

# HIGH RATE MAX



Valve Regulated Lead Acid Battery  
Designed for UPS Standby Power Applications.

## 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

## FEATURES & BENEFITS

- 10 year design life @ 25°C
- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance.
- 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
- 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°C)										Weight	
			Operating Time (in minutes) to 1.67 Volts per Cell											
			5	10	15	20	30	40	50	60	90	lbs	kg	
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	
UPS12-490MR	12	141.2	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.

# SPECIFICATIONS

<b>Operating Temperature Range with temperature compensation</b>	Discharge: -40°F (-40°C) to +160°F (+71°C) Charge: -10°F (-23°C) to +140°F (+60°C)
<b>Nominal Operating Temperature Range</b>	+74°F (23°C) to +80°F (27°C)
<b>Recommended Maximum Charging Current Limit</b>	C <sub>20</sub> /5 amperes @ 20hr rate
<b>Float Charging Voltage</b>	13.65 ± 0.15 VDC average per 12V unit (6.75 to 6.90 per 6V unit)
<b>Maximum AC Ripple (Charger)</b>	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C/20 @ 20 hr. rate
<b>Self Discharge</b>	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D brochure 41-7272, Self-Discharge and Inventory Control for details.
<b>Equalize charge and cycle service voltage</b>	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C) (7.20 to 7.40 VDC per 6V unit.)
<b>Terminal: Flag</b>	0.22 in. clearance hole to accept 0.1875 in. or 10-32 bolt (UPS12-100MR)
<b>Terminal: Inserted</b>	Threaded copper alloy insert terminal to accept 10-32 UNF bolt (UPS12-150MR, UPS12-210MR) 1/4-20 UNC bolt (UPS12-300MR, UPS12-350MR, UPS12-400MR, UPS12-490MR, UPS12-540MR, UPS6-620MR)
<b>Terminal Hardware Annual Retorque</b>	32 in.-lbs (3.48 N-m) (UPS12-100MR)
<b>Terminal Hardware Initial Torque: Inserted Terminal</b>	40 in.-lbs. (4.5 N-m) (UPS12-100MR) 30 in.-lbs. (3.4 N-m) (UPS12-150MR, UPS12-210MR) 110 in.-lbs. (12.4 N-m) (UPS12-300MR, UPS12-350MR, UPS12-400MR, UPS12-490MR, UPS12-540MR, UPS6-620MR)

# DIMENSIONS

							Battery Termination			
							UPS12-100MR	UPS12-150MR	UPS12-210MR	UPS 12-300MR
	A	B	C	D	E	F	UPS12-350MR	UPS12-400MR	UPS12-490MR/UPS12-540MR	UPS6-620MR
UPS12-100MR	6.54 (166.2)	6.45 (163.7)	5.17 (131.3)	5.07 (128.8)	6.37 (161.7)	6.86 (174.3)				
UPS12-150MR	7.76 (197.1)	7.54 (191.4)	5.19 (131.9)	5.02 (127.6)	6.52 (165.7)	6.80 (172.7)				
UPS12-210MR	9.0 (228.6)	8.86 (225.1)	5.48 (139.2)	5.31 (134.8)	7.89 (200.3)	8.07 (205.1)				
UPS12-300MR	10.27 (260.9)	10.17 (258.4)	6.83 (173.4)	6.65 (168.9)	7.89 (200.3)	8.01 (203.5)				
UPS12-350MR	12.04 (305.8)	11.95 (303.5)	6.83 (173.4)	6.65 (168.9)	7.94 (201.6)	8.06 (204.8)				
UPS12-400MR	13.42 (340.9)	12.75 (323.7)	6.80 (172.7)	6.54 (166.0)	8.40 (213.2)	8.52 (216.4)				
UPS12-490MR	13.57 (344.7)	12.74 (323.6)	6.80 (172.7)	6.63 (168.4)	10.81 (274.5)	10.93 (277.7)				
UPS12-540MR										
UPS6-620MR	12.63 (320.8)	12.51 (317.8)	6.97 (177.0)	6.83 (173.4)	8.82 (224.0)	8.94 (227.2)				

\*All dimensions in inches (mm). All dimensions are for reference only. Contact a C&D Representative for complete dimension information.  
NOTE: Batteries to be mounted with 0.5 in (1.25 cm) spacing minimum and free air ventilation.

## UPS12-100MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	157	114	87.5	72.1	54.9	45.0	41.5	38.5	33.7	24.0
1.70	168	115	89.6	74.4	56.5	46.0	42.1	38.9	33.8	24.4
1.67	172	117	90.9	75.4	57.2	46.5	42.6	39.3	34.1	24.6
1.65	174	118	91.5	75.9	57.6	46.9	42.9	39.7	34.5	24.8
1.60	179	119	92.5	76.8	58.3	47.4	43.4	40.1	34.8	25.0

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)														
	Operating Time to End Point Voltage (in hours)														
	.083	.25	.5	.75	1	2	3	5	8	10	12	20	24	72	100
1.90	50.8	32.9	32.9	17.1	13.8	8.29	6.04	3.95	2.61	2.15	1.82	1.14	0.96	0.34	0.24
1.85	63.2	38.1	38.1	18.6	15.0	8.99	6.56	4.30	2.84	2.33	1.98	1.24	1.05	0.37	0.26
1.80	71.8	41.6	41.6	20.3	16.1	9.42	6.83	4.46	2.95	2.42	2.05	1.28	1.08	0.38	0.27
1.75	85.5	45.7	45.7	21.4	17.0	9.74	6.99	4.54	3.00	2.45	2.08	1.30	1.10	0.39	0.28

**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.

## UPS12-150MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	273	182	140	115	85.7	68.8	62.7	57.6	49.7	35.0
1.70	284	188	144	117	87.1	69.8	63.6	58.4	50.3	35.7
1.67	290	193	148	120	88.9	71.1	64.7	59.4	51.1	36.1
1.65	294	196	149	122	90.0	71.8	65.3	60.0	51.5	36.4
1.60	297	200	152	124	91.0	72.5	65.9	60.5	51.9	36.6

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	1	2	3	5	8	10	12	20	24	72
1.85	22.8	13.0	9.08	5.70	3.76	3.10	2.64	1.64	1.38	0.47
1.80	24.2	13.6	9.46	5.91	3.90	3.21	2.72	1.69	1.41	0.48
1.75	25.4	14.1	9.80	6.11	4.00	3.28	2.79	1.73	1.45	0.49

**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.

## UPS12-210MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	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

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	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	19.9	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

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	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

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	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

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	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

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	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

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.

## UPS12-400MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	612	470	374	310	232	186	169	155	134	94.7
1.70	678	490	388	323	241	193	176	161	138	96.6
1.67	716	506	400	328	244	195	177	162	139	97.2
1.65	740	515	403	332	247	197	179	164	140	98.1
1.60	767	530	411	337	249	199	180	165	140	99.2

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	1	2	3	5	8	10	12	20	24	72
1.85	56.2	33.7	24.4	15.7	10.8	8.85	7.56	4.8	4.06	1.38
1.80	62.1	36.5	26.1	16.7	11.4	9.38	8.00	5.03	4.23	1.43
1.75	67.9	39.2	27.8	17.6	11.9	9.73	8.26	5.17	4.35	1.46

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.

## SPECIFICATIONS

Model	Cells per Unit	Maximum Discharge Current (AMPS)	Short Circuit Current (AMPS @ 0.1 sec)	Ohms Impedance 60 Hz ( $\Omega$ )
UPS12-100MR	6	500	1750	0.0060
UPS12-150MR	6	500	2500	0.0060
UPS12-210MR	6	600	3000	0.0045
UPS12-300MR	6	800	3600	0.0040
UPS12-350MR	6	800	4200	0.0030
UPS12-400MR	6	800	5100	0.0025
UPS12-490MR	6	800	5000	0.0023
UPS12-540MR	6	800	5000	0.0023
UPS6-620MR	3	800	4350	0.0012

Additional product details available on the C&D Battery Sizing Program at [www.cdstandbypower.net](http://www.cdstandbypower.net). Cabinet systems also available.

### UPS12-490MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	655	527	443	382	300	247	227	210	183	132
1.70	740	573	470	400	310	253	233	215	187	134
1.67	771	593	488	411	317	258	237	218	189	135
1.65	799	614	497	419	321	261	239	220	191	137
1.60	838	640	513	429	325	264	241	222	193	138

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	1	2	3	5	8	10	12	20	24	72
1.85	80.8	48.4	34.8	22.4	15.0	12.3	10.5	6.66	5.64	1.93
1.80	86.4	51.3	36.7	23.4	15.6	12.7	10.8	6.88	5.82	1.99
1.75	91.0	53.5	38.2	24.4	16.2	13.1	11.1	7.06	5.98	2.03

**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.

### UPS12-540MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	728	564	471	406	318	261	239	221	191	136
1.70	833	626	511	433	332	269	246	226	195	138
1.67	875	657	537	451	343	277	252	231	198	139
1.65	912	683	550	462	349	280	255	234	201	141
1.60	959	701	560	468	353	283	258	237	203	143

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	1	2	3	5	8	10	12	20	24	72
1.85	82.7	49.5	35.6	22.9	15.0	12.6	10.9	7.05	5.98	2.00
1.80	89.6	53.1	38.1	24.4	15.9	13.2	11.3	7.29	6.18	2.07
1.75	98.9	57.0	40.3	25.5	16.5	13.6	11.7	7.46	6.31	2.11

**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.

# UPS6-620MR

End Point Volts/Cell	Constant Power Discharge Ratings - Watts Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in minutes)									
	5	10	15	20	30	40	45	50	60	90
1.75	862	681	573	497	392	323	297	274	238	169
1.70	890	718	602	517	403	330	302	278	241	171
1.67	938	747	620	530	410	335	307	283	245	174
1.65	951	763	634	542	419	342	313	288	250	178
1.60	1000	794	655	557	429	349	320	295	256	183

End Point Volts/Cell	Constant Current Discharge Ratings - Amps Per Cell @ +77°F (+25°C)									
	Operating Time to End Point Voltage (in hours)									
	1	2	3	5	8	10	12	20	24	72
1.85	106	63.6	46.2	30.1	20.3	16.9	14.5	9.27	7.85	2.73
1.80	114	67.6	48.8	31.6	21.2	17.6	15.1	9.66	8.10	2.83
1.75	121	71.2	50.9	32.6	21.9	18.1	15.6	9.96	8.42	2.87

**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.

High Rate Max Part Number	Manufacturer Approved Premium Replacement for:
UPS12-100MR	UPS12-100FR
UPS12-150MR	UPS12-140FR & MR12-150
UPS12-210MR	UPS12-170FR, UPS12-200FR & MR12-210
UPS12-300MR	UPS12-270FR & MR12-300
UPS12-350MR	UPS12-310FR & MR12-350
UPS12-400MR	UPS12-370FR & MR12-400
UPS12-490MR	UPS12-475FR & MR12-490 (Extended run applications)
UPS12-540MR	UPS12-530FR & MR12-540
UPS6-620MR	UPS6-620FR

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