

# Marathon Pure Energy Premium FT

## Technical data sheet

### Technical features:

- Thin Plate Pure Lead technology (TPPL)
- Design life: Up to 20 years at 20 °C (until 80 % nominal C<sub>10</sub>)
- Maintenance-free (no topping up) during the whole service life
- High-compression Absorbent Glass Mat (AGM) technology
- Nominal capacity 86-200 Ah
- Flame retardant UL 94 HB or UL 94 V-0 version
- Very low gassing due to internal gas recombination (99 % efficiency)
- Low self discharge rate, enabling extended storage capability
- Durable container material – maintaining structural integrity in higher operating temperatures
- Central degassing available on request

### Standards & certifications:

- EUROBAT 2022 classification: >12 years – Very long life
- Designed in accordance with IEC 60896-21/22
- Approval: UL (Underwriters Laboratories)
- Trouble-free transportation of operational blocks and cells. No restriction for most rail, road, sea, and air transportation (IATA. DGR clause A67)
- Manufactured in Europe in our ISO 9001 and 14001 certified production plants



Design life up to 20 years



Nominal capacity 86-200 Ah



Block battery



Grid plate



Recyclable



Valve regulated lead-acid batteries



Maintenance-free (no topping up)

### Technical characteristics and data

Type	Part number	Nom. voltage	Nominal capacity				Length (l)	Width (w)	Height (h)	Weight approx. kg	Internal resistance mOhm*	Short circuit current A*	Terminal
			C <sub>10</sub> 1.80 Vpc 20 °C	C <sub>8</sub> 1.75 Vpc 25 °C	C <sub>3</sub> 1.70 Vpc 20 °C	C <sub>1</sub> 1.60 Vpc 20 °C							
		V	Ah	Ah	Ah	Ah	max. mm	max. mm	max. mm				
M12V90PE FT	NAEF120090HM0FA	12	86.0	86.0	75.2	65.3	395	105	270	30	5.1	2440	F-M6-90°
M12V100PE FT	NAEF120100HM0FA	12	100	103	89.4	75	395	105	287	32	5	2445	F-M6-90°
M12V105PE FT	NAEF120105HM0FA	12	100	104	86.6	71.3	511	110	238	34.5	4.9	2555	F-M6-90°
M12V125PE FT	NAEF120125HM0FA	12	121	125	112	89.4	559	125	283	46	4.7	2640	F-M6-90°
M12V155PE FT	NAEF120155HM0FA	12	155	158	133	105	559	125	283	49	3.8	3300	F-M6-90°
M12V200PE FT	NAEF120200HM0FA	12	200	203	174	140	559	125	318	60	3.3	3660	F-M6-90°

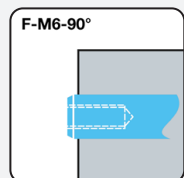
\* According to IEC 60896-21/22

# Marathon Pure Energy Premium FT

## Technical data sheet

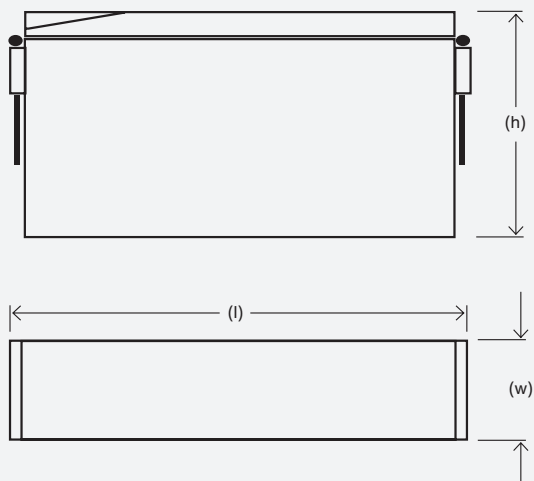
### Container, terminal and torque

Flame retardant polypropylene (PP) according to UL 94 HB or to UL 94 V-0.  
Change **H** to **V** in the part number for UL 94 V-0 version.



11 Nm

### Drawings



Not to scale!

# Marathon Pure Energy Premium FT

## Constant current discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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### 1.90 Vpc – Discharge in A at 20 °C

M12V90PE FT	115	115	115	115	84.0	53.9	38.5	30.3	21.6	14.1	9.33	7.65	6.51	3.52
M12V100PE FT	150	150	150	150	99.0	58.5	40.9	35.0	25.0	16.5	10.9	8.90	7.56	4.01
M12V105PE FT	141	141	141	141	91.6	59.4	42.9	34.1	24.6	16.4	10.9	8.90	7.52	3.97
M12V125PE FT	152	152	152	152	105	72.6	52.9	42.3	31.1	19.6	12.9	10.5	9.00	4.84
M12V155PE FT	236	225	195	170	122	83.9	63.4	51.9	37.0	24.1	16.3	13.3	11.2	5.91
M12V200PE FT	210	205	191	178	145	112	84.0	65.0	47.0	31.0	20.5	17.0	14.8	8.00

### 1.87 Vpc – Discharge in A at 20 °C

M12V90PE FT	120	120	120	120	87.0	57.4	40.8	32.0	23.1	14.7	9.77	8.03	6.84	3.71
M12V100PE FT	160	160	160	160	106	62.0	43.4	37.0	26.3	17.4	11.5	9.40	7.99	4.23
M12V105PE FT	147	147	147	147	97.9	62.6	45.1	35.7	25.8	17.0	11.4	9.34	7.89	4.17
M12V125PE FT	169	169	169	169	115	78.0	56.5	44.9	33.0	20.8	13.6	11.1	9.48	5.08
M12V155PE FT	273	260	225	196	136	89.5	67.2	54.8	39.0	25.3	17.1	14.0	11.7	6.18
M12V200PE FT	270	260	237	216	165	118	89.0	68.0	48.5	32.0	22.0	18.0	15.5	8.50

### 1.85 Vpc – Discharge in A at 20 °C

M12V90PE FT	207	189	150	126	90.0	59.5	42.3	33.2	23.5	15.1	10.0	8.28	7.07	3.87
M12V100PE FT	265	245	200	168	110	64.0	44.8	38.3	27.1	17.9	11.8	9.60	8.16	4.32
M12V105PE FT	265	240	191	154	101	64.7	46.5	36.9	26.5	17.5	11.7	9.59	8.12	4.32
M12V125PE FT	175	175	175	175	119	79.1	57.9	46.4	34.3	21.6	14.1	11.5	9.80	5.24
M12V155PE FT	324	290	245	210	147	92.8	69.6	56.8	40.3	26.1	17.6	14.3	12.1	6.35
M12V200PE FT	382	350	293	253	178	124	92.0	71.0	51.0	34.0	23.0	19.0	16.0	9.00

### 1.83 Vpc – Discharge in A at 20 °C

M12V90PE FT	220	200	160	133	92.0	61.0	43.3	34.0	23.9	15.3	10.2	8.40	7.17	3.92
M12V100PE FT	300	270	213	177	114	66.0	46.2	39.5	27.7	18.1	12.0	9.80	8.33	4.41
M12V105PE FT	295	260	200	163	104	66.3	47.6	37.7	27.1	17.9	12.0	9.79	8.28	4.40
M12V125PE FT	186	186	186	186	124	81.7	59.6	47.7	35.2	22.1	14.4	11.8	10.0	5.34
M12V155PE FT	355	315	257	220	154	95.8	71.5	58.1	41.2	26.7	17.9	14.7	12.3	6.50
M12V200PE FT	420	381	312	266	186	125	93.0	72.5	52.5	34.5	23.5	19.5	16.5	9.10

### 1.80 Vpc – Discharge in A at 20 °C

M12V90PE FT	237	215	171	140	94.0	63.0	44.7	35.0	24.5	15.7	10.4	8.60	7.31	3.99
M12V100PE FT	338	300	230	188	118	67.5	47.2	40.3	28.2	18.4	12.2	10.0	8.50	4.50
M12V105PE FT	320	280	214	170	109	68.3	49.0	38.7	27.8	18.3	12.2	10.0	8.47	4.48
M12V125PE FT	204	204	204	204	132	85.1	61.8	49.2	36.3	22.8	14.8	12.1	10.3	5.46
M12V155PE FT	385	340	270	230	161	99.8	73.8	59.6	42.2	28.0	18.9	15.5	12.6	6.64
M12V200PE FT	458	410	330	278	193	127	94.0	74.0	54.0	35.0	24.0	20.0	17.0	9.20

# Marathon Pure Energy Premium FT

## Constant current discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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### 1.78 Vpc – Discharge in A at 20 °C

M12V90PE FT	265	233	179	144	96.0	63.6	45.0	35.2	24.7	15.8	10.4	8.62	7.35	4.01
M12V100PE FT	370	320	243	195	121	69.0	48.3	40.9	28.7	18.7	12.4	10.2	8.67	4.59
M12V105PE FT	360	310	230	185	115	69.3	49.7	39.2	28.1	18.5	12.4	10.1	8.57	4.53
M12V125PE FT	214	214	214	214	136	86.6	62.7	49.8	36.7	23.0	15.0	12.2	10.4	5.53
M12V155PE FT	410	360	285	240	165	101	74.9	60.3	43.0	28.5	19.1	15.6	12.7	6.72
M12V200PE FT	489	433	346	291	197	129	95.0	75.5	55.0	36.0	24.5	20.2	17.2	9.30

### 1.75 Vpc – Discharge in A at 20 °C

M12V90PE FT	285	248	185	148	98.0	64.0	45.4	35.5	24.9	15.9	10.5	8.68	7.40	4.03
M12V100PE FT	385	332	250	200	124	70.0	49.0	41.3	29.0	18.9	12.5	10.3	8.75	4.63
M12V105PE FT	360	310	230	185	115	70.0	50.2	39.7	28.5	18.7	12.6	10.2	8.68	4.55
M12V125PE FT	233	233	233	233	141	88.1	63.6	50.4	37.1	23.3	15.2	12.4	10.5	5.60
M12V155PE FT	433	380	300	250	169	103	75.7	60.8	43.5	29	19.2	15.7	12.9	6.79
M12V200PE FT	524	460	363	303	204	132	96.0	77.0	56.0	37.0	25.0	20.5	17.5	9.50

### 1.73 Vpc – Discharge in A at 20 °C

M12V90PE FT	314	265	192	151	100	64.4	45.5	35.6	24.9	15.9	10.5	8.70	7.42	4.04
M12V100PE FT	400	346	258	204	126	71.0	49.7	41.9	29.3	19.1	12.6	10.4	8.84	4.68
M12V105PE FT	380	330	240	189	116	70.5	50.6	40.0	28.6	18.8	12.7	10.3	8.71	4.56
M12V125PE FT	236	236	236	236	143	88.7	64.1	50.8	37.3	23.5	15.3	12.5	10.5	5.63
M12V155PE FT	465	405	310	258	173	104	76.2	61.2	44.0	29.1	19.3	15.8	12.9	6.80
M12V200PE FT	563	490	375	312	209	134	97.0	78.0	57.0	37.2	25.3	20.7	17.7	9.60

### 1.70 Vpc – Discharge in A at 20 °C

M12V90PE FT	340	280	200	155	102	64.7	45.7	35.7	25.0	16.0	10.6	8.74	7.45	4.06
M12V100PE FT	420	360	265	208	127	72.0	50.4	42.4	29.8	19.2	12.8	10.5	8.92	4.72
M12V105PE FT	410	345	245	193	118	71.2	51.1	40.4	28.8	18.9	12.7	10.3	8.75	4.58
M12V125PE FT	241	241	241	241	147	89.6	64.6	51.2	37.5	23.7	15.4	12.6	10.6	5.67
M12V155PE FT	505	430	320	265	176	105	76.9	61.7	44.5	29.2	19.4	15.9	13.0	6.83
M12V200PE FT	611	520	387	321	213	136	99.0	79.0	58.0	37.3	25.5	21.0	18.0	9.70

### 1.67 Vpc – Discharge in A at 20 °C

M12V90PE FT	365	300	210	160	105	64.9	45.9	35.9	25.2	16.1	10.6	8.77	7.48	4.07
M12V100PE FT	440	375	271	211	129	73.0	51.1	42.8	30.1	19.4	12.9	10.6	9.01	4.77
M12V105PE FT	430	360	250	196	119	72.0	51.6	40.7	29.1	19.0	12.8	10.4	8.79	4.59
M12V125PE FT	248	248	248	248	150	90.6	65.2	51.7	37.6	23.9	15.5	12.7	10.7	5.72
M12V155PE FT	530	450	330	270	179	106	77.6	62.2	44.8	29.3	19.5	16.0	13.1	6.86
M12V200PE FT	641	545	399	327	216	138	100	79.5	58.2	37.5	25.6	21.1	18.2	9.80

# Marathon Pure Energy Premium FT

Constant current discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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## 1.65 Vpc – Discharge in A at 20 °C

M12V90PE FT	390	315	215	165	108	65.1	46.0	36.0	25.2	16.1	10.6	8.79	7.49	4.08
M12V100PE FT	470	400	280	215	130	74.0	51.8	43.1	30.3	19.6	13.0	10.7	9.09	4.81
M12V105PE FT	445	370	258	197	120	72.6	52.0	41.0	29.2	19.0	12.9	10.4	8.82	4.60
M12V125PE FT	250	250	250	250	152	91.2	65.7	52.0	37.7	24.0	15.6	12.7	10.8	5.75
M12V155PE FT	555	470	340	274	180	106	78.0	62.5	45.0	29.4	19.7	16.1	13.1	6.88
M12V200PE FT	672	569	411	332	217	140	102	80.0	58.5	38.0	25.7	21.2	18.3	10.0

## 1.60 Vpc – Discharge in A at 20 °C

M12V90PE FT	400	330	220	170	110	65.1	46.0	36.0	25.2	16.1	10.6	8.79	7.49	4.09
M12V100PE FT	502	430	295	219	132	75.0	52.5	43.5	30.5	19.7	13.1	10.7	9.09	4.81
M12V105PE FT	460	380	260	201	122	73.4	52.0	41.0	29.2	19.0	12.9	10.4	8.82	4.60
M12V125PE FT	250	250	250	250	152	91.2	65.7	52.0	37.7	24.0	15.6	12.7	10.8	5.75
M12V155PE FT	600	495	350	277	181	106	78.0	62.5	45.3	29.6	19.8	16.2	13.1	6.88
M12V200PE FT	725	598	423	335	219	142	103	81.0	58.8	38.5	26.0	21.5	18.5	10.3

# Marathon Pure Energy Premium FT

## Constant power discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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### 1.90 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	1360	1360	1360	1360	990	630	454	359	259	171	114	93.4	78.9	41.6
M12V100PE FT	1670	1670	1670	1670	1186	740	518	429	300	189	126	103	87.5	45.3
M12V105PE FT	1600	1600	1600	1600	1085	690	497	393	283	187	125	102	86.8	46.4
M12V125PE FT	1321	1321	1321	1321	1321	828	601	479	348	233	164	133	111	57.8
M12V155PE FT	2755	2550	2300	1916	1480	975	718	579	419	282	194	159	134	71.2
M12V200PE FT	2338	2338	2338	2338	1780	1243	950	785	590	385	260	212	182	100

### 1.87 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	1430	1430	1430	1430	1035	665	477	377	271	178	119	97.6	82.4	43.4
M12V100PE FT	1790	1790	1790	1790	1250	770	539	447	310	195	130	106	90.3	46.7
M12V105PE FT	1670	1670	1670	1670	1144	722	519	410	295	194	130	106	90.5	48.3
M12V125PE FT	1400	1400	1400	1400	1400	873	634	504	366	244	168	139	117	60.6
M12V155PE FT	3100	2960	2550	2200	1600	1042	758	605	448	300	202	165	140	74.1
M12V200PE FT	2684	2684	2684	2684	1907	1280	980	815	610	400	273	220	190	106

### 1.85 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	2280	2080	1730	1480	1060	689	493	389	279	183	123	100	84.8	44.6
M12V100PE FT	3100	2800	2220	1880	1295	790	553	455	320	201	133	109	92.6	47.9
M12V105PE FT	2989	2700	2090	1720	1185	743	533	422	303	199	134	109	93.0	49.6
M12V125PE FT	2114	2114	2114	2114	1454	905	655	521	377	251	172	144	121	62.4
M12V155PE FT	3500	3200	2700	2350	1717	1083	786	626	462	309	207	170	143	75.9
M12V200PE FT	4065	3900	3275	2835	1979	1312	1011	839	629	417	280	228	195	108

### 1.83 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	2430	2200	1820	1550	1090	700	501	395	282	185	124	101	85.8	45.2
M12V100PE FT	3300	2980	2350	1960	1329	800	560	465	328	207	137	112	95.2	49.2
M12V105PE FT	3121	2810	2200	1800	1216	760	545	431	309	203	137	112	95.0	50.3
M12V125PE FT	2178	2178	2178	2178	1489	924	669	532	385	256	176	148	124	63.4
M12V155PE FT	3850	3400	2850	2450	1770	1112	805	645	475	315	211	173	146	77.3
M12V200PE FT	4380	4100	3460	2960	2041	1395	1035	848	633	420	282	231	197	110

### 1.80 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	2600	2330	1890	1600	1110	717	512	403	288	188	127	103	87.3	46.0
M12V100PE FT	3621	3224	2459	2011	1355	815	570	473	334	210	140	114	96.9	50.1
M12V105PE FT	3313	2950	2250	1840	1249	780	558	441	316	207	140	114	96.9	51.2
M12V125PE FT	2255	2255	2255	2255	1532	949	686	545	394	262	179	151	127	64.8
M12V155PE FT	4100	3650	3000	2530	1820	1148	829	658	485	320	216	177	149	78.8
M12V200PE FT	4730	4350	3630	3089	2093	1473	1091	859	640	425	286	235	199	112

# Marathon Pure Energy Premium FT

## Constant power discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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### 1.78 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	2910	2570	2000	1650	1130	721	514	404	290	189	128	104	87.9	46.3
M12V100PE FT	3777	3355	2568	2100	1380	825	577	479	338	212	142	116	98.6	51.0
M12V105PE FT	3456	3070	2350	1900	1272	789	565	446	319	210	142	115	98.0	51.7
M12V125PE FT	2291	2291	2291	2291	1552	960	694	551	398	264	181	153	128	65.6
M12V155PE FT	4350	3900	3120	2600	1860	1166	841	668	493	325	218	178	151	79.6
M12V200PE FT	5046	4641	3720	3138	2115	1500	1120	885	645	427	288	237	200	112

### 1.75 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3200	2780	2080	1690	1150	728	516	405	290	190	129	105	88.9	46.7
M12V100PE FT	3948	3497	2689	2153	1400	835	584	485	342	215	144	117	99.4	51.4
M12V105PE FT	3612	3200	2460	1970	1292	796	570	450	322	211	143	116	98.8	52.0
M12V125PE FT	2307	2307	2307	2307	1562	966	697	553	399	266	183	155	130	66.2
M12V155PE FT	4550	4010	3250	2659	1890	1171	847	673	500	330	220	180	152	80.3
M12V200PE FT	5278	4900	3900	3227	2154	1524	1132	894	650	431	291	239	202	113

### 1.73 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3350	2900	2125	1720	1160	732	518	405	291	191	129	105	89.0	46.8
M12V100PE FT	4153	3661	2770	2219	1425	845	591	488	345	218	145	118	100	52.1
M12V105PE FT	3800	3350	2530	2030	1304	800	572	451	323	212	144	117	99.0	52.1
M12V125PE FT	2324	2324	2324	2324	1573	970	699	554	400	267	183	155	130	66.5
M12V155PE FT	4850	4300	3330	2720	1910	1177	853	679	508	332	221	180	152	80.7
M12V200PE FT	5626	5275	4144	3340	2196	1548	1152	903	655	433	292	240	203	113

### 1.70 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3500	3000	2170	1750	1170	735	519	406	292	192	129	105	89.1	46.9
M12V100PE FT	4372	3830	2830	2250	1434	855	598	495	350	221	146	119	101	52.6
M12V105PE FT	4000	3551	2650	2100	1312	803	575	453	324	213	144	117	99.3	52.2
M12V125PE FT	2340	2340	2340	2340	1582	974	701	555	400	268	185	155	130	66.9
M12V155PE FT	5200	4600	3380	2770	1935	1183	857	685	515	334	222	180	153	80.9
M12V200PE FT	5900	5454	4240	3400	2216	1574	1172	916	660	436	294	241	204	114

### 1.67 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3640	3080	2200	1780	1180	737	521	407	292	192	129	105	89.3	47.0
M12V100PE FT	4645	4011	2890	2280	1443	860	602	499	355	224	147	120	102	52.9
M12V105PE FT	4250	3670	2730	2140	1321	806	577	455	325	213	145	117	99.6	52.4
M12V125PE FT	2357	2357	2357	2357	1591	978	703	557	401	268	185	156	131	67.3
M12V155PE FT	5300	4680	3420	2830	1950	1189	862	690	516	335	222	181	153	81.0
M12V200PE FT	6148	5696	4367	3470	2234	1600	1193	922	665	430	296	242	205	114

# Marathon Pure Energy Premium FT

Constant power discharge

Type	3 min	5 min	10 min	15 min	30 min	1 h	1.5 h	2 h	3 h	5 h	8 h	10 h	12 h	24 h
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## 1.65 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3800	3190	2250	1800	1190	739	522	408	293	193	130	105	89.3	47.0
M12V100PE FT	4924	4153	2950	2310	1449	865	605	502	359	227	149	122	103	53.6
M12V105PE FT	4505	3800	2770	2160	1326	809	579	456	326	214	145	118	99.8	52.5
M12V125PE FT	2373	2373	2373	2373	1599	981	705	557	403	269	186	157	131	67.6
M12V155PE FT	5500	4800	3470	2850	1960	1196	865	695	517	337	223	182	153	81.3
M12V200PE FT	6380	5938	4480	3519	2245	1625	1213	930	671	441	298	244	206	115

## 1.60 Vpc – Discharge in W/block at 20 °C

M12V90PE FT	3900	3290	2300	1820	1200	739	522	408	293	193	130	105	89.3	47.0
M12V100PE FT	5200	4300	3000	2345	1451	870	609	505	364	230	150	122	104	53.9
M12V105PE FT	4900	3960	2795	2180	1326	809	579	456	326	214	145	118	99.8	52.5
M12V125PE FT	2373	2373	2373	2373	1599	981	705	557	403	269	186	157	131	67.6
M12V155PE FT	5750	5000	3500	2870	1970	1196	865	700	518	339	223	182	153	81.3
M12V200PE FT	6600	6200	4600	3650	2300	1646	1233	942	676	443	299	245	207	115