

Customer :	POSUM
Location :	Poznań
Made by :	Michał Warmiak
Room name :	Serwerownia
Risk type :	Higher Hazard Class A [45,7%]
Date :	2021.05.13
Remarks :	

Dimensions of the protected buildings:		Volume 1	Volume 2	Volume 3
Lenght		3,03 m	0,00 m	0,00 m
Width		5,91 m	0,00 m	0,00 m
Height		2,80 m	0,00 m	0,00 m
Calculated floor surface		17,9 m2		
Customized floor surface				
Cross volume		50,1 m3		
Volume to be deducted				
Volume to be added				
Calculated net volume		50,1 m3		
Customized net volume				
Global calculated net volume			50,1 m3	
Regulation		EN 15004		ed.2018
Protected risk / C%		004 - Computer / server room	004 - Computer / server room	004 - Computer / server room
Required concentration		45,70 %	45,70 %	45,70 %
Room temperature		20 °C	20 °C	20 °C
Altitude		400 m		Coef. 1,000

Calculation amount of IG-541 necessary			
Specific volume of IG-541	0,7058 m3/kg	0,7058 m3/kg	0,7058 m3/kg
Mass of IG-541 required	1,1925 kg/m3	1,1925 kg/m3	1,1925 kg/m3
Mass of IG-541 required per volume	43,3 kg	0,0 kg	0,0 kg
Total quantity of IG-541	43,3 kg		

Help to choose the nozzles		Volume 1	Volume 2	Volume 3
Discharge time			60 seconds	
Flow		0,7 kg/sec		
Quantity of layers	1			
Maximum coverage area per nozzle		30,0 m2	30,0 m2	30,0 m2
Minimal quantity of nozzle		0,6		
Quantity of nozzles per layer to supply the flow	3/8"	3		
	1/2"	2		
	3/4"	1		
	1"	1		
	1 1/4"	1		
	1 1/2"	1		
	2"	1		

Configuration				Centralized		
Cylinder pressure	Cylinder volume	Gas mass per cylinder	Total quantity of gas required	Calculated quantity of cylinders	Customized quantity of cylinders	Actual storage of gas
300 bar	140 L	58,3 kg	43,3 kg	0,74	1	58,3 kg

Oxygen concentration O ₂ concentration after total discharge :	9,14 %
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Calculation of venting flap based on the VdS equations		Calculation with ζ=		2
Discharge time		60 seconds		
DUCT DOWNSTREAM AM FLAP	Acceptable overpressure	Volume 1	Volume 2	Volume 3
		3,00 mbar	3,00 mbar	3,00 mbar
	Duct flow section (m²)			
	Equivalent duct circular diameter			
	Duct length (m)			
	Number of bends 90°			
	Inner duct material	Galvanized steel	Galvanized steel	Galvanized steel
	Rugosity (mm)	0,15	0,15	0,15
	Estimated pressure loss in the duct	0,00 mbar	0,00 mbar	0,00 mbar
	Minimum net opening of the venting flap without duct	0,034 m2		
Minimum net opening of the venting flap with duct				