



CALCULATION OF ELECTROLYTE QUANTITY FOR UPS SYSTEMS

The City of Mountain View's Fire Protection Engineer has provided this form to help determine exemption or compliance with 2013 CFC Section 608, provisions regulating Stationary Storage Battery Systems.

Company or Tenant Name: _____

Project Street Address: _____

Room Number and Location of UPS equipment: _____

Manufacture(s) Cut Sheets (*Must provide & indicate electrolyte volume per battery*):
Yes _____ / No _____

UPS System equipment (*Battery Type*): _____

Quantity of Batteries: _____

Quantity of electrolyte volume within EACH Battery: _____

ELECTROLYTE CALCULATION:

(Quantity of Batteries: _____) X (_____ Quantity of Electrolyte Volume within EACH Battery) = _____

EXAMPLE:

Quantity of Batteries: **100** _____

Quantity of Electrolyte Volume within EACH Battery: **.054 gallons** _____

(100) X (.054) = 5.4 gallons



CALCULATION OF ELECTROLYTE QUANTITY FOR UPS SYSTEMS

The City of Mountain View’s Fire Protection Engineer has provided this form to help determine exemption or compliance with 2013 CFC Section 608, provisions regulating Stationary Storage Battery Systems.

Company or Tenant Name: Construction, Inc.

Project Street Address: 500 Castro Street

Room Number and Location of UPS equipment: Room #109 - First Floor

Manufacture(s) Cut Sheets (Must provide & indicate electrolyte volume per battery):

Yes / No

UPS System equipment (Battery Type): Power Solutions, Inc. - UPS 12-300MR

Quantity of Batteries: 8

Quantity of electrolyte volume within EACH Battery: 1.2

ELECTROLYTE CALCULATION:

(Quantity of Batteries 8) X (1.2 Quantity of Electrolyte Volume within EACH Battery) = 9.6 gallons

EXAMPLE:

Quantity of Batteries: **100** _____

Quantity of Electrolyte Volume within EACH Battery: **.054 gallons** _____

(100) X (.054) = 5.4 gallons

Manufactures Specifications and Cut Sheets

HIGH RATE MAX



Valve Regulated Lead Acid Battery

Designed for UPS Standby Power Applications.

FEATURES & BENEFITS

APPLICATIONS

- Data Centers
- Network Operations Centers
- Industrial Process Control Facilities
- Internet Housing Sites
- Semiconductor Manufacturing
- Banks & Financial Markets
- Power Generation Plants
- Hospitals & Testing Laboratories
- Emergency 911 Response Centers

- 10 year design life @ 25°C
- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance.
- 3 Year Warranty (refer Dynasty warranty card, 41-9027)
- Patented Long Life Alloy having the lowest calcium levels in the industry - minimizing grid growth, reducing gassing, and extending battery life.
- Patented UL Recognized Flame-arresting vents in each cell for safety and long life.
- Designed with the same recombination, thermal runaway prevention, gassing and flame retardant characteristics of the Bellcore 4228 compliant Dynasty Telecom products.
- Flame retardant polypropylene case and cover compliant with UL94-V2
- Proprietary Fixed Orifice Plate Pasting technology applying active materials on both sides of the grid for consistent cell-to-cell performance, higher capacity and uniform grid protection.
- Thermally welded case-to-cover bond to eliminate leakage.
- Can be operated in any orientation. Upright, side or end mounting recommended.
- Not restricted for air transport - Complies with IATA/ICAO Special Provisions A67.
- Not restricted for surface transport - Classified as non-hazardous material as related to DOT-CFR Title 49 parts 171-189.
- Not restricted for water transport - Classified as non-hazardous material per IMDG Amendment 27.

TECHNICAL DATA

Model	Voltage	AH 20 hr*	Constant Power Discharge Ratings - Watts per Cell @ 77°F (25°F)									Weight	
			Operating Time (in minutes) to 1.67 Volts per Cell									lbs	kg
			5	10	15	20	30	40	50	60	90		
UPS12-100MR	12	26.0	172	117	90.9	75.4	57.2	46.5	39.3	34.1	24.6	21.0	10.0
UPS12-150MR	12	34.6	290	193	148	120	88.9	71.1	59.4	51.1	36.1	27.3	12.4
UPS12-210MR	12	53.8	373	261	206	169	127	102	85.1	73.3	51.9	40.0	18.0
UPS12-300MR	12	78.6	546	385	300	245	183	147	123	106	75.0	58.4	26.5
UPS12-350MR	12	93.2	619	440	350	289	216	173	144	123	85.9	67.4	30.5
UPS12-400MR	12	103	716	506	400	328	244	195	162	139	97.2	75.8	34.4
UPS12-490MRLP	12	115	772	607	488	402	300	240	201	173	122	83.0	38.0
UPS12-490MR	12	141	771	593	488	411	317	258	218	189	135	100.0	45.0
UPS12-540MR	12	149	875	657	537	451	343	277	231	198	139	100.0	45.0
UPS6-620MR	6	199	938	747	620	530	410	335	283	245	174	72.0	33.0

* Nominal 20 hr rate to 1.75 VPC in Ampere-Hours.

UPS12-210MR

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°C)										
Operating Time to End Point Voltage (in minutes)										
End Point Volts/Cell	5	10	15	20	30	40	45	50	60	90
1.75	341	243	193	162	123	99.0	90.3	83.0	71.5	50.6
1.70	366	253	200	166	125	100	91.1	83.6	71.8	50.4
1.67	373	261	206	169	127	102	92.6	85.1	73.3	51.9
1.65	378	262	205	170	128	102	93.3	85.7	73.8	52.1
1.60	391	265	207	172	129	103	94.0	86.3	74.2	52.3

Constant Power Discharge Ratings - Amperes @ 77°F (25°C)										
Operating Time to End Point Voltage (in hours)										
End Point Volts/Cell	1	2	3	5	8	10	12	20	24	72
1.85	32.6	19.1	13.6	8.68	5.79	4.72	4.01	2.51	2.12	0.73
1.80	34.8	20.3	14.4	9.20	6.12	5.00	4.24	2.65	2.23	0.76
1.75	36.7	21.1	14.9	9.43	6.25	5.05	4.28	2.69	2.27	0.77

Note: Batteries to be mounted with 0.5 in. (1.25 cm) spacing minimum and free air ventilation. Specifications subject to change without notification. Above ratings do not include interunit connector voltage drops.

UPS12-300MR

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°C)										
Operating Time to End Point Voltage (in minutes)										
End Point Volts/Cell	5	10	15	20	30	40	45	50	60	90
1.75	493	360	281	232	175	141	129	119	103	73.5
1.70	525	379	293	240	179	144	131	120	104	74.0
1.67	546	385	300	245	183	147	134	123	106	75.0
1.65	564	395	302	247	183	147	134	124	107	76.2
1.60	579	402	306	250	186	150	137	126	109	77.7

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)										
Operating Time to End Point Voltage (in hours)										
End Point Volts/Cell	1	2	3	5	8	10	12	20	24	72
1.85	48.3	28.1	19.9	12.6	8.36	6.82	5.79	3.62	3.05	1.05
1.80	51.1	29.3	20.7	13.1	8.84	7.23	6.13	3.83	3.22	1.08
1.75	52.7	30.1	21.2	13.4	9.16	7.46	6.32	3.93	3.30	1.10

Note: Batteries to be mounted with 0.5 in. (1.25 cm) spacing minimum and free air ventilation. Specifications subject to change without notification. Above ratings do not include interunit connector voltage drops.

UPS12-350MR

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°C)										
Operating Time to End Point Voltage (in minutes)										
End Point Volts/Cell	5	10	15	20	30	40	45	50	60	90
1.75	534	410	327	272	205	165	150	138	119	84.3
1.70	596	425	337	280	211	169	154	141	121	84.9
1.67	619	440	350	289	216	173	157	144	123	85.9
1.65	638	455	358	296	220	175	159	145	124	86.5
1.60	669	471	367	302	223	177	161	147	126	87.6

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)										
Operating Time to End Point Voltage (in hours)										
End Point Volts/Cell	1	2	3	5	8	10	12	20	24	72
1.85	53.0	31.8	22.9	14.8	10.6	8.73	7.38	4.56	3.84	1.29
1.80	58.8	34.5	24.6	15.7	10.1	8.35	7.09	4.39	3.69	1.32
1.75	62.6	36.3	25.8	16.4	11.0	8.98	7.57	4.66	3.92	1.34

HAZMAT TABLE: LEAD WEIGHT & ACID CONTENT per CELL TYPES

Product Line	Model	# of Cells per unit	Specific Gravity	Lead Weight per Cell (Lbs)	Electrolyte Weight per Cell (Lbs)	Pure Sulfuric Acid Weight per Cell (Lbs)	Electrolyte Volume per Cell (Gal)
<i>Note: Discontinued Models are located in as separate file. Hazmat Table: Discontinued C&D Products</i>							
VRLA PRODUCTS							
Liberty 1000	LS12-55	6	1.300	6	2.0	0.8	0.2
Liberty 1000	LS12-80	6	1.300	10	2.5	1.0	0.2
Liberty 1000	LS12-100	6	1.300	11	3.1	1.2	0.3
Liberty 1000	LS2-600	1	1.300	68	18.1	7.2	1.7
Liberty 1000	LS4-300	2	1.300	34	9.1	3.6	0.8
Liberty 1000	LS6-125	3	1.300	13	3.7	1.5	0.3
Liberty 1000	LS6-200	3	1.300	23	6.1	2.4	0.6
Liberty 1000 Front Access	FAM12-100	6	1.300	10	2.7	1.1	0.3
Liberty 1000 Front Access	FAM12-150	6	1.300	14	4.6	1.8	0.4
Broadband	BBG85GXL	6	1.325	5	1.2	0.5	0.1
Broadband	BBA160	6	1.300	8	2.1	0.8	0.2
Broadband	BBG165GXL	6	1.300	8	2.1	0.9	0.2
Broadband	BBG165RT	6	1.325	8	2.1	0.9	0.2
Broadband	BBG180GXL	6	1.325	8	2.7	1.1	0.2
Broadband	BBG180RT	6	1.325	8	2.7	1.1	0.2
Deep Cycle	DCS 33	6	1.300	3.3	0.8	0.3	0.1
Deep Cycle	DCS 50	6	1.300	5.0	1.2	0.5	0.1
Deep Cycle	DCS 75	6	1.300	7.0	1.8	0.7	0.2
Deep Cycle	DCS 88	6	1.300	8.2	2.1	0.8	0.2
Deep Cycle	DCS 100	6	1.300	8.3	2.3	0.9	0.2
TEL-series	TEL12-30	6	1.300	3.4	0.8	0.3	0.1
TEL-series	TEL12-45	6	1.300	5.2	1.2	0.5	0.1
TEL-series	TEL12-70	6	1.300	6.9	1.8	0.7	0.2
TEL-series	TEL12-80	6	1.300	8.2	2.1	0.8	0.2
TEL-series	TEL12-90	6	1.300	9.2	2.2	0.9	0.2
TEL-series	TEL6-180	3	1.300	18.0	4.4	1.7	0.4
TEL-series	TEL12-125	6	1.300	12.9	3.2	1.3	0.3
TEL-series	TEL12-105FS	6	1.300	9.8	2.6	1.0	0.2
C&D True FA - TEL	TEL12-105FN5G	6	1.300	7.9	2.4	1.0	0.2
C&D True FA - TEL	TEL12-115FNG	6	1.300	8.0	2.6	1.1	0.2
C&D True FA - TEL	TEL12-145FW	6	1.320	12.9	3.9	1.6	0.4
C&D True FA - TEL	TEL12-155F/FG	6	1.320	10.9	4.1	1.8	0.4
C&D True FA - TEL	TEL12-160FW	6	1.320	13.9	4.1	1.7	0.4
C&D True FA - TEL	TEL12-180F	6	1.320	13.0	3.9	1.6	0.4
C&D True FA - TEL	TEL12-180F	6	1.320	15.0	4.6	1.9	0.4
C&D True FA - TEL	TEL12-190F/FG	6	1.300	14.5	4.9	2.1	0.4
C&D True FA - TEL	TEL12-210F/FG	6	1.300	15.0	4.6	2.0	0.4
C&D True FA - TEL-C	TEL12-105FN5GC	6	1.300	8.2	2.3	0.9	0.2
C&D True FA - TEL-C	TEL12-115FN5GC	6	1.300	8.6	2.5	1.0	0.2
C&D True FA - TEL-C	TEL12-170FGC	6	1.300	12.6	3.8	1.5	0.4
C&D True FA - TEL-C	TEL12-210FGC	6	1.300	15.1	4.5	1.8	0.4
UPS High Rate Max	UPS12-100MR	6	1.310	2.6	0.7	0.3	0.1
UPS High Rate Max	UPS12-150MR	6	1.310	3.5	0.7	0.3	0.1
UPS High Rate Max	UPS12-210MR	6	1.310	5.0	1.2	0.5	0.1
UPS High Rate Max	UPS12-300MR	6	1.310	7.1	1.8	0.7	0.2
UPS High Rate Max	UPS12-350MR	6	1.310	8.2	2.1	0.8	0.2
UPS High Rate Max	UPS12-400MR	6	1.310	9.2	2.3	0.9	0.2
UPS High Rate Max	UPS12-490MRLP	6	1.325	10.4	2.4	1.0	0.2
UPS High Rate Max	UPS12-490MR	6	1.310	12.4	3.2	1.3	0.3
UPS High Rate Max	UPS12-540MR	6	1.310	12.7	3.2	1.3	0.3
UPS High Rate Max	UPS6-620MR	3	1.310	17.0	4.5	1.8	0.4

Building Occupancy Classification Inventory Form

For Use by Unidocs Member Agencies or where approved by your Local Jurisdiction

Plan Check No.: _____ Proposed Occupancy Classification: _____ Signature of Preparer: _____ Date: _____

Control Area No.: _____ Is this area protected by an automatic sprinkler system? Yes; No. How Many Floors Does This Building Have? _____

1. Room No.	2. Chemical Name & Concentration <i>(Not Trade Name)</i>	3. CFC Class*		4. Quantity in Storage	5. Quantity in Use*			6. Stored in Approved Cabinet
		Physical	Health		Open System		Closed System	
				<input type="checkbox"/> gal. <input type="checkbox"/> lbs. <input type="checkbox"/> ft. ³	<input type="checkbox"/> gal. <input type="checkbox"/> lbs. <input type="checkbox"/> ft. ³	<input type="checkbox"/> gal. <input type="checkbox"/> lbs. <input type="checkbox"/> ft. ³	<input type="checkbox"/> Yes <input type="checkbox"/> No	
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* Please see the instructions on the reverse side of this page for a list of CFC hazard classes and definitions of Open System use and Closed System use.

Instructions for Completing the Building Occupancy Classification Inventory Form

A critical first step in the plan check process is the establishment of proper building occupancy classification. The occupancy classification determines the standard to which your plans will be reviewed. This form is a guidance document that has been prepared to expedite the review process. Please note that submittal of this form does not satisfy Hazardous Materials Business Plan (HMBP) Inventory reporting requirements.

Complete a separate inventory for each control area (or a single inventory for the entire building if control areas are not established). Group materials within each room by their primary California Fire Code (CFC) hazards, then indicate additional physical and health hazards. Where several classes are given (e.g., Oxidizer 4, 3, 2, 1), please indicate the appropriate one.

Physical Hazards*	Health Hazards*
Combustible Liquid – Class II, IIIA, IIIB	Corrosive
Combustible Fiber – loose, baled	Highly Toxic
Consumer Fireworks (Class C, Common) – 1.4G	Toxic
Cryogenics, flammable	
Cryogenics, oxidizing	
Explosives – Division 1.1, 1.2, 1.3, 1.4, 1.4G, 1.5, 1.6	
Flammable Gas – gaseous, liquefied	
Flammable Liquid – Class IA, IB, IC; Combination IA, IB, IC	
Flammable Solid	
Organic Peroxide – UD, Class I, II, III, IV, V	
Oxidizer – Class 4, 3, 2, 1	
Oxidizing Gas – gaseous, liquefied	
Pyrophoric Material	
Unstable (reactive) – Class 4, 3, 2, 1	
Water Reactive – Class 3, 2, 1	

* Definitions of physical hazards and health hazards can be found in the California Fire Code.

Definitions

Closed System – The use of a solid or liquid hazardous material involving a closed vessel or system that remains closed during normal operations where vapors emitted by the product are not liberated outside of the vessel or system and the product is not exposed to the atmosphere during normal operations; and all uses of compressed gases. Examples of closed systems for solids and liquids include product conveyed through a piping system into a closed vessel, system, or piece of equipment.

Control Area – Spaces within a building where quantities of hazardous materials not exceeding the maximum allowable quantities per control area are stored, dispensed, used or handled. *Refer to IBC Section 414.2 for additional information regarding control areas.*

Open System – The use of a solid or liquid hazardous material involving a vessel or system that is continuously open to the atmosphere during normal operations and where vapors are liberated, or the product is exposed to the atmosphere during normal operations. Examples of open systems for solids and liquids include dispensing from or into open beakers or containers; dip tank operations; and plating tank operations.

Make additional copies of this form if needed. Number each page appropriately.