



# HIGH RATE MAX



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

## 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.
- 3 Year Warranty (refer Dynasty warranty card, 41-9026)
- 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 UL 1778
- 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	Watts Per Cell @ 77°F (25°C)										Weight lbs	Weight kg
		Operating Time (in minutes) to 1.67 Volts per Cell											
		5	10	15	20	30	40	45	50	60	90		
UPS12-100MR	12	172	117	91	75	57	47	43	39	35	24	21	10
UPS12-150MR	12	288	192	148	120	89	71	65	60	51	36	27.3	12.4
UPS12-210MR	12	376	257	206	170	125	101	92	85	73	52	40	18
UPS12-300MR	12	550	382	300	244	179	144	131	121	105	76	58.4	26.5
UPS12-350MR	12	620	440	350	290	217	171	155	141	122	87	67.4	30.5
UPS12-400MR	12	720	505	400	325	237	189	172	158	136	98	75.8	34.4
UPS12-490MR	12	773	590	488	412	317	256	236	218	189	136	100	45
UPS12-540MR	12	868	654	537	450	344	277	252	230	198	139	100	45
UPS6-620MR	6	940	750	620	525	410	333	309	285	245	173	72	33

**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/5 amperes @ 20hr rate
<b>Float Charging Voltage</b>	13.65 ± 1.5 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.
<b>Self Discharge</b>	Up to 6 months at 25°C and then a freshening charge is required. For higher temps, the time interval will increase. freshening charge is required. For higher temperatures the time interval will be shorter. For lower temperatures time interval will decrease equalization charge.
<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. 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) 25 in.-lbs. (2.8 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**

							<b>Battery Termination</b>			
							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
<b>UPS12-100MR</b>	6.54 (166.2)	6.45 (163.7)	5.17 (131.3)	5.07 (128.8)	6.37 (161.7)	6.86 (174.3)				
<b>UPS12-150MR</b>	7.76 (197.1)	7.54 (191.4)	5.19 (131.9)	5.02 (127.6)	6.52 (165.7)	6.80 (172.7)				
<b>UPS12-210MR</b>	9.0 (228.6)	8.86 (225.1)	5.48 (139.2)	5.31 (134.8)	7.89 (200.3)	8.07 (205.1)				
<b>UPS12-300MR</b>	10.27 (260.9)	10.17 (258.4)	6.83 (173.4)	6.65 (168.9)	7.89 (200.3)	8.01 (203.5)				
<b>UPS12-350MR</b>	12.04 (305.8)	11.95 (303.5)	6.83 (173.4)	6.65 (168.9)	7.94 (201.6)	8.06 (204.8)				
<b>UPS12-400MR</b>	13.42 (340.9)	12.75 (323.7)	6.80 (172.7)	6.54 (166.0)	8.40 (213.2)	8.52 (216.4)				
<b>UPS12-490MR</b> <b>UPS12-540MR</b>	13.57 (344.7)	12.74 (323.6)	6.80 (172.7)	6.63 (168.4)	10.81 (274.5)	10.93 (277.7)				
<b>UPS6-620MR</b>	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 millimeters. All dimensions are for reference only. Contact a C&D Representative for complete dimension information.

## UPS12-100MR

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	158	111	87	73	56	46	42	39	34	24
1.70	168	115	90	75	57	47	43	40	35	24
1.67	172	117	91	75	57	47	43	40	35	24
1.65	174	118	91	76	57	47	43	40	35	25
1.60	179	119	92	76	58	47	43	40	35	25

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)															
Operating Time to End Point Voltage (in hours)															
End Point Volts/Cell	.083	.25	.50	.75	1	2	3	5	8	10	12	20	24	72	100
1.90	51.1	33.0	22.4	18.2	14.0	6.30	6.05	3.94	2.62	2.14	1.82	1.14	0.96	0.34	0.24
1.85	62.8	38.4	25.3	20.5	15.6	9.10	6.60	4.29	2.85	2.33	1.98	1.24	1.05	0.37	0.26
1.80	72.3	42.1	27.1	21.8	16.4	9.50	6.86	4.45	2.95	2.41	2.05	1.28	1.08	0.38	0.27
1.75	80.0	44.3	28.1	22.5	16.9	9.75	7.00	4.53	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.

## UPS12-150MR

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	270	182	141	115	86	69.0	63.0	58.0	49.7	35.0
1.70	282	188	144	118	87	70.0	63.9	58.8	50.4	35.5
1.67	288	192	148	120	89	71.1	64.9	59.5	51.0	36.0
1.65	292	196	150	122	90	71.8	65.3	60.0	51.5	36.3
1.60	296	200	152	123	91	72.5	66.0	60.5	51.8	36.5

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	22.5	12.5	8.80	5.68	3.76	3.10	2.63	1.65	1.39	0.47
1.80	23.8	13.1	9.20	5.90	3.90	3.21	2.72	1.69	1.42	0.48
1.75	25.2	13.7	9.52	6.05	4.00	3.29	2.78	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.

## 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	340	240	195	164	121	98	90	83.0	71.8	51.0
1.70	366	252	201	168	123	99	91	84.2	72.8	52.0
1.67	376	257	206	170	125	101	92	85.0	73.3	52.4
1.65	380	259	207	171	126	101	93	85.4	73.8	52.6
1.60	392	261	209	172	127	102	93	86.0	74.2	52.8

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	33.0	18.7	13.3	8.60	5.78	4.74	4.02	2.50	2.10	0.73
1.80	35.0	19.5	13.9	9.20	6.10	5.02	4.25	2.63	2.21	0.76
1.75	36.5	20.6	14.5	9.40	6.23	5.09	4.30	2.67	2.24	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.

## 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	496	360	282	234	174	140	128	118	103	74
1.70	530	373	294	240	177	142	130	120	104	75
1.67	550	382	300	244	179	144	131	121	105	76
1.65	566	387	303	246	181	146	133	122	106	77
1.60	580	391	306	248	183	147	134	123	107	78

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	48.4	27.1	19.6	12.6	8.34	6.85	5.80	3.60	3.03	1.05
1.80	50.7	28.3	20.3	13.1	8.81	7.27	6.15	3.80	3.18	1.08
1.75	52.5	29.0	20.6	13.4	9.13	7.50	6.35	3.89	3.25	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.

## 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	540	410	327	274	205	164	149	137	118	85
1.70	596	425	337	283	211	167	152	140	120	86
1.67	620	440	350	290	217	171	155	141	122	87
1.65	640	455	360	298	219	173	157	144	123	88
1.60	672	470	370	303	222	175	159	145	125	89

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	31.0	22.1	14.8	10.08	8.34	7.08	4.40	3.71	1.29
1.80	59.0	33.5	23.7	15.6	10.63	8.74	7.42	4.55	3.83	1.32
1.75	63.0	35.1	24.8	16.1	11.00	9.00	7.58	4.65	3.90	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.

## UPS12-400MR

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	616	461	377	312	230	184	168	154	133	96
1.70	680	490	390	319	234	187	170	156	135	97
1.67	720	505	400	325	237	189	172	158	136	98
1.65	740	515	406	329	239	191	174	160	137	99
1.60	770	525	412	333	241	193	175	161	138	100

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	56.0	33.0	23.9	15.8	10.8	8.90	7.58	4.77	4.00	1.38
1.80	62.0	35.3	25.3	16.6	11.4	9.44	8.02	4.99	4.18	1.43
1.75	68.0	38.0	27.0	17.6	11.9	9.80	8.30	5.10	4.27	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.

## UPS12-490MR

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	660	525	444	385	300	245	224	208	183	133
1.70	740	570	472	401	310	252	231	214	186	135
1.67	773	590	488	412	317	256	236	218	189	136
1.65	800	614	500	418	322	260	238	220	191	137
1.60	840	644	513	428	327	264	241	222	192	138

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	80.9	47.2	34.4	22.5	15.0	12.3	10.5	6.58	5.53	1.93
1.80	85.5	50.9	36.3	23.5	15.5	12.8	10.9	6.79	5.70	1.99
1.75	90.3	53.2	37.8	24.2	16.1	13.2	11.2	6.96	5.84	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.

## UPS12-540MR

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	723	564	472	405	320	261	239	220	190	136
1.70	825	625	512	432	334	270	247	226	193	137.5
1.67	868	654	537	450	344	277	252	230	198	139
1.65	904	679	554	459	350	282	256	234	200	141
1.60	952	696	564	465	354	284	258	237	202	143

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
1.90	75.0	44.0	32.0	21.4	14.4	11.9	10.1	6.35	5.35	1.85
1.85	85.0	49.5	35.8	23.4	15.8	13.0	11.1	6.94	5.88	2.00
1.80	90.0	53.0	38.0	24.6	16.4	13.6	11.5	7.20	6.06	2.07
1.75	95.0	56.0	39.9	25.6	16.9	13.9	11.8	7.35	6.17	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.

## UPS6-620MR

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	840	680	575	500	395	320	297	275	242	168
1.70	890	720	600	520	405	332	306	280	243	170
1.67	940	750	620	525	410	333	309	285	245	173
1.65	950	760	630	532	414	335	311	288	248	176
1.60	1000	790	650	550	420	340	315	290	250	178

Constant Current Discharge Ratings - Amperes @ 77°F (25°C)															
Operating Time to End Point Voltage (in hours)															
End Point Volts/Cell	.083	.25	.50	.75	1	2	3	5	8	10	12	20	24	72	100
1.90	250	207	149	122	94.0	57.7	42.0	27.9	19.0	15.8	13.5	8.70	7.31	2.51	1.82
1.85	332	248	174	142	110	62.7	45.5	30.0	20.3	16.9	14.5	9.30	7.84	2.73	1.98
1.80	418	288	196	158	120	68.0	48.3	31.6	21.3	17.6	15.2	9.80	8.21	2.83	2.05
1.75	454	312	208	166	123	69.5	50.0	32.4	22.0	18.2	15.6	10.0	8.38	2.87	2.08

Note: Batteries to be mounted with 0.5 in. (1.25 cm) spacing minimum and free air ventilation. Specifications subject to change without notification.

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
UPS12-540MR	UPS12-530FR & MR12-540
UPS6-620MR	UPS6-620FR

Also Available  
**UPS CABINET SOLUTIONS**



**SITES THAT USE UPS HIGH RATE MAX BATTERIES INCLUDE:**

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- 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

**Call 1.800.396.2789 for more information.**

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