



Kidde Fire Protection - Flow Calculation Software v4.00 (Novec 1230)  
UL: EX4674 / Component of FM Approved System

File Name: HV 001\_Jinonice střed.FC4

## Consolidated Report

### Customer Information

Company Name: VPÚ DECO PRAHA a.s.  
Address: Podbabská 1014/20  
16000 Praha 6

Phone: +420 731 142 157  
Contact: Ing. Ladislav Řídký  
Title:

### Project Data

Project Name: FSV UK Jinonice  
Designer: Ing. David Pařízek  
Number: HV 001  
Account: Prostor  
Location: SERVEROVNA RUK C.033 a SERVEROVNA FSV C03  
Description: Stabilní hasicí zařízení s plynem Novec 1230 (SHZ)

### Enclosure Report

Elevation: 300 m (relative to sea level)

Atmospheric Correction Factor: 1 (ISO 14520)

Enclosure 1 C.033

Enclosure Temperature:	Number of Nozzles:	1
Minimum: 18.0 C	Width:	5.45 m
Maximum: 25.0 C	Length:	6.85 m
Max. Concentration: 5.76% (At 25.0 C)	Height:	2.60 m
Design Concentration:	Volume:	97.06 m <sup>3</sup>
Adjusted: 5.64 %	Non-permeable:	0.00 m <sup>3</sup>
Minimum: 5.60 %	Total Volume:	97.06 m <sup>3</sup>
Min. Agent Required: 80.72 kg		

---

Calculation Date/Time: Monday, November 21, 2022, 11:04:55 AM  
Copyright (c) Jensen Hughes, Inc. Licensed to: Kidde-Fenwal  
Key ID: 1559920589

## Consolidated Report

Adjusted Agent Required: 81.26 kg

Enclosure 2      C.034

Enclosure Temperature:	Number of Nozzles:	1
Minimum: 18.0 C	Width:	4.74 m
Maximum: 24.0 C	Length:	5.50 m
Max. Concentration: 5.79% (At 24.0 C)	Height:	2.60 m
Design Concentration:	Volume:	67.78 m <sup>3</sup>
Adjusted: 5.63 %	Non-permeable:	0.00 m <sup>3</sup>
Minimum: 5.60 %	Total Volume:	67.78 m <sup>3</sup>
Min. Agent Required: 56.37 kg		
Adjusted Agent Required: 56.74 kg		

## Agent Source Report

Agent: 3M™ Novec™ 1230 Fire Protection Fluid  
Container Name: 142 L Cylinder  
Container Part Number: 45-100350-001  
Agent Per Container: 138.00 kg  
Fill Density: 0.975 kg / l  
Number of Main Containers: 1  
Number of Reserve Containers: 0  
  
Container Empty Weight: 91.20 kg  
Weight, All Containers + Agent: 229.20 kg  
Floor Area Per Container: 0.13 m<sup>2</sup>  
Floor Loading Per Container: 1763 kg /m<sup>2</sup>

## Consolidated Report

### Parts Report

Total Agent Required: 138.00 kg

Container Name: 142 L Cylinder (Part: 45-100350-001)

Number of Containers: 1

Nozzle	Type	Nozzle Diameter	Nozzle Area	Part Number
E1-N1	360-BSP-BR	32 mm	721.61 mm <sup>2</sup>	45-294726-201
E2-N1	360-BSP-BR	32 mm	519.55 mm <sup>2</sup>	45-294726-190

Pipe & Fittings	Type	Diameter	Length	Elbows (90)	Elbows (45)	Tees	Unions
	40T	32 mm	2.40 m	2	0	0	0
	40T	40 mm	2.50 m	0	0	0	0
	40T	50 mm	2.55 m	2	0	1	0

Other Objects	Name	Quantity	Part Number
	50 mm Valve Outlet Adapter	1	283905-000

## System Acceptance Report

System Discharge Time: 6.6 seconds

Percent Agent In Pipe: 16.5%

Percent Agent Before First Tee: 10.0%

Dead Volume: 0.0% (0.00 kg)

Enclosure Number: 1

Enclosure Name: C.033

Minimum Design Concentration: 5.60%

Adjusted Design Concentration: 5.64%

Predicted Concentration: 5.61%

Maximum Expected Agent Concentration: 5.76% (At 25.0 C)

Calculation Date/Time: Monday, November 21, 2022, 11:04:55 AM

Copyright (c) Jensen Hughes, Inc. Licensed to: Kidde-Fenwal

Key ID: 1559920589

## Consolidated Report

Maximum Allowed Enclosure Pressure: 300 Pa  
Installed Vent Area: 0.00 m<sup>2</sup>  
Estimated Free Vent Area Required (Negative): 0.12 m<sup>2</sup>  
Estimated Free Vent Area Required (Positive): 0.02 m<sup>2</sup>  
Predicted Enclosure Pressure (Negative): N/A  
Predicted Enclosure Pressure (Positive): N/A  
Maximum Enclosure Flow Rate: 17.46 kg/s

Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Average Nozzle Pressure
E1-N1	80.72 kg	81.26 kg	80.93 kg	4.482 bar
Total	80.72 kg	81.26 kg	80.93 kg	

Enclosure Number: 2  
Enclosure Name: C.034  
Minimum Design Concentration: 5.60%  
Adjusted Design Concentration: 5.63%  
Predicted Concentration: 5.67%  
Maximum Expected Agent Concentration: 5.79% (At 24.0 C)

Maximum Allowed Enclosure Pressure: 300 Pa  
Installed Vent Area: 0.00 m<sup>2</sup>  
Estimated Free Vent Area Required (Negative): 0.08 m<sup>2</sup>  
Estimated Free Vent Area Required (Positive): 0.01 m<sup>2</sup>  
Predicted Enclosure Pressure (Negative): N/A  
Predicted Enclosure Pressure (Positive): N/A  
Maximum Enclosure Flow Rate: 12.03 kg/s

Nozzle	Minimum Agent Required	Adjusted Agent Required	Predicted Agent Delivered	Average Nozzle Pressure
E2-N1	56.37 kg	56.74 kg	57.07 kg	5.074 bar
Total	56.37 kg	56.74 kg	57.07 kg	

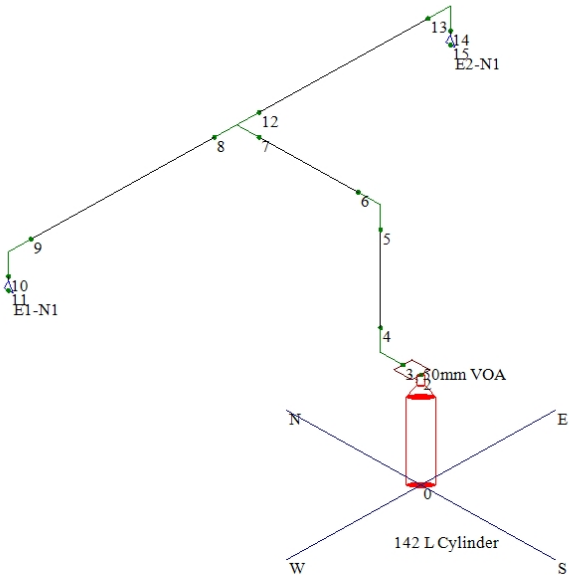
## Consolidated Report

### 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
Container - On	Man./End	0	2		50 mm	1.35 m	0	1.35 m	15.24 m				
Adapter	System	2	3		50 mm	0.08 m	0	-----	2.74 m				
Elbow (90)	System	3	4	40T	50 mm	-----	0	-----	1.68 m				
Pipe	System	4	5	40T	50 mm	1.20 m	0	1.20 m	1.20 m				
Elbow (90)	System	5	6	40T	50 mm	-----	0	-----	1.68 m				
Pipe	System	6	7	40T	50 mm	1.35 m	0	-----	1.35 m				
Tee	System	7	8	40T	40 mm	-----	0	-----	2.65 m				
Pipe	System	8	9	40T	40 mm	2.50 m	0	-----	2.50 m				
Elbow (90)	System	9	10	40T	32 mm	-----	0	-----	1.13 m				
Pipe&Nozzle	System	10	11	40T	32 mm	0.05 m	0	-0.05 m	0.05 m	E1-N1	32 mm	360-BSP-BR	721.61 mm <sup>2</sup>
Tee	System	7	12	40T	32 mm	-----	0	-----	2.29 m				
Pipe	System	12	13	40T	32 mm	2.30 m	0	-----	2.30 m				
Elbow (90)	System	13	14	40T	32 mm	-----	0	-----	1.13 m				
Pipe&Nozzle	System	14	15	40T	32 mm	0.05 m	0	-0.05 m	0.05 m	E2-N1	32 mm	360-BSP-BR	519.55 mm <sup>2</sup>

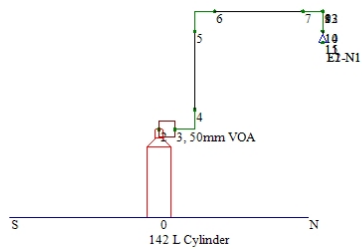
Consolidated Report

View #: 1 - Isometric View-Node



Consolidated Report

View #: 5 - Standard Elevation View



Consolidated Report

View #: 9 - Standard Plan View

