



XHRL series
Extreme High Rate
Long life

ENERGY OF INFINITY ▼

Confidence & Creativity
Service & Sincerity
Belief & Bravery

XHRL

XHRL series

XHRL-series batteries are specially designed for high-rate discharge applications. With new VRLA technology, the XHRL series features 20% greater power density in the standard footprint.

The XHRL service life is up to 10 years in standby use, or more than 260 cycles at 100% discharge.

As with all CSB batteries, all XHRL series batteries are rechargeable, highly efficient, maintenance free, leakproof, useable in any orientation and ISO/UL recognized.



Feature and Benefits

- Extreme energy density, small footprint, increased power (15% to 20% above standard high-rate batteries).
- Innovative plate structure greatly increases energy/density ratios.
- New paste formula increases active surface area.
- Proprietary electrolyte additives.
- Thermally bonded casing.
- TIG terminal welds.
- Flame-arresting vents.
- Highly durable safety valve.
- Increased current delivery for high-rate discharge.
- Up to 50% greater resistance to grid growth under optimal temperature.
- Reduced internal resistance for superior performance.
- Uniform plate formation for consistent capacity.
- No-spill design.
- Useable in any orientation.
- Maintenance free.
- Low self-discharge.

Long service life

- Up to 10 years of expected life under normal float charge at 25°C (77°F).
- Extended shelf life (up to 14 months at 20°C).

Reliability

- CSB-manufactured batteries are 100% 2-cycle tested by the CCDS system.
- CSB-manufactured batteries are UL-recognized components under UL 924 and UL 1989. CSB file number MH14533.
- ISO9001 and ISO14001 certified.

Applications

Standby use

- UPS power supply.
- Workstation UPS.
- Emergency lighting equipment.
- Precision instrumentation.
- Fire alarm and security systems.
- Communications and electrical equipment.
- Office computers, microcomputers and OA equipment.
- Robots, control equipment and other FA equipment.
- Emergency power supply in power plants and substations.

Cycle use

- Portable measuring equipment.
- Cameras and photographic equipment.
- Various toys and hobby equipment.

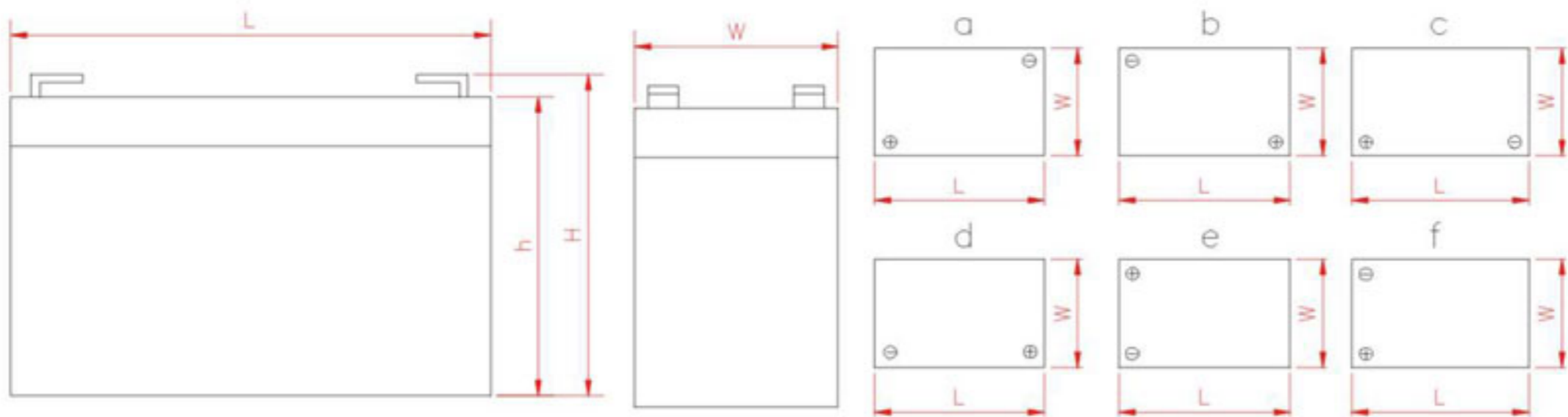
Specifications

| Battery Type | Nominal Voltage(V) | Nominal Capacity (15min) (Wh/cell) | Weight (Approx. kg) | Energy Density (Wh/l) | Specific Energy (Wh/kg) | Internal Resistance Approx. (mΩ) | Max. Discharge Current 5 sec (A) | Dimensions (mm) | | | | Terminal Position | Terminal Type | Max. Charging Current (A) | Max. Screw Torque value | |
|--------------|--------------------|------------------------------------|---------------------|-----------------------|-------------------------|----------------------------------|----------------------------------|--------------------|----------------------|------------|-----------|-------------------|---------------|---------------------------|-------------------------|------|
| | | | | | | | | Overall Height (H) | Container Height (h) | Length (L) | Width (W) | | | | Kgf-cm / lbf-in | N-m |
| XHRL 12360W | 12 | 360 | 27.50 | 58.1 | 19.64 | 4.00 | 800 | 214.2±2.5 | 211.2±2.5 | 261±2.5 | 168.5±2.0 | c | I2 | 36.00 | 91/79 | 8.92 |
| XHRL 12410W | 12 | 410 | 31.00 | 55.8 | 19.84 | 4.00 | 800 | 214.2±2.5 | 211.3±2.5 | 308.7±2.5 | 169±2.0 | c | I2 | 41.00 | 91/79 | 8.92 |
| XHRL 12475W | 12 | 475 | 35.30 | 56.9 | 20.18 | 3.70 | 800 | 217.9±2.5 | 214.6±2.5 | 343±2.5 | 170±2.0 | c | I2 | 47.50 | 91/79 | 8.92 |
| XHRL 12620W | 12 | 620 | 47.20 | 58.2 | 19.70 | 3.70 | 800 | 275.9±2.5 | 273.9±2.5 | 343±2.5 | 170±2.0 | c | I2 | 62.00 | 91/79 | 8.92 |

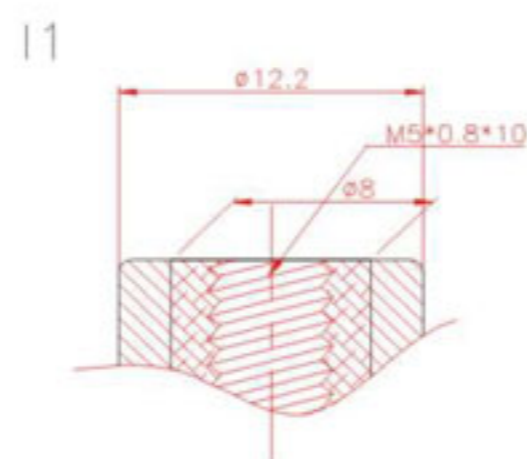
Charging(V) : • Standby Use : 2.275V±0.025/CELL AT 25°C (77°F) Temp Coefficient -3.3mV/CELL°C

• Cycle Use : 2.45V±0.05V/CELL AT 25°C (77°F) Temp Coefficient -5mV/CELL°C

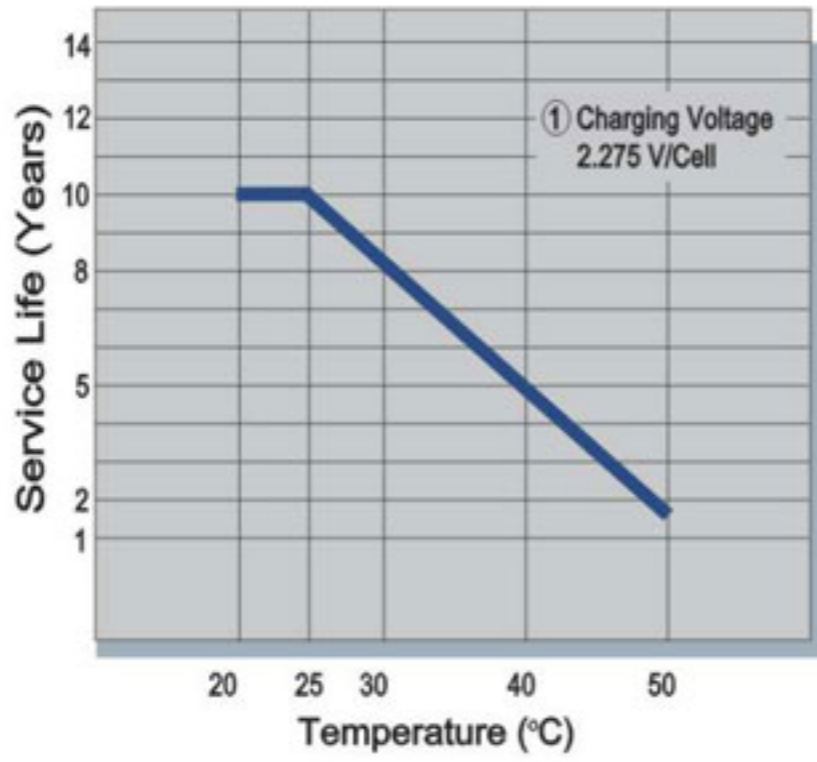
Terminal Position



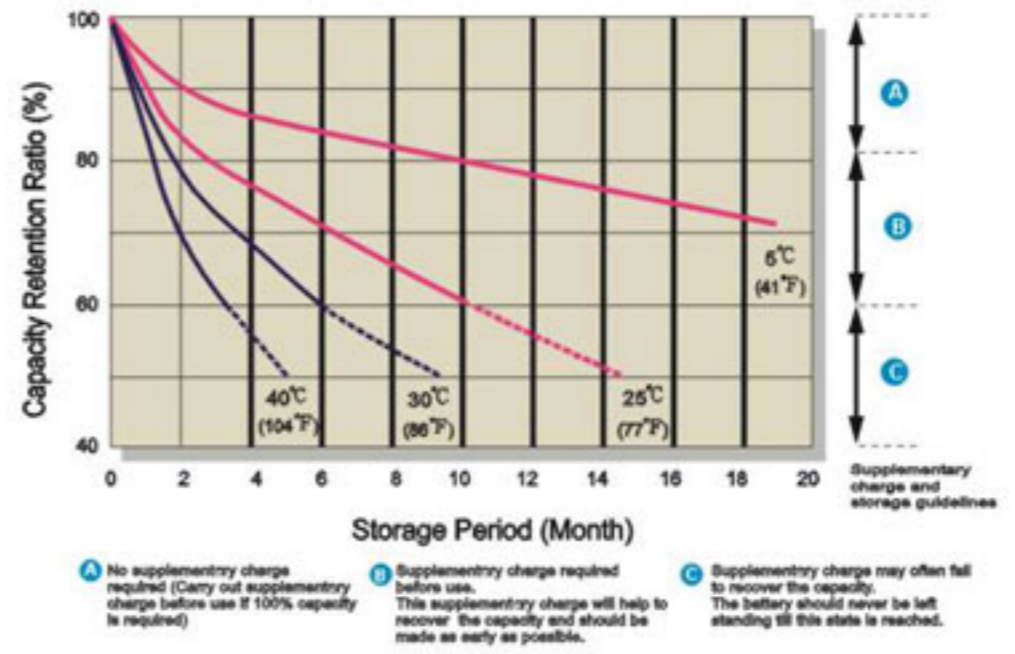
Terminal Type



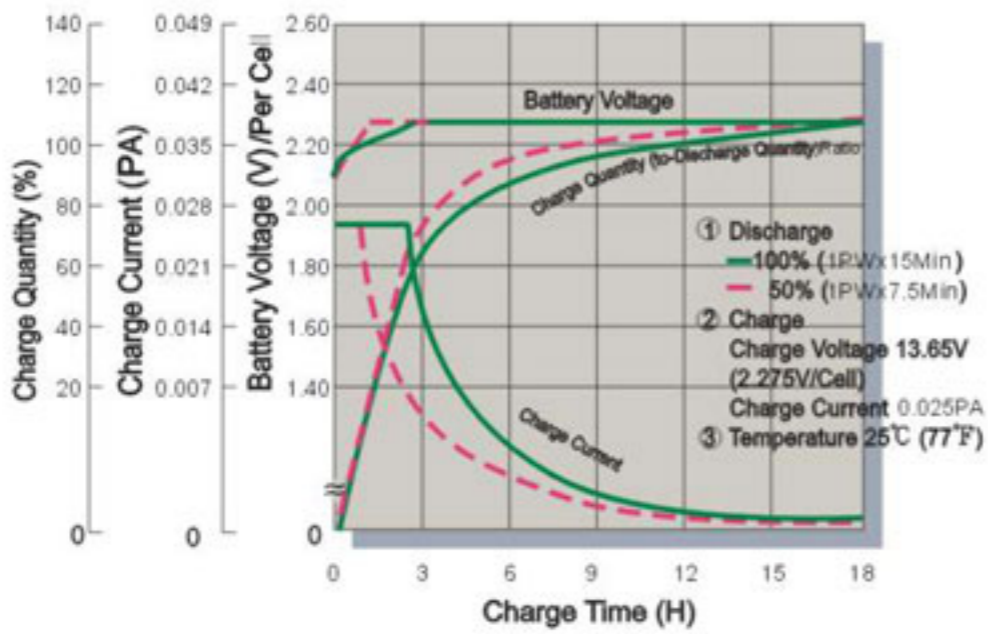
Trickle (or Float) Service Life



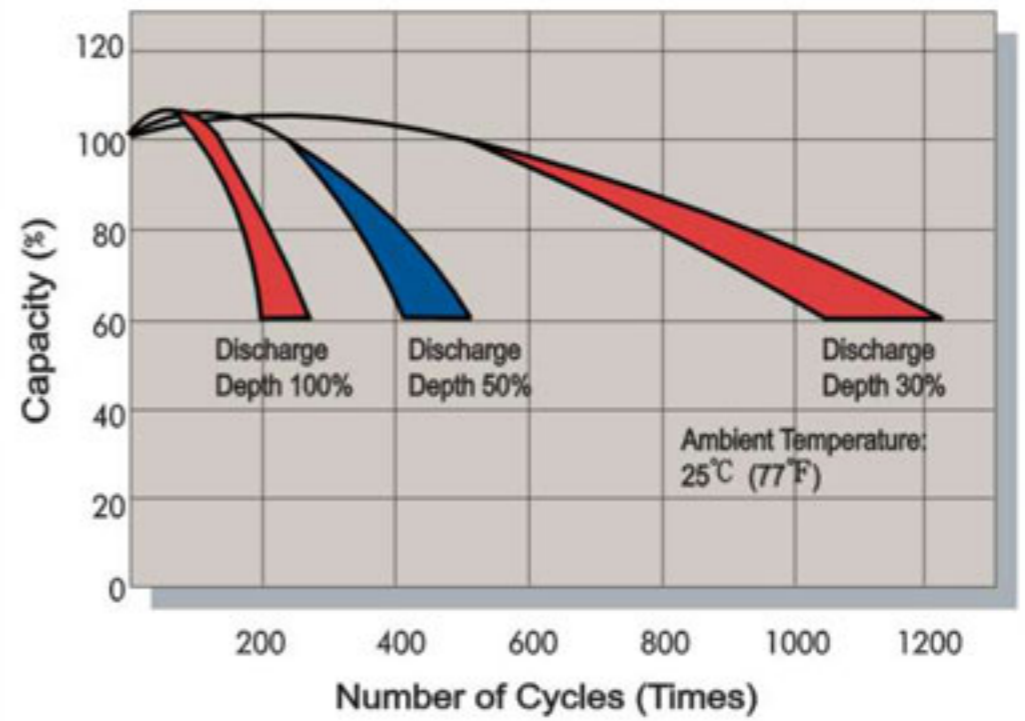
Capacity Retention Characteristic



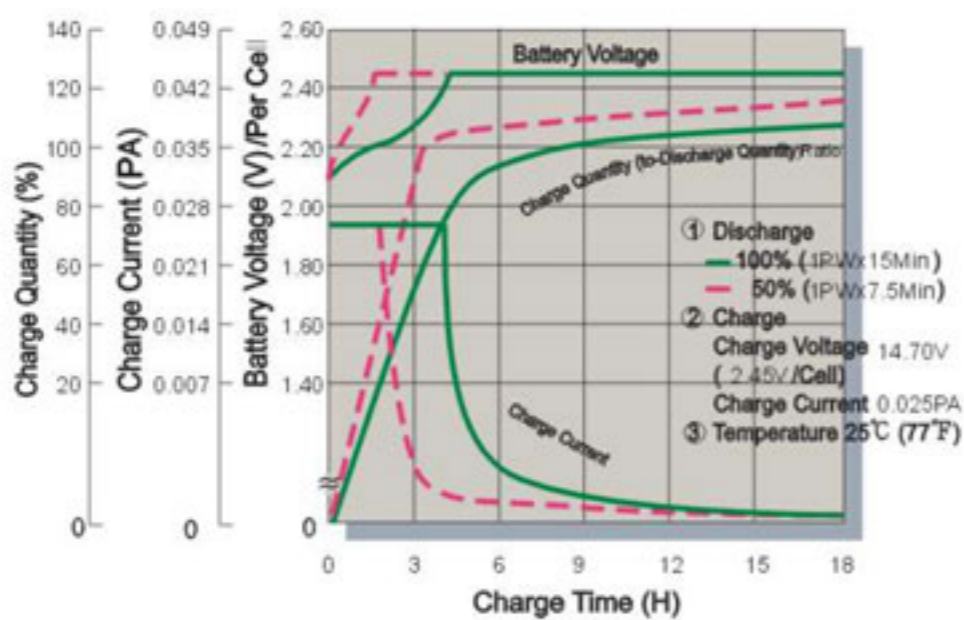
Battery Voltage and Charge Time for Standby Use



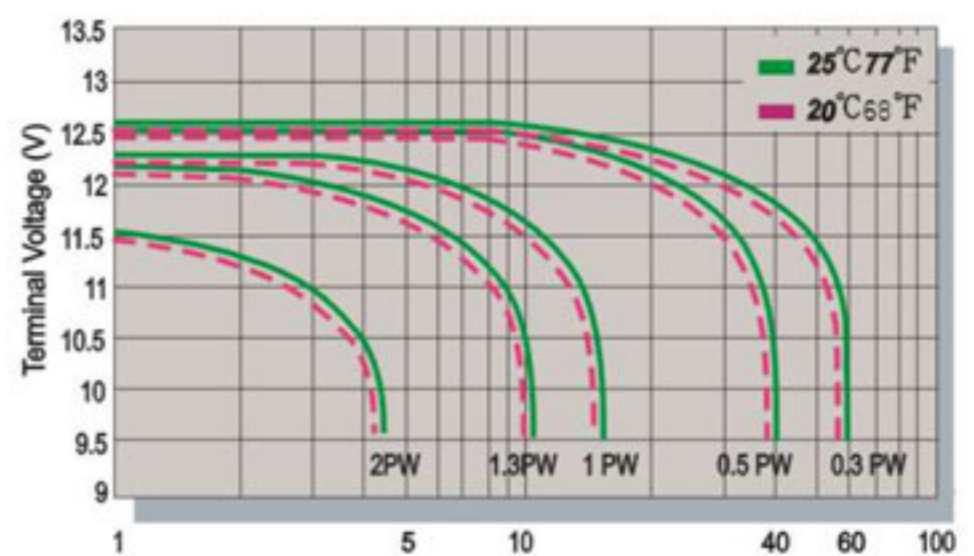
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



| XHRL12360W | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 468 | 383 | 319 | 273 | 239 | 182 | 145 | 104 | 57.3 | 40.4 |
| 1.67V | 405 | 352 | 300 | 257 | 228 | 176 | 142 | 102 | 56.9 | 40.3 |
| 1.70V | 373 | 324 | 290 | 252 | 221 | 173 | 139 | 101 | 56.5 | 40.1 |
| 1.75V | 347 | 299 | 267 | 234 | 210 | 165 | 133 | 98.4 | 55.4 | 39.4 |
| 1.80V | 319 | 284 | 244 | 214 | 194 | 152 | 125 | 92.8 | 54.0 | 38.5 |
| 1.85V | 281 | 238 | 208 | 192 | 174 | 139 | 115 | 86.9 | 50.3 | 34.7 |
| Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 4,544 | 3,982 | 3,529 | 3,081 | 2,758 | 2,198 | 1,735 | 1,232 | 678 | 485 |
| 1.67V | 4,125 | 3,665 | 3,339 | 2,956 | 2,646 | 2,160 | 1,711 | 1,209 | 676 | 480 |
| 1.70V | 3,850 | 3,516 | 3,203 | 2,830 | 2,530 | 2,080 | 1,664 | 1,184 | 668 | 477 |
| 1.75V | 3,593 | 3,327 | 3,073 | 2,677 | 2,400 | 1,986 | 1,597 | 1,160 | 658 | 468 |
| 1.80V | 3,376 | 3,020 | 2,777 | 2,476 | 2,240 | 1,858 | 1,514 | 1,102 | 644 | 459 |
| 1.85V | 2,750 | 2,571 | 2,436 | 2,232 | 2,016 | 1,686 | 1,365 | 1,029 | 598 | 434 |

| XHRL12410W | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 546 | 447 | 372 | 319 | 279 | 212 | 169 | 121 | 68.8 | 48.6 |
| 1.67V | 472 | 411 | 350 | 300 | 266 | 206 | 166 | 119 | 68.4 | 48.4 |
| 1.70V | 435 | 378 | 339 | 294 | 258 | 202 | 162 | 118 | 67.9 | 48.1 |
| 1.75V | 405 | 348 | 312 | 273 | 245 | 192 | 156 | 115 | 66.6 | 47.3 |
| 1.80V | 373 | 331 | 285 | 249 | 226 | 177 | 146 | 108 | 64.9 | 46.2 |
| 1.85V | 328 | 277 | 243 | 224 | 203 | 162 | 135 | 101 | 60.4 | 41.7 |
| Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 5,179 | 4,538 | 4,022 | 3,512 | 3,143 | 2,505 | 1,977 | 1,440 | 811 | 580 |
| 1.67V | 4,702 | 4,177 | 3,806 | 3,369 | 3,016 | 2,462 | 1,950 | 1,412 | 809 | 575 |
| 1.70V | 4,388 | 4,008 | 3,651 | 3,225 | 2,884 | 2,370 | 1,897 | 1,383 | 800 | 571 |
| 1.75V | 4,095 | 3,792 | 3,503 | 3,052 | 2,735 | 2,264 | 1,820 | 1,355 | 787 | 560 |
| 1.80V | 3,848 | 3,443 | 3,166 | 2,822 | 2,553 | 2,117 | 1,726 | 1,288 | 771 | 549 |
| 1.85V | 3,135 | 2,930 | 2,776 | 2,544 | 2,298 | 1,922 | 1,597 | 1,202 | 716 | 519 |

| XHRL12475W | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 694 | 582 | 468 | 401 | 349 | 264 | 214 | 155 | 86.0 | 60.6 |
| 1.67V | 614 | 522 | 431 | 376 | 331 | 254 | 209 | 152 | 84.8 | 59.4 |
| 1.70V | 585 | 490 | 413 | 363 | 320 | 249 | 206 | 150 | 84.2 | 59.1 |
| 1.75V | 549 | 437 | 381 | 334 | 301 | 237 | 199 | 145 | 82.3 | 57.8 |
| 1.80V | 445 | 389 | 338 | 304 | 274 | 218 | 184 | 136 | 78.8 | 55.9 |
| 1.85V | 383 | 327 | 296 | 268 | 240 | 198 | 164 | 124 | 73.2 | 52.6 |
| Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 6,951 | 5,678 | 4,791 | 4,197 | 3,702 | 2,912 | 2,373 | 1,739 | 991 | 709 |
| 1.67V | 6,328 | 5,324 | 4,513 | 4,032 | 3,560 | 2,851 | 2,323 | 1,716 | 987 | 706 |
| 1.70V | 6,043 | 5,092 | 4,400 | 3,903 | 3,455 | 2,805 | 2,280 | 1,698 | 980 | 704 |
| 1.75V | 5,511 | 4,666 | 4,144 | 3,627 | 3,284 | 2,691 | 2,193 | 1,650 | 966 | 691 |
| 1.80V | 4,800 | 4,245 | 3,762 | 3,331 | 3,058 | 2,498 | 2,056 | 1,571 | 931 | 666 |
| 1.85V | 4,161 | 3,801 | 3,315 | 3,010 | 2,789 | 2,208 | 1,862 | 1,453 | 874 | 625 |

| XHRL12620W | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Constant Current Discharge Characteristics Unit:Amperes(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 766 | 641 | 571 | 504 | 458 | 349 | 283 | 206 | 116 | 81.7 |
| 1.67V | 660 | 585 | 511 | 466 | 420 | 326 | 273 | 200 | 114 | 79.8 |
| 1.70V | 622 | 545 | 486 | 448 | 398 | 315 | 267 | 196 | 113 | 78.3 |
| 1.75V | 553 | 485 | 449 | 398 | 356 | 293 | 252 | 188 | 110 | 78.2 |
| 1.80V | 494 | 443 | 383 | 344 | 315 | 270 | 229 | 175 | 106 | 75.6 |
| 1.85V | 437 | 360 | 322 | 298 | 280 | 239 | 201 | 158 | 97.9 | 71.1 |
| Constant Power Discharge Characteristics Unit:Watts(25°C, 77°F) | | | | | | | | | | |
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
| 1.60V | 7,070 | 6,088 | 5,529 | 5,280 | 4,692 | 3,770 | 3,108 | 2,304 | 1,344 | 966 |
| 1.67V | 6,439 | 5,680 | 5,432 | 4,894 | 4,387 | 3,720 | 2,983 | 2,249 | 1,329 | 959 |
| 1.70V | 6,090 | 5,494 | 5,336 | 4,692 | 4,262 | 3,540 | 2,918 | 2,222 | 1,325 | 957 |
| 1.75V | 5,579 | 5,208 | 4,825 | 4,311 | 3,969 | 3,282 | 2,742 | 2,135 | 1,293 | 944 |
| 1.80V | 5,235 | 4,660 | 4,246 | 3,894 | 3,639 | 2,956 | 2,515 | 2,017 | 1,247 | 916 |
| 1.85V | 4,134 | 3,765 | 3,674 | 3,470 | 3,120 | 2,576 | 2,257 | 1,864 | 1,163 | 867 |

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