



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

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

OFFICE USE ONLY

APPLICATION #: OSP-0715

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Beacon Medaes (Atlas Copco Compressors, LLC.)

Manufacturer's Technical Representative: Tim Conner

Mailing Address: 1059 Paragon Way, Rock Hill, SC 29730

Telephone: (803) 817-5656

Email: tim.conner@beaconmedaes.com

**Product Information**

Product Name: LifeLine Automatic Changeover Gas Manifold Control Modules

Product Model Number(s): See attached

Product Category: Medical Gas and Vacuum Systems

Product Sub-Category: Medical Gas Systems

General Description: High Pressure x High Pressure, Liquid x Liquid, and Liquid x High Pressure automatic changeover gas manifold control modules offering Standard or Total Alert Embedded electronics options for a range of gasses.

Mounting Description: Wall Mounted Rigid

Tested Seismic Enhancements: None

**Applicant Information**

Applicant Company Name: DCL Labs, LLC

Contact Person: Rachel Wolfe

Mailing Address: 1315 Greg Street, Sparks, NV 89431

Telephone: (775) 358-5085

Email: rachel.wolfe@shaketest.com

Title: Seismic Test Engineer



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
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**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

Company Name: THE VMC GROUP

Name: Kenneth Tarlow California License Number: S2851

Mailing Address: 980 9th Street, 16th Floor, Sacramento, CA 95814

Telephone: (832) 627-2214 Email: ken.tarlow@thevmcgroup.com

**Certification Method**

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

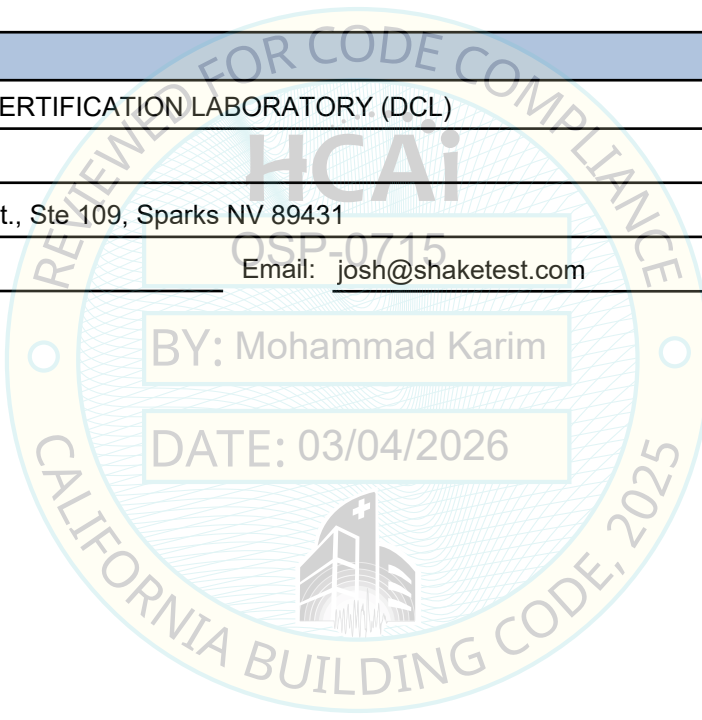
**Testing Laboratory**

Company Name: DYNAMIC CERTIFICATION LABORATORY (DCL)

Contact Person: Josh Sailer

Mailing Address: 1315 Greg St., Ste 109, Sparks NV 89431

Telephone: (775) 358-5085 Email: josh@shaketest.com





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**Seismic Parameters**

Certified Response Spectral Acceleration Factors:(Fp/Wp)

Horizontal (A Flx-H), g= 3.2 (A Rig-H), g= 2.15  
 Vertical (A Flx-V), g= 1.33 (A Rig-V), g= 0.53

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

Hf (Force amplification height factor) = 3.5 at z/h=1; 1.0 at z/h=0

Ru (Structure ductility reduction factor) = 1.3 at z/h=1; 1.0 at z/h=0

Ip (Importance factor) = 1.5

z/h (Height ratio factor) = 0 and 1

**HCAI Approval (For Office Use Only) - Approval Expires on 03/04/2032**

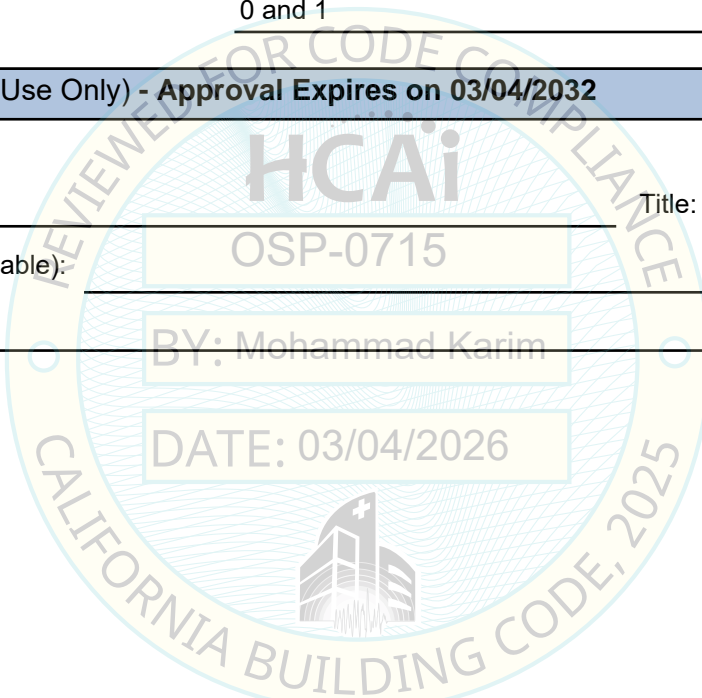
Date: 3/4/2026

Name: Mohammad Karim Title: Supervisor, Health Facilities

Condition of Approval (if applicable): OSP-0715

BY: Mohammad Karim

DATE: 03/04/2026



# Special Seismic Certification

## Table 1 - Certified Components - Gas Manifold Control Modules



**DCL Project Number:** 85930-2501

**Manufacturer:** Beacon Medaes

**Product Line:** Beacon Medaes LifeLine

**Product Type:** Automatic Changeover Gas Manifold Control Modules

**Product Construction:** Carbon Steel, Type 4 NEMA

**Mounting:** Rigid Wall Mount

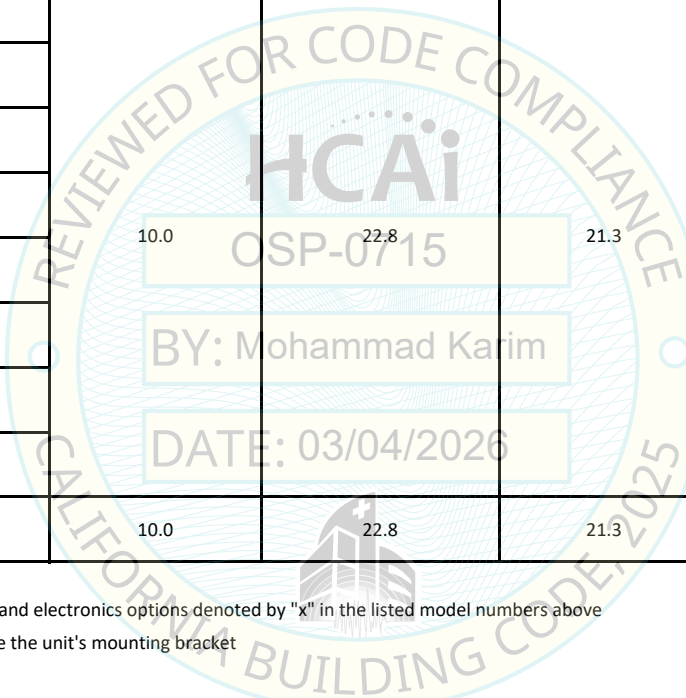
**Certified Seismic Levels:**  $S_{ds} = 2.0\text{ g}$ ,  $z/h = 1.0$  and  $z/h = 0.0$

**Factors for Force Amplification and Structure Ductility Reduction:**  $H_f = 3.5$  at  $z/h=1.0$ ;  $1.0$  at  $z/h=0$  and  $R_p = 1.3$  at  $z/h=1.0$ ;  $1.0$  at  $z/h=0$

Model Number <sup>1</sup>	Max. Dimensions [ in. ] <sup>2</sup>			Max. Weight [ lb. ] <sup>2</sup>	Unit				
	Depth	Width	Height						
CMNE-HH-AIR-AS	10.0	22.8	21.3	68.0	UUT-1				
CMNE-HH-x-Bx	10.0	22.8	21.3	68.0 to 72.0	Interpolated				
CMNE-HH-x-Cx					Interpolated				
CMNE-LH-x-Ax					Interpolated				
CMNE-LH-x-Bx					Interpolated				
CMNE-LH-x-Cx					Interpolated				
CMNE-LL-x-Ax					Interpolated				
CMNE-LL-x-Bx					Interpolated				
CMNE-LL-x-Cx					Interpolated				
CMNE-LL-N2-CT					10.0	22.8	21.3	72.0	UUT-2

**Notes:**

- Reference Table 2 for the gas and electronics options denoted by "x" in the listed model numbers above
- Dimensions and weight include the unit's mounting bracket



# Special Seismic Certification Nomenclature Chart



DCL Project Number: 85930-2501

Manufacturer: Beacon Medaes

Product Line: Beacon Medaes LifeLine

Mounting: Rigid Wall Mount

Sample Part Number: A B C - D - E - F G

Character	Category	Allowable Value	Description	Unit
A	Branding	CM	Branding	UUT-1, UUT-2
B	Series	N	NFPA	UUT-1, UUT-2
C	Language	E	English	UUT-1, UUT-2
		S	Spanish	Same as
D	Type	HH	High Pressure x High Pressure	UUT-1
		LL	Liquid x Liquid	UUT-2
		LH	Liquid x High Pressure	Interpolated
E	Gas <sup>1</sup>	O2	Oxygen	Same as
		N2O	Nitrous Oxide	Same as
		Air	Medical Air	UUT-1
		N2	Nitrogen	UUT-2
		IAIR	Instrument Air	Same as
		CO2	Carbon Dioxide	Same as
		CO2O2	Carbon Dioxide- Oxygen (CO2 > 7%)	Same as
		O2CO2	Oxygen-Carbon Dioxide (CO2 < 7%)	Same as
		HEO2	Helium-Oxygen (He > 80%)	Same as
		O2HE	Oxygen-Helium (He < 80%)	Same as
		HE	Helium	Same as
		AR	Argon	Same as
		ISAIR	ISO Air	Same as
F	Delivery Pressure	A	55 psi delivery pressure	UUT-1
		B	100 psi delivery pressure	Interpolated
		C	180 psi delivery pressure	UUT-2
		S	Standard	UUT-1
G	Electronics	T	Total Alert Embedded	UUT-2

Notes:

1. The difference between the gases is the gas ID label. The unit construction remains the same regardless of the gas type.

**Special Seismic Certification**  
**Table 2 - Certified Subcomponents**



DCL Project Number: 85930-2501

Product Line: Beacon Medaes LifeLine

Certified Seismic Levels: Sds = 2.0 g, z/h = 1.0

Manifold Assembly							
Model Number	Manufacturer	Description	Material	Weight [ lb. ]	Unit		
4107791380	Beacon Medaes	Manifold Assembly HPXHP 55PSI	Brass	28	UUT-1		
4107791381		Manifold Assembly HPXHP 100PSI		28	Interpolated		
4107791382		Manifold Assembly HPXHP 180PSI		28	Interpolated		
4107791383		Manifold Assembly LQXLQ 55PSI		30	Interpolated		
4107791384		Manifold Assembly LQXLQ 100PSI		30	Interpolated		
4107791385		Manifold Assembly LQXLQ 180PSI		30	UUT-2		
Enclosure Assembly							
4107792602	FormaFab	ASM Enclosure HPXHP	Carbon Steel	15	UUT-1		
4107792665		ASM Enclosure LQxLQ & LQxHP		15	UUT-2		
Control Assembly							
4107653568	Beacon Medaes	PCB ASM Manifold Power Supply	4 Layer Polyclad	1	UUT-1, UUT-2		
4107653561		PCB ASM Manifold Basic Reduced		1	UUT-1		
4107653565		PCB ASM Manifold Advanced Full		8 Layer Polyclad	1	UUT-2	
4107655538	Hammond	Cab Elec Encl NEMA-4 8X6X3.5	Carbon Steel	5	UUT-1, UUT-2		
Switch Assembly							
4107653589	Ashcroft	SWT Pres Switch 150 PSI SAE-4	Brass, Plastic	1	UUT-1		
4107653590		SWT Pres Switch 300 PSI SAE-4		1	Interpolated		
4107653591		SWT Pres Switch 250 PSI SAE-4		1	Interpolated		
4107653592		SWT Pres Switch 1500 PSI SAE-4		1	Interpolated		
4107653727		TDC Pres Transducer 0-300 PSI		1	UUT-2		
4107656939		TDC Pres Transducer 0-300 PSI		1	Interpolated		
4107656940		TDC Pres Transducer 0-3000 PSI		1	Interpolated		
4107653728		TDC Pres Transducer 0-3000 PSI		1	UUT-2		
Relief Valves							
4107653570	Rego	RLF Pres Rel Val 75psi SAE-6	Brass, Stainless Steel	1	UUT-1		
4107655847		RLF Pres Rel Val 100psi SAE-6		1	Interpolated		
4107653571		RLF Pres Rel Val 150psi SAE-6		1	Interpolated		
4107653572		RLF Pres Rel Val 250psi SAE-6		1	UUT-2		
4107653573		RLF Pres Rel Val 350psi SAE-6		1	UUT-1, UUT-2		
4107653574		RLF Pres Rel Val 400psi SAE-6		1	UUT-2		
Pressure Gauges							
4107654146	Wika	Gag Pres Gage 2-1/2" 0-100 Psi	Carbon Steel, Plastic	1	UUT-1		
4107654149		Gag Pres Gage 2-1/2" 0-3000 Psi		1	UUT-1		
4107657175		Gag Pres Gage 2-1/2" 0-100 Psi		1	Interpolated		
4107657178		Gag Pres Gage 2-1/2" 0-3000 Psi		1	Interpolated		
4107653599		Gag Pres Gage 1-1/2" Dia 0-400		1	UUT-1		
4107654148		Gag Pres Gage 2-1/2" 0-400 Psi		1	UUT-2		
4107654147		Gag Pres Gage 2-1/2" 0-300 Psi		1	UUT-2		
4107657177		Gag Pres Gage 2-1/2" 0-400 Psi		1	Interpolated		
4107657176		Gag Pres Gage 2-1/2" 0-300 Psi		1	Interpolated		
4107653599		Gag Pres Gage 1-1/2" Dia 0-400		1	UUT-2		
4107653600		Gag Pres Gage 1-1/2" 0-60 Psi		1	UUT-2		
Dome Bias Regulator							
4107653615		Norgren		Reg Regulator 1/8" NPT w/ Nut	Brass, Zinc	1	UUT-2
Switching Valve							
4107656430	MAC Valve	Val Solenoid Bank Switching	Carbon Steel, Plastic	1	UUT-1, UUT-2		

**Special Seismic Certification**  
**Table 3 - Tested Units**



**DCL Project Number:** 85930-2501

**Manufacturer:** Beacon Medaes

**Product Line:** Beacon Medaes LifeLine

**Report Number:** 13152-2101

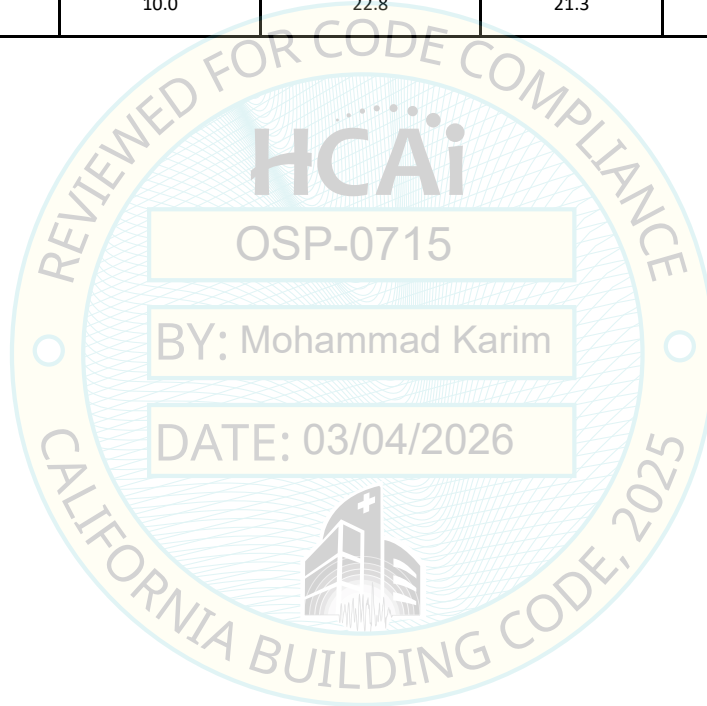
**Product Construction:** Carbon Steel, Type 4 NEMA

**Mounting:** Rigid Wall Mount

**Certified Seismic Levels:**  $S_{ds} = 2.0 g$ ,  $z/h = 1.0$

**Factors for Force Amplification and Structure Ductility Reduction:**  $H_f = 3.5$  at  $z/h=1.0$ ;  $1.0$  at  $z/h=0$  and  $R_{\mu} = 1.3$  at  $z/h=1.0$ ;  $1.0$  at  $z/h=0$

Model Number	Dimensions [ in. ]			Weight [ lb. ]	Unit
	Length	Width	Height		
CMNE-HH-AIR-AS	10.0	22.8	21.3	68.0	UUT-1
CMNE-LL-N2-CT	10.0	22.8	21.3	72.0	UUT-2



# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-1

**DCL Report Number:** 13152-2101

**Test Date:** 7/28/2021

**Manufacturer:** Beacon Medaes

**Product Line:** Beacon Medaes LifeLine

**Model Number:** CMNE-HH-AIR-AS

**Product Construction Summary:** Carbon Steel, Type 4 NEMA Rated Enclosure

**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 before and after the AC 156 test.

### UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
68	10.0	22.8	21.3	N/A	N/A	N/A

### Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H <sub>i</sub>	R <sub>μ</sub>	I <sub>p</sub>	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.00	1.0	3.5	1.3	1.5	3.20	2.40	N/A	N/A
	AC156-24	2.00	0.0	1.0	1.0		N/A	N/A	1.33	0.53

**Unit Mounting Description:** UUT-1 was mounted to the DCL wall fixture via the manufacturer-provided mounting bracket (Model Number: 4107 6559 95). The mounting bracket was mounted to the wall fixture using (4) 3/8" Grade 5 bolts, round washers, 1-1/4"x1-1/4"x1/4" galvanized steel plate washers, and spring nuts. The bolts were spaced approximately 9-1/2" on center width-wise and approximately 14-3/4" on center height-wise. Each bolt was torqued to approximately 25 ft.-lb. to the Unistrut on the DCL wall fixture. UUT-1 was mounted to the mounting bracket using the manufacturer-provided mounting instructions. (4) 307a 5/16" bolts and round washers, spaced approximately 6" on center width-wise and approximately 10" on center height-wise, were used to mount the manifold to the mounting bracket.

BY: Mohammad Karim

DATE: 03/04/2026



Overall and interior view of UUT-1

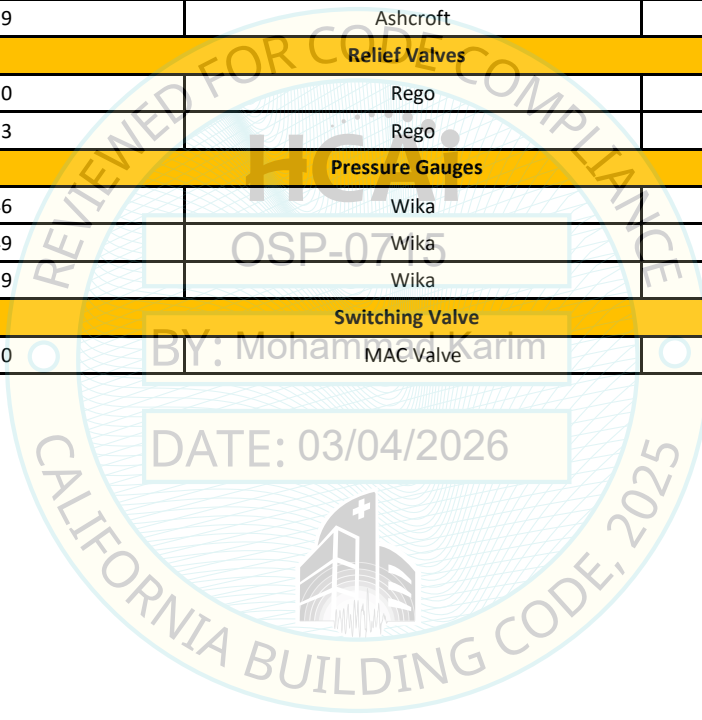
# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-1

**Options / Component Summary:**

Model Number	Manufacturer	Material
<b>Manifold Assembly</b>		
4107791380	Beacon Medaes	Brass
<b>Enclosure Assembly</b>		
4107792602	FormaFab	Carbon Steel
<b>Control Assembly</b>		
4107653568	Beacon Medaes	4 Layer Polyclad
4107653561	Beacon Medaes	5 Layer Polyclad
4107655538	Hammond	Carbon Steel
<b>Switch Assembly</b>		
4107653589	Ashcroft	Brass, Plastic
<b>Relief Valves</b>		
4107653570	Rego	Brass, Stainless Steel
4107653573	Rego	Brass, Stainless Steel
<b>Pressure Gauges</b>		
4107654146	Wika	Carbon Steel, Plastic
4107654149	Wika	Carbon Steel, Plastic
4107653599	Wika	Carbon Steel, Plastic
<b>Switching Valve</b>		
4107656430	MAC Valve	Carbon Steel, Plastic



# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-2

**DCL Report Number:** 13152-2101

**Test Date:** 7/28/2021

**Manufacturer:** Beacon Medaes

**Product Line:** Beacon Medaes LifeLine

**Model Number:** CMNE-LL-N2-CT

**Product Construction Summary:** Carbon Steel, Type 4 NEMA Rated Enclosure

**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 before and after the AC 156 test.

### UUT Properties

Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
72	10.0	22.8	21.3	N/A	N/A	N/A

### Seismic Test Parameters

Building Code	Test Criteria	Sds (g)	z/h	H <sub>r</sub>	R <sub>μ</sub>	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2025	ICC-ES	2.00	1.0	3.5	1.3	1.5	3.20	2.40	N/A	N/A
	AC156-24	2.00	0.0	1.0	1.0		N/A	N/A	1.33	0.53

**Unit Mounting Description:** UUT-2 was mounted to the DCL wall fixture via the manufacturer-provided mounting bracket (Model Number: 4107 6559 95). The mounting bracket was mounted to the wall fixture using (4) 3/8" Grade 5 bolts, round washers, 1-1/4"x1-1/4"x1/4" galvanized steel plate washers, and spring nuts. The bolts were spaced approximately 9-1/2" on center width-wise and approximately 14-3/4" on center height-wise. Each bolt was torqued to approximately 25 ft.-lb. to the Unistrut on the DCL wall fixture. UUT-2 was mounted to the mounting bracket using the manufacturer-provided mounting instructions. (4) 307a 5/16" bolts and round washers, spaced approximately 6" on center width-wise and approximately 10" on center height-wise, were used to mount the manifold to the mounting bracket.

BY: Mohammad Karim

DATE: 03/04/2026



Overall and interior view of UUT-2

# UNIT UNDER TEST (UUT) Summary Sheet



## UUT-2

**Options / Component Summary:**

Model Number	Manufacturer	Material
<b>Manifold Assembly</b>		
4107791385	Beacon Medaes	Brass
<b>Enclosure Assembly</b>		
4107792665	FormaFab	Carbon Steel
<b>Control Assembly</b>		
4107653568	Beacon Medaes	4 Layer Polyclad
4107653565	Beacon Medaes	8 Layer Polyclad
4107655538	Hammond	Carbon Steel
<b>Switch Assembly</b>		
4107653727	Ashcroft	Brass, Plastic
4107653728	Ashcroft	Brass, Plastic
<b>Relief Valves</b>		
4107653572	Rego	Brass, Stainless Steel
4107653573	Rego	Brass, Stainless Steel
4107653574	Rego	Brass, Stainless Steel
<b>Pressure Gauges</b>		
4107654148	Wika	Carbon Steel, Plastic
4107654147	Wika	Carbon Steel, Plastic
4107653599	Wika	Carbon Steel, Plastic
4107653600	Wika	Carbon Steel, Plastic
<b>Dome Bias Regulator</b>		
4107653615	Norgren	Brass, Zinc
<b>Switching Valve</b>		
4107656430	MAC Valve	Carbon Steel, Plastic

