



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY

APPLICATION #: OSP – 0077 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Fike Corporation

Manufacturer's Technical Representative: Brent Mlika

Mailing Address: 704 SW 10<sup>th</sup> St, Blue Springs, MO 64015

Telephone: (816) 655-4720

Email: [brent.mlika@fike.com](mailto:brent.mlika@fike.com)

Product Information

Product Name: SHP-Pro, CyberCat 1016, CyberCat 254, CyberCat 50, Cheetah Xi, Cheetah Xi 50, Intelligent Smoke Control

Product Type: Electrical equipment

Product Model Number: See attached

(List all unique product identification numbers and/or part numbers) mothy J Piland

General Description: The units are comprised of painted carbon steel enclosures (NEMA 1) and a combination of lights switches, controllers, BUS devices, transformers and batteries.

Mounting Description: Units are rigid wall mounted

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780

Email: [john.giuliano@thvmcgroup.com](mailto:john.giuliano@thvmcgroup.com)

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant:

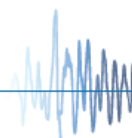
Date: 2/27/19

Title: President

Company Name: The VMC Group

"Access to Safe, Quality Healthcare Environments that Meet California's

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY  
OSH-FD-759 (REV 12/16/15)



OSHPD

Page 1 of 3



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
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: SE-2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: (973) 838-1780 Email: [ken.tarlow@thevmcgroup.com](mailto:ken.tarlow@thevmcgroup.com)

**Supports and Attachments Preapproval**

- ☐ Supports and attachments are preapproved under OPM-  
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)
- ☒ Supports and attachments are not preapproved

**Certification Method**

- ☒ Testing in accordance with: ☒ ICC-ES AC156
- ☐ Other (Please Specify): OSP-0077-10
- BY: Timothy J Piland
- DATE: 09/13/2019

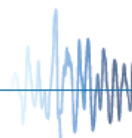
**Testing Laboratory**

Company Name: DCL Labs

Contact Name: Josh Sailer, Laboratory Manager

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

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





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION

**Seismic Parameters**

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.50

$S_{DS}$  (Design spectral response acceleration at short period, g) = 2.00

$a_p$  (In-structure equipment or component amplification factor) = 2.5

$R_p$  (Equipment or component response modification factor) = 6.0

$\Omega_0$  (System overstrength factor) = 2

$I_p$  (Importance factor) = 1.5

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

Equipment or Component Natural Frequencies (Hz) = See attachment

Overall dimensions and weight (or range thereof) = See attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components ( $V/W$ ) = \_\_\_\_\_

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

$S_{D1}$  (Design spectral response acceleration at 1 second period, g) = \_\_\_\_\_

$R$  (Response modification coefficient) = OSP-0077-10

$\Omega_0$  (System overstrength factor) = \_\_\_\_\_

$C_d$  (Deflection amplification factor) = BY: Timothy J Piland

$I_p$  (Importance factor) = 1.5

Height to Center of Gravity above base = DATE: 09/13/2019

Equipment or Component Natural Frequencies (Hz) = \_\_\_\_\_

Overall dimensions and weight (or range thereof) = \_\_\_\_\_

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

**List of Attachments Supporting Special Seismic Certification**

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☐ Other(s) (Please Specify): \_\_\_\_\_

**OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022**

Signature: Timothy J. Piland Date: September 13, 2019

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to :  $S_{DS}$  (g) = 2.00  $z/h$  = 1

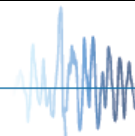
Condition of Approval (if applicable): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

"Access to Safe. Quality Healthcare Environments that Meet California's

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY  
OSH-FD-759 (REV 12/16/15)



OSHPD

# Table 1

## Certified Components

**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Certified Product Construction:** Painted carbon steel (NEMA 1)

**Certified Options:** Enclosures, lights, switches, controllers, BUS devices, transformers and batteries

**Certified Mounting Description:** Rigid wall mount

Model Number	Manufacturer	Description	NEMA Rating	Dimensions (inches)			Max Operating Weight (lb)	Mounting	Sds (g), z/h=1	Unit
				Depth	Width	Height				
10-063-m-c-p	Fike	SHP Pro Control System	1	4.8	15.5	22.3	22	Rigid wall mount	2.00	UUT1
10-071-c-p		Cheetah Xi 50 System	1	4.8	15.4	22.1	25			UUT3
10-071-c-p-d		Cheetah Xi 50 System	1	4.8	15.4	22.1	25			Interpolated
10-070-c-p		CyberCat 50 System	1	4.8	15.4	22.1	25			Interpolated
10-070-c-p-d		CyberCat 50 System	1	4.8	15.4	22.1	25			Interpolated
10-068-c-p		Cheetah Xi System	1	4.7	15.4	23.6	31			Interpolated
10-068-c-p-L		Cheetah Xi System	1	4.7	15.4	23.6	31			UUT2
10-064-c-p-L-d-o		CyberCat 1016 System	1	5.7	24.6	41.2	59			UUT4a
10-066-c-p-L-d-o		CyberCat 254 System	1	5.7	24.6	41.2	59			Interpolated
10-2154-c		Battery Enclosure	1	5.8	21.0	11.0	66			UUT4b
10-2236-c		Battery Enclosure	1	7.0	26.3	14.0	143			UUT4c
10-2690-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	14.0	14.0	15			UUT6
10-2691-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	24.0	24.0	25			Interpolated
10-2692H-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	36.0	24.0	38			Interpolated
10-2692V-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	24.0	36.0	38			Interpolated
10-2693H-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	36.0	30.0	67			Interpolated
10-2693V-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	30.0	36.0	67			UUT5

\*Note: In model number, m relates to mode (1=all modes, 2=sprinkler mode only); c relates to enclosure color (B=black, G=gray, R=red); L=lexan; p relates to voltage (1=120V, 2= 240V); d=deadfront; o relates to overlay color (B=black, R=red)

Deadfront options (d):

Blank = standard enclosure – no dead-front

0 = standard enclosure – solid dead-front

3 = standard enclosure – 3 card dead-front

13 = extended enclosure – 13 card dead-front

19 = fire command center enclosure -19 card dead-front

23 = fire command center enclosure – 23 card dead-front

Table 2

## Certified Subcomponents



Manufacturer: Fike

Product Line: Fire detection equipment line

Subcomponent: Enclosures

Enclosures									
Model Number	Manufacturer	Type	Description	Dimensions			Material	NEMA Rating	Unit
				Depth	Width	Height			
10-2453-c	Fike	Shp Pro	Standard	4.8	15.5	22.3	Painted carbon steel	1	UUT1
10-2541-c	Fike	Cheetah Xi	Standard	4.7	15.4	23.6		1	UUT2
10-2541-c-L	Fike	Cheetah Xi	Standard	4.7	15.4	23.6		1	Interpolated <sup>1</sup>
10-2621-c	Fike	CyberCat 50	Standard	4.8	15.4	22.1		1	Interpolated <sup>2</sup>
10-2621-c-d	Fike	CyberCat 50	Standard	4.8	15.4	22.1		1	Interpolated <sup>2</sup>
10-2623-c	Fike	Cheetah Xi 50	Standard	4.8	15.4	22.1		1	UUT3
10-2623-c-d	Fike	Cheetah Xi 50	Deadfront	4.8	15.4	22.1		1	Interpolated <sup>2</sup>
10-2483-c-L-d-o	Fike	CyberCat 1016	Standard	5.7	24.6	41.2		1	UUT4a
10-2527-c-L-d-o	Fike	CyberCat 254	Standard	5.7	24.6	41.2		1	Interpolated <sup>3</sup>
10-2783-c-o	Fike	CyberCat 254 or 1016	Smoke 15 card Dead front EXD-Enclosure Red/Black Overlay	5.6	24.6	24.5		1	Interpolated <sup>3</sup>
10-2753-c-o	Fike		Retrofit 16 Card Dead front Enclosure Red/Black Overlay	5.6	24.6	31.1		1	Interpolated <sup>3</sup>
10-2771-c fcc	Fike		w/21 Card Dead Front Enclosure Black Overlay	6.6	24.6	41.1		1	Interpolated <sup>3</sup>
10-2771-c-r fcc	Fike		w/21 Card Dead Front Enclosure Red Overlay	6.6	24.6	41.1		1	Interpolated <sup>3</sup>
10-2772-c fcc	Fike		w/25 Card Dead Front Enclosure Black Overlay	6.6	24.6	41.1		1	Interpolated <sup>3</sup>
10-2772-c-r fcc	Fike		w/25 Card Dead Front Enclosure Red Overlay	6.6	24.6	41.1		1	Interpolated <sup>3</sup>
10-2628-c	Fike		Deadfront, 50 Point Panel	1.3	14.3	23.0		1	Interpolated <sup>3</sup>
10-2695-c	Fike		Solid Deadfront Kit for Standard Enclosure	1.9	24.6	22.5		1	Interpolated <sup>3</sup>
10-2696-c	Fike		3 Module Deadfront Kit for Standard Enclosure	1.9	24.6	22.5		1	Interpolated <sup>3</sup>
10-2754-c	Fike		3 AMP Enclosure	5.7	24.6	41.2		1	Interpolated <sup>3</sup>
10-2755-c	Fike		5 AMP Enclosure	5.7	24.6	52.7		1	Extrapolated <sup>4</sup>

1. Represented by UUT2 test

2. Represented by UUT3 test

3. Represented by UUT4a test

4. 10-2755-C, 5 AMP Enclosure is a larger box than the 3 AMP Enclosure to allow for 2 more AMPs to be installed. The hardware and structure for mounting the additional AMPs is identical as the 3 AMP enclosure. The larger box allows for more mounting hardware of the enclosure. For surface mount it has 2 more tear drop mounting holes in the back of the box and for flush mount allows for 2 more screw/bolt holes in the side of the enclosure

\*Note: In model number, c relates to enclosure color (B=black, G=gray, R=red); L=lexan; p relates to voltage (1=120V, 2= 240V); d=deadfront; o relates to overlay color (B=black, R=red)

Deadfront options (d)

Blank = standard enclosure – no dead-front

0 = standard enclosure – solid dead-front

3 = standard enclosure – 3 card dead-front

13 = extended enclosure – 13 card dead-front

19 = fire command center enclosure -19 card dead-front

23 = fire command center enclosure – 23 card dead-front

**Table 2 - Continued**  
**Certified Subcomponents**

**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Enclosures (continued)

Enclosures (Continued)										
Model Number	Manufacturer	Type	Description	Dimensions			Material of Construction	NEMA Rating	Unit	
				Depth	Width	Height				
10-2690-B	Gemcom	Intelligent Smoke Control	Graph Ann 14"x14" w/ 10"x10" viewing window	4.0	14.0	14.0	Painted carbon steel	1	UUT6	
10-2691-B			Graph Ann 24"x24" w/ 20"x20" viewing window	4.0	24.0	24.0			Interpolated	
10-2692H-B			Graph Ann 36"x24" w/ 32"x20" viewing window	4.0	36.0	24.0			Interpolated	
10-2692V-B			Graph Ann 24"x36" w/ 20"x32" viewing window	4.0	24.0	36.0			Interpolated	
10-2693H-B			Graph Ann 36"x30" w/ 32"x26" viewing window	4.0	36.0	30.0			Interpolated	
10-2693V-B			Graph Ann 30"x36" w/ 26"x32" viewing window	4.0	30.0	36.0			UUT5	
10-2588-B			Graphic Annunciator	Backbox 14"x14" for part # 10-2690-B	N/A	14.0			14.0	Painted carbon steel
10-2589-B		Backbox 24"x24" for part # 10-2691-B		N/A	24.0	24.0	Interpolated			
10-2590H-B		Backbox 36"x24" for part # 10-2692H-B		N/A	36.0	24.0	Interpolated			
10-2590V-B		Backbox 24"x36" for part # 10-2692V-B		N/A	24.0	36.0	Interpolated			
10-2591H-B		Backbox 36"x30" for part # 10-2591H-B		N/A	36.0	30.0	Interpolated			
10-2591V-B		Backbox 30"x36" for part # 10-2693V-B		N/A	30.0	36.0	UUT5			
10-2154-R		Fike		Battery Enclosure	Red	5.8	21.0	11.0	Painted carbon steel	
10-2154-G			Gray		5.8	21.0	11.0	1		Extrapolated <sup>1</sup>
10-2236-R	Red		7.0		26.3	14.0	1	UUT4b		
10-2236-G	Gray		7.0		26.3	14.0	1	Extrapolated <sup>1</sup>		

1. Color change only from tested subcomponent



**Table 3**  
**Certified Subcomponents**

**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Light-emitting diodes and switches

Model Number	Manufacturer	Description	Material	Weight (lb)	Unit
Light-Emitting Diodes					
02-12216	Gemcom	Red LED	Plastic	>1.0	UUT5, UUT6
02-12218		Green LED	Plastic	>1.0	UUT5, UUT6
02-12219		Yellow LED	Plastic	>1.0	UUT5, UUT6
02-12220		White LED	Plastic	>1.0	UUT5, UUT6
Switches					
02-12245	Galco	Two-Position Toggle Switch	Plastic	>1.0	Extrapolated
02-12172		Three-Position Rotary Selector Switch	Plastic	>1.0	UUT5, UUT6
02-12171		Three-Position Toggle Switch	Plastic	>1.0	UUT5, UUT6
02-12246		Four-Position Rotary Switch	Plastic	>1.0	Extrapolated <sup>1</sup>
10-1903		34-PIN Ribbon Cable, Cntrol-Driver 24"	Plastic	>1.0	UUT5, UUT6
10-1950		34-PIN Ribbon Cable, Cntrol-Driver 48"	Plastic	>1.0	UUT5, UUT6

1. The three position rotary switch 02-12172 is larger than the four position rotary switch

**Table 4**  
**Certified Subcomponents**

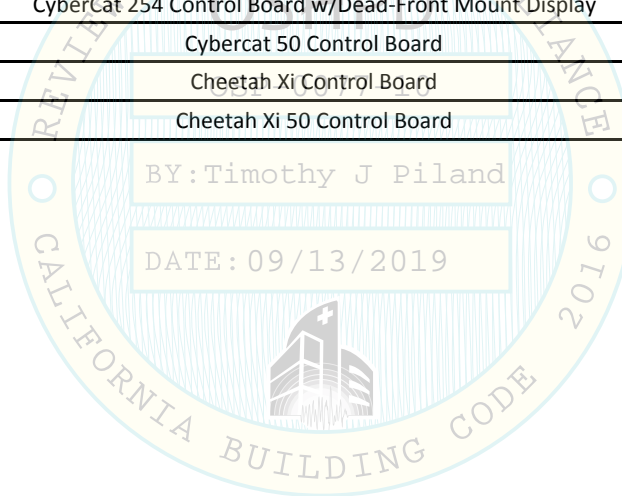
**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Controllers

Controllers				
Model Number	Manufacturer	Description	Material	Unit
10-2452-1	Fike	SHP Pro Control Board all modes	Circuit Board	UUT1
10-2452-2		SHP Pro Control Board sprinkler mode only	Circuit Board	Same as UUT1 <sup>1</sup>
10-2472		CyberCat 1016 Control Board w/Mounted Display	Circuit Board	Same as UUT2 <sup>1</sup>
10-2472-EXD		CyberCat 1016 Control Board w/Dead-Front Mount Display	Circuit Board	UUT4a
10-2525		CyberCat 254 Control Board w/Mounted Display	Circuit Board	Same as UUT2 <sup>1</sup>
10-2525-EXD		CyberCat 254 Control Board w/Dead-Front Mount Display	Circuit Board	Same as UUT4a <sup>1</sup>
10-2620		Cybercat 50 Control Board	Circuit Board	Same as UUT3 <sup>1</sup>
10-2542		Cheetah Xi Control Board	Circuit Board	UUT2
10-2622		Cheetah Xi 50 Control Board	Circuit Board	UUT3

1. Only differs by software





**Table 4 - Continued**  
**Certified Subcomponents**

**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Controllers (continued)

Controllers (Continued)				
Model Number	Manufacturer	Description	Material	Unit
10-2450	Fike	Class A Input Module	Circuit Board	UUT1
10-2448		Class A Output Module	Circuit Board	UUT1
10-2473		SLM - Supplemental Loop Module (adds 2 loops 254 devices each)	Circuit Board	UUT2
10-2482		Network Module	Circuit Board	UUT2
10-2624		Fiber Optic Network Module	Circuit Board	UUT2
10-2204		CRM4 - Relay Module	Circuit Board	UUT1
10-2254		CRPM - Reverse Polarity Module	Circuit Board	UUT2
10-2627		Ethernet Module	Circuit Board	UUT3
10-2583		Multi-Interface Module	Circuit Board	UUT4a
10-2746		Class A Speaker Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2727		Digital Paging Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2741		Paging Control Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2751		Digital Paging Assembly (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2663		Smoke Control Graphics Controller	Circuit Board	UUT5, UUT6
10-2665		Smoke Control Graphics Driver Card	Circuit Board	UUT5, UUT6
10-2528	Bosch	BOSCH DACT, 5 zone with serial inter-face	Circuit Board	UUT1 <sup>1</sup>

1. Subcomponent manufacturing process is ISO 9001 certified.

**Table 5****Certified Subcomponents****Manufacturer:** Fike**Product Line:** Fire detection equipment line**Subcomponent:** Peripheral BUS devices

Peripheral BUS Devices				
Model Number	Manufacturer	Description	Material	Unit
10-2658	Fike	6 Zone Smoke Control Module (dead-front mount)	Circuit Board	UUT4a
10-2659		Input/Output Module (dead-front mount)	Circuit Board	UUT4a
10-2660		Twenty Zone Annunciator Module (dead-front mount)	Circuit Board	UUT4a
10-2726		Amplifier Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2661		Audio Control Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2728		Fire-Phone Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2730		Supplemental Fire-Phone Card (Emergency Voice Communication System)	Circuit Board	UUT4a
10-2474		SPS - Supplemental Power Supply	Circuit Board	UUT2

BY: Timothy J Piland

DATE: 09/13/2019

**Table 6**  
**Certified Subcomponents**

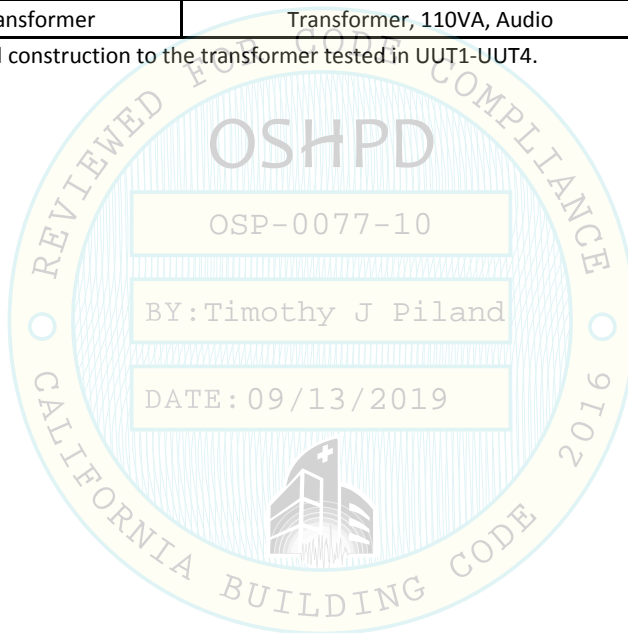
**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Transformers and Supplemental Power Supplies

Transformers and Supplemental Power Supplies				
Model Number	Manufacturer	Description	Material	Unit
B 170716	Hammond Power Solutions	Transformer, 120VAC primary	Copper Winding	UUT1, UUT2, UUT3, UUT4a
2-51-0919	MCI Transformer	Transformer, 110VA, Audio	Copper Winding	UUT4a

1. Extrapolated subcomponent is identical in size, weight and construction to the transformer tested in UUT1-UUT4.



**Table 7**  
**Certified Subcomponents**

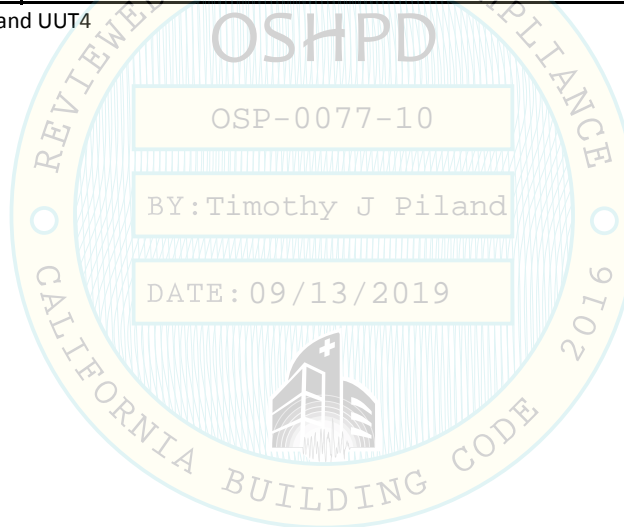
**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Subcomponent:** Batteries

Batteries				
Model Number	Manufacturer	Description	Material	Unit
SEC 1075	REMCO/ Interstate	Battery, 12V, 7AH (requires 2 each)	Absorbed Glass Mat (AGM)	UUT1, UUT3, UUT4a
SLA1104	REMCO/ Interstate	Battery, 12V, 12AH (requires 2 each)	Absorbed Glass Mat (AGM)	Interpolated <sup>1</sup>
PC 12180	REMCO/ Interstate	Battery, 12V, 18 AH (requires 2 each)	Absorbed Glass Mat (AGM)	UUT1, UUT2, UUT4a
DCM0035L	REMCO/ Interstate	Battery, 12V, 33AH (requires 2 each)	Absorbed Glass Mat (AGM)	UUT4b (x2)
DCM0075U	REMCO/ Interstate	Battery, 12V, 75AH (requires 2 each)	Absorbed Glass Mat (AGM)	UUT4c (x2)

1. Subcomponent is represented by batteries tested in UUT1 and UUT4



## Table 8

### Tested Components

**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Tested Product Construction:** Painted carbon steel (NEMA 1)

**Tested Options:** Enclosures, lights, switches, controllers, BUS devices, transformers and batteries

**Tested Mounting Description:** Rigid wall mount

Model Number	Manufacturer	Description	NEMA Rating	Dimensions (inches)			Weight (lb)	Mounting	Sds (g), z/h=1	Unit
				Depth	Width	Height				
10-063-1-R-1	Fike	SHP Pro	1	4.8	15.5	22.3	22	Rigid wall mount	2.00	UUT1
10-068-R-1-L		Cheetah Xi	1	4.7	15.4	23.6	31		2.00	UUT2
10-071-R-1		Cheetah Xi 50	1	4.8	15.4	22.1	25		2.00	UUT3
10-064-R-1-L-23		CyberCat 1016	1	5.7	24.6	41.2	59		2.00	UUT4a
10-2154-R		Small battery enclosure	1	5.8	21.0	11.0	66		2.00	UUT4b
10-2236-R		Large battery enclosure	1	7.0	26.3	14.0	143		2.00	UUT4c
10-2693V-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	30.0	36.0	67		2.00	UUT5
10-2690-B		Intelligent Smoke Control Graphic Annunciator	1	4.0	14.0	14.0	15		2.00	UUT6

DATE: 09/13/2019

# UNIT UNDER TEST - Summary Sheet

## UUT1



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** SHP Pro, Model 10-063-1-R-1

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:** Fike SHP control board, Bosch DACT 5-zone controller with serial interface, Fike Class A input/output modules, Fike CRM4 relay module, Hammond 120VAC transformer, 2 Remco 12V 7AH batteries with Fike wiring assembly

**Unit Mounting Description:** The unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure spaced at approximately 14" in width and 21" in height on center.

### UUT Properties

UUT1	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	22	4.8	15.5	22.3	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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



# UNIT UNDER TEST - Summary Sheet

## UUT2



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** Cheetah Xi, Model 10-068-R-1-L

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:** Fike Cheetah Xi control board, Fike supplemental loop module, Fike Network module, Fike fiber optic network module, Fike reverse polarity module, Fike supplemental power supply BUS device, Hammond 120VAC transformer, 2 Remco 12V 18AH batteries

**Unit Mounting Description:** The unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure spaced at approximately 14" in width and 21" in height on center.

### UUT Properties

UUT2	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	31	4.7	15.4	23.6	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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



# UNIT UNDER TEST - Summary Sheet

## UUT3



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** Cheetah Xi 50, Model 10-071-R-1

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:** Fike Cheetah Zi 50 control board, Fike ethernet module, Hammond 120VAC transformer, 2 Remco 12V 7AH batteries

**Unit Mounting Description:** The unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure spaced at approximately 14" in width and 21" in height on center.

### UUT Properties

UUT3	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	25	4.8	15.4	22.1	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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

# UNIT UNDER TEST - Summary Sheet

## UUT4a, UUT4b, UUT4c



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** Cheetah Xi 50, Model 10-071-R-1

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:**

**UUT4a:** Fike CyberCat 1016 control board w/ dead-front mount display, Fike multi-interface module, Fike class A speaker card, Fike digital paging card, Fike paging control board, Fike digital paging assembly, Fike 6 zone smoke control module, Fike input/output module, Fike twenty zone annunciator module, Fike amplifier card, Fike audio control card, Fike fire-phone card and supplemental fire-phone card, Hammond 120VAC transformer, MCI 110VA transforme, Remco 12V 7AH battery, Remco 12V 18AH battery

**UUT4b:** 2 Remco 12V 33AH batteries

**UUT4c:** 2 Remco 12V 75AH batteries

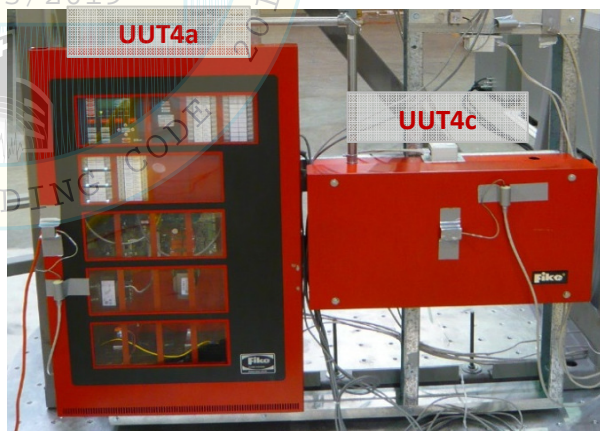
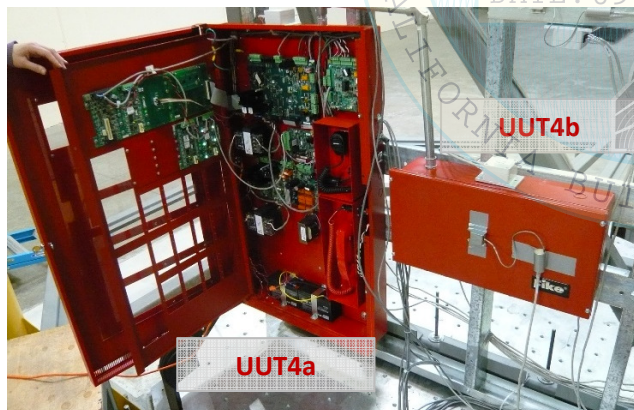
**Unit Mounting Description:** Each unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure. Bolts were spaced at approximately 23" in width and 40" in height on center for UUT4a, 20" in width and 10" in height on center for UUT4b, and 25" in width and 131" in height on center for UUT4c.

### UUT Properties

	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
UUT4a	59	5.7	24.6	41.2	N/A	N/A	N/A
UUT4b	66	5.8	21.0	11.0	N/A	N/A	N/A
UUT4c	143	7.0	26.3	14.0	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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

# UNIT UNDER TEST - Summary Sheet

## UUT5



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** Intelligent Smoke Control Graphic Annunciator

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:** LEDs, three position rotary selector switch, three position toggle switch, smoke control module, switch/LED driver module, 34-PIN ribbon cable (24" and 48") and Fike smoke control graphics controller and smoke control graphics driver card

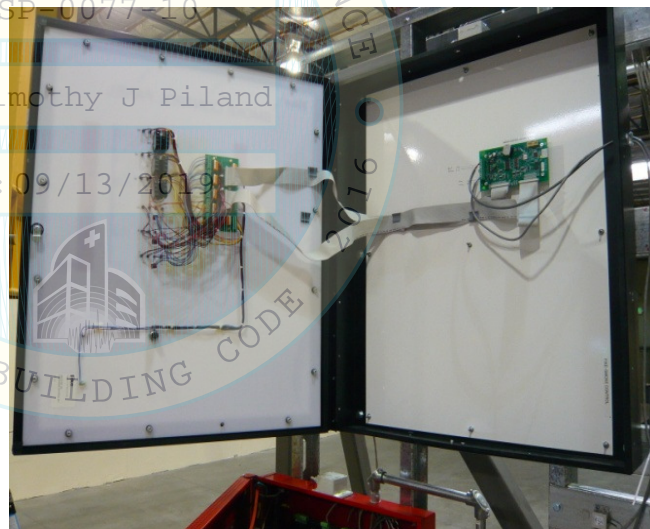
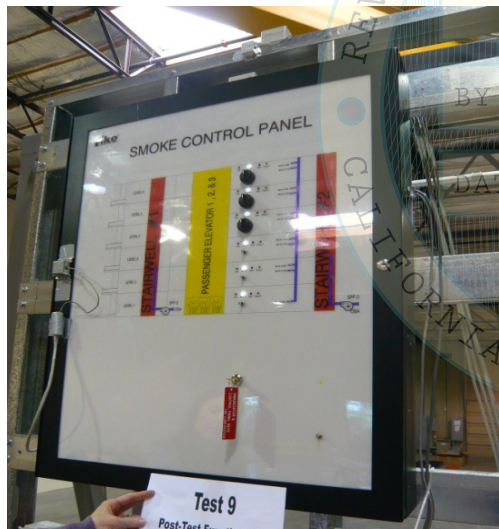
**Unit Mounting Description:** The unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure spaced at approximately 28" in width and 34" in height on center.

### UUT Properties

UUT5	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	67	4.0	30.0	36.0	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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



# UNIT UNDER TEST - Summary Sheet

## UUT6



**Manufacturer:** Fike

**Product Line:** Fire detection equipment line

**Model Number:** Intelligent Smoke Control Graphic Annunciator

**Product Construction Summary:** Painted carbon steel enclosure, NEMA 1

**Options / Subcomponent Summary:** LEDs, three position rotary selector switch, three position toggle switch, smoke control module, switch/LED driver module, 34-PIN ribbon cable (24" and 48") and Fike smoke control graphics controller and smoke control graphics driver card

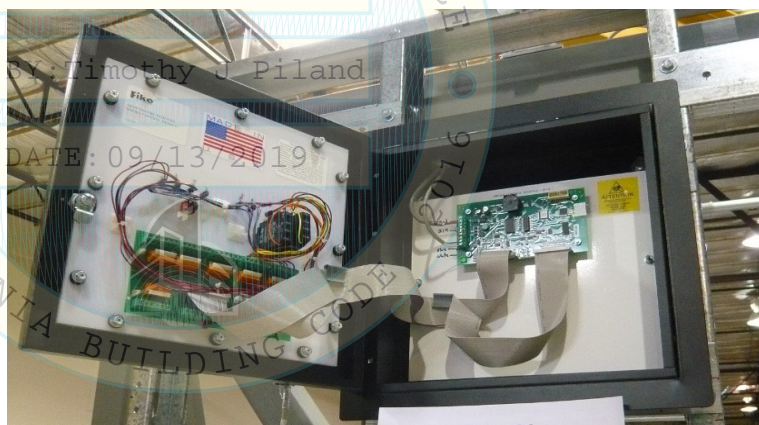
**Unit Mounting Description:** The unit was attached to the DCL shake table interface frame with four 3/8-inch diameter Grade 5 bolts, using the manufacturer-provided holes in the back of the enclosure spaced at approximately 11" in width and 11" in height on center.

### UUT Properties

UUT6	Operating Weight (lb)	Dimensions (in)			Lowest Natural Frequency (Hz)		
		Depth	Width	Height	Front-Back	Side-Side	Vertical
	15	4.0	14.0	14.0	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 2016	ICC-ES AC156	2.00	1.0	1.5	3.20	2.40	1.34	0.54



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