

## Marathon M FT / M12V190FT

### INDUSTRIAL BATTERIES / NETWORK POWER

Designed for durability in telecommunications and electric utility applications, the Marathon M-FT series provides high performance and reliability in medium and long duration discharge applications. The location of the terminals on the front (vs. the top) of the battery greatly facilitates the installation and maintenance of the product when placed in a cabinet enclosure or on a standard relay rack tray.

**Part Number: NAMF120190HM0FA**

#### APPLICATIONS



#### SPECIFICATIONS

- Maintenance-free (no topping up) during the whole service life
- High-Compression Absorbent Glass Mat (AGM) technology
- Design life: »> 12 years– Very Long Life« according to EUROBAT 2015 Classification
- Available as standard or flame retardant version (UL 94-V0)
- Grid plates with superior lead calcium alloy for excellent corrosion resistance
- Very low gassing due to internal gas recombination (99 % efficiency)
- Low self discharge rate, enabling extended storage capability
- Designed in accordance with IEC 60896-21/-22
- Approval: UL (Underwriter 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 certified production plants
- Central degassing



Design life  
> 12 years -  
Very Long Life



Block battery



Grid plate



Recyclable



Valve  
regulated  
lead-acid  
batteries



Maintenance  
free (no  
topping up)

#### RECYCLE WITH EXIDE.



Exide Technologies takes pride in its commitment to a better environment. An integrated approach to manufacturing, distributing and recycling of leadacid batteries has been developed to ensure a safe and responsible life cycle for all ofits products.



For more information please  
[contact your local dealer](#)

## TECHNICAL CHARACTERISTICS AND DATA

|                              |                                                             |
|------------------------------|-------------------------------------------------------------|
| <b>Nominal voltage</b>       | 12 V                                                        |
| <b>Float charge</b>          | 2,29 V/C @ 20 °C                                            |
| <b>Capacity</b>              | CP 10min 1,6V/C 20°C 4600W/Bloc<br>CC 10h 1,8V/C 20°C 190Ah |
| <b>Short circuit current</b> | 3653 A (IEC60896-21/22)                                     |
| <b>Internal resistance</b>   | 3,4 mΩ (IEC60896-21/22)                                     |

|                                 |                          |
|---------------------------------|--------------------------|
| <b>Terminal</b>                 | F-M6-90°                 |
| <b>Terminal Torque</b>          | 11 Nm                    |
| <b>Container</b>                | UL 94-HB (Polypropylene) |
| <b>Temperature range</b>        | -40°C to 55°C            |
| <b>Dimensions (l x b/w x h)</b> | 125 x 559 x 318 mm       |
| <b>Weight</b>                   | 62 kg                    |
| <b>Origin</b>                   | Castanheira, Portugal    |

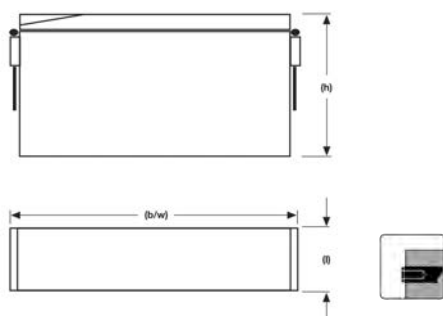
## CONSTANT POWER DISCHARGE

| W @ 20 °C | 3m   | 5m   | 10m  | 15m  | 30m  | 1h   | 90m  | 2h  | 150m | 3h  | 4h  | 5h  | 6h  | 7h  | 8h  | 9h  | 10h | 12h | 24h  |
|-----------|------|------|------|------|------|------|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1,940 V/C | 1631 | 1631 | 1631 | 1631 | 1571 | 1077 | 805  | 680 | 585  | 520 | 410 | 335 | 288 | 250 | 222 | 202 | 183 | 155 | 89   |
| 1,920 V/C | 1984 | 1984 | 1984 | 1984 | 1679 | 1170 | 870  | 765 | 650  | 565 | 450 | 370 | 315 | 275 | 245 | 221 | 200 | 169 | 92,9 |
| 1,900 V/C | 2337 | 2337 | 2337 | 2337 | 1780 | 1243 | 950  | 785 | 670  | 585 | 465 | 385 | 330 | 290 | 256 | 230 | 208 | 177 | 97,4 |
| 1,870 V/C | 2684 | 2684 | 2684 | 2684 | 1907 | 1270 | 980  | 810 | 690  | 600 | 475 | 394 | 339 | 295 | 263 | 235 | 214 | 181 | 99,5 |
| 1,850 V/C | 4065 | 3900 | 3275 | 2835 | 1979 | 1292 | 1000 | 830 | 710  | 610 | 484 | 400 | 343 | 300 | 266 | 240 | 217 | 185 | 102  |
| 1,830 V/C | 4380 | 4100 | 3460 | 2960 | 2041 | 1380 | 1020 | 845 | 725  | 615 | 487 | 404 | 346 | 304 | 270 | 243 | 221 | 187 | 103  |
| 1,800 V/C | 4730 | 4350 | 3630 | 3089 | 2093 | 1450 | 1080 | 850 | 730  | 620 | 490 | 408 | 350 | 306 | 272 | 245 | 223 | 189 | 105  |
| 1,780 V/C | 5046 | 4641 | 3720 | 3138 | 2115 | 1480 | 1100 | 875 | 735  | 625 | 495 | 411 | 352 | 308 | 274 | 247 | 225 | 190 | 105  |
| 1,750 V/C | 5278 | 4900 | 3900 | 3227 | 2154 | 1500 | 1120 | 885 | 740  | 630 | 498 | 414 | 354 | 310 | 276 | 249 | 227 | 192 | 106  |
| 1,730 V/C | 5626 | 5275 | 4144 | 3340 | 2196 | 1525 | 1140 | 900 | 745  | 635 | 503 | 416 | 355 | 311 | 278 | 251 | 228 | 193 | 106  |
| 1,700 V/C | 5900 | 5454 | 4240 | 3401 | 2216 | 1550 | 1160 | 906 | 750  | 640 | 507 | 418 | 356 | 313 | 279 | 252 | 229 | 194 | 107  |
| 1,670 V/C | 6148 | 5696 | 4367 | 3470 | 2234 | 1580 | 1180 | 912 | 755  | 645 | 510 | 420 | 358 | 315 | 281 | 254 | 231 | 195 | 107  |
| 1,650 V/C | 6380 | 5938 | 4480 | 3519 | 2244 | 1600 | 1200 | 920 | 760  | 650 | 513 | 423 | 360 | 316 | 283 | 255 | 232 | 196 | 108  |
| 1,600 V/C | 6600 | 6200 | 4600 | 3650 | 2300 | 1620 | 1220 | 932 | 765  | 655 | 516 | 425 | 362 | 318 | 284 | 256 | 233 | 197 | 108  |

## CONSTANT CURRENT DISCHARGE

| A @ 20 °C | 3m  | 5m  | 10m | 15m | 30m | 1h  | 90m  | 2h   | 150m | 3h   | 4h   | 5h   | 6h   | 7h   | 8h   | 9h   | 10h  | 12h  | 24h |
|-----------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| 1,940 V/C | 152 | 149 | 142 | 135 | 115 | 90  | 67,5 | 55,8 | 46,5 | 40,2 | 31,9 | 26,6 | 22,9 | 20,1 | 18   | 16,2 | 14,8 | 12,7 | 6,9 |
| 1,920 V/C | 180 | 176 | 166 | 156 | 131 | 100 | 75   | 61   | 51   | 44,5 | 35   | 29   | 24,7 | 21,5 | 19,3 | 17,4 | 15,9 | 13,6 | 7,4 |
| 1,900 V/C | 210 | 205 | 191 | 178 | 145 | 112 | 84   | 65   | 53,5 | 46,5 | 36,8 | 30,5 | 26   | 22,8 | 20,3 | 18,3 | 16,8 | 14,4 | 7,8 |
| 1,870 V/C | 270 | 260 | 237 | 216 | 165 | 118 | 88,5 | 68   | 56   | 47,9 | 37,9 | 31,6 | 27,1 | 23,9 | 21,4 | 19,4 | 17,8 | 15,2 | 8,2 |
| 1,850 V/C | 382 | 350 | 293 | 253 | 178 | 122 | 91,5 | 70   | 58   | 49,3 | 39   | 32,4 | 27,7 | 24,5 | 22   | 19,9 | 18,3 | 15,6 | 8,4 |
| 1,830 V/C | 420 | 381 | 312 | 266 | 186 | 123 | 92,3 | 71,5 | 59,5 | 50,7 | 40   | 33,2 | 28,4 | 25   | 22,5 | 20,3 | 18,6 | 15,9 | 8,5 |
| 1,800 V/C | 458 | 410 | 330 | 278 | 193 | 125 | 93   | 73   | 60,8 | 52   | 40,8 | 33,9 | 29   | 25,6 | 22,9 | 20,8 | 19   | 16,3 | 8,7 |
| 1,780 V/C | 489 | 433 | 346 | 291 | 197 | 128 | 93,4 | 74   | 62   | 53   | 41,6 | 34,5 | 29,4 | 25,9 | 23,2 | 21   | 19,2 | 16,4 | 8,8 |
| 1,750 V/C | 524 | 460 | 363 | 303 | 205 | 130 | 94,9 | 76   | 64   | 54,5 | 42,8 | 35,5 | 29,6 | 26,1 | 23,4 | 21,1 | 19,3 | 16,5 | 8,8 |
| 1,730 V/C | 563 | 490 | 375 | 312 | 209 | 132 | 96,4 | 77   | 65,5 | 55,2 | 43   | 35,6 | 29,8 | 26,3 | 23,5 | 21,3 | 19,4 | 16,6 | 8,9 |
| 1,700 V/C | 611 | 520 | 387 | 321 | 213 | 134 | 97,8 | 78   | 66   | 56   | 43,2 | 35,7 | 30   | 26,4 | 23,6 | 21,4 | 19,5 | 16,7 | 8,9 |
| 1,670 V/C | 641 | 545 | 399 | 327 | 216 | 136 | 99,3 | 78,6 | 66,4 | 56,2 | 43,5 | 35,8 | 30,1 | 26,5 | 23,7 | 21,4 | 19,6 | 16,8 | 9   |
| 1,650 V/C | 672 | 569 | 411 | 332 | 217 | 138 | 101  | 79,2 | 66,8 | 56,4 | 43,7 | 36   | 30,3 | 26,6 | 23,8 | 21,6 | 19,7 | 16,9 | 9   |
| 1,600 V/C | 725 | 598 | 423 | 335 | 219 | 140 | 102  | 80   | 67   | 56,5 | 44   | 36,2 | 30,4 | 26,7 | 23,9 | 21,6 | 19,8 | 16,9 | 9   |

## Technical drawing



## Float Voltage vs Temperature

