

**MAXIMUM VOLUME OF ENCLOSURE THAT CAN BE PROTECTED BY THE 3.0 LB. SSP 1230 SYSTEM**



**MAXIMUM VOLUME OF ENCLOSURE THAT CAN BE PROTECTED BY THE 7.0 LB. SSP 1230 SYSTEM**



**MAXIMUM VOLUME OF ENCLOSURE THAT CAN BE PROTECTED BY THE 14.0 LB SSP 1230 SYSTEM**



**SSP 1230 PRE-ENGINEERED SYSTEM CALCULATION GUIDE**

**Table 4 - Maximum Volume Enclosure for 3 lb. System**

Minimum enclosure temp	Maximum hazard volume (ft <sup>3</sup> )							
	Design concentration number							
	3	4	5	6	7	8	9	10
0	95.8	71.1	56.3	46.4	39.4	34.1	30.0	26.7
10°	98.0	72.7	57.6	47.5	40.3	34.8	30.6	27.3
20°	100.3	74.5	59.0	48.6	41.2	35.7	31.4	27.9
30°	102.7	76.2	60.4	49.8	42.2	36.5	32.1	28.6
40°	105.1	78.0	61.7	50.9	43.2	37.4	32.9	29.2
50°	107.4	79.8	63.1	52.1	44.1	38.2	33.6	29.9
60°	109.8	81.5	64.5	53.2	45.1	39.1	34.3	30.6
70°	112.2	83.3	65.9	54.4	46.1	39.9	35.1	31.2
80°	114.5	85.0	67.3	55.5	47.1	40.7	35.8	31.9
90°	116.9	86.8	68.7	56.6	48.0	41.6	36.6	32.5
100°	119.3	88.5	70.1	57.8	49.0	42.4	37.3	33.2
110°	121.6	90.3	71.5	58.9	50.0	43.3	38.0	33.9
120°	124.0	92.1	72.9	60.1	51.0	44.1	38.8	34.5
130°	126.4	93.8	74.3	61.2	51.9	45.0	39.5	35.2

**Table 5 - Maximum Volume Enclosure for 7 lb. System**

Minimum enclosure temp	Maximum hazard volume (ft <sup>3</sup> )							
	Design concentration number							
	3	4	5	6	7	8	9	10
0	223.6	166.0	131.4	108.4	91.9	79.5	69.9	62.2
10°	228.6	169.7	134.3	110.8	93.9	81.3	71.5	63.6
20°	234.1	173.8	137.6	113.4	96.2	83.3	73.2	65.2
30°	239.6	177.9	140.8	116.1	98.5	85.2	74.9	66.7
40°	245.2	182.0	144.1	118.8	100.7	87.2	76.7	68.2
50°	250.7	186.1	147.3	121.5	103.0	89.2	78.4	69.8
60°	256.2	190.2	150.6	124.1	105.3	91.1	80.1	71.3
70°	261.7	194.3	153.8	126.8	107.6	93.1	81.9	72.9
80°	267.3	198.4	157.1	129.5	109.8	95.1	83.6	74.4
90°	272.8	202.5	160.3	132.2	112.1	97.0	85.3	75.9
100°	278.3	206.6	163.6	134.9	114.4	99.0	87.0	77.5
110°	283.8	210.7	166.8	137.5	116.6	101.0	88.8	79.0
120°	289.4	214.8	170.0	140.2	118.9	102.9	90.5	80.5
130°	294.9	218.9	173.3	142.9	121.2	104.9	92.2	82.1

**Table 6 - Maximum Volume Enclosure for 14 lb. System**

Minimum enclosure temp	Maximum hazard volume (ft <sup>3</sup> )							
	Design concentration number							
	3	4	5	6	7	8	9	10
0	447.2	332.0	262.8	216.7	183.8	159.1	139.9	124.5
10°	457.2	339.4	268.7	221.5	187.9	162.6	143.0	127.3
20°	468.2	347.6	275.2	226.9	192.4	166.5	146.4	130.3
30°	479.3	355.8	281.6	232.2	196.9	170.5	149.9	133.4
40°	490.3	364.0	288.1	237.6	201.5	174.4	153.3	136.5
50°	501.4	372.2	294.6	242.9	206.0	178.3	156.8	139.6
60°	512.4	380.4	301.1	248.3	210.6	182.3	160.2	142.6
70°	523.5	388.6	307.6	253.7	215.1	186.2	163.7	145.7
80°	534.5	396.8	314.1	259.0	219.6	190.1	167.2	148.8
90°	545.6	405.0	320.6	264.4	224.2	194.1	170.6	151.9
100°	556.6	413.2	327.1	269.7	228.7	198.0	174.1	154.9
110°	567.7	421.4	333.6	275.1	233.3	201.9	177.5	158.0
120°	578.7	429.6	340.1	280.4	237.8	205.8	181.0	161.1
130°	589.8	437.8	346.6	285.8	242.3	209.8	184.4	164.2



# HOW TO DETERMINE THE CORRECT SSP 1230 SYSTEM FOR YOUR APPLICATION.

### Step 1

Identify the hazard to protect and note the applicable design concentration number.

**Example:** Hazard is Class C (Energized) 4.5% 4.7% required

Round up design concentration to 5% (next whole number)

### Electrical Control Cabinet

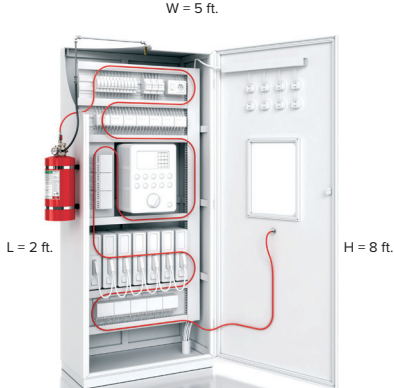


Table 1 - Hazards to Protect			
Flammable Liquid	Design Concentration % v/v	Flammable Liquid	Design Concentration % v/v
1-Butane	6.37	Isooctane	6.11
1-Propanol	7.02	Isopropanol Alcohol	6.37
2,2,4-trimethylpentane	6.11	Methane	7.28
2-butoxyethanol	6.76	Methanol	8.45
Acetone	5.59	Methyl Ethyl Ketone	5.85
Acetonitrile	4.20	Methyl Isobutyl Ketone	5.72
Commercial Heptane	5.72	Methyl Tert Butyl Ether	5.95
Commercial Hexanes	5.59	n-Heptane	5.85
Cyclohexane	5.85	n-Heptane	6.11
Cyclopentanone	5.98	Octane	5.72
Denatured Alcohol (92.2% EtOH, 4.6% IPA, and 3.1% MeOH)	6.89	Propane	7.54
Diesel Fuel	4.42	Pyrrolidine	6.11
Diethyl Ether	6.37	Technical Heptane	5.59
Ethanol	7.15	Tetrahydrofuran	6.50
Ethyl Acetate	6.11	Toluene	4.55
Gasoline-87 oct. unleaded	5.85	Transformer Oil	5.85
Hexene	5.98	Class A & de-energized Class C Fires	4.20

\*Note: Design Concentration for Class B Fire are shown in the above table and includes a 30% safety factor from the minimum extinguishing concentration.

Table 2 - Flooding Factor Numbers									
	Design concentration number								
	3	4	5	6	7	8	9	10	
30°F	0.0292	0.0394	0.0497	0.0603	0.0711	0.0821	0.0934	0.1049	
40°F	0.0286	0.0385	0.0486	0.0589	0.0695	0.0803	0.0913	0.1026	
50°F	0.0279	0.0376	0.0475	0.0576	0.0680	0.0785	0.0893	0.1003	
60°F	0.0273	0.0368	0.0465	0.0564	0.0665	0.0768	0.0874	0.0981	
70°F	0.0267	0.0360	0.0455	0.0552	0.0651	0.0752	0.0855	0.0961	
80°F	0.0262	0.0353	0.0446	0.0541	0.0637	0.0736	0.0838	0.0941	
90°F	0.0257	0.0346	0.0437	0.0530	0.0624	0.0721	0.0821	0.0922	
100°F	0.0252	0.0339	0.0428	0.0519	0.0612	0.0707	0.0804	0.0904	
110°F	0.0247	0.0332	0.0420	0.0509	0.0600	0.0693	0.0789	0.0886	
120°F	0.0242	0.0326	0.0412	0.0499	0.0589	0.0680	0.0774	0.0869	
130°F	0.0237	0.0320	0.0404	0.0490	0.0578	0.0667	0.0759	0.0853	

### Step 2

To identify the flooding factors number determine the enclosure's minimum temperature and align this with the rounded up design concentration number in Table 2 left.

**Example:** Minimum temperature is 70°F, rounding up number is 5; therefore flooding factor number is 0.0455.

### Step 3

Calculate cubic feet of enclosure by multiplying the width x length x height. To identify required system size multiply cubic feet of enclosure by the flooding factors number.

**Example:** Enclosure is 5 ft. W x 2 ft. L x 8 ft. H = 80 cubic feet.  $80 \times 0.0455 = 3.64$ . This would round up to the 7 lb. system.

### Step 4

Use Table 3 to double check that the enclosure to be protected does not exceed the maximum area coverage of the tested nozzles and the volume coverage does not exceed the maximum hazard volume of enclosure in Table 4.

**Example:** The enclosure is 10 ft<sup>2</sup> and the max coverage of 7 lb nozzle is 108.10 ft<sup>2</sup>. The 7 lb system can protect up to 153.8 ft<sup>3</sup> at 70°F with a design concentration of 5%.

Table 3 - Maximum Area Coverage	
System	Max area coverage
3 lb.	46.33 ft <sup>2</sup>
7 lb.	108.10 ft <sup>2</sup>
14 lb.	216.10 ft <sup>2</sup>