

ROBUST
ENDURING
RELIABLE

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### AMARA RAJA -POWERED BY INNOVATION

The future belongs to those who stake a claim for it here and now. This axiom has been our guiding principle at Amara Raja, helping it to ceaselessly innovate and explore the new and never-before.

Amara Raja has put its vision into practice by striding forward in the power management industry and consolidating its position as one of the leading players in the Asia-Pacific region.

This facilitates sharing of knowledge and innovations to accelerate and expand development efforts in the global battery market. It also enables harnessing technology that acclimatized batteries to operate in harsh tropical conditions. Amara Raja's plant facility is backed by one of the finest Research & Development centers on site. A center that constantly and unceasingly thinks out-of-the-box and develops products and services that match world-class standards, and sets industry benchmarks.

Amara Raja's Energy & Mobility Excellence Center

is another first for India. Here, products are put through rigorous tests to ensure that they comply with international standards and design requirements. With the latest testing equipment, the center evaluates battery performance, design and longevity. Apart from this, there are facilities for application engineering, vehicle system study, simulations and computer-aided design, including a full calibration laboratory. Amara Raja's quality commitment has ensured that it conforms to International quality standards.

Amara Raja today has the distinction of being a prime player and is forging ahead into new marketpowered by innovation.

Amaron Volt<sup>™</sup>, the latest Product Offering from Amara Raja Energy & Mobility Ltd is the 2V High Integrity Series from Amaron Hi Life Batteries range. Amaron Volt incorporating the cutting edge technology offers an unbeatable value proposition for the demanding applications in back-up power for Telecom, Broadband, IT, Power Utility, Solar PV and UPS applications. Amaron Volt<sup>™</sup> is designed to be a robust, enduring and reliable Battery - fulfilling all your requirements of back-up power for critical applications even in harsh outdoor environs



ANARA

### Backup Power for Demanding Needs of Telecom Infrastructure

The VRLA Battery has established itself as the epitome of back-up power for the Indian Telecom Network, since its introduction in the early nineties. It is a key building block, supporting the phenomenal growth of tele-density achieved in the last decade.

As the Indian Telecom network witnesses an unprecedented pressure on energy-costoptimisation and a spread of rural network in difficult terrains, the expectations from a battery have changed.

The battery is now required to take up the role of a key energy source, unlike in the past, when it merely served as a standby in urban / semi-urban networks. Successful implementations in the field have already proved that an intelligent architecture using superior Hi-Life VRLA Battery more efficiently can provide immediate benefits in terms of reduced OPEX.

Sensing this underlying and yet to be defined need for a robust, enduring and reliable Plug-n-Play source of power for Telecom networks, **Amaron Volt**<sup>™</sup> comes to you as the right solution at the right time, with cutting edge technology for sustaining the pace of network deployment.

Coming from the Amara Raja stable, this product has been designed and manufactured with all essential features needed for an Outdoor as well as Indoor, Renewable Energy compatible, Remote and High Life energy storage solution for tropical conditions. Amaron Volt<sup>™</sup> with it's cutting edge technology offers an Unbeatable Value Proposition for

- Robustness to core, suiting Outdoor / Rural / Off-grid / Critical Installations
- Highest cyclic life, for most competitive Total Cost of Ownership (TCO)
- Substantially higher OPEX savings and lowers Carbon footprint
- Excels in PSOC operations to suit demanding applications
- Reliable for maintenance-free operation
- Technology with high energy density
- Best in class Deep Discharge Quick Recharge Characteristics
- Time tested & high end VRLA Technology for Telecom Networks
- World Class Aesthetics and User Friendliness
- Optional Bundling of Customized Cabinets & Remote Monitoring Solutions

#### **ROBUSTNESS TO CORE**

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Perdura<sup>™</sup> Grid

- **Positive Grid** High thickness proprietary Perdura<sup>™</sup> Grid with SRS profile
- Separator Hi-Sorb<sup>™</sup> Separator with higher density and superior absorption with uniform compression
- Container / Cover Reinforced ribbed Polypropylene container and cover with Lip-n-Tongue<sup>™</sup> Thermal Seal for durability and leak-proof joint.
- Connection Terminals Highly conductive and integrated M8 electrolytic Copper inserts
- Terminal post Seal Sturdy Ring-n-Lock<sup>™</sup> Terminal Design with secondary epoxy seal providing leak-proof joint
- Safety Valve integrated Flame Arrester and operates between 4-6 psi for superior recombination efficiency
- Electrolyte Vaccum filled high purity Sulphuric Acid

#### **LIFE ENHANCERS**

- Plate Proprietary Perdura<sup>™</sup> Grid employing patented alloy and TetraCrys<sup>™</sup> paste recipe for improved bonding, offering Best In Class float and cyclic life
- Seperator Hi-Sorb<sup>™</sup> Seperator with superior absorption of high volume vacuum filled electrolyte, increasing life in cycling application. Double Layer Separator ensures higher reliability, adding to life

- Container Higher surface area with ribs offering superior thermal conductivity and uniform cell compression for life in outdoor installations
- Container-Cover Sealing Lip-n-Tongue<sup>™</sup> Thermal Seal arrangement for leak-proof Long Life

#### **OPEX SAVINGS**

- Best-In-Class recharge characteristics for PSOC operations & DG run reduction
- Quick charging capability at lower currents
- Best-In-Class cyclic life for tropical conditions
- Higher and assured back-up for designed size
- Zero Maintenance operation
- Time tested and proven technology

#### **USER FRIENDLY INSTALLATION – PLUG & PLAY**

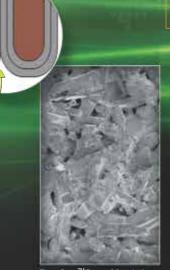
- Shipped in 100% charged condition from factory
- Higher Copper Insert Head for stronger integrity in inter cell connections
- Heavy-duty Tin plated copper connectors facilitating high rate discharge and quick recharge
- Full-wrap trays of MS with acid resistant paint, self-stackable type for ease of installation
- Transparent front cover for Protection and ease of monitoring
- Visual terminal identification to prevent connection errors
- Best-In-Class Footprint offering higher energy density

Hi-Sorb<sup>™</sup> Seperator

• Confirming to Seismic Zone IV installations



Ring-n-Lock<sup>™</sup> Terminal Design



TetraCrys<sup>™</sup> Paste Morphology





#### **APPLICATION SPECTRUM**

- Critical installations
- Outdoor and Indoor installations
- Rural Offgrid and poor grid installation
- Renewable energy installations / Solar installations
- Mission Critical power sector installations
- High-end UPS and Data centre installations

#### **COMPLIANCE TO INTERNATIONAL SPECIFICATIONS**

- Certified for IS 15549 : 2005, IEC 60896-PART 21 & 22 and IEC 61427
- Complies to IEEE 1188 & 1189, TEC GR No. GR/TX/BAT-001/04 June 2011, Telcordia SR4228
  CE marking for Conformite European

### UNBEATABLE PERFORMANCE EDGE

- Design float life: 20+ years @ 27°C
- Self-discharge < 2% per month</li>
- Shelf life without recharge upto 6 months
- Operating range: 40°C to + 60°C
- AH efficiency: >95% and WH efficiency: >85%
- Recombination efficiency > 98%

#### Note: All values & charging parameters are rated @ 27°C

| Charging Method: | Charging      | Maximum Charging |
|------------------|---------------|------------------|
| Charge Provision | Voltage       | Current (ADC)    |
| Float Charge     | 2.23-2.25 VPC | 0.3 C            |
| Boost Charge     | 2.30-2.32 VPC | 0.3 C            |

C is the rated AH capacity @ 10 hours

## AMARON VOLT<sup>™</sup> RANGE

|            |              | MODULE                         |                                 |             | RFORMANCE   | DATA |                            |  |
|------------|--------------|--------------------------------|---------------------------------|-------------|---|------|----------------------------|--|
|            |              | Nominal<br>Ah Capacity         |                                 | Sta<br>(Inc | Stacking dimensions<br>(Including front cover)<br>±5 mm |      |                            |  |
| SI.<br>No. | Cell<br>Type | @C10 to<br>1 75 ECV at<br>27°C | System<br>Module<br>voltage (V) | W           | D   | н    | Module<br>weight<br>±5 Kgs |  |
| 1          | AV4007       | 300 AH                         | 12                              | 706         | 515   | 236  | 153                        |  |
| 2          | AV5007       | 340 AH                         | 12                              | 706         | 570   | 236  | 169                        |  |
| 3          | AV4009       | 400 AH                         | 12                              | 706         | 515   | 282  | 193                        |  |
| 4          | AV5009       | 455 AH                         | 12                              | 706         | 570   | 282  | 215                        |  |
| 5          | AV4011       | 500 AH                         | 12                              | 706         | 515   | 328  | 220                        |  |
| 6          | AV4013       | 600AH                          | 12                              | 706         | 515   | 374  | 266                        |  |
| 7          | AV5013       | 680 AH                         | 12                              | 706         | 570   | 374  | 295                        |  |
| 8          | AV4017       | 800 AH                         | 6                               | 706         | 515   | 261  | 180                        |  |
| 9          | AV5017       | 910 AH                         | 6                               | 706         | 570   | 261  | 201                        |  |
| 10         | AV4021       | 1000 AH                        | 6                               | 706         | 515   | 306  | 217                        |  |
| 11         | AV5021       | 1140 AH                        | 6                               | 706         | 570   | 306  | 244                        |  |
| 12         | AV4025       | 1200 AH                        | 6                               | 706         | 515   | 351  | 250                        |  |
| 13         | AV5025       | 1370 AH                        | 6                               | 706         | 570   | 351  | 285                        |  |
| 14         | AV4034       | 1600AH                         | 6                               | 706         | 515   | 522  | 360                        |  |
| 15         | AV5034       | 1800 AH                        | 6                               | 706         | 570   | 522  | 402                        |  |
| 16         | AV4042       | 2000 AH                        | 6                               | 706         | 515   | 612  | 434                        |  |
| 17         | AV5042       | 2300 AH                        | 6                               | 706         | 570   | 612  | 488                        |  |
| 18         | AV4050       | 2400 AH                        | 6                               | 706         | 515   | 702  | 500                        |  |
| 19         | AV5050       | 2750 AH                        | 6                               | 706         | 570   | 702  | 570                        |  |
| 20         | AV4063       | 3000 AH                        | 6                               | 706         | 515   | 918  | 651                        |  |
| 21         | AV5063       | 3400 AH                        | 6                               | 706         | 570   | 918  | 732                        |  |
| 22         | AV4075       | 3600 AH                        | 6                               | 706         | 515   | 1053 | 750                        |  |
| 23         | AV5075       | 4100 AH                        | 6                               | 706         | 570   | 1053 | 855                        |  |
| 24         | AV4084       | 4000 AH                        | 6                               | 706         | 515   | 1224 | 868                        |  |
| 25         | AV5084       | 4550 AH                        | 6                               | 706         | 570   | 1224 | 976                        |  |
| 26         | AV4100       | 4800 AH                        | 6                               | 706         | 515   | 1404 | 1000                       |  |
| 27         | AV5100       | 5500 AH                        | 6                               | 706         | 570   | 1404 | 1140                       |  |
|            |              |                                |                                 |             |   |      |                            |  |

The models are rated for 1.75ECV. For ratings of other ECV's, Please contact AMARA RAJA. Note: 1. "D" dimensions are with front covers. 2. Installation drawing will supersedes the catalogue for dimensions. 3. Design Improvements are continuous process, as result the contents may change without prior notice.

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GE SPECIFICATIONS

### CONSTANT CURRENT DISCHARGE (ADC) TO 1.75ECV @ 27°C

|            |              | Nominal<br>Ah Capacity |       |        |        |        |      | Discharg | e Current | t in Amps | ;     |       |       |       |        |  |  |  |  |  |
|------------|--------------|------------------------|-------|--------|--------|--------|------|----------|-----------|-----------|-------|-------|-------|-------|--------|--|--|--|--|--|
| SI.<br>No. | Cell<br>type | @ C10 at<br>27° C      | 5 Min | 10 Min | 15 Min | 30 Min | 1 Hr | 2 Hrs    | 3 Hrs     | 4 Hrs     | 5 Hrs | 6 Hrs | 7 Hrs | 8 Hrs | 10 Hrs |  |  |  |  |  |
| 1          | AV4007       | 300                    | 330   | 300    | 275    | 219    | 162  | 102      | 77        | 62        | 52.2  | 45.6  | 40.3  | 36.1  | 30.0   |  |  |  |  |  |
| 2          | AV5007       | 340                    | 374   | 340    | 312    | 248    | 184  | 115      | 88        | 71        | 59.1  | 51.7  | 45.7  | 41.0  | 34.0   |  |  |  |  |  |
| 3          | AV4009       | 400                    | 440   | 400    | 367    | 292    | 216  | 136      | 103       | 83        | 69.6  | 60.8  | 53.8  | 48.2  | 40.0   |  |  |  |  |  |
| 4          | AV5009       | 455                    | 500   | 455    | 417    | 332    | 246  | 154      | 117       | 95        | 79.1  | 69.1  | 61.2  | 54.8  | 45.5   |  |  |  |  |  |
| 5          | AV 4011      | 500                    | 549   | 500    | 459    | 365    | 270  | 169      | 129       | 104       | 87.0  | 76.0  | 67.2  | 60.2  | 50.0   |  |  |  |  |  |
| 6          | AV4013       | 600                    | 659   | 600    | 550    | 438    | 324  | 203      | 155       | 125       | 104.3 | 91.2  | 80.6  | 72.3  | 60.0   |  |  |  |  |  |
| 7          | AV5013       | 680                    | 747   | 680    | 624    | 496    | 368  | 231      | 175       | 141       | 118.3 | 103.3 | 91.4  | 81.9  | 68.0   |  |  |  |  |  |
| 8          | AV4017       | 800                    | 879   | 800    | 734    | 584    | 432  | 271      | 206       | 166       | 139.1 | 121.6 | 107.5 | 96.4  | 80.0   |  |  |  |  |  |
| 9          | AV5017       | 910                    | 1000  | 910    | 835    | 664    | 492  | 308      | 235       | 189       | 158.3 | 138.3 | 122.3 | 109.6 | 91.0   |  |  |  |  |  |
| 10         | AV4021       | 1000                   | 1099  | 1000   | 917    | 730    | 541  | 339      | 258       | 208       | 173.9 | 152.0 | 134.4 | 120.5 | 100.0  |  |  |  |  |  |
| 11         | AV5021       | 1140                   | 1253  | 1140   | 1046   | 832    | 616  | 386      | 294       | 237       | 198.3 | 173.3 | 153.2 | 137.3 | 114.0  |  |  |  |  |  |
| 12         | AV4025       | 1200                   | 1319  | 1200   | 1101   | 876    | 649  | 407      | 309       | 249       | 208.7 | 182.4 | 161.3 | 144.6 | 120.0  |  |  |  |  |  |
| 13         | AV5025       | 1370                   | 1505  | 1370   | 1257   | 1000   | 741  | 464      | 353       | 285       | 238.3 | 208.2 | 184.1 | 165.1 | 137.0  |  |  |  |  |  |
| 14         | AV4034       | 1600                   | 1758  | 1600   | 1468   | 1168   | 865  | 542      | 412       | 333       | 278.3 | 243.2 | 215.1 | 192.8 | 160.0  |  |  |  |  |  |
| 15         | AV5034       | 1800                   | 1978  | 1800   | 1651   | 1314   | 973  | 610      | 464       | 374       | 313.0 | 273.6 | 241.9 | 216.9 | 180.0  |  |  |  |  |  |
| 16         | AV4042       | 2000                   | 2198  | 2000   | 1835   | 1460   | 1081 | 678      | 515       | 416       | 347.8 | 304.0 | 268.8 | 241.0 | 200.0  |  |  |  |  |  |
| 17         | AV5042       | 2300                   | 2527  | 2300   | 2110   | 1679   | 1243 | 780      | 593       | 478       | 400.0 | 349.5 | 309.1 | 277.1 | 230.0  |  |  |  |  |  |
| 18         | AV4050       | 2400                   | 2637  | 2400   | 2202   | 1752   | 1297 | 814      | 619       | 499       | 417.4 | 364.7 | 322.6 | 289.2 | 240.0  |  |  |  |  |  |
| 19         | AV5050       | 2750                   | 3022  | 2750   | 2523   | 2007   | 1486 | 932      | 709       | 572       | 478.3 | 417.9 | 369.6 | 331.3 | 275.0  |  |  |  |  |  |
| 20         | AV4063       | 3000                   | 3297  | 3000   | 2752   | 2190   | 1622 | 1017     | 773       | 624       | 521.7 | 455.9 | 403.2 | 361.4 | 300.0  |  |  |  |  |  |
| 21         | AV5063       | 3400                   | 3736  | 3400   | 3119   | 2482   | 1838 | 1153     | 876       | 707       | 591.3 | 516.7 | 457.0 | 409.6 | 340.0  |  |  |  |  |  |
| 22         | AV4075       | 3600                   | 3956  | 3600   | 3303   | 2628   | 1946 | 1220     | 928       | 748       | 626.1 | 547.1 | 483.9 | 433.7 | 360.0  |  |  |  |  |  |
| 23         | AV5075       | 4100                   | 4505  | 4100   | 3761   | 2993   | 2216 | 1390     | 1057      | 852       | 713.0 | 623.1 | 551.1 | 494.0 | 410.0  |  |  |  |  |  |
| 24         | AV4084       | 4000                   | 4396  | 4000   | 3670   | 2920   | 2162 | 1356     | 1031      | 832       | 695.7 | 607.9 | 537.6 | 481.9 | 400.0  |  |  |  |  |  |
| 25         | AV5084       | 4550                   | 5000  | 4550   | 4174   | 3321   | 2459 | 1542     | 1173      | 946       | 791.3 | 691.5 | 611.6 | 548.2 | 455.0  |  |  |  |  |  |
| 26         | AV4100       | 4800                   | 5275  | 4800   | 4404   | 3504   | 2595 | 1627     | 1237      | 998       | 834.8 | 729.5 | 645.2 | 578.3 | 480.0  |  |  |  |  |  |
| 27         | AV5100       | 5500                   | 6044  | 5500   | 5046   | 4015   | 2973 | 1864     | 1418      | 1143      | 956.5 | 835.9 | 739.2 | 662.7 | 550.0  |  |  |  |  |  |

# **RANGE SPECIFICATIONS**

7

2V HIGH INTEGRITY SERIES

### CONSTANT CURRENT DISCHARGE (ADC) TO 1.85ECV @ 27°C

|            |              | Nominal                          |       | Discharge Current in Amps |        |        |      |       |       |       |       |       |       |       |        |
|------------|--------------|----------------------------------|-------|---------------------------|--------|--------|------|-------|-------|-------|-------|-------|-------|-------|--------|
| SI.<br>No. | Cell<br>type | Ah Capacity<br>@ C10 at<br>27° C | 5 Min | 10 Min                    | 15 Min | 30 Min | 1 Hr | 2 Hrs | 3 Hrs | 4 Hrs | 5 Hrs | 6 Hrs | 7 Hrs | 8 Hrs | 10 Hrs |
| 1          | AV4007       | 300                              | 278   | 254                       | 242    | 200    | 152  | 95    | 71    | 58    | 47.6  | 41.2  | 36.6  | 33.0  | 27.2   |
| 2          | AV5007       | 340                              | 315   | 288                       | 274    | 227    | 173  | 108   | 81    | 66    | 54.0  | 46.7  | 41.5  | 37.4  | 30.9   |
| 3          | AV4009       | 400                              | 370   | 339                       | 323    | 267    | 203  | 127   | 95    | 78    | 63.5  | 54.9  | 48.8  | 44.0  | 36.3   |
| 4          | AV5009       | 455                              | 421   | 386                       | 367    | 303    | 231  | 144   | 108   | 88    | 72.2  | 62.5  | 55.6  | 50.0  | 41.3   |
| 5          | AV 4011      | 500                              | 463   | 424                       | 403    | 333    | 254  | 159   | 119   | 97    | 79.4  | 68.7  | 61.1  | 54.9  | 45.4   |
| 6          | AV4013       | 600                              | 556   | 508                       | 484    | 400    | 305  | 190   | 143   | 117   | 95.2  | 82.4  | 73.3  | 65.9  | 54.4   |
| 7          | AV5013       | 680                              | 630   | 576                       | 548    | 453    | 345  | 216   | 162   | 132   | 107.9 | 93.4  | 83.0  | 74.7  | 61.7   |
| 8          | AV4017       | 800                              | 741   | 678                       | 645    | 533    | 406  | 254   | 190   | 155   | 127.0 | 109.9 | 97.7  | 87.9  | 72.6   |
| 9          | AV5017       | 910                              | 843   | 771                       | 734    | 607    | 462  | 289   | 217   | 177   | 144.4 | 125.0 | 111.1 | 100.0 | 82.6   |
| 10         | AV4021       | 1000                             | 926   | 847                       | 806    | 667    | 508  | 317   | 238   | 194   | 158.7 | 137.4 | 122.1 | 109.9 | 90.7   |
| 11         | AV5021       | 1140                             | 1056  | 966                       | 919    | 760    | 579  | 362   | 271   | 221   | 181.0 | 156.6 | 139.2 | 125.3 | 103.4  |
| 12         | AV4025       | 1200                             | 1111  | 1017                      | 968    | 800    | 609  | 381   | 286   | 233   | 190.5 | 164.8 | 146.5 | 131.9 | 108.9  |
| 13         | AV5025       | 1370                             | 1269  | 1161                      | 1105   | 913    | 695  | 435   | 326   | 266   | 217.5 | 188.2 | 167.3 | 150.5 | 124.3  |
| 14         | AV4034       | 1600                             | 1481  | 1356                      | 1290   | 1067   | 812  | 508   | 381   | 311   | 254.0 | 219.8 | 195.4 | 175.8 | 145.2  |
| 15         | AV5034       | 1800                             | 1667  | 1525                      | 1452   | 1200   | 914  | 571   | 429   | 350   | 285.7 | 247.3 | 219.8 | 197.8 | 163.3  |
| 16         | AV4042       | 2000                             | 1852  | 1695                      | 1613   | 1333   | 1015 | 635   | 476   | 388   | 317.5 | 274.7 | 244.2 | 219.8 | 181.5  |
| 17         | AV5042       | 2300                             | 2130  | 1949                      | 1855   | 1533   | 1168 | 730   | 548   | 447   | 365.1 | 315.9 | 280.8 | 252.7 | 208.7  |
| 18         | AV4050       | 2400                             | 2222  | 2034                      | 1935   | 1600   | 1218 | 762   | 571   | 466   | 381.0 | 329.7 | 293.0 | 263.7 | 217.8  |
| 19         | AV5050       | 2750                             | 2546  | 2331                      | 2218   | 1833   | 1396 | 873   | 655   | 534   | 436.5 | 377.7 | 335.8 | 302.2 | 249.5  |
| 20         | AV4063       | 3000                             | 2778  | 2542                      | 2419   | 2000   | 1523 | 952   | 714   | 583   | 476.2 | 412.1 | 366.3 | 329.7 | 272.2  |
| 21         | AV5063       | 3400                             | 3148  | 2881                      | 2742   | 2267   | 1726 | 1079  | 810   | 660   | 539.7 | 467.0 | 415.1 | 373.6 | 308.5  |
| 22         | AV4075       | 3600                             | 3333  | 3051                      | 2903   | 2400   | 1827 | 1143  | 857   | 699   | 571.4 | 494.5 | 439.6 | 395.6 | 326.7  |
| 23         | AV5075       | 4100                             | 3796  | 3475                      | 3306   | 2733   | 2081 | 1302  | 976   | 796   | 650.8 | 563.2 | 500.6 | 450.5 | 372.1  |
| 24         | AV4084       | 4000                             | 3704  | 3390                      | 3226   | 2667   | 2030 | 1270  | 952   | 777   | 634.9 | 549.5 | 488.4 | 439.6 | 363.0  |
| 25         | AV5084       | 4550                             | 4213  | 3856                      | 3669   | 3033   | 2310 | 1444  | 1083  | 883   | 722.2 | 625.0 | 555.6 | 500.0 | 412.9  |
| 26         | AV4100       | 4800                             | 4444  | 4068                      | 3871   | 3200   | 2437 | 1524  | 1143  | 932   | 761.9 | 659.3 | 586.1 | 527.5 | 435.6  |
| 27         | AV5100       | 5500                             | 5093  | 4661                      | 4435   | 3667   | 2792 | 1746  | 1310  | 1068  | 873.0 | 755.5 | 671.6 | 604.4 | 499.1  |

**RANGE SPECIFICATIONS** 

### CONSTANT POWER DISCHARGE (WATT) PER CELL TO 1.75ECV @ 27°C

|            |              | Nominal                          |       |        |        |        |      | Dischar | scharge Power in Watts |       |        |        |  |        |        |
|------------|--------------|----------------------------------|-------|--------|--------|--------|------|---------|------------------------|-------|--------|--------|--|--------|--------|
| SI.<br>No. | Cell<br>type | Ah Capacity<br>@ C10 at<br>27° C | 5 Min | 10 Min | 15 Min | 30 Min | 1 Hr | 2 Hrs   | 3 Hrs                  | 4 Hrs | 5 Hrs  | 6 Hrs  | Image: Constraint of the sector of | 10 Hrs |        |
| 1          | AV4007       | 300                              | 589   | 541    | 501    | 405    | 305  | 193     | 147                    | 119   | 100.2  | 87.7   | 77.6   | 69.7   | 58.1   |
| 2          | AV5007       | 340                              | 668   | 613    | 568    | 459    | 345  | 218     | 167                    | 135   | 113.6  | 99.4   | 87.9   | 79.0   | 65.8   |
| 3          | AV4009       | 400                              | 786   | 721    | 668    | 540    | 406  | 257     | 196                    | 159   | 133.6  | 117.0  | 103.4  | 92.9   | 77.4   |
| 4          | AV5009       | 455                              | 894   | 820    | 760    | 615    | 462  | 292     | 224                    | 181   | 152.0  | 133.0  | 117.6  | 105.7  | 88.0   |
| 5          | AV 4011      | 500                              | 982   | 902    | 835    | 676    | 508  | 321     | 246                    | 199   | 167    | 146.2  | 129.3  | 116.1  | 96.8   |
| 6          | AV4013       | 600                              | 1179  | 1082   | 1002   | 811    | 609  | 385     | 295                    | 239   | 200.5  | 175.4  | 155.1  | 139.4  | 116.1  |
| 7          | AV5013       | 680                              | 1336  | 1226   | 1136   | 919    | 690  | 437     | 334                    | 271   | 227.2  | 198.8  | 175.8  | 158.0  | 131.6  |
| 8          | AV4017       | 800                              | 1572  | 1442   | 1337   | 1081   | 812  | 514     | 393                    | 319   | 267.3  | 233.9  | 206.8  | 185.8  | 154.8  |
| 9          | AV5017       | 910                              | 1788  | 1641   | 1520   | 1229   | 924  | 584     | 447                    | 362   | 304.0  | 266.1  | 235.3  | 211.4  | 176.1  |
| 10         | AV4021       | 1000                             | 1965  | 1803   | 1671   | 1351   | 1015 | 642     | 491                    | 398   | 334.1  | 292.4  | 258.5  | 232.3  | 193.5  |
| 11         | AV5021       | 1140                             | 2240  | 2055   | 1905   | 1540   | 1157 | 732     | 560                    | 454   | 380.9  | 333.3  | 294.7  | 264.8  | 220.6  |
| 12         | AV4025       | 1200                             | 2358  | 2164   | 2005   | 1621   | 1218 | 770     | 589                    | 478   | 400.9  | 350.9  | 310.2  | 278.7  | 232.2  |
| 13         | AV5025       | 1370                             | 2692  | 2470   | 2289   | 1851   | 1391 | 880     | 673                    | 545   | 457.7  | 400.6  | 354.2  | 318.2  | 265.1  |
| 14         | AV4034       | 1600                             | 3144  | 2885   | 2673   | 2162   | 1624 | 1027    | 786                    | 637   | 534.5  | 467.8  | 413.6  | 371.7  | 309.6  |
| 15         | AV5034       | 1800                             | 3537  | 3245   | 3007   | 2432   | 1827 | 1156    | 884                    | 717   | 601.4  | 526.3  | 465.3  | 418.1  | 348.3  |
| 16         | AV4042       | 2000                             | 3930  | 3606   | 3341   | 2702   | 2030 | 1284    | 982                    | 796   | 668.2  | 584.8  | 517.0  | 464.6  | 387.0  |
| 17         | AV5042       | 2300                             | 4519  | 4147   | 3842   | 3108   | 2335 | 1477    | 1130                   | 916   | 768.4  | 672.5  | 594.6  | 534.3  | 445.1  |
| 18         | AV4050       | 2400                             | 4716  | 4327   | 4010   | 3243   | 2436 | 1541    | 1179                   | 956   | 801.8  | 701.8  | 620.5  | 557.5  | 464.4  |
| 19         | AV5050       | 2750                             | 5403  | 4958   | 4594   | 3716   | 2792 | 1766    | 1351                   | 1095  | 918.7  | 804.1  | 710.9  | 638.8  | 532.1  |
| 20         | AV4063       | 3000                             | 5895  | 5409   | 5012   | 4053   | 3045 | 1926    | 1474                   | 1194  | 1002.3 | 877.2  | 775.6  | 696.9  | 580.5  |
| 21         | AV5063       | 3400                             | 6680  | 6130   | 5680   | 4594   | 3451 | 2183    | 1670                   | 1354  | 1135.9 | 994.2  | 879.0  | 789.8  | 657.9  |
| 22         | AV4075       | 3600                             | 7073  | 6491   | 6014   | 4864   | 3654 | 2311    | 1768                   | 1433  | 1202.7 | 1052.6 | 930.7  | 836.2  | 696.6  |
| 23         | AV5075       | 4100                             | 8056  | 7392   | 6850   | 5539   | 4162 | 2632    | 2014                   | 1632  | 1369.8 | 1198.8 | 1059.9   | 952.4  | 793.4  |
| 24         | AV4084       | 4000                             | 7859  | 7212   | 6683   | 5404   | 4061 | 2568    | 1965                   | 1593  | 1336.3 | 1169.6 | 1034.1   | 929.2  | 774.0  |
| 25         | AV5084       | 4550                             | 8940  | 8204   | 7601   | 6147   | 4619 | 2921    | 2235                   | 1811  | 1520.1 | 1330.4 | 1176.3   | 1056.9 | 880.4  |
| 26         | AV4100       | 4800                             | 9431  | 8654   | 8019   | 6485   | 4873 | 3082    | 2358                   | 1911  | 1603.6 | 1403.5 | 1240.9   | 1115.0 | 928.8  |
| 27         | AV5100       | 5500                             | 10807 | 9917   | 9189   | 7431   | 5583 | 3531    | 2702                   | 2190  | 1837.5 | 1608.2 | 1421.9   | 1277.6 | 1064.3 |

RANGE SPECIFICATIONS

VOIT

2V HIGH INTEGRITY SERIES

### CONSTANT POWER DISCHARGE (WATT) PER CELL TO 1.85ECV @ 27°C

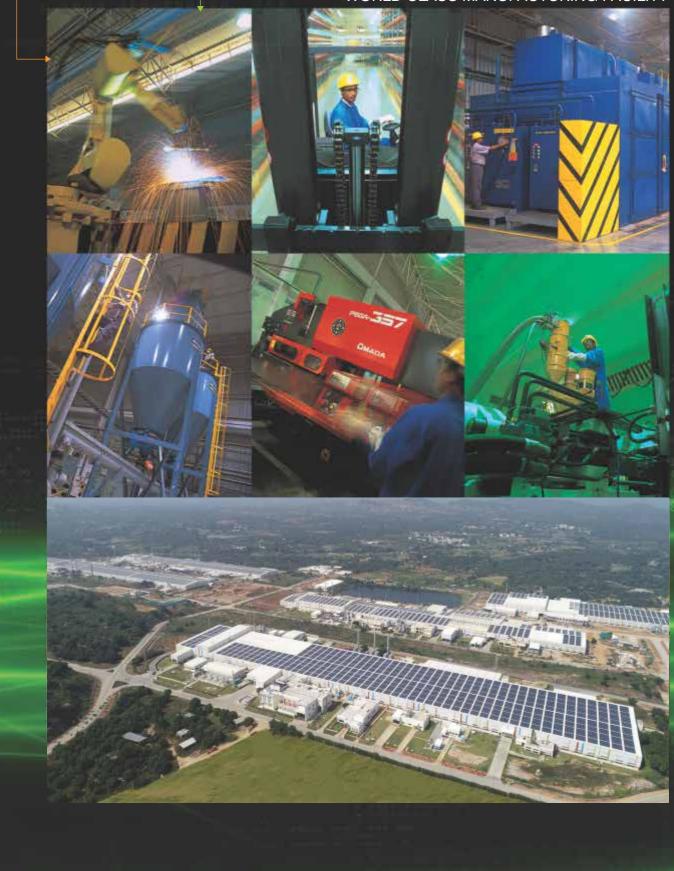
|            |              | Nominal<br>Ah Capacity |       |        |        |        |      | Dischar | ge Power | in Watts |        |        |        |        |        |
|------------|--------------|------------------------|-------|--------|--------|--------|------|---------|----------|----------|--------|--------|--------|--------|--------|
| SI.<br>No. | Cell<br>type | @ C10 at<br>27° C      | 5 Min | 10 Min | 15 Min | 30 Min | 1 Hr | 2 Hrs   | 3 Hrs    | 4 Hrs    | 5 Hrs  | 6 Hrs  | 7 Hrs  | 8 Hrs  | 10 Hrs |
| 1          | AV4007       | 300                    | 521   | 480    | 459    | 382    | 294  | 184     | 139      | 114      | 93.0   | 80.6   | 71.6   | 64.5   | 53.4   |
| 2          | AV5007       | 340                    | 590   | 544    | 520    | 433    | 333  | 209     | 157      | 129      | 105.4  | 91.3   | 81.2   | 73.1   | 60.5   |
| 3          | AV4009       | 400                    | 694   | 640    | 612    | 510    | 391  | 246     | 185      | 151      | 124.0  | 107.4  | 95.5   | 86.0   | 71.2   |
| 4          | AV5009       | 455                    | 790   | 728    | 696    | 580    | 445  | 280     | 211      | 172      | 141.1  | 122.2  | 108.7  | 97.8   | 81.0   |
| 5          | AV 4011      | 500                    | 868   | 800    | 765    | 637    | 489  | 307     | 231      | 189      | 155.0  | 134.3  | 119.4  | 107.5  | 89.0   |
| 6          | AV4013       | 600                    | 1041  | 959    | 918    | 764    | 587  | 369     | 278      | 227      | 186.0  | 161.1  | 143.3  | 129.0  | 106.8  |
| 7          | AV5013       | 680                    | 1180  | 1087   | 1040   | 866    | 666  | 418     | 315      | 257      | 210.8  | 182.6  | 162.4  | 146.2  | 121.0  |
| 8          | AV4017       | 800                    | 1388  | 1279   | 1224   | 1019   | 783  | 492     | 370      | 303      | 248.0  | 214.8  | 191.1  | 172.0  | 142.4  |
| 9          | AV5017       | 910                    | 1579  | 1455   | 1392   | 1159   | 891  | 560     | 421      | 344      | 282.1  | 244.4  | 217.3  | 195.7  | 161.9  |
| 10         | AV4021       | 1000                   | 1735  | 1599   | 1530   | 1274   | 979  | 615     | 463      | 378      | 310.0  | 268.5  | 238.8  | 215.0  | 177.9  |
| 11         | AV5021       | 1140                   | 1978  | 1823   | 1744   | 1452   | 1116 | 701     | 528      | 431      | 353.4  | 306.1  | 272.3  | 245.1  | 202.9  |
| 12         | AV4025       | 1200                   | 2082  | 1919   | 1836   | 1529   | 1174 | 738     | 555      | 454      | 372.0  | 322.3  | 286.6  | 258.0  | 213.5  |
| 13         | AV5025       | 1370                   | 2377  | 2191   | 2096   | 1745   | 1341 | 842     | 634      | 518      | 424.7  | 367.9  | 327.2  | 294.6  | 243.8  |
| 14         | AV4034       | 1600                   | 2776  | 2559   | 2448   | 2038   | 1566 | 984     | 741      | 606      | 496.0  | 429.7  | 382.1  | 344.0  | 284.7  |
| 15         | AV5034       | 1800                   | 3123  | 2878   | 2754   | 2293   | 1762 | 1107    | 833      | 681      | 558.0  | 483.4  | 429.9  | 387.0  | 320.3  |
| 16         | AV4042       | 2000                   | 3470  | 3198   | 3060   | 2548   | 1957 | 1230    | 926      | 757      | 620.0  | 537.1  | 477.7  | 430.0  | 355.9  |
| 17         | AV5042       | 2300                   | 3991  | 3678   | 3519   | 2930   | 2251 | 1414    | 1065     | 870      | 713.0  | 617.7  | 549.3  | 494.5  | 409.3  |
| 18         | AV4050       | 2400                   | 4164  | 3838   | 3672   | 3058   | 2349 | 1476    | 1111     | 908      | 744.0  | 644.5  | 573.2  | 516.0  | 427.1  |
| 19         | AV5050       | 2750                   | 4772  | 4398   | 4207   | 3504   | 2691 | 1691    | 1273     | 1041     | 852.5  | 738.5  | 656.8  | 591.3  | 489.4  |
| 20         | AV4063       | 3000                   | 5206  | 4797   | 4590   | 3822   | 2936 | 1845    | 1389     | 1135     | 930.0  | 805.6  | 716.5  | 645.0  | 533.8  |
| 21         | AV5063       | 3400                   | 5900  | 5437   | 5201   | 4332   | 3328 | 2091    | 1574     | 1287     | 1054.0 | 913.0  | 812.0  | 731.0  | 605.0  |
| 22         | AV4075       | 3600                   | 6247  | 5757   | 5507   | 4586   | 3523 | 2214    | 1666     | 1362     | 1116.0 | 966.8  | 859.8  | 774.0  | 640.6  |
| 23         | AV5075       | 4100                   | 7114  | 6557   | 6272   | 5223   | 4013 | 2521    | 1898     | 1552     | 1271.0 | 1101.0 | 979.2  | 881.5  | 729.6  |
| 24         | AV4084       | 4000                   | 6941  | 6397   | 6119   | 5096   | 3915 | 2460    | 1851     | 1514     | 1240.0 | 1074.2 | 955.3  | 860.0  | 711.8  |
| 25         | AV5084       | 4550                   | 7895  | 7276   | 6961   | 5797   | 4453 | 2798    | 2106     | 1722     | 1410.5 | 1221.9 | 1086.7 | 978.3  | 809.7  |
| 26         | AV4100       | 4800                   | 8329  | 7676   | 7343   | 6115   | 4698 | 2952    | 2222     | 1817     | 1488.0 | 1289.0 | 1146.4 | 1032.0 | 854.2  |
| 27         | AV5100       | 5500                   | 9544  | 8795   | 8414   | 7007   | 5383 | 3382    | 2546     | 2081     | 1705.0 | 1477.0 | 1313.6 | 1182.5 | 978.7  |

The above data are average values and tolerance of  $\pm 5\%$  is applicable for the above constant current and power discharge values.

## **RANGE SPECIFICATIONS**



## WORLD CLASS MANUFACTURING FACILITY





Amara Raja Energy & Mobility Limited (Formerly known as Amara Raja Batteries Limited)

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ISO 9001 : 2015 | ISO 14001 : 2015 | ISO 45001 : 2018 |

Middle East Asia Office:

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Recyclabl

handover at approved waste handling point

Protect eyes





