



VISION Rechargeable Products
Sealed Lead Acid Battery

www.vision-batt.com

FM Series

General purpose application

VISION FM series are designed for general purpose applications, such as UPS, telecom, electrical utilities.

With 10 years design life, the batteries comply to the most popular international standards, such as IEC896-2, BS6290-4, Eurobat Guide.

The battery container and cover are available both in V0 class flame retardant ABS or HBO ABS plastics.

Shenzhen Center Power Tech Co., Ltd. has come to obtain wide recognition from customers all over the world. This is not only due to the fact that our products are featured by reliable stability in quality, but also because we attach great importance to our communication with customers and our perfect understanding of customers' requirements as well.

Shenzhen Center Power Tech. Co., Ltd

6FM230S-X 12V 230Ah

(Edition Nov 2010)

General Features

- Positive and negative plates in lead-calcium-tin alloy
- Stable Quality & High Reliability
- Sealed Construction
- Long Service Life
- Maintenance-Free Operation
- Low Pressure Venting System
- Low Self Discharge
- U. L. Component Recognition
- Six months shelf life at 20°C
- Design life 10 years



Dimensions and Weight

| | SI Units | English Units |
|----------------|----------|---------------|
| Length | 520mm | 20.5inch |
| Width | 269mm | 10.6inch |
| Height | 203mm | 8.0inch |
| Total Height | 208mm | 8.2inch |
| Approx. Weight | 73.2Kg | 161.5lbs |

Performance Characteristics

- Nominal Voltage 12V
- Number of cell 6
- Nominal Capacity 77°F(25°C)
 - 10 hour rate (23.0A, 10.8V) 230Ah
 - 5 hour rate (44.6A, 10.5V) 223Ah
 - 1 hour rate (153A, 9.60V) 153Ah
- Internal Resistance
 - Fully Charged battery 77°F(25°C) 2.8mOhms
- Self-Discharge
 - 3% of capacity declined per month at 20°C(average)
- Operating Temperature Range
 - Discharge -20~60°C
 - Charge -10~60°C
 - Storage -20~60°C
- Max. Discharge Current 77°F(25°C) 1100A(5s)
- Short Circuit Current 4300A
- Charge Methods: Constant Voltage Charge 77°F(25°C)
 - Cycle use 14.4-14.7V
 - Maximum charging current 69A
 - Temperature compensation -30mV/°C
- Standby use 13.6-13.8V
 - Temperature compensation -20mV/°C



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6FM230S-X 12V 230Ah

Discharge Data

Constant Current Discharge Data (Amperes at 25°C)

| End voltage volts/cell | | 15min | 20min | 25min | 30min | 35min | 40min | 45min | 50min | 55min | 60min | 1.5h | 2h | 2.5h | 3h | 4h | 5h | 6h | 7h | 8h | 9h | 10h | 12h | 24h |
|------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1.60V | | 371 | 307 | 268 | 242 | 216 | 197 | 182 | 170 | 161 | 153 | 111 | 89.6 | 76.9 | 68.5 | 54.0 | 45.4 | 38.0 | 32.8 | 28.9 | 25.8 | 23.4 | 20.3 | 10.4 |
| 1.65V | | 367 | 304 | 266 | 241 | 215 | 195 | 180 | 168 | 159 | 151 | 110 | 88.8 | 76.4 | 68.2 | 53.8 | 45.1 | 37.9 | 32.7 | 28.8 | 25.7 | 23.3 | 20.2 | 10.4 |
| 1.70V | | 365 | 302 | 265 | 240 | 214 | 194 | 179 | 167 | 158 | 150 | 109 | 88.3 | 76.0 | 67.8 | 53.5 | 44.9 | 37.7 | 32.5 | 28.6 | 25.6 | 23.2 | 20.1 | 10.3 |
| 1.75V | | 359 | 298 | 261 | 236 | 211 | 191 | 176 | 165 | 156 | 149 | 108 | 87.3 | 75.0 | 66.8 | 53.0 | 44.6 | 37.5 | 32.3 | 28.5 | 25.5 | 23.1 | 20.0 | 10.3 |
| 1.80V | | 348 | 290 | 256 | 233 | 208 | 189 | 174 | 164 | 155 | 148 | 107 | 87.0 | 74.7 | 66.5 | 52.6 | 44.3 | 37.2 | 32.1 | 28.3 | 25.4 | 23.0 | 19.9 | 10.2 |

Constant Power Discharge Data (Watts per cell at 25°C)

| End voltage volts/cell | | 15min | 20min | 25min | 30min | 35min | 40min | 45min | 50min | 55min | 60min | 1.5h | 2h | 2.5h | 3h | 4h | 5h | 6h | 7h | 8h | 9h | 10h | 12h | 24h |
|------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|------|-----|-----|------|------|------|------|------|------|------|------|
| 1.60V | | 677 | 573 | 511 | 469 | 423 | 388 | 361 | 335 | 314 | 296 | 213 | 172 | 147 | 131 | 103 | 86.7 | 73.0 | 63.2 | 55.9 | 50.2 | 45.6 | 39.5 | 20.3 |
| 1.65V | | 673 | 570 | 507 | 466 | 420 | 386 | 359 | 333 | 312 | 294 | 212 | 171 | 146 | 130 | 103 | 86.4 | 72.8 | 63.0 | 55.7 | 50.0 | 45.4 | 39.4 | 20.3 |
| 1.70V | | 666 | 564 | 503 | 462 | 417 | 383 | 357 | 331 | 309 | 291 | 210 | 169 | 145 | 129 | 102 | 86.1 | 72.5 | 62.8 | 55.5 | 49.8 | 45.2 | 39.2 | 20.2 |
| 1.75V | | 658 | 558 | 499 | 459 | 415 | 381 | 355 | 328 | 306 | 288 | 208 | 168 | 144 | 128 | 101 | 85.8 | 72.2 | 62.5 | 55.2 | 49.6 | 45.0 | 39.0 | 20.1 |
| 1.80V | | 649 | 552 | 494 | 455 | 411 | 378 | 352 | 325 | 302 | 284 | 205 | 166 | 143 | 126 | 100 | 85.4 | 71.9 | 62.2 | 55.0 | 49.4 | 44.9 | 38.9 | 20.0 |

(Note) The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values.



