, Humidipack (Wall Mounted)											
DCL Project Number:	21127-2201						CERTI	FICATION				
Manufacturer:	Armstrong Internationa	I										
Product Line:	Armstrong Humidifiers	nstrong Humidifiers										
Mounting Description:	Wall mounted											
Test Levels:	S <sub>DS</sub> = 2.00g, z/h = 1.0											
Model	Orientation	Width (in)	Depth (in)	Hoight (in)	Weig	ht (lb)	Construction Material	Unit				
woder	Unentation	width (in)	Depth (in)	Height (in)	Dry	Wet	construction Material	Unit				
D3450	Horizontal Header											

Table 6 - Teste	d l Inite					
able 0 - Tester	u Onits					DCL
						DYNAMI
OCL Project Number:	21127-2201					
esting Lab:	Clark Dynamic Testing	Laboratory				
est Report Number:	JID 16-00105					
Aanufacturer:	Armstrong Internation	al				
roduct Line:	Amstrong Humidifiers					
		Dimensions (in)		Weight	Sds (g),	
Model	Width	Depth	Height	$CO \square E$	z/h = 1.0	Unit
HC 6100	21.9	22.3	32.1	128	2.00	UUT1A.1
HC 6100	21.9	22.3	32.1	230	2.00	UUT1A.2
HC 6100	21.9	22.3	32.1	156	2.00	UUT1B.1
HC 6300	21.9	22.1	32.1	234	2.00	UUT1B.2
HC 6700	26.0	32.1	56.2	286	2.00	UUT3A.1
HC 6700	26.0	32.1	56.2	507	2.00	UUT3A.2
HC 6500	26.0	30.6	56.0	$SP_{-280}477$	2.00	UUT3B.1
HC 6500	26.0	30.6	56.0	501	2.00	UUT3B.2
1100	12.0	4.1	8.6	20	2.00	UUTS
1400	144.0	4.1	24.1	144	2.00	UUT6
N/A	72.0	N/A	DY 144.0 ON	amn <sub>14</sub> ad K	arin <u>2.00</u>	UUT7.1
N/A	72.0	N/A	144.0	272	2.00	UUT7.2
D3450	72.0	N/A	72.0	72	2.00	UUT8.1
D3450	72.0	N/A		10/127/20	2.00	UUT8.2
EHU-801	16.3	10.0	DA25.5 C.	46/20	2.00	UUT9.1
EHU-801	16.3	10.0	25.5	60	2.00	UUT9.2
EHU-804	33.6	14.1	31.8	126	2.00	UUT10.1
EHU-804	33.6	14.1	31.8	240	2.00	UUT10.2
N/A	12.0	N/A	12.0	17	2.00	UUT11
N/A	12.0	N/A	A BU	12	2.00	UUT12

## UUT1A.1 (Dry)(Batch 1) ((-)) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: HC 6100

**Product Construction Summary:** 

14 ga. 304 stainless steel

**Options / Component Summary:** 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

			UU	T Propertie	es			
Operating Weight	1 L	Dimensio	ns (inche	s)		Lowest	Natural Freque	ency (Hz)
(lb)	Depth	Wic	lth		eight	Front-Back	Side-Side	Vertical
128	22.3	21	.905	P-04 /	32.1	N/A	N/A	N/A
			Seismic	Test Parar	meters			
Building Code	Test <mark>Criteria</mark>	Sds (g)	Me/ha	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

Unit Mounting Description:

DATE: 10/17/2022 Wall mounted using: (4) - 3/8" - 16 grade 5 hex head bolts, washers, lock washers, and nuts torqued to 31 ft-lbs



Overall view of UUT1A.1 (Dry)

ERTIFICATION BORATORIES.LLC

## UUT1A.2 (Wet)(Batch 1) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet** ERTIFICATION BORATORIES,LLC

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: HC 6100

**Product Construction Summary:** 

14 ga. 304 stainless steel

**Options / Component Summary:** 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

			UU	T Propertie	es			
Operating Weight	1 L	Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
(lb)	Depth	Wi	dth		eight	Front-Back	Side-Side	Vertical
230	22.3	21	.905	P-04/	32.1	N/A	N/A	N/A
			Seismic	Test Parar	meters			
Building Code	Test <mark>Criteri</mark> a	Sds (g)	Me/ha	mmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

Unit Mounting Description:

DATE: 10/17/2022 Wall mounted using: (4) - 3/8" - 16 grade 5 hex head bolts, washers, lock washers, and nuts torqued to 31 ft-lbs



Overall view of UUT1A.2 (Wet)

## UUT1B.1 (Dry)(Batch 1) ((-)) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: HC 6300

**Product Construction Summary:** 

14 ga. 304 stainless steel

**Options / Component Summary:** 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		NY I	UU	T Propertie	es			
Operating Weight	1 L	Dimensio	ons (inche	s)		Lowest	Natural Freque	ency (Hz)
(lb)	Depth	Wio	lth		eight	Front-Back	Side-Side	Vertical
156	22.1	21	.905	-04/	32.1	N/A1	N/A	N/A
		XXXXXXXXX	Seismic	Test Parar	meters			•
Building Code	Test <mark>Criteria</mark>	Sds (g)	Me/hai	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

## Unit Mounting Description:

DATF · 10/17/2022 Wall mounted using: (4) - 3/8" - 16 grade 5 hex head bolts, washers, lock washers, and nuts torqued to 31 ft-lbs in Armstrong seismic double bracket mounts S29888A & S29888C



Overall view of UUT1B.1 (Dry)

ERTIFICATION BORATORIES.LLC

## UUT1B.2 (Wet)(Batch 1) ((-)) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: HC 6300

**Product Construction Summary:** 

14 ga. 304 stainless steel

**Options / Component Summary:** 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7	UU	Propertie	es				
Operating Weight	1 L	Dimensio	ons (inche		Lowest Natural Frequency (Hz)				
(lb)	Depth	Wi	dth		eight	Front-Back	Side-Side	Vertical	
234	22.1	21	9051	-04/	32.1	N/A1	N/A	N/A	
			Seismic	Test Parar	meters				
Building Code	Test <mark>Criteria</mark>	Sds (g)	Mahai	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)	
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53	

#### Unit Mounting Description:

DATF · 10/17/2022 Wall mounted using: (4) - 3/8" - 16 grade 5 hex head bolts, washers, lock washers, and nuts torqued to 31 ft-lbs in Armstrong seismic double bracket mounts S29888A & S29888C



Overall view of UUT1B.2 (Wet)

ERTIFICATION BORATORIES.LLC

## UUT3A.1 (Dry)(Batch 1 & 5) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet** CERTIFICATION ABORATORIES,LLC

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: HC 6700

## Product Construction Summary:

14 ga. 304 stainless steel

## **Options / Component Summary:**

A P1000H3 Unistrut bar was installed spanning the width inside the enclosure (side to side, above the front of the UUT) using a Unistrut angle with (2) 1/2" - 13 bolts to the side panel of the enclosure and (2) 1/2" - 13 bolts to the P1000H3 bar. The P1000H3 bar was then attached to the top of the UUT using (2) 1/2" - 13 bolts. This modification prevented water intrusion during run 9.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7	υυτ	Properti	es			
Operating Weight	No.	Dimensio	ons (inches	<b>)</b>		Lowest	Natural Freque	ency (Hz)
(lb)	Depth	Wi		⊃_∩⊿ <sup>⊾</sup>	leight	Front-Back	Side-Side	Vertical
286	32.1	26	5.0	*****	56.2	12.79	7.17	19.86
		DV.	Seismic T	est Para	meters			
Building Code	Test <mark>Criteria</mark>	Sds (g)	Wonar z/h	nmad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53
Unit Mounting Des	cription:		<b>FE: 1</b> (	)/17/2	2022	0		

## Unit Mounting Description:

Floor mounted using:

(4) - 3/8" - 16 bolts, one at each leg through floor of outdoor enclosure; (20) - 1/4" - 20 bolts at outdoor enclosure.





Overall view of UUT3A.1 (Dry)

## UUT3A.2 (Wet)(Batch 1 & 5) (( Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet** CERTIFICATION ABORATORIES,LLC

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: HC 6700

## Product Construction Summary:

14 ga. 304 stainless steel

## **Options / Component Summary:**

A P1000H3 Unistrut bar was installed spanning the width inside the enclosure (side to side, above the front of the UUT) using a Unistrut angle with (2) 1/2" - 13 bolts to the side panel of the enclosure and (2) 1/2" - 13 bolts to the P1000H3 bar. The P1000H3 bar was then attached to the top of the UUT using (2) 1/2" - 13 bolts. This modification prevented water intrusion during run 9.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7	υυτ	Properti	es			
Operating Weight	No.	Dimensio	ons (inches	<b>)</b>		Lowest	Natural Freque	ency (Hz)
(lb)	Depth	Wi		⊃_∩⊿ <sup>⊾</sup>	eight	Front-Back	Side-Side	Vertical
507	32.1	26	5.0	*****	56.2	9.17	5.73	10.71
		DV.	Seismic T	est Para	meters			
Building Code	Test <mark>Criteria</mark>	Sds (g)	wonar z/h	nmad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53
Unit Mounting Des	cription:		<b>FE: 1</b> (	)/17/2	2022	0		

## Unit Mounting Description:

Floor mounted using:

(4) - 3/8" - 16 bolts, one at each leg through floor of outdoor enclosure; (20) - 1/4" - 20 bolts at outdoor enclosure.





Overall view of UUT3A.2 (Wet)

UUT3B.1			. (			
Clark Test	Report J	ID 16-0010	)5			
	DER TEST	(UUT) Su <mark>n</mark>	nmary Shee	et		ICATION
DCL Project Nun	nber:	21127-2201			LABURA	TORIES,LLC
Manufacturer:	Armstrong Internat	ional				
Product Line:	Armstrong Humidif	ïers				
Model Number:	HC 6500					
Product Constructio	-					
	operational befor		and was full of operat		ing the tests. T	The structural
integrity of the com	ponent attachmer		T Properties	maintained.		
Operating Weight	K	Dimensions (inche		Lowest	Natural Freque	ency (Hz)
(lb)	Depth	Width	Height	Front-Back	Side-Side	Vertical
280	30.6	26.0	56.0	18.36	11.25	>33
		Seismic	Test Parameters			
Building Code	Test Criteria	Sds (g) z/h	Ip Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00 1.0	1.5 3.20	2,40	1.33	0.53
Floor mounted using			5 hex head bolts, was			
		Overall vie	w of UUT3B.1 (Dry)			

UNIT UND		(UUT)	Sum					
	ber:		Juin	mary	y Shee	t	CERTIF	AMIC
DCL Project Num		21127-22	201					011120,220
<b>Manufacturer:</b> A	rmstrong Internat	ional						
Product Line: A	rmstong Humidifie	ers						
Model Number: H	IC 6500							
<b>Product Construction</b> 14 ga. 304 stainless s	-							
Options / Componen Note: The UUT was integrity of the comp	operational before						ing the tests. T	he structural
			υυτ	Properti	es	2		
Operating Weight	No.	Dimensio	ns (inches			Lowest I	Natural Freque	ncy (Hz)
(lb)	Depth	Wid	thOSE	D_04H	eight	Front-Back	Side-Side	Vertical
501	30.6	26.	0		56.0	13.10	8.33	N/A
		DV-	Seismic T	est Parar	neters			
Building Code	Test <mark>Criteri</mark> a	Sds (g)	vionar z/h	nnad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
Floor mounted using:		Ibs	16 grade s		2018 69	hers, lock washe	ers, and nuts to	rqued to 25 ft-

## UUT5 (Batch 4) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: 1100

### Product Construction Summary:

Stainless steel

## *Options / Component Summary:*

This unit is rigidly connected at the top and bottom to the structure. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

	144	רטט	Properti	es			
4	Dimensio	ons (inche	5)		Lowest I	Natural Freque	ncy (Hz)
Depth	Width		a (www.p	leight	Front-Back	Side-Side	Vertical
20 4.1		.0 OS	P-047	8.6	N/A	N/A	N/A
	WWWWWW	Seismic 1	est Para	meters			
Test <mark>Criteria</mark>	Sds (g)	Mz/har	nn <sup>lp</sup> ad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53
	4.1 Test Criteria	Depth Wid 4.1 12 Test Criteria Sds (g)	Dimensions (inches Depth Width 4.1 12.0 OS Seismic T Test Criteria Sds (g) Z/h	Dimensions (inches) Depth Width H 4.1 12.0 Seismic Test Para Test Criteria Sds (g) Z/h Ip	Depth     Width     Height       4.1     12.0     -04.8.6       Seismic Test Parameters       Test Criteria       Sds (g)     z/h     lp     Aflx-H (g)	Dimensions (inches)     Lowest       Depth     Width     Height     Front-Back       4.1     12.0     -04.8.6     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Afix-H (g)     Arig-H (g)	Dimensions (inches)     Lowest Natural Freque       Depth     Width     Height     Front-Back     Side-Side       4.1     12.0     -04.8.6     N/A     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)

## Unit Mounting Description:

Mounted at top and bottom using: (1) - 1/2" - 13 all thread, washers and nuts (hand tight). One P100T Unistrut strap was attached to the inlet steam pipe. The steam pipe was spot welded to the Unistrut support. One unistrut strap was attached to the condensate drain pipe. The condensate drain pipe was spot welded to the unistrut support.



Overall view of UUT5

ERTIFICATION

## UUT6 (Batch 3 & 6) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: 1400

### Product Construction Summary:

Stainless steel

## *Options / Component Summary:*

This unit is rigidly connected at the top and bottom to the structure. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

	144	רטט	Properti	es			
4	Dimensio	ons (inche	5)		Lowest I	Natural Freque	ency (Hz)
Depth	Width		Height		Front-Back	Side-Side	Vertical
144 4.1		144.0OS		24.1	N/A	N/A	N/A
	WWWWWW	Seismic 1	est Para	meters			
Test <mark>Criteria</mark>	Sds (g)	Mz/har	nn <sup>lp</sup> ad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53
	4.1 Test Criteria	Depth Wid 4.1 144 Test Criteria Sds (g)	Dimensions (inches Depth Width 4.1 144.0 Seismic T Seismic T Test Criteria Sds (g) Z/h	Dimensions (inches) Depth Width H 4.1 144.0	Depth     Width     Height       4.1     144.0     -04 24.1       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     lp     Aflx-H (g)	Dimensions (inches)     Lowest       Depth     Width     Height     Front-Back       4.1     144.0     -04.24.1     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)     Arig-H (g)	Dimensions (inches)     Lowest Natural Freque       Depth     Width     Height     Front-Back     Side-Side       4.1     144.0     -04.24.1     N/A     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)

## Unit Mounting Description:

Mounted to fixture using: (1) - 1/2"-13 all thread, washers and nuts at the top of the body. (1) Unistrut strap was attached to the inlet steam pipe. (1) Unistrut strap was attached to the condensate drain pipe. (1) 3/8" - 16 all thread, washers and nuts were used on the manifold. A UBPA Unistrut U-Bolt Clamp was attached to the end of the UUT.



Overall view of UUT6

ERTIFICATION

## UUT7.1 (Dry)(Batch 3) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

DCL Project Number:

21127-2201

Manufacturer: Armstrong International

**Product Line:** Armstrong Humidifiers

Model Number: N/A

### Product Construction Summary:

Stainless steel

## **Options / Component Summary:**

This unit is rigidly connected at the top and bottom to steel framing that supports the duct. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

			UUT	Properti	es			
Operating Weight (lb)	12	Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
	Depth	Width		Height		Front-Back	Side-Side	Vertical
144	N/A	72.0		-04	144.0	N/A	N/A	N/A
			Seismic	Test Para	meters			
Building Code	Test <mark>Criteri</mark> a	Sds (g)	Mahai	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES <mark>AC 15</mark> 6	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53

## Unit Mounting Description: DATE: 10/17/2022

Mounted to using: (18) - 1/4" - 20 grade 5 bolts, washers, lock washers, and nuts turqued at 9 ft-lbs. The outboard header plate is connected using (2) 1/2" - 13 all thread, washers, and nuts.





Overall view of UUT7.1(Dry)

CERTIFICATION LABORATORIES,LLC

## UUT7.2 (Wet)(Batch 3) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

DCL Project Number:

21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: N/A

#### **Product Construction Summary:**

Stainless steel

## **Options / Component Summary:**

This unit is rigidly connected at the top and bottom to steel framing that supports the duct. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

			UUI	Properti	es			
Operating Weight		Dimensi	ons (inche	Lowest	Natural Freque	ency (Hz)		
(lb)	Depth	Wi	dth		eight	Front-Back	Side-Side	Vertical
272	N/A	72	2.0	144.0		N/A	N/A	N/A
			Seismic	Test Parai	neters			
Building Code	Test <mark>Criteria</mark>	Sds (g)	Mahar	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53
Unit Mounting Des	cription:	DA	FE: 1	0/17/2	2022	0		

Mounted to using: (18) - 1/4" - 20 grade 5 bolts, washers, lock washers, and nuts turqued at 9 ft-lbs. The outboard header plate is connected using (2) 1/2" - 13 all thread, washers, and nuts.





Overall view of UUT7.2(Wet)

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## UUT8.1 (Dry)(Batch 4) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: D3450

### Product Construction Summary:

Stainless steel

## **Options / Component Summary:**

This unit is rigidly connected at the top and bottom to steel framing that supports the duct. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7-11	UU	T Properti	es			
Operating Weight (lb)	X	Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
	Depth	Depth Width		Height		Front-Back	Side-Side	Vertical
72	N/A	72.0		7-047	72.0	10.32	10.68	>33
			Seismic	Test Parai	meters			
Building Code	Test <mark>Criteri</mark> a	Sds (g)	Mahai	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2.40	1.33	0.53

## Unit Mounting Description:

DATF: 10/17/2022 Mounted using: (18) - 1/4" - 20 grade 5 bolts, washers, lock washers, and nuts turgued at 9 ft-lbs. The top of UUT-08 is attached using (2) 1/2"-13 all thread, washers, and nuts hand tight to the wall mount fixture. Rigid compression/tension braces were installed during the test on each side of UUT-08.



Overall view of UUT8.1(Dry)

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## UUT8.2 (Wet)(Batch 4) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: D3450

Product Construction Summary:

Stainless steel

## **Options / Component Summary:**

This unit is rigidly connected at the top and bottom to steel framing that supports the duct. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7	UU	T Properti	es			
<b>Operating Weight</b>	X	Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
(lb)	Depth	Wi	dth		eight	Front-Back	Side-Side	Vertical
122	N/A	72.0		P-047	72.0	10.33	10.66	24.21
			Seismic	Test Parai	neters			•
Building Code	Test <mark>Criteri</mark> a	Sds (g)	Me/hai	nmpad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53

## Unit Mounting Description:

DATF: 10/17/2022 Mounted using: (18) - 1/4" - 20 grade 5 bolts, washers, lock washers, and nuts turqued at 9 ft-lbs. The top of UUT8 is attached using (2) 1/2" - 13 all thread, washers, and nuts hand tight to the wall mount fixture. Rigid compression/tension braces were installed during the test on each side of UUT8.



Overall view of UUT8.2(Wet)

CERTIFICATION ABORATORIES,LLC

## UUT9.1 (Dry)(Batch 2) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

DCL Project Number:

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: EHU-801

Product Construction Summary:

Stainless steel

*Options / Component Summary:* 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		OF	UU	T Properti	es V			
Operating Weight		Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
(lb)	Depth	Wid	lth	WY A	leight	Front-Back	Side-Side	Vertical
46	10.0	16.3 25.5			25.5	N/A	N/A	N/A
	8		Seismic	Test Para	meters			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Ari <mark>g-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES <mark>AC 15</mark> 6	2.00	Mala	nn <del>1</del> .5d	K 3.20	2 <mark>.4</mark> 0	1.33	0.53

## Unit Mounting Description:

Wall mounted using: The lower mounting braket is mounted onto the fixture using (4) 3/8" - 16 grade 5 bolts, washers, lock washers, and nuts turqued to 31 ft-lbs. The upper mounting bracket is attached to the fixture using (2) 3/8" - 16 grade 5 bolts torqued to 31 ft-lbs. UUT9 is mounted to the top bracket and attached to the lower bracket of the fixture using (2) 3/8"-16 grade 5 hex head bolts, washers, and lock washers torqued to 31 ft-lbs.



Overall view of UUT9.1(Dry)

CERTIFICATION LABORATORIES,LLC

## UUT9.2 (Wet)(Batch 2) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

DCL Project Number:

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: EHU-801

Product Construction Summary:

Stainless steel

*Options / Component Summary:* 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		OF	UU	T Properti	es V			
Operating Weight		Dimensio	ons (inche	Lowest Natural Frequency (Hz)				
(lb)	Depth	Wid	lth	WY A	leight	Front-Back	Side-Side	Vertical
60	10.0	16.3 25.5			25.5	N/A	N/A	N/A
	8		Seismic	Test Para	meters			
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Ari <mark>g-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES <mark>AC 15</mark> 6	2.00	Mala	nn <del>1</del> .5d	K 3.20	2 <mark>.4</mark> 0	1.33	0.53

## Unit Mounting Description:

Wall mounted using: The lower mounting braket is mounted onto the fixture using (4) 3/8" - 16 grade 5 bolts, washers, lock washers, and nuts turqued to 31 ft-lbs. The upper mounting bracket is attached to the fixture using (2) 3/8" - 16 grade 5 bolts torqued to 31 ft-lbs. UUT9 is mounted to the top bracket and attached to the lower bracket of the fixture using (2) 3/8"-16 grade 5 hex head bolts, washers, and lock washers torqued to 31 ft-lbs.



Overall view of UUT9.2(Wet)

CERTIFICATION LABORATORIES,LLC

## UUT10.1 (Dry)(Batch 2) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: EHU-804

Product Construction Summary:

Stainless steel

*Options / Component Summary:* 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		OF'	001	l Properti	es			
Operating Weight (lb)		Dimensio	ns (inche	Lowest	Natural Freque	ency (Hz)		
	Depth	Wic	ith	Height		Front-Back	Side-Side	Vertical
126	14.1	33.6			31.8		N/A	N/A
	4		Seismic 1	Test Para	meters	2		
Building Code	Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Ari <mark>g-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	M <sup>1.0</sup> ar	nn <sup>1.5</sup> d	3.20	2 <mark>.4</mark> 0	1.33	0.53
			, which have					-

## Unit Mounting Description:

Wall mounted using: The lower mounting bracket was attached onto the UUT using (2) 3/8" - 16 bolts, washers, lock washers, and nuts turqued to 31 ft-lbs. The upper mounting bracket is attached to the fixture using (5) 3/8" - 16 bolts torqued to 31 ft-lbs. UUT10 is mounted to the top bracket and attached to the lower bracket of the fixture using (2) 3/8"-16 grade 5 hex head bolts, washers, and lock washers torqued to 31 ft-lbs. (2) 3/8"-16 grade 5 hex head bolts through the enclosure holes were added.



Overall view of UUT10.1(Dry)

CERTIFICATION

## UUT10.2 (Wet)(Batch 2) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

Product Line: Armstrong Humidifiers

Model Number: EHU-804

Product Construction Summary:

Stainless steel

*Options / Component Summary:* 

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

	OF'	UUT	l' Properti	es			
	Dimensio	ns (inche	Lowest Natural Frequency (Hz)				
Depth	Wic	ith	H A H	leight	Front-Back	Side-Side	Vertical
14.1	33.6 31.8		31.8	N/A	N/A	N/A	
2		Seismic	Test Para	meters	121		
Test Criteria	Sds (g)	z/h	lp	Aflx-H (g)	Ari <mark>g-H (g)</mark>	Aflx-V (g)	Arig-V (g)
ICC-ES <mark>AC 15</mark> 6	2.00	M <sup>1.0</sup> ar	nn <sup>1.5</sup> d	3.20	2 <mark>.4</mark> 0	1.33	0.53
	14.1 Test Criteria	Depth Wid 14.1 33 Test Criteria Sds (g)	Dimensions (incher       Depth     Width       14.1     33.6       Seismic 1       Test Criteria     Sds (g)     z/h	Dimensions (inches)       Depth     Width       14.1     33.6       Seismic Test Para       Test Criteria     Sds (g)     z/h	Depth     Width     Height       14.1     33.6     31.8       Seismic Test Parameters       Test Criteria       Sds (g)     z/h     lp     Aflx-H (g)	Dimensions (inches)     Lowest       Depth     Width     Height     Front-Back       14.1     33.6     31.8     N/A       Seismic Test Parameters       Test Criteria       Sds (g)     z/h     Ip     Aflx-H (g)     Arig-H (g)	Dimensions (inches)     Lowest Natural Freque       Depth     Width     Height     Front-Back     Side-Side       14.1     33.6     31.8     N/A     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)

## Unit Mounting Description:

Wall mounted using: The lower mounting bracket was attached onto the UUT using (2) 3/8" - 16 bolts, washers, lock washers, and nuts turqued to 31 ft-lbs. The upper mounting bracket is attached to the fixture using (5) 3/8" - 16 bolts torqued to 31 ft-lbs. UUT10 is mounted to the top bracket and attached to the lower bracket of the fixture using (2) 3/8"-16 grade 5 hex head bolts, washers, and lock washers torqued to 31 ft-lbs. (2) 3/8"-16 grade 5 hex head bolts through the enclosure holes were added.



Overall view of UUT10.2(Wet)

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## UUT11 (Batch 2) Clark Test Report JID 16-00105 **UNIT UNDER TEST (UUT) Summary Sheet**



21127-2201

Manufacturer: Armstrong International

Product Line: **Armstrong Humidifiers** 

Model Number: N/A

## Product Construction Summary:

Stainless steel

## **Options / Component Summary:**

The unit is rigidly connected at the top and bottom to the structure. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

		7.	רטט	Properti	es	~~		
Operating Weight	4	Dimensio	ons (inche	Lowest	Natural Freque	ency (Hz)		
(lb)	Depth	Width		H	eight	Front-Back	Side-Side	Vertical
17.0	N/A	12.005		-04 12.0		N/A	N/A	N/A
		XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Seismic	Test Parai	meters			
Building Code	Test <mark>Criteria</mark>	Sds (g)	Mz/har	nmead	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC 156	2.00	1.0	1.5	3.20	2 <mark>.40</mark>	1.33	0.53

## Unit Mounting Description:

DATE: 10/17/2022 Mounted using: (4) 1/2" - 20 grade 5 hex head bolts, washers and lock washers torqued to 9 ft-lbs. Also use (1) 1/2" - 13 all thread and nuts (hand tightened).



Overall view of UUT11

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## UUT12 (Batch 2) Clark Test Report JID 16-00105 UNIT UNDER TEST (UUT) Summary Sheet

**DCL Project Number:** 

21127-2201

Manufacturer: Armstrong International

**Product Line:** Armstrong Humidifiers

Model Number: N/A

## Product Construction Summary:

Stainless steel

## Options / Component Summary:

The unit is rigidly connected at the top and bottom to the structure. The UUT is not connected directly to the duct. The UUT can move independently of the duct, which has oversized holes where the UUT passes through the duct in order to work inside of the duct. See cut sheets for further details.

Note: The UUT was operational before and after shaking and was full of operating content during the tests. The structural integrity of the component attachment system and force-resisting systems was maintained.

	14-	וטט	Properti	es	2		
4	Dimensio	ons (inche	Lowest I	Natural Freque	ncy (Hz)		
Depth	Width		Height		Front-Back	Side-Side	Vertical
N/A	12.0 OSP-04 12.0				N/A	N/A	N/A
		Seismic	Test Para	meters			
Test <mark>Criteri</mark> a	Sds (g)	Mz/har	nn <sup>i</sup> Pad	Aflx-H (g)	Arig <mark>-H (g)</mark>	Aflx-V (g)	Arig-V (g)
ICC-ES <mark>AC 15</mark> 6	2.00	1.0	1.5	3.20	2.40	1.33	0.53
	N/A Test Criteria	Depth Win N/A 12 Test Criteria Sds (g)	Dimensions (incher Depth Width N/A 12.0 OS Seismic T Test Criteria Sds (g) Z/har	Dimensions (inches) Depth Width H N/A 12.0 Seismic Test Para Test Criteria Sds (g) Z/h 1p.d	Depth     Width     Height       N/A     12.0     -04 12.0       Seismic Test Parameters       Test Criteria       Sds (g)     z/h     Ip	Dimensions (inches)     Lowest       Depth     Width     Height     Front-Back       N/A     12.0     -04     12.0     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Afix-H (g)     Arig-H (g)	Dimensions (inches)     Lowest Natural Freque       Depth     Width     Height     Front-Back     Side-Side       N/A     12.0     -04-12.0     N/A     N/A       Seismic Test Parameters       Test Criteria     Sds (g)     Z/h     Ip     Aflx-H (g)     Arig-H (g)     Aflx-V (g)

## Unit Mounting Description:

Mounted using: (4) 1/4"-20 grade 5 hex head bolts, washers, lock washers, and nuts torqued to 9 ft-lbs and (1) 1/2"-13 grade holes into the seismic table. The fixture was secured to the plate using (4) 1/2"-13 grade 5 hex head bolts, washers, and lock washers torqued to 75 ft-lbs.



Overall view of UUT12

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