



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

**APPLICATION #: OSP-0719**

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

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Rauland-Borg

Manufacturer's Technical Representative: Vernon Morris

Mailing Address: 1802 W Central Road, Mount Prospect, IL 60056

Telephone: (847) 632-8656

Email: Vernon.Morris@ametek.com

**Product Information**

Product Name: Electrical Control Panels on Life Safety/Critical Branch

Product Type: Nurse Call Stations

Product Model Number: See Attachment

General Description: Responder Nurse Call Systems: Responder 4000, Responder 5/ Responder Enterprise, and Responder 5000

Mounting Description: Rigid, Wall Mounted

Tested Seismic Enhancements: None

**Applicant Information**

Applicant Company Name: Dynamic Certification Laboratories

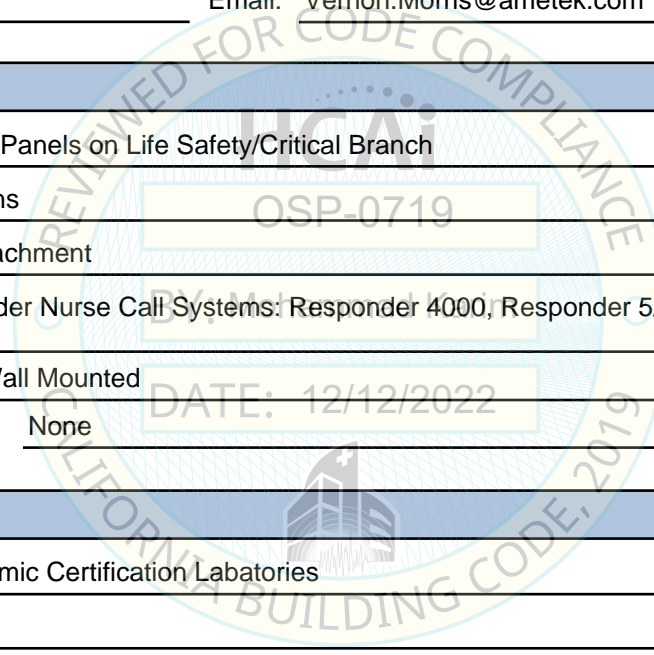
Contact Person: Kelly Laplace

Mailing Address: 1315 Greg Street Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085

Email: kelly@shaketest.com

Title: Business Manager





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**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): \_\_\_\_\_

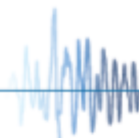
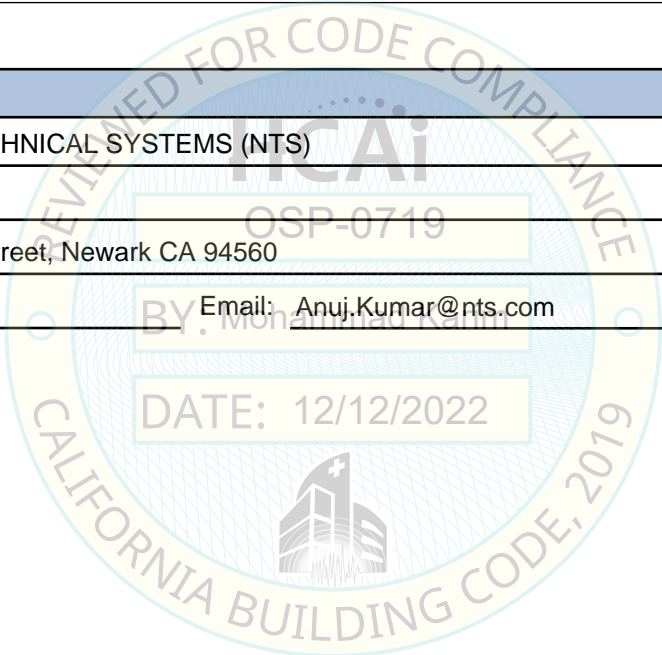
**Testing Laboratory**

Company Name: NATIONAL TECHNICAL SYSTEMS (NTS)

Contact Person: Anuj Kumar

Mailing Address: 38995 Cherry Street, Newark CA 94560

Telephone: (510) 578-3500 Email: Anuj.Kumar@nts.com





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FACILITIES DEVELOPMENT DIVISION**

**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.88

SDS (Design spectral response acceleration at short period, g) = 2.5

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 6.0

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

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

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

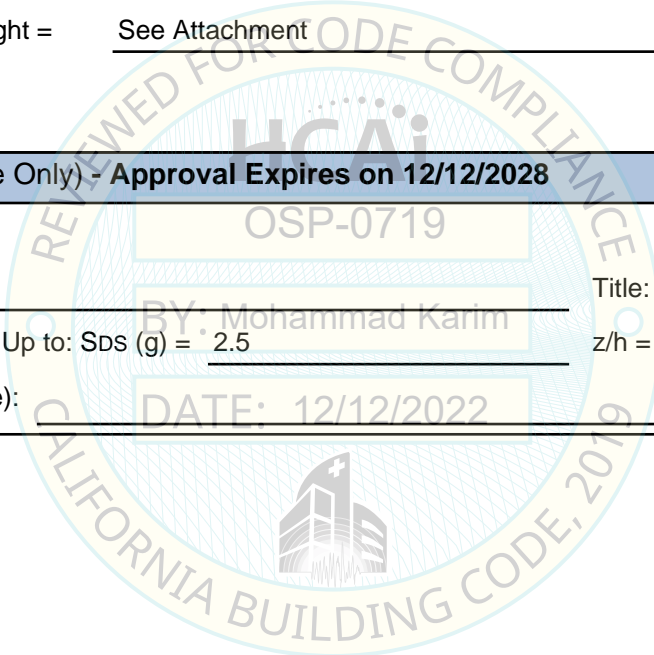
**HCAI Approval (For Office Use Only) - Approval Expires on 12/12/2028**

Date: 12/12/2022

Name: Mohammad Karim Title: Supervisor, Health Facilities

Special Seismic Certification Valid Up to: SDS (g) = 2.5  $z/h$  = 1

Condition of Approval (if applicable): DATE: 12/12/2022



# Special Seismic Certification

## Table 1 - Certified Components



DCL Project Number: 25240-2201  
 Manufacturer: Rauland-Borg  
 Mounting Configuration: Rigid wall mount  
 Test Levels:  $S_{DS} = 2.50g$ ,  $z/h=1.0$

Model Number	Cabinet Number	Max. Dimensions (in)			Max. Weight (lb.)	Material <sup>2</sup>	Unit
		Depth	Width	Height			
<b>Responder 4000</b>							
351102-2	351102	4.8	14.4	28.0	42	16 ga CFS	PR054947.01 EUT-02
351102-5	351102	4.8	14.4	28.0	50	16 ga CFS	PR064966.01 UUT-09
NC2828-2	NC2828	5.5	28.0	28.0	67	16 ga CFS	PR054947.01 EUT-01
NC2828-5	NC2828	5.5	28.0	28.0	101	16 ga CFS	PR064966.01 UUT-10
<b>Responder 5/Responder Enterprise &amp; Responder 5000</b>							
351102-1 /351102-1A <sup>6</sup>	351102	4.8	14.4	28.0	41	16 ga CFS	R93329 UUT-02
351102-3	351102	4.8	14.4	28.0	36	16 ga CFS	PR054947.01 EUT-04
351102-4 /351102-4A <sup>6</sup>	351102	4.8	14.4	28.0	51	16 ga CFS	PR064966.01 UUT-07
351102-6 /351102-6A <sup>6</sup>	351102	4.8	14.4	28.0	37	16 ga CFS	TR-143508.01 ENV-Rev 0 - UUT-01
351102-7 /351102-7A <sup>6</sup>	351102	4.8	14.4	28.0	37	16 ga CFS	TR-143508.01 ENV-Rev 0 - UUT-02
NC2828-1 /NC2828-1A <sup>6</sup>	NC2828	5.5	28.0	28.0	67	16 ga CFS	R93329 UUT-01
NC2828-3	NC2828	5.5	28.0	28.0	66	16 ga CFS	PR054947.01 EUT-03
NC2828-4 /NC2828-4A <sup>6</sup>	NC2828	5.5	28.0	28.0	92	16 ga CFS	PR064966.01 UUT-08

**Notes:**

- 1.All enclosures are NEMA 1 rated.
- 2.CFS = cold-formed carbon steel.
- 3.All enclosures are rigid wall-mounted.
- 4.Responder 4000 panels can be configured to maximum weight of 101 lb.
- 5.Responder 5/Responder Enterprise & Responder 5000 panels can be configured to a maximum weight of 92 lb.
- 6.Difference between # and #A is software change only.

# Special Seismic Certification

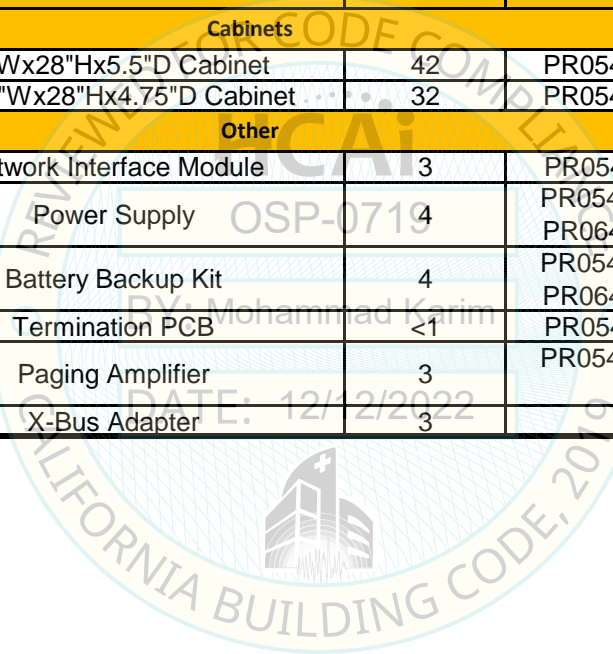
## Table 2 - Certified Subcomponents - Responder 4000



DCL Project Number: 25240-2201

Certified Seismic Level :  $S_{DS} = 2.50g$ ,  $z/h=1.0$

Model Number	Manufacturer	Subcomponent	Weight (lb.)	Unit
<b>Cabinets</b>				
NC2828	Rauland-Borg	28"Wx28"Hx5.5"D Cabinet	42	PR054947.01 EUT-01, PR064966.01 UUT-10
351102		14.38"Wx28"Hx4.75"D Cabinet	32	PR054947.01 EUT-02, PR064966.01 UUT-09
<b>Other</b>				
R4KNIM	Rauland-Borg	Network Interface Module	3	PR054947.01 EUT-01, PR054947.01 EUT-02
R4KPR400		Power Supply	4	PR054947.01 EUT-01, PR054947.01 EUT-02, PR064966.01 UUT-09, PR064966.01 UUT-10
R4KBK400		Battery Backup Kit	4	PR054947.01 EUT-01, PR054947.01 EUT-02, PR064966.01 UUT-09, PR064966.01 UUT-10
R4KTMB		Termination PCB	<1	PR054947.01 EUT-01, PR054947.01 EUT-02
R4KPA25		Paging Amplifier	3	PR054947.01 EUT-01, PR054947.01 EUT-02, PR064966.01 UUT-10
R4KXBA		X-Bus Adapter	3	PR054947.01 EUT-01



**Special Seismic Certification**  
**Table 3 - Certified Subcomponents - Responder 5/Responder Enterprise**  
**& Responder 5000**



DCL Project Number: 25240-2201

Certified Seismic Level :  $S_{DS} = 2.50g, z/h=1.0$

Model Number	Manufacturer	Subcomponent	Weight (lb.)	Unit
<b>Cabinets</b>				
NC2828	Rauland-Borg	28"Wx28"Hx5.5"D Cabinet	42	R93329 UUT-01, PR064966.01 UUT-08, PR054947.01 EUT-03
351102		14.38"Wx28"Hx4.75"D Cabinet	32	R93329 UUT-02, PR064966.01 UUT-07, PR054947.01 EUT-04
351102		14.38"Wx28"Hx4.75"D Cabinet	32	TR-143508.01 ENV-Rev 0 - UUT-01, TR-143508.01 ENV-Rev 0 - UUT-02
<b>Other</b>				
351000	Rauland-Borg	Branch Regional Controller*	2	R93329 UUT-02
351001		Branch Regional Controller v2*	2	Interpolated
351005		Branch Regional Controller v3*	2	TR-143508.01 ENV-Rev 0 - UUT-01
351007		Branch Regional Controller v4*	2	Interpolated
351008		Branch Regional Controller v5*	2	Interpolated
351010		Responder Network Concentrator*	2	R93329 UUT-01
351011		Responder Network Concentrator*	2	TR-143508.01 ENV-Rev 0 - UUT-01
351003		Power Supply and Battery	4	R93329 UUT-01, R93329 UUT-02, PR064966.01 UUT-07, PR064966.01 UUT-08, TR-143508.01 ENV-Rev 0 - UUT-01
351004		8 Port Ethernet Switch	2	R93329 UUT-02, PR064966.01 UUT-08
351006		Fiber Optic Adapter	1	R93329 UUT-01, R93329 UUT-02
R5KMSC		Main System Controller	2	PR054947.01 EUT-03, PR054947.01 EUT-04
R5KMSCv2		Main System Controller	2	TR-143508.01 ENV-Rev 0 - UUT-02
R5KL2KA		Adapter	1	PR054947.01 EUT-03, PR054947.01 EUT-04, TR-143508.01 ENV-Rev 0 - UUT-02
R5KMMPR15		Power Supply (15V) w/Battery Backup	4	PR054947.01 EUT-03, PR054947.01 EUT-04, TR-143508.01 ENV-Rev 0 - UUT-02
R5KMMPR36		Power Supply (36V) w/Battery Backup	4	PR054947.01 EUT-03, PR054947.01 EUT-04, TR-143508.01 ENV-Rev 0 - UUT-02
R5KM8PRT		Ethernet Switch	2	PR054947.01 EUT-03
R5KMTRM		Termination PCB	<1	PR054947.01 EUT-03, PR054947.01 EUT-04, TR-143508.01 ENV-Rev 0 - UUT-02

**Note:**

\* The Branch Regional Controllers and Responder Network Concentrator are of similar construction, material, and configuration.



# Special Seismic Certification

## Table 4 - Tested Units



DCL Project Number: 25240-2201  
 Manufacturer: Rauland-Borg  
 Product Line: Responder 4000, Responder 5/ Responder Enterprise, and Responder 5000

Model Number	Manufacturer	Dimensions (in)			Weight (lb.)	Mounting Configuration	Sds (g) z/h=1	Unit
		Depth	Width	Height				
<b>Responder 4000</b>								
NC2828-2	Rauland-Borg	5.5	28.0	28.0	67	Wall Mount	2.50	PR054947.01 EUT-01
351102-2	Rauland-Borg	4.8	14.4	28.0	42	Wall Mount	2.50	PR054947.01 EUT-02
351102-5	Rauland-Borg	4.8	14.4	28.0	50	Wall Mount	2.50	PR064966.01 UUT-09
NC2828-5	Rauland-Borg	5.5	28.0	28.0	101	Wall Mount	2.50	PR064966.01 UUT-10
<b>Responder 5/Responder Enterprise</b>								
NC2828-1 /NC2828-1A	Rauland-Borg	5.5	28.0	28.0	67	Wall Mount	2.50	R93329 UUT-01
351102-1 /351102-1A	Rauland-Borg	4.8	14.4	28.0	41	Wall Mount	2.50	R93329 UUT-02
351102-4 /351102-4A	Rauland-Borg	4.8	14.4	28.0	51	Wall Mount	2.50	PR064966.01 UUT-07
NC2828-4 /NC2828-4A	Rauland-Borg	5.5	28.0	28.0	92	Wall Mount	2.50	PR064966.01 UUT-08
351102-6 /351102-6A	Rauland-Borg	4.8	14.4	28.0	37	Wall Mount	2.50	TR-143508.01 ENV-Rev 0 - UUT-01
<b>Responder 5000</b>								
NC2828-3	Rauland-Borg	5.5	28.0	28.0	66	Wall Mount	2.50	PR054947.01 EUT-03
351102-3	Rauland-Borg	4.8	14.4	28.0	36	Wall Mount	2.50	PR054947.01 EUT-04
351102-7 /351102-7A	Rauland-Borg	4.8	14.4	28.0	37	Wall Mount	2.50	TR-143508.01 ENV-Rev 0 - UUT-02

# Test Report R93329 – UUT-01

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5/ Responder Enterprise

**Model Number:** NC2828-1 /NC2828-1A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Power Supply with Battery Backup, Fiber Optic Adapter Module, Responder Network Concentrator

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
67	5.5	28.0	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**

UUT-01 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report R93329 – UUT-01



# Test Report R93329 – UUT-02

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5/ Responder Enterprise

**Model Number:** 351102-1 /351102-1A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Branch Regional Controller, Power Supply with Battery Backup, 8 Port Ethernet Switch, Fiber Optic Adapter Module

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
41	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	1.67	0.67

**Unit Mounting Description:**

UUT-02 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report R93329 – UUT-02

# Test Report PR054947.01 – EUT-01

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL**  
 DYNAMIC  
 CERTIFICATION  
 LABORATORIES, LLC

**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 4000

**Model Number:** NC2828-2

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Network Interface Module, Power Supply, Battery Backup Kit, Battery Backup Kit, Termination PCB, Paging Amplifier, X-Bus Adapter

**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 Properties**

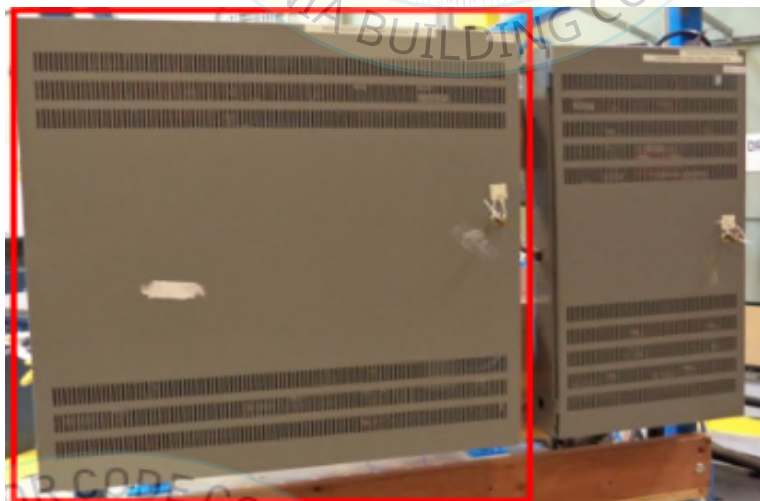
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
67	5.5	28.0	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

EUT-01 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report PR054947.01 – EUT-01

# Test Report PR054947.01 – EUT-02

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 4000

**Model Number:** 351102-2

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Network Interface Module, Power Supply, Battery Backup Kit, Termination PCB, Paging Amplifier

**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 Properties**

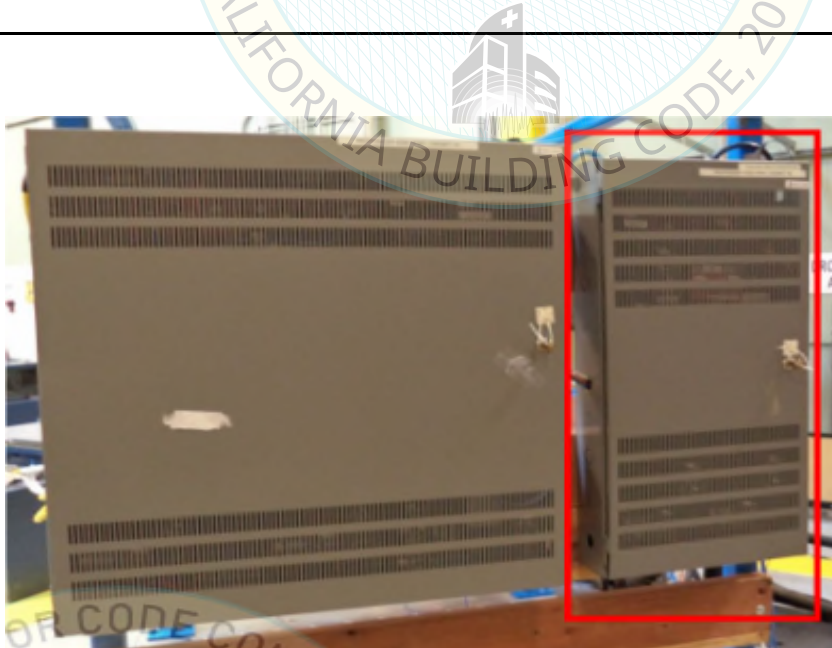
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
42	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

EUT-02 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report PR054947.01 – EUT-02

# Test Report PR054947.01 – EUT-03

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5000

**Model Number:** NC2828-3

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Main System Controller, Adapter, Power Supply (15V) w/Battery Backup, Power Supply (36V) w/Battery Backup, Ethernet Switch, Termination PCB

**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 Properties**

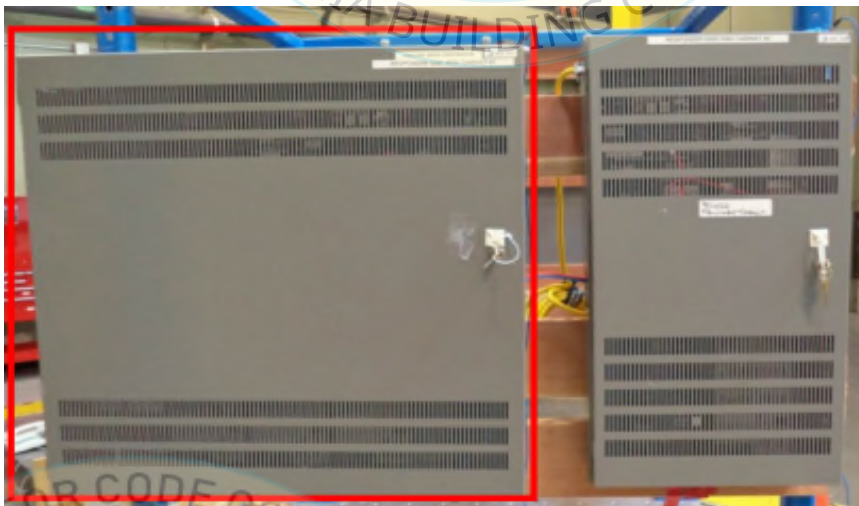
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
66	5.5	28.0	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

EUT-03 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report PR054947.01 – EUT-03



# Test Report PR054947.01 – EUT-04

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5000

**Model Number:** 351102-3

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Main System Controller, Adapter, Power Supply (15V) w/Battery Backup, Power Supply (36V) w/Battery Backup, Termination PCB

**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 Properties**

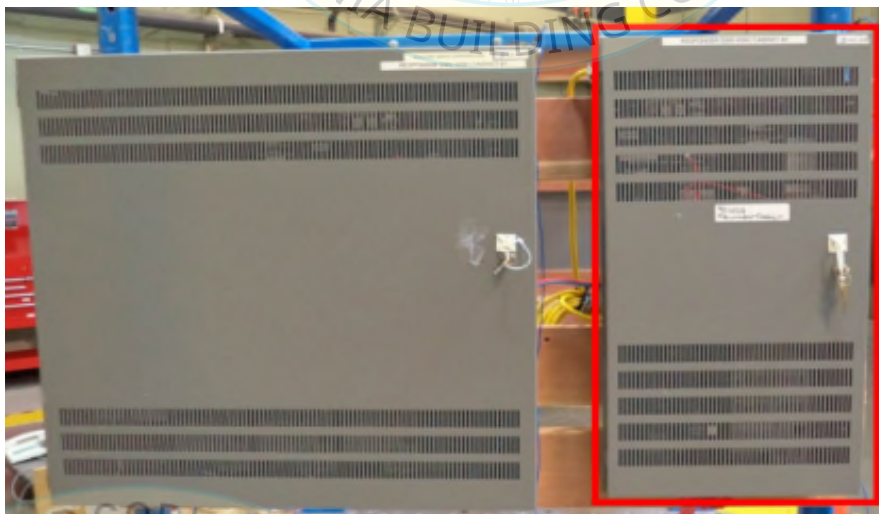
Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
36	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

EUT-04 was wall mounted with (4) 3/8" diameter A307 grade A bolts



Overall view of unit from Test Report PR054947.01 – EUT-04

# Test Report PR064966.01 – UUT-07

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL**  
 DYNAMIC  
 CERTIFICATION  
 LABORATORIES, LLC

**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5/ Responder Enterprise

**Model Number:** 351102-4 /351102-4A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Power Supply and Battery

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
51	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

UUT-07 was wall mounted with (4) #10 pan head 1" long screws



Overall view of unit from Test Report PR064966.01 – UUT-07



# Test Report PR064966.01 – UUT-08

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL**  
 DYNAMIC  
 CERTIFICATION  
 LABORATORIES, LLC

**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5/ Responder Enterprise

**Model Number:** NC2828-4 / NC2828-4A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Power Supply and Battery, 8 Port Ethernet Switch

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
92	5.5	28.0	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

UUT-08 was wall mounted with (4) #10 pan head 1" long screws



Overall view of unit from Test Report PR064966.01 – UUT-08

# Test Report PR064966.01 – UUT-09

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 4000

**Model Number:** 351102-5

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Power Supply, Battery Backup Kit

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
50	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

UUT-09 was wall mounted with (4) #10 pan head 1" long screws



Overall view of unit from Test Report PR064966.01 – UUT-09

# Test Report PR064966.01 – UUT-10

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL**  
DYNAMIC  
CERTIFICATION  
LABORATORIES, LLC

**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 4000

**Model Number:** NC2828-5

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Power Supply, Battery Backup Kit, Paging Amplifier

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
101	5.5	28.0	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	2.50	1.0	1.5	4.00	3.00	2.50	1.00

**Unit Mounting Description:**

UUT-10 was wall mounted with (4) #10 pan head 1" long screws



Overall view of unit from Test Report PR064966.01 – UUT-10

# Test Report TR-143508.01 ENV Rev 0 – UUT-01

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5/ Responder Enterprise

**Model Number:** 351102-6 /351102-6A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Branch Regional Controller, Power Supply with Battery Backup, Responder Network Concentrator

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	3.00	1.0	1.5	4.80	3.60	2.01	0.80

**Unit Mounting Description:**

UUT-01 was wall mounted with (4) #10 pan head anchor bolts



Overall view of unit from Test Report TR-143508.01 ENV Rev 0 – UUT-01

# Test Report TR-143508.01 ENV Rev 0 – UUT-02

## UNIT UNDER TEST (UUT)

### Summary Sheet



**DCL Project Number:** 25240-2201

**Manufacturer:** Rauland-Borg

**Product Line:** Responder 5000

**Model Number:** 351102-7 /351102-7A

**Product Construction Summary:**

16 ga. Cold Formed Carbon Steel

**Options / Component Summary:**

Main System Controller, Adapter, Termination PCB, Power Supply (36V) w/Battery Backup, Power Supply (15V) w/Battery Backup

**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 Properties**

Operating Weight (lb)	Dimensions (inches)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
37	4.8	14.4	28.0	N/A	N/A	N/A

**Seismic Test Parameters**

Building Code	Test Criteria	Sds (g)	z/h	Ip	Aflx-H (g)	Arig-H (g)	Aflx-V (g)	Arig-V (g)
CBC 2022	ICC-ES AC156	3.00	1.0	1.5	4.80	3.60	2.01	0.80

**Unit Mounting Description:**

UUT-02 was wall mounted with (4) #10 pan head anchor bolts



Overall view of unit from Test Report TR-143508.01 ENV Rev 0 – UUT-02