Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/27/17

Kidde Fire Systems

Kidde Fire Systems - Flow Calculation Software v4.0.0 (Novec 1230)
UL: EX4674 / Component of FM Approved System

Eastern Fire Protection

170 Kittyhawk Ave
Auburn, ME 04210
Phone: 207-784-1507
File Name: Apothecary by Design NOVEC Calc.FC4

Consolidated Report

Customer Information

Company Name: Apothecary by Design
Address: 141 Preble St
Portland, ME 04101

Phone:
Contact: Eddie Bureau
Title:

Project Data

Project Name: 1st Floor Server Room
Designer: CRM
Number:
Account:
Location:
Description:

Enclosure Report

Elevation: 25 ft (relative to sea level)
Atmospheric Correction Factor: 1

Enclosure 1 Server Room

Enclosure Temperature: Number of Nozzles: 1

Calculation Date/Time: Friday, April 7, 2017, 9:19:15 AM
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Consolidated Report

Minimum:	70 F	Width:	7.0 ft
Maximum:	70 F	Length:	12.3 ft
Max. Concentration:	7.59 %	Height:	9.0 ft
Design Concentration:		Volume:	774.9 ft ³
Adjusted:	7.59 %	Non-permeable:	0.0 ft ³
Minimum:	4.70 %	Total Volume:	774.9 ft ³
Min. Agent Required:	33.1 lb		
Adjusted Agent Required:	55.0 lb		

Agent Source Report

Agent:	Novec / Propellant N2
(Novec 1230 is a Trademark of 3M)	
Cylinder Name:	70 lb Cylinder
Cylinder Part Number:	45-100070-001
Agent Per Cylinder:	55.0 lb
Fill Density:	55.0 lbs / cubic ft
Number of Main Cylinders:	1
Number of Reserve Cylinders:	1
Total Agent Amount:	110.0 lb (includes reserve)
Cylinder Empty Weight:	52.0 lb
Weight, All Cylinders + Agent:	214.0 lb
Floor Area Per Cylinder:	0.44 ft ²
Floor Loading Per Cylinder:	243 lbs / ft ²

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Consolidated Report

Parts Report

Total Agent Required: 110.0 lb (includes reserve)

Cylinder Name: 70 lb Cylinder (Part: 45-100070-001)

Number of Cylinders: 2 (includes reserve)

Nozzle	Type	Nozzle Diameter	Drill Size	Nozzle Area	Part Number
E1-N1	180-SS	3/4 in	D	0.3803 in ²	45-194614-168

Pipe & Fittings	Type	Diameter	Length	Elbows (90)	Elbows (45)	Tees	Unions
	40T	3/4 in	8.75 ft	6	0	0	0
	40T	1 in	0.75 ft	0	0	1	0

Other Objects	Name	Quantity	Part Number
	1-1/2 in. Valve Outlet Adapter	2	283904
	3/4 in. Check Valve	2	81-800266-000

System Acceptance Report

*** WARNING - The data in this project may have been changed after the calculations were performed.**

System Discharge Time:	8.1 seconds
Percent Agent In Pipe:	11.7%
Percent Agent Before First Tee:	0.0%
Dead Volume:	0.0% (0.0 lb)
Enclosure Number:	1
Enclosure Name:	Server Room
Minimum Design Concentration:	4.70%
Adjusted Design Concentration:	7.59%

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Consolidated Report

Predicted Concentration: 7.59%
Maximum Expected Agent Concentration: 7.59% (At 70 F)

Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Average Nozzle Pressure
E1-N1	33.1 lb	55.0 lb	55.0 lb	65 psig

Calculation Date/Time: Friday, April 7, 2017, 9:19:15 AM
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Pipe Network Report

Description	Pipe Section	Start Node	End Node	Pipe Type	Pipe Diameter	Pipe Length	Union	Total Elevation Change	Total Equivalent Length	Nozzle Name	Nozzle Size	Nozzle Type	Nozzle Area
Cylinder - On	Man.	0	4		1-1/2 in	2.91 ft	0	2.91 ft	50.00 ft				
Adapter	Man.	4	5		1-1/2 in	0.22 ft	0	------	11.80 ft				
Elbow (90)	Man.	5	6	40T	3/4 in	------	0	------	2.20 ft				
Pipe	Man.	6	7	40T	3/4 in	0.25 ft	0	0.25 ft	0.30 ft				
Check Valve ->	Man.	7	8		3/4 in	0.28 ft	0	0.28 ft	17.00 ft				
Pipe	Man.	8	9	40T	1 in	0.25 ft	0	0.25 ft	0.30 ft				
Elbow (90)	Man.	9	10	40T	3/4 in	------	0	------	2.20 ft				
Pipe	Man.	10	11	40T	3/4 in	1.00 ft	0	------	1.00 ft				
Tee	Man.	2	12	40T	1 in	------	0	------	5.70 ft				
Reserve Man.	Man.	1	2	40T	1 in	------	0	------	0.00 ft				
Tee	Man.	11	12	40T	1 in	------	0	------	5.70 ft				
Pipe	Man./End	12	13	40T	1 in	0.25 ft	0	0.25 ft	0.30 ft				
Pipe	System	13	14	40T	3/4 in	5.00 ft	0	5.00 ft	5.00 ft				
Elbow (90)	System	14	15	40T	3/4 in	------	0	------	2.20 ft				
Pipe	System	15	16	40T	3/4 in	1.00 ft	0	------	1.00 ft				
Elbow (90)	System	16	17	40T	3/4 in	------	0	------	2.20 ft				
Pipe&Nozzle	System	17	18	40T	3/4 in	0.25 ft	0	-0.25 ft	0.30 ft	E1-N1	3/4 in	180-SS	0.3803 in ²

Date: 05/27/17

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CITY OF PORTLAND, MAINE

Kidde Fire Systems

Consolidated Report

View #: 1 - Isometric View-Node

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Date: 05/27/17

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Consolidated Report

View #: 5 - Standard Elevation View

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Kidde Fire Systems

Consolidated Report

View #: 9 - Standard Plan View

Key ID: 1803507359

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RESURGAM