



data safe[®]

ES Performance Specifications

Features and Benefits

- Durable 20 year design life @ 77°F (25°C) ambient temperature
- Low Calcium alloy grids designed for lower water loss, lower maintenance costs
- Individual single cell construction
- Standard cover made of flame retardant UL94 V0 Poly Carbonate (PC)
- Standard container made of non-flame retardant Styrene Acrylonitril (SAN)
- Container made of flame retardant UL94 V0 PC
- Capacity ranges:
ES 1.215 SG: 0.378 to 3.092 kW per cell to 1.67 vpc @ 15 minute rate
ES 1.250 SG: 0.417 to 3.463 kW per cell to 1.67 vpc @ 15 minute rate
- 100% initial battery capacity

Construction

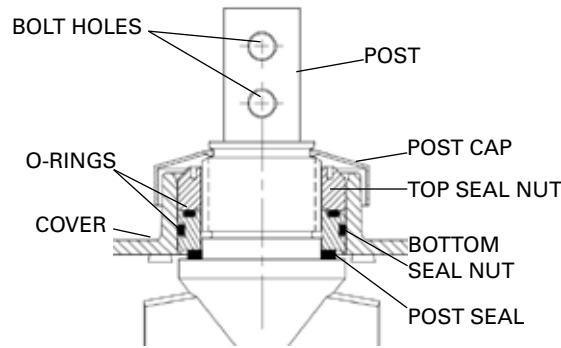
- Specific Gravity (SG): 1.215 SG Standard, 1.250 SG optional
- Plate thickness: Positive 0.19" (4.85mm), Negative 0.13" (3.55mm)
- Container: Standard SAN jar with LOI 18%, optional PC with LOI >28%
- PC cover
- Separator: microporous plastic
- Electrolyte over plates: 2.1" (53.3mm)
- Vent Type: Flame arrestor, fused alumina type
- Post Type: ES-5 to ES-21 One Positive and negative post per cell; ES-23 to ES-37 Two positive and negative posts per cell
- Post Seal: Slide-Lock™

Installation and Operation

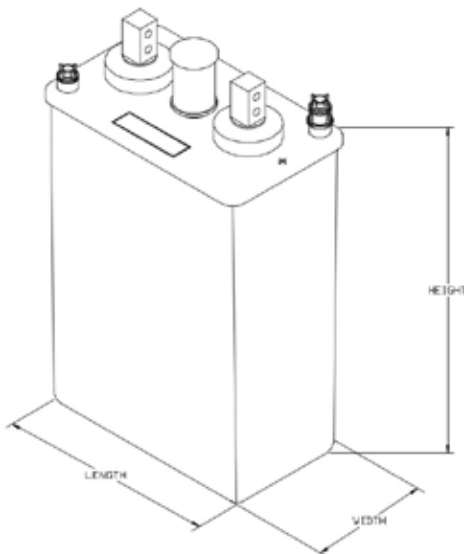
- Normal operating temperature range: 68°F (20°C) to 86°F (30°C); Allowable operating temperature range: 32°F (0°C) to 104°F (40°C)
- Float charging voltage:
1.215 SG Range- 2.17 to 2.26 vpc, recommended 2.21vpc @ 77°F (25°C);
1.250 (B) SG- 2.25 to 2.30 vpc, recommended 2.26vpc @ 77°F (25°C)
- Bolt Connections: stainless steel standard 1/4-20 with 7/16 hex head wrench required
- Torque specifications:
70 to 75 in-lbs (8.0 to 8.5 Nm) ± 5%;
Retorque: 60 to 65 in-lbs (7.0 to 7.5 Nm) ± 5%
- Withdrawal tube: one per cell

Standards

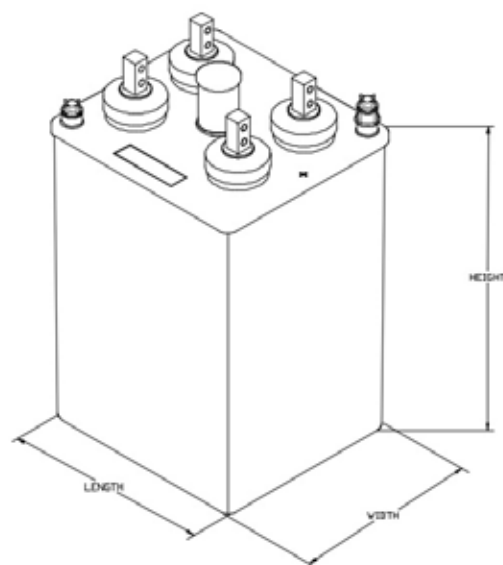
- Manufactured to EnerSys® standards in ISO 9001:2008 registered production facilities worldwide



Exclusive Slide-Lock Post Seal™



ES-5 to ES-21



ES-23 to ES-37

General Specifications 1.250 Specific Gravity

| Battery Type | Nominal Capacity ¹ | Nominal Dimensions | | | | | | Weights - Volumes | | | | | | | | Internal Resistance | Short Circuit Current |
|--------------|-------------------------------|--------------------|-----|-------|-----|--------|-----|-------------------|------|--------|------|---------------------------|------|------|------|---------------------|-----------------------|
| | | Length** | | Width | | Height | | Unpacked | | Packed | | Electrolyte Only /1.250SG | | | | | |
| | | in | mm | in | mm | in | mm | lbs | kg | lbs | kg | lbs | kg | gal | L | | |
| ES-5B | 155 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 58.4 | 26.5 | 57.7 | 26.2 | 25.0 | 11.4 | 2.40 | 9.08 | 650 | 3133 |
| ES-7B | 220 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 64.4 | 29.2 | 63.7 | 28.9 | 23.5 | 10.6 | 2.25 | 8.52 | 469 | 4335 |
| ES-9B | 285 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 71.2 | 32.3 | 70.6 | 32.1 | 21.9 | 9.93 | 2.10 | 7.95 | 368 | 5525 |
| ES-11B | 350 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 77.2 | 35.0 | 76.6 | 34.8 | 20.3 | 9.22 | 1.95 | 7.38 | 303 | 6705 |
| ES-13B | 410 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 84.1 | 38.2 | 83.6 | 37.9 | 19.3 | 8.75 | 1.85 | 7.00 | 258 | 7878 |
| ES-15B | 515 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 103 | 46.6 | 101.9 | 46.2 | 27.1 | 12.3 | 2.60 | 9.8 | 225 | 9045 |
| ES-17B | 580 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 110 | 49.7 | 108.8 | 49.4 | 26.1 | 11.8 | 2.50 | 9.5 | 199 | 10206 |
| ES-19B | 640 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 117 | 52.8 | 115.8 | 52.6 | 25.0 | 11.4 | 2.40 | 9.1 | 179 | 11362 |
| ES-21B | 715 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 124 | 56.4 | 123.8 | 56.2 | 24.0 | 10.9 | 2.30 | 8.7 | 163 | 12514 |
| ES-23B | 770 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 149 | 67.5 | 148.0 | 67.2 | 32.3 | 14.7 | 3.10 | 11.7 | 149 | 13662 |
| ES-25B | 815 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 155 | 70.2 | 154.0 | 70.0 | 31.3 | 14.2 | 3.00 | 11.4 | 137 | 14807 |
| ES-27B | 870 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 162 | 73.4 | 161.0 | 73.0 | 30.2 | 13.7 | 2.90 | 11.0 | 128 | 15949 |
| ES-29B | 965 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 183 | 83.2 | 182.3 | 82.8 | 40.7 | 18.4 | 3.90 | 14.8 | 119 | 17087 |
| ES-31B | 1005 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 190 | 86.4 | 189.3 | 86.0 | 39.6 | 18.0 | 3.80 | 14.4 | 112 | 18223 |
| ES-33B | 1045 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 198 | 90.0 | 197.3 | 89.6 | 38.6 | 17.5 | 3.70 | 14.0 | 105 | 19357 |
| ES-35B | 1085 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 204 | 92.7 | 203.3 | 92.3 | 37.5 | 17.0 | 3.60 | 13.6 | 99 | 20487 |
| ES-37B | 1135 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 211 | 95.8 | 210.2 | 95.5 | 36.5 | 16.6 | 3.50 | 13.2 | 94 | 21616 |

General Specifications 1.215 Specific Gravity

| Battery Type | Nominal Capacity ¹ | Nominal Dimensions | | | | | | Weights - Volumes | | | | | | | | Internal Resistance | Short Circuit Current |
|--------------|-------------------------------|--------------------|-----|-------|-----|--------|-----|-------------------|------|--------|------|---------------------------|------|------|------|---------------------|-----------------------|
| | | Length** | | Width | | Height | | Unpacked | | Packed | | Electrolyte Only /1.215SG | | | | | |
| | | in | mm | in | mm | in | mm | lbs | kg | lbs | kg | lbs | kg | gal | L | | |
| ES-5 | 140 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 55 | 24.9 | 57 | 25.9 | 24.4 | 11.1 | 2.40 | 9.08 | 650 | 3079 |
| ES-7 | 200 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 61 | 27.7 | 63 | 28.6 | 22.9 | 10.4 | 2.25 | 8.52 | 469 | 4260 |
| ES-9 | 260 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 68 | 30.8 | 70 | 31.8 | 21.3 | 9.68 | 2.10 | 7.95 | 368 | 5430 |
| ES-11 | 315 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 75 | 34.0 | 76 | 34.5 | 19.8 | 8.99 | 1.95 | 7.38 | 303 | 6590 |
| ES-13 | 375 | 5.10 | 130 | 11.06 | 274 | 18.7 | 475 | 82 | 37.2 | 83 | 37.6 | 18.8 | 8.53 | 1.85 | 7.00 | 258 | 7743 |
| ES-15 | 470 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 98 | 44.4 | 101 | 45.8 | 26.4 | 12.0 | 2.60 | 9.84 | 225 | 8889 |
| ES-17 | 525 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 105 | 47.6 | 108 | 49.0 | 25.4 | 11.5 | 2.50 | 9.46 | 199 | 10030 |
| ES-19 | 580 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 112 | 50.8 | 115 | 52.2 | 24.4 | 11.1 | 2.40 | 9.08 | 179 | 11167 |
| ES-21 | 650 | 6.60 | 168 | 11.06 | 274 | 18.7 | 475 | 119 | 54.0 | 123 | 55.8 | 23.4 | 10.6 | 2.30 | 8.71 | 163 | 12299 |
| ES-23 | 700 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 143 | 64.9 | 147 | 66.7 | 31.5 | 14.3 | 3.10 | 11.7 | 149 | 13428 |
| ES-25 | 740 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 149 | 67.6 | 153 | 69.5 | 30.5 | 13.8 | 3.00 | 11.4 | 137 | 14553 |
| ES-27 | 790 | 8.10 | 206 | 11.06 | 274 | 18.7 | 475 | 155 | 70.3 | 160 | 72.6 | 29.5 | 13.4 | 2.90 | 11.0 | 128 | 15675 |
| ES-29 | 880 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 176 | 79.8 | 181 | 82.3 | 39.6 | 18.0 | 3.90 | 14.8 | 119 | 16794 |
| ES-31 | 915 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 183 | 83.0 | 188 | 85.4 | 38.6 | 17.5 | 3.80 | 14.4 | 112 | 17910 |
| ES-33 | 950 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 190 | 86.2 | 196 | 89.0 | 37.6 | 17.1 | 3.70 | 14.0 | 105 | 19024 |
| ES-35 | 985 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 196 | 88.9 | 202 | 91.7 | 36.6 | 16.6 | 3.60 | 13.6 | 99 | 20135 |
| ES-37 | 1030 | 10.10 | 257 | 11.06 | 274 | 18.7 | 475 | 203 | 92.1 | 209 | 94.9 | 35.6 | 16.1 | 3.50 | 13.2 | 94 | 21244 |

*Nominal Amp hour capacity at the 8 hr rate for 1.215 SG to 1.75 Vpc

** 0.25" must be added between cells for spacing purposes when calculating total battery length

¹ Nominal Amp hour capacity at the 8 hr rate for 1.250 SG

Constant Power Discharge Performance Data

1.250 Specific Gravity Discharge Rates (kW per cell*) to 1.75Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5B | 0.552 | 0.527 | 0.506 | 0.486 | 0.468 | 0.452 | 0.437 | 0.423 | 0.410 | 0.398 | 0.387 | 0.340 | 0.304 | 0.275 | 0.218 | 0.183 | 0.142 | 0.118 | 0.089 |
| ES-7B | 0.810 | 0.774 | 0.743 | 0.715 | 0.690 | 0.666 | 0.644 | 0.623 | 0.604 | 0.587 | 0.570 | 0.501 | 0.448 | 0.405 | 0.320 | 0.269 | 0.208 | 0.172 | 0.130 |
| ES-9B | 1.044 | 1.001 | 0.962 | 0.927 | 0.894 | 0.865 | 0.836 | 0.810 | 0.785 | 0.762 | 0.740 | 0.650 | 0.581 | 0.526 | 0.414 | 0.347 | 0.266 | 0.220 | 0.166 |
| ES-11B | 1.270 | 1.220 | 1.174 | 1.132 | 1.093 | 1.056 | 1.022 | 0.989 | 0.959 | 0.931 | 0.904 | 0.794 | 0.709 | 0.641 | 0.504 | 0.421 | 0.322 | 0.265 | 0.198 |
| ES-13B | 1.484 | 1.428 | 1.376 | 1.328 | 1.284 | 1.239 | 1.198 | 1.160 | 1.124 | 1.091 | 1.059 | 0.931 | 0.830 | 0.751 | 0.589 | 0.490 | 0.372 | 0.307 | 0.228 |
| ES-15B | 1.709 | 1.649 | 1.593 | 1.542 | 1.491 | 1.447 | 1.404 | 1.364 | 1.327 | 1.292 | 1.258 | 1.117 | 1.004 | 0.915 | 0.726 | 0.610 | 0.468 | 0.386 | 0.287 |
| ES-17B | 1.944 | 1.877 | 1.814 | 1.755 | 1.698 | 1.647 | 1.598 | 1.552 | 1.509 | 1.468 | 1.430 | 1.269 | 1.142 | 1.040 | 0.825 | 0.690 | 0.527 | 0.432 | 0.319 |
| ES-19B | 2.179 | 2.105 | 2.037 | 1.969 | 1.905 | 1.846 | 1.792 | 1.740 | 1.691 | 1.645 | 1.603 | 1.422 | 1.279 | 1.166 | 0.924 | 0.771 | 0.586 | 0.479 | 0.352 |
| ES-21B | 2.415 | 2.334 | 2.259 | 2.183 | 2.112 | 2.045 | 1.986 | 1.927 | 1.873 | 1.822 | 1.775 | 1.576 | 1.417 | 1.291 | 1.023 | 0.852 | 0.645 | 0.525 | 0.384 |
| ES-23B | 2.766 | 2.662 | 2.563 | 2.478 | 2.396 | 2.319 | 2.246 | 2.180 | 2.117 | 2.059 | 2.002 | 1.768 | 1.585 | 1.439 | 1.134 | 0.948 | 0.723 | 0.591 | 0.434 |
| ES-25B | 2.988 | 2.879 | 2.779 | 2.688 | 2.598 | 2.512 | 2.432 | 2.357 | 2.287 | 2.222 | 2.162 | 1.909 | 1.710 | 1.554 | 1.225 | 1.021 | 0.775 | 0.633 | 0.464 |
| ES-27B | 3.216 | 3.102 | 2.998 | 2.900 | 2.802 | 2.707 | 2.620 | 2.537 | 2.460 | 2.390 | 2.325 | 2.052 | 1.838 | 1.671 | 1.318 | 1.095 | 0.829 | 0.676 | 0.495 |
| ES-29B | 3.436 | 3.305 | 3.186 | 3.081 | 2.975 | 2.879 | 2.790 | 2.707 | 2.627 | 2.553 | 2.484 | 2.190 | 1.960 | 1.778 | 1.395 | 1.164 | 0.887 | 0.725 | 0.533 |
| ES-31B | 3.636 | 3.501 | 3.377 | 3.268 | 3.156 | 3.054 | 2.960 | 2.871 | 2.788 | 2.708 | 2.635 | 2.326 | 2.082 | 1.890 | 1.485 | 1.236 | 0.938 | 0.765 | 0.561 |
| ES-33B | 3.834 | 3.697 | 3.569 | 3.450 | 3.333 | 3.225 | 3.126 | 3.032 | 2.944 | 2.861 | 2.784 | 2.460 | 2.203 | 2.001 | 1.573 | 1.307 | 0.988 | 0.804 | 0.587 |
| ES-35B | 4.043 | 3.901 | 3.770 | 3.641 | 3.517 | 3.404 | 3.299 | 3.201 | 3.107 | 3.021 | 2.940 | 2.599 | 2.328 | 2.115 | 1.664 | 1.381 | 1.041 | 0.845 | 0.615 |
| ES-37B | 4.246 | 4.099 | 3.965 | 3.823 | 3.695 | 3.575 | 3.466 | 3.363 | 3.263 | 3.174 | 3.091 | 2.733 | 2.450 | 2.226 | 1.752 | 1.452 | 1.091 | 0.884 | 0.642 |

1.250 Specific Gravity Discharge Rates (kW per cell*) to 1.70Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5B | 0.608 | 0.578 | 0.550 | 0.527 | 0.505 | 0.486 | 0.468 | 0.452 | 0.436 | 0.422 | 0.409 | 0.354 | 0.315 | 0.283 | 0.221 | 0.184 | 0.142 | 0.118 | 0.089 |
| ES-7B | 0.891 | 0.848 | 0.810 | 0.776 | 0.746 | 0.718 | 0.692 | 0.668 | 0.645 | 0.624 | 0.605 | 0.524 | 0.465 | 0.418 | 0.326 | 0.271 | 0.208 | 0.172 | 0.130 |
| ES-9B | 1.150 | 1.097 | 1.051 | 1.009 | 0.970 | 0.935 | 0.902 | 0.871 | 0.842 | 0.815 | 0.790 | 0.683 | 0.606 | 0.544 | 0.423 | 0.350 | 0.267 | 0.220 | 0.166 |
| ES-11B | 1.399 | 1.339 | 1.284 | 1.234 | 1.187 | 1.145 | 1.106 | 1.068 | 1.033 | 1.000 | 0.969 | 0.838 | 0.742 | 0.666 | 0.516 | 0.426 | 0.323 | 0.265 | 0.198 |
| ES-13B | 1.640 | 1.570 | 1.507 | 1.450 | 1.396 | 1.347 | 1.301 | 1.258 | 1.216 | 1.177 | 1.140 | 0.986 | 0.872 | 0.782 | 0.605 | 0.498 | 0.374 | 0.307 | 0.228 |
| ES-15B | 1.891 | 1.815 | 1.746 | 1.683 | 1.625 | 1.572 | 1.522 | 1.475 | 1.431 | 1.390 | 1.350 | 1.185 | 1.058 | 0.955 | 0.749 | 0.623 | 0.475 | 0.388 | 0.287 |
| ES-17B | 2.144 | 2.061 | 1.984 | 1.914 | 1.850 | 1.790 | 1.734 | 1.681 | 1.631 | 1.583 | 1.538 | 1.349 | 1.205 | 1.088 | 0.852 | 0.707 | 0.535 | 0.435 | 0.319 |
| ES-19B | 2.401 | 2.308 | 2.223 | 2.147 | 2.075 | 2.010 | 1.948 | 1.887 | 1.830 | 1.776 | 1.725 | 1.514 | 1.352 | 1.221 | 0.956 | 0.791 | 0.595 | 0.482 | 0.352 |
| ES-21B | 2.658 | 2.554 | 2.462 | 2.380 | 2.301 | 2.229 | 2.162 | 2.092 | 2.029 | 1.969 | 1.912 | 1.678 | 1.498 | 1.353 | 1.059 | 0.875 | 0.655 | 0.529 | 0.384 |
| ES-23B | 3.028 | 2.902 | 2.787 | 2.683 | 2.590 | 2.502 | 2.422 | 2.347 | 2.274 | 2.206 | 2.141 | 1.872 | 1.666 | 1.501 | 1.170 | 0.969 | 0.729 | 0.592 | 0.434 |
| ES-25B | 3.272 | 3.137 | 3.018 | 2.909 | 2.811 | 2.720 | 2.633 | 2.551 | 2.469 | 2.393 | 2.322 | 2.026 | 1.802 | 1.623 | 1.265 | 1.045 | 0.783 | 0.635 | 0.464 |
| ES-27B | 3.521 | 3.378 | 3.254 | 3.139 | 3.034 | 2.938 | 2.846 | 2.754 | 2.666 | 2.581 | 2.503 | 2.181 | 1.940 | 1.746 | 1.362 | 1.123 | 0.839 | 0.679 | 0.495 |
| ES-29B | 3.790 | 3.630 | 3.484 | 3.354 | 3.234 | 3.125 | 3.022 | 2.926 | 2.834 | 2.748 | 2.668 | 2.327 | 2.065 | 1.857 | 1.441 | 1.191 | 0.895 | 0.727 | 0.533 |
| ES-31B | 4.014 | 3.844 | 3.695 | 3.560 | 3.436 | 3.322 | 3.215 | 3.113 | 3.014 | 2.923 | 2.837 | 2.476 | 2.199 | 1.978 | 1.536 | 1.267 | 0.948 | 0.768 | 0.561 |
| ES-33B | 4.228 | 4.058 | 3.905 | 3.764 | 3.636 | 3.517 | 3.407 | 3.296 | 3.192 | 3.094 | 3.003 | 2.623 | 2.332 | 2.098 | 1.629 | 1.342 | 1.000 | 0.807 | 0.587 |
| ES-35B | 4.457 | 4.283 | 4.123 | 3.976 | 3.843 | 3.719 | 3.602 | 3.484 | 3.375 | 3.271 | 3.175 | 2.775 | 2.468 | 2.221 | 1.725 | 1.419 | 1.054 | 0.849 | 0.615 |
| ES-37B | 4.681 | 4.501 | 4.335 | 4.183 | 4.047 | 3.917 | 3.791 | 3.667 | 3.552 | 3.443 | 3.341 | 2.922 | 2.600 | 2.341 | 1.819 | 1.494 | 1.107 | 0.888 | 0.642 |

*kW values listed represent 100% of the initial capacity.

** At 77°F (25°C) includes intercell connector drop.

Constant Power Discharge Performance Data Continued

1.250 Specific Gravity Discharge Rates (kW per cell*) to 1.67Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5B | 0.636 | 0.602 | 0.572 | 0.545 | 0.521 | 0.500 | 0.481 | 0.464 | 0.447 | 0.432 | 0.417 | 0.360 | 0.318 | 0.285 | 0.221 | 0.184 | 0.142 | 0.118 | 0.089 |
| ES-7B | 0.933 | 0.885 | 0.843 | 0.805 | 0.771 | 0.741 | 0.713 | 0.687 | 0.663 | 0.640 | 0.619 | 0.533 | 0.470 | 0.421 | 0.326 | 0.271 | 0.208 | 0.172 | 0.130 |
| ES-9B | 1.203 | 1.146 | 1.095 | 1.049 | 1.006 | 0.967 | 0.931 | 0.898 | 0.867 | 0.838 | 0.810 | 0.696 | 0.614 | 0.549 | 0.423 | 0.350 | 0.267 | 0.220 | 0.166 |
| ES-11B | 1.466 | 1.400 | 1.340 | 1.284 | 1.234 | 1.187 | 1.144 | 1.104 | 1.066 | 1.031 | 0.997 | 0.856 | 0.754 | 0.674 | 0.518 | 0.426 | 0.323 | 0.265 | 0.198 |
| ES-13B | 1.718 | 1.643 | 1.574 | 1.511 | 1.453 | 1.399 | 1.349 | 1.302 | 1.258 | 1.216 | 1.176 | 1.008 | 0.888 | 0.793 | 0.608 | 0.498 | 0.374 | 0.307 | 0.228 |
| ES-15B | 1.979 | 1.895 | 1.821 | 1.751 | 1.687 | 1.628 | 1.575 | 1.525 | 1.478 | 1.432 | 1.390 | 1.212 | 1.078 | 0.970 | 0.756 | 0.626 | 0.475 | 0.388 | 0.287 |
| ES-17B | 2.242 | 2.151 | 2.067 | 1.990 | 1.920 | 1.855 | 1.795 | 1.739 | 1.686 | 1.634 | 1.586 | 1.382 | 1.229 | 1.106 | 0.861 | 0.710 | 0.535 | 0.435 | 0.319 |
| ES-19B | 2.508 | 2.409 | 2.315 | 2.231 | 2.154 | 2.082 | 2.016 | 1.953 | 1.894 | 1.835 | 1.781 | 1.551 | 1.380 | 1.242 | 0.966 | 0.795 | 0.595 | 0.482 | 0.352 |
| ES-21B | 2.774 | 2.667 | 2.564 | 2.472 | 2.388 | 2.310 | 2.237 | 2.168 | 2.102 | 2.036 | 1.976 | 1.721 | 1.531 | 1.378 | 1.071 | 0.879 | 0.655 | 0.529 | 0.384 |
| ES-23B | 3.153 | 3.017 | 2.893 | 2.783 | 2.680 | 2.586 | 2.500 | 2.419 | 2.345 | 2.272 | 2.203 | 1.914 | 1.698 | 1.525 | 1.181 | 0.970 | 0.729 | 0.592 | 0.434 |
| ES-25B | 3.402 | 3.264 | 3.136 | 3.017 | 2.909 | 2.810 | 2.718 | 2.632 | 2.551 | 2.471 | 2.393 | 2.074 | 1.837 | 1.650 | 1.277 | 1.047 | 0.783 | 0.635 | 0.464 |
| ES-27B | 3.660 | 3.516 | 3.380 | 3.255 | 3.140 | 3.036 | 2.938 | 2.845 | 2.759 | 2.670 | 2.585 | 2.236 | 1.980 | 1.777 | 1.375 | 1.125 | 0.839 | 0.679 | 0.495 |
| ES-29B | 3.958 | 3.786 | 3.632 | 3.488 | 3.357 | 3.238 | 3.129 | 3.025 | 2.929 | 2.838 | 2.750 | 2.380 | 2.104 | 1.886 | 1.454 | 1.192 | 0.895 | 0.727 | 0.533 |
| ES-31B | 4.190 | 4.014 | 3.854 | 3.705 | 3.569 | 3.444 | 3.329 | 3.222 | 3.121 | 3.023 | 2.929 | 2.537 | 2.244 | 2.012 | 1.551 | 1.269 | 0.948 | 0.768 | 0.561 |
| ES-33B | 4.422 | 4.242 | 4.073 | 3.920 | 3.778 | 3.649 | 3.528 | 3.416 | 3.309 | 3.204 | 3.106 | 2.692 | 2.383 | 2.136 | 1.647 | 1.345 | 1.000 | 0.807 | 0.587 |
| ES-35B | 4.667 | 4.478 | 4.301 | 4.142 | 3.994 | 3.860 | 3.733 | 3.615 | 3.501 | 3.391 | 3.286 | 2.851 | 2.524 | 2.263 | 1.744 | 1.423 | 1.054 | 0.849 | 0.615 |
| ES-37B | 4.906 | 4.707 | 4.524 | 4.359 | 4.205 | 4.066 | 3.934 | 3.811 | 3.689 | 3.573 | 3.463 | 3.005 | 2.662 | 2.388 | 1.841 | 1.499 | 1.107 | 0.888 | 0.642 |

1.250 Specific Gravity Discharge Rates (kW per cell*) to 1.65Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5B | 0.652 | 0.616 | 0.584 | 0.556 | 0.530 | 0.508 | 0.488 | 0.470 | 0.452 | 0.436 | 0.422 | 0.362 | 0.318 | 0.285 | 0.221 | 0.184 | 0.142 | 0.118 | 0.089 |
| ES-7B | 0.957 | 0.907 | 0.862 | 0.822 | 0.785 | 0.753 | 0.724 | 0.697 | 0.671 | 0.648 | 0.626 | 0.537 | 0.472 | 0.422 | 0.326 | 0.271 | 0.208 | 0.172 | 0.130 |
| ES-9B | 1.237 | 1.176 | 1.121 | 1.071 | 1.026 | 0.985 | 0.947 | 0.912 | 0.880 | 0.850 | 0.821 | 0.703 | 0.617 | 0.551 | 0.423 | 0.350 | 0.267 | 0.220 | 0.166 |
| ES-11B | 1.507 | 1.436 | 1.372 | 1.314 | 1.260 | 1.211 | 1.166 | 1.123 | 1.084 | 1.047 | 1.012 | 0.865 | 0.759 | 0.677 | 0.518 | 0.426 | 0.323 | 0.265 | 0.198 |
| ES-13B | 1.765 | 1.686 | 1.615 | 1.547 | 1.486 | 1.428 | 1.376 | 1.326 | 1.280 | 1.237 | 1.196 | 1.020 | 0.895 | 0.798 | 0.608 | 0.498 | 0.374 | 0.307 | 0.228 |
| ES-15B | 2.031 | 1.942 | 1.862 | 1.788 | 1.722 | 1.661 | 1.604 | 1.551 | 1.501 | 1.454 | 1.411 | 1.226 | 1.087 | 0.976 | 0.758 | 0.626 | 0.475 | 0.388 | 0.287 |
| ES-17B | 2.298 | 2.202 | 2.115 | 2.034 | 1.960 | 1.892 | 1.828 | 1.769 | 1.714 | 1.661 | 1.611 | 1.398 | 1.240 | 1.114 | 0.863 | 0.710 | 0.535 | 0.435 | 0.319 |
| ES-19B | 2.569 | 2.465 | 2.370 | 2.280 | 2.198 | 2.124 | 2.054 | 1.988 | 1.927 | 1.868 | 1.811 | 1.571 | 1.393 | 1.252 | 0.969 | 0.795 | 0.595 | 0.482 | 0.352 |
| ES-21B | 2.841 | 2.730 | 2.625 | 2.527 | 2.437 | 2.356 | 2.279 | 2.207 | 2.139 | 2.075 | 2.011 | 1.743 | 1.546 | 1.389 | 1.074 | 0.879 | 0.655 | 0.529 | 0.384 |
| ES-23B | 3.225 | 3.082 | 2.954 | 2.837 | 2.730 | 2.633 | 2.542 | 2.458 | 2.380 | 2.306 | 2.235 | 1.936 | 1.712 | 1.535 | 1.181 | 0.970 | 0.729 | 0.592 | 0.434 |
| ES-25B | 3.481 | 3.333 | 3.201 | 3.079 | 2.965 | 2.861 | 2.765 | 2.675 | 2.591 | 2.511 | 2.432 | 2.099 | 1.854 | 1.662 | 1.278 | 1.047 | 0.783 | 0.635 | 0.464 |
| ES-27B | 3.743 | 3.590 | 3.452 | 3.323 | 3.201 | 3.091 | 2.989 | 2.893 | 2.802 | 2.717 | 2.629 | 2.264 | 1.999 | 1.791 | 1.377 | 1.125 | 0.839 | 0.679 | 0.495 |
| ES-29B | 4.060 | 3.876 | 3.714 | 3.564 | 3.426 | 3.302 | 3.187 | 3.079 | 2.978 | 2.883 | 2.792 | 2.407 | 2.123 | 1.899 | 1.454 | 1.192 | 0.895 | 0.727 | 0.533 |
| ES-31B | 4.300 | 4.111 | 3.944 | 3.788 | 3.644 | 3.513 | 3.393 | 3.281 | 3.175 | 3.075 | 2.977 | 2.569 | 2.266 | 2.028 | 1.552 | 1.269 | 0.948 | 0.768 | 0.561 |
| ES-33B | 4.536 | 4.344 | 4.170 | 4.009 | 3.860 | 3.723 | 3.598 | 3.480 | 3.370 | 3.264 | 3.161 | 2.728 | 2.408 | 2.155 | 1.649 | 1.345 | 1.000 | 0.807 | 0.587 |
| ES-35B | 4.786 | 4.587 | 4.406 | 4.238 | 4.082 | 3.939 | 3.808 | 3.685 | 3.569 | 3.456 | 3.347 | 2.891 | 2.551 | 2.284 | 1.747 | 1.423 | 1.054 | 0.849 | 0.615 |
| ES-37B | 5.029 | 4.826 | 4.634 | 4.461 | 4.300 | 4.151 | 4.014 | 3.886 | 3.764 | 3.644 | 3.529 | 3.051 | 2.693 | 2.411 | 1.845 | 1.499 | 1.107 | 0.888 | 0.642 |

*kW values listed represent 100% of the initial capacity.

** At 77°F (25°C) includes intercell connector drop.

Constant Power Discharge Performance Data Continued

1.250 Specific Gravity Discharge Rates (kW per cell*) to 1.60Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5B | 0.684 | 0.644 | 0.608 | 0.576 | 0.547 | 0.521 | 0.499 | 0.478 | 0.460 | 0.443 | 0.427 | 0.363 | 0.318 | 0.285 | 0.221 | 0.184 | 0.142 | 0.118 | 0.089 |
| ES-7B | 1.009 | 0.951 | 0.900 | 0.854 | 0.813 | 0.775 | 0.742 | 0.712 | 0.685 | 0.659 | 0.636 | 0.540 | 0.472 | 0.422 | 0.326 | 0.271 | 0.208 | 0.172 | 0.130 |
| ES-9B | 1.308 | 1.237 | 1.174 | 1.117 | 1.066 | 1.018 | 0.976 | 0.938 | 0.902 | 0.868 | 0.838 | 0.710 | 0.619 | 0.551 | 0.423 | 0.350 | 0.267 | 0.220 | 0.166 |
| ES-11B | 1.596 | 1.515 | 1.441 | 1.374 | 1.312 | 1.257 | 1.205 | 1.158 | 1.114 | 1.073 | 1.035 | 0.878 | 0.762 | 0.677 | 0.518 | 0.426 | 0.323 | 0.265 | 0.198 |
| ES-13B | 1.872 | 1.780 | 1.698 | 1.622 | 1.552 | 1.487 | 1.428 | 1.372 | 1.321 | 1.272 | 1.228 | 1.039 | 0.902 | 0.799 | 0.608 | 0.498 | 0.374 | 0.307 | 0.228 |
| ES-15B | 2.138 | 2.036 | 1.945 | 1.863 | 1.787 | 1.718 | 1.655 | 1.597 | 1.543 | 1.493 | 1.445 | 1.246 | 1.098 | 0.983 | 0.758 | 0.626 | 0.475 | 0.388 | 0.287 |
| ES-17B | 2.417 | 2.307 | 2.209 | 2.119 | 2.036 | 1.960 | 1.890 | 1.825 | 1.764 | 1.707 | 1.654 | 1.425 | 1.255 | 1.123 | 0.863 | 0.710 | 0.535 | 0.435 | 0.319 |
| ES-19B | 2.700 | 2.581 | 2.474 | 2.376 | 2.287 | 2.202 | 2.124 | 2.052 | 1.985 | 1.921 | 1.861 | 1.603 | 1.412 | 1.263 | 0.969 | 0.795 | 0.595 | 0.482 | 0.352 |
| ES-21B | 2.983 | 2.855 | 2.740 | 2.634 | 2.536 | 2.444 | 2.359 | 2.280 | 2.205 | 2.135 | 2.069 | 1.782 | 1.569 | 1.402 | 1.074 | 0.879 | 0.655 | 0.529 | 0.384 |
| ES-23B | 3.377 | 3.215 | 3.073 | 2.943 | 2.825 | 2.718 | 2.619 | 2.529 | 2.443 | 2.364 | 2.290 | 1.970 | 1.731 | 1.543 | 1.181 | 0.970 | 0.729 | 0.592 | 0.434 |
| ES-25B | 3.645 | 3.478 | 3.329 | 3.195 | 3.070 | 2.956 | 2.851 | 2.753 | 2.661 | 2.576 | 2.495 | 2.141 | 1.878 | 1.673 | 1.278 | 1.047 | 0.783 | 0.635 | 0.464 |
| ES-27B | 3.920 | 3.746 | 3.590 | 3.449 | 3.318 | 3.196 | 3.084 | 2.979 | 2.880 | 2.788 | 2.701 | 2.312 | 2.026 | 1.804 | 1.377 | 1.125 | 0.839 | 0.679 | 0.495 |
| ES-29B | 4.273 | 4.065 | 3.879 | 3.714 | 3.562 | 3.421 | 3.292 | 3.172 | 3.061 | 2.958 | 2.861 | 2.451 | 2.145 | 1.908 | 1.454 | 1.192 | 0.895 | 0.727 | 0.533 |
| ES-31B | 4.526 | 4.314 | 4.123 | 3.952 | 3.796 | 3.649 | 3.514 | 3.388 | 3.272 | 3.162 | 3.060 | 2.621 | 2.295 | 2.040 | 1.552 | 1.269 | 0.948 | 0.768 | 0.561 |
| ES-33B | 4.777 | 4.560 | 4.364 | 4.188 | 4.025 | 3.873 | 3.732 | 3.602 | 3.479 | 3.366 | 3.258 | 2.790 | 2.443 | 2.172 | 1.649 | 1.345 | 1.000 | 0.807 | 0.587 |
| ES-35B | 5.042 | 4.817 | 4.615 | 4.432 | 4.260 | 4.101 | 3.953 | 3.817 | 3.690 | 3.569 | 3.456 | 2.960 | 2.592 | 2.305 | 1.747 | 1.423 | 1.054 | 0.849 | 0.615 |
| ES-37B | 5.297 | 5.066 | 4.861 | 4.670 | 4.491 | 4.324 | 4.171 | 4.030 | 3.897 | 3.771 | 3.653 | 3.128 | 2.740 | 2.437 | 1.845 | 1.499 | 1.107 | 0.888 | 0.642 |

Constant Power Discharge Performance Data

1.215 Specific Gravity Discharge Rates (kW per cell*) to 1.75Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5 | 0.496 | 0.474 | 0.456 | 0.438 | 0.423 | 0.408 | 0.394 | 0.381 | 0.369 | 0.358 | 0.348 | 0.305 | 0.273 | 0.247 | 0.196 | 0.165 | 0.128 | 0.106 | 0.080 |
| ES-7 | 0.721 | 0.690 | 0.663 | 0.638 | 0.615 | 0.594 | 0.574 | 0.556 | 0.538 | 0.522 | 0.507 | 0.444 | 0.397 | 0.360 | 0.286 | 0.240 | 0.185 | 0.154 | 0.116 |
| ES-9 | 0.926 | 0.887 | 0.852 | 0.820 | 0.792 | 0.765 | 0.739 | 0.715 | 0.693 | 0.672 | 0.652 | 0.572 | 0.511 | 0.463 | 0.367 | 0.307 | 0.237 | 0.197 | 0.148 |
| ES-11 | 1.133 | 1.088 | 1.046 | 1.008 | 0.973 | 0.940 | 0.908 | 0.879 | 0.851 | 0.826 | 0.801 | 0.702 | 0.626 | 0.567 | 0.446 | 0.373 | 0.286 | 0.237 | 0.177 |
| ES-13 | 1.328 | 1.276 | 1.229 | 1.184 | 1.144 | 1.104 | 1.068 | 1.033 | 1.001 | 0.970 | 0.942 | 0.825 | 0.734 | 0.663 | 0.518 | 0.431 | 0.328 | 0.270 | 0.201 |
| ES-15 | 1.519 | 1.468 | 1.419 | 1.375 | 1.330 | 1.290 | 1.251 | 1.215 | 1.181 | 1.150 | 1.121 | 0.995 | 0.896 | 0.818 | 0.652 | 0.546 | 0.419 | 0.345 | 0.256 |
| ES-17 | 1.727 | 1.668 | 1.613 | 1.561 | 1.510 | 1.464 | 1.420 | 1.378 | 1.339 | 1.304 | 1.270 | 1.126 | 1.013 | 0.924 | 0.734 | 0.613 | 0.467 | 0.383 | 0.283 |
| ES-19 | 1.936 | 1.869 | 1.806 | 1.748 | 1.690 | 1.638 | 1.589 | 1.542 | 1.498 | 1.458 | 1.420 | 1.258 | 1.130 | 1.030 | 0.816 | 0.680 | 0.517 | 0.422 | 0.310 |
| ES-21 | 2.144 | 2.069 | 2.000 | 1.935 | 1.870 | 1.812 | 1.758 | 1.705 | 1.656 | 1.611 | 1.569 | 1.389 | 1.247 | 1.135 | 0.898 | 0.748 | 0.566 | 0.461 | 0.337 |
| ES-23 | 2.464 | 2.373 | 2.290 | 2.217 | 2.142 | 2.072 | 2.006 | 1.945 | 1.887 | 1.834 | 1.785 | 1.578 | 1.415 | 1.288 | 1.019 | 0.850 | 0.647 | 0.529 | 0.389 |
| ES-25 | 2.668 | 2.570 | 2.479 | 2.399 | 2.317 | 2.240 | 2.168 | 2.100 | 2.037 | 1.978 | 1.924 | 1.697 | 1.519 | 1.382 | 1.090 | 0.908 | 0.689 | 0.562 | 0.413 |
| ES-27 | 2.870 | 2.763 | 2.665 | 2.577 | 2.490 | 2.405 | 2.326 | 2.250 | 2.182 | 2.119 | 2.059 | 1.813 | 1.620 | 1.471 | 1.158 | 0.962 | 0.728 | 0.593 | 0.435 |
| ES-29 | 3.058 | 2.947 | 2.845 | 2.753 | 2.659 | 2.571 | 2.490 | 2.416 | 2.343 | 2.275 | 2.214 | 1.954 | 1.749 | 1.591 | 1.254 | 1.044 | 0.793 | 0.649 | 0.478 |
| ES-31 | 3.233 | 3.117 | 3.009 | 2.911 | 2.811 | 2.719 | 2.634 | 2.554 | 2.479 | 2.407 | 2.342 | 2.068 | 1.851 | 1.682 | 1.325 | 1.101 | 0.834 | 0.680 | 0.499 |
| ES-33 | 3.403 | 3.282 | 3.170 | 3.064 | 2.959 | 2.863 | 2.774 | 2.690 | 2.611 | 2.536 | 2.468 | 2.179 | 1.950 | 1.771 | 1.394 | 1.157 | 0.873 | 0.711 | 0.519 |
| ES-35 | 3.585 | 3.457 | 3.342 | 3.227 | 3.117 | 3.017 | 2.923 | 2.834 | 2.750 | 2.673 | 2.602 | 2.297 | 2.054 | 1.866 | 1.467 | 1.217 | 0.917 | 0.744 | 0.543 |
| ES-37 | 3.758 | 3.625 | 3.506 | 3.381 | 3.267 | 3.162 | 3.065 | 2.972 | 2.883 | 2.804 | 2.729 | 2.409 | 2.155 | 1.956 | 1.536 | 1.274 | 0.957 | 0.775 | 0.563 |

Constant Power Discharge Performance Data Continued

1.215 Specific Gravity Discharge Rates (kW per cell*) to 1.70Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5 | 0.552 | 0.525 | 0.500 | 0.478 | 0.459 | 0.441 | 0.425 | 0.410 | 0.396 | 0.382 | 0.370 | 0.319 | 0.283 | 0.255 | 0.199 | 0.166 | 0.128 | 0.106 | 0.080 |
| ES-7 | 0.804 | 0.765 | 0.729 | 0.699 | 0.671 | 0.645 | 0.621 | 0.599 | 0.578 | 0.559 | 0.541 | 0.466 | 0.414 | 0.372 | 0.291 | 0.242 | 0.185 | 0.154 | 0.116 |
| ES-9 | 1.035 | 0.985 | 0.942 | 0.902 | 0.867 | 0.834 | 0.803 | 0.775 | 0.748 | 0.723 | 0.700 | 0.603 | 0.535 | 0.480 | 0.375 | 0.311 | 0.238 | 0.197 | 0.148 |
| ES-11 | 1.268 | 1.209 | 1.158 | 1.111 | 1.068 | 1.028 | 0.990 | 0.955 | 0.923 | 0.892 | 0.863 | 0.744 | 0.657 | 0.589 | 0.458 | 0.378 | 0.287 | 0.237 | 0.177 |
| ES-13 | 1.487 | 1.422 | 1.363 | 1.308 | 1.258 | 1.212 | 1.169 | 1.128 | 1.090 | 1.054 | 1.019 | 0.877 | 0.773 | 0.692 | 0.534 | 0.440 | 0.331 | 0.271 | 0.201 |
| ES-15 | 1.702 | 1.635 | 1.574 | 1.519 | 1.467 | 1.419 | 1.375 | 1.332 | 1.291 | 1.252 | 1.215 | 1.064 | 0.950 | 0.858 | 0.675 | 0.561 | 0.427 | 0.349 | 0.258 |
| ES-17 | 1.932 | 1.856 | 1.787 | 1.723 | 1.664 | 1.610 | 1.559 | 1.511 | 1.464 | 1.420 | 1.378 | 1.206 | 1.076 | 0.971 | 0.761 | 0.631 | 0.477 | 0.388 | 0.285 |
| ES-19 | 2.163 | 2.078 | 2.001 | 1.929 | 1.863 | 1.802 | 1.745 | 1.690 | 1.638 | 1.588 | 1.542 | 1.348 | 1.202 | 1.084 | 0.848 | 0.701 | 0.528 | 0.428 | 0.312 |
| ES-21 | 2.394 | 2.299 | 2.214 | 2.134 | 2.061 | 1.993 | 1.930 | 1.870 | 1.811 | 1.756 | 1.705 | 1.490 | 1.327 | 1.196 | 0.934 | 0.772 | 0.578 | 0.467 | 0.339 |
| ES-23 | 2.724 | 2.614 | 2.513 | 2.421 | 2.337 | 2.260 | 2.188 | 2.120 | 2.052 | 1.988 | 1.928 | 1.681 | 1.497 | 1.349 | 1.055 | 0.872 | 0.656 | 0.532 | 0.389 |
| ES-25 | 2.953 | 2.832 | 2.723 | 2.622 | 2.531 | 2.447 | 2.368 | 2.294 | 2.219 | 2.149 | 2.083 | 1.812 | 1.610 | 1.449 | 1.130 | 0.933 | 0.700 | 0.567 | 0.414 |
| ES-27 | 3.178 | 3.047 | 2.930 | 2.820 | 2.723 | 2.630 | 2.545 | 2.465 | 2.383 | 2.306 | 2.234 | 1.938 | 1.719 | 1.544 | 1.201 | 0.990 | 0.741 | 0.599 | 0.436 |
| ES-29 | 3.409 | 3.268 | 3.142 | 3.027 | 2.921 | 2.823 | 2.731 | 2.644 | 2.558 | 2.479 | 2.403 | 2.090 | 1.855 | 1.668 | 1.299 | 1.072 | 0.805 | 0.654 | 0.479 |
| ES-31 | 3.611 | 3.461 | 3.327 | 3.207 | 3.095 | 2.992 | 2.895 | 2.802 | 2.711 | 2.627 | 2.547 | 2.217 | 1.967 | 1.768 | 1.375 | 1.134 | 0.848 | 0.686 | 0.501 |
| ES-33 | 3.808 | 3.651 | 3.510 | 3.383 | 3.266 | 3.158 | 3.056 | 2.957 | 2.861 | 2.772 | 2.688 | 2.341 | 2.078 | 1.867 | 1.450 | 1.193 | 0.890 | 0.718 | 0.521 |
| ES-35 | 4.015 | 3.850 | 3.703 | 3.569 | 3.446 | 3.332 | 3.224 | 3.119 | 3.018 | 2.924 | 2.836 | 2.470 | 2.193 | 1.971 | 1.528 | 1.257 | 0.935 | 0.753 | 0.545 |
| ES-37 | 4.214 | 4.042 | 3.889 | 3.747 | 3.619 | 3.500 | 3.386 | 3.275 | 3.169 | 3.070 | 2.978 | 2.595 | 2.303 | 2.070 | 1.603 | 1.317 | 0.978 | 0.784 | 0.566 |

1.215 Specific Gravity Discharge Rates (kW per cell*) to 1.67Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5 | 0.580 | 0.549 | 0.521 | 0.496 | 0.474 | 0.454 | 0.437 | 0.420 | 0.405 | 0.391 | 0.378 | 0.324 | 0.286 | 0.256 | 0.199 | 0.166 | 0.128 | 0.106 | 0.080 |
| ES-7 | 0.846 | 0.801 | 0.762 | 0.726 | 0.694 | 0.666 | 0.640 | 0.616 | 0.594 | 0.573 | 0.554 | 0.474 | 0.418 | 0.375 | 0.291 | 0.242 | 0.185 | 0.154 | 0.116 |
| ES-9 | 1.090 | 1.035 | 0.985 | 0.941 | 0.900 | 0.864 | 0.830 | 0.799 | 0.770 | 0.743 | 0.718 | 0.615 | 0.542 | 0.485 | 0.375 | 0.311 | 0.238 | 0.197 | 0.148 |
| ES-11 | 1.335 | 1.271 | 1.212 | 1.160 | 1.111 | 1.067 | 1.026 | 0.988 | 0.952 | 0.919 | 0.888 | 0.759 | 0.668 | 0.596 | 0.459 | 0.378 | 0.287 | 0.237 | 0.177 |
| ES-13 | 1.567 | 1.495 | 1.429 | 1.369 | 1.313 | 1.261 | 1.214 | 1.169 | 1.127 | 1.088 | 1.052 | 0.896 | 0.787 | 0.701 | 0.536 | 0.440 | 0.331 | 0.271 | 0.201 |
| ES-15 | 1.790 | 1.715 | 1.646 | 1.584 | 1.527 | 1.475 | 1.426 | 1.380 | 1.337 | 1.295 | 1.256 | 1.090 | 0.969 | 0.872 | 0.682 | 0.565 | 0.427 | 0.349 | 0.258 |
| ES-17 | 2.031 | 1.946 | 1.868 | 1.798 | 1.733 | 1.674 | 1.618 | 1.566 | 1.517 | 1.470 | 1.425 | 1.237 | 1.098 | 0.988 | 0.769 | 0.635 | 0.477 | 0.388 | 0.285 |
| ES-19 | 2.273 | 2.178 | 2.091 | 2.013 | 1.940 | 1.873 | 1.811 | 1.753 | 1.698 | 1.645 | 1.594 | 1.383 | 1.227 | 1.103 | 0.858 | 0.706 | 0.528 | 0.428 | 0.312 |
| ES-21 | 2.515 | 2.410 | 2.314 | 2.227 | 2.147 | 2.073 | 2.004 | 1.939 | 1.878 | 1.820 | 1.764 | 1.529 | 1.356 | 1.219 | 0.946 | 0.776 | 0.578 | 0.467 | 0.339 |
| ES-23 | 2.850 | 2.728 | 2.616 | 2.518 | 2.425 | 2.341 | 2.262 | 2.189 | 2.122 | 2.054 | 1.989 | 1.722 | 1.527 | 1.372 | 1.065 | 0.875 | 0.656 | 0.532 | 0.389 |
| ES-25 | 3.090 | 2.956 | 2.836 | 2.727 | 2.626 | 2.535 | 2.449 | 2.369 | 2.295 | 2.221 | 2.151 | 1.856 | 1.642 | 1.474 | 1.141 | 0.936 | 0.700 | 0.567 | 0.414 |
| ES-27 | 3.326 | 3.182 | 3.052 | 2.933 | 2.825 | 2.725 | 2.632 | 2.547 | 2.465 | 2.386 | 2.309 | 1.986 | 1.754 | 1.572 | 1.214 | 0.994 | 0.741 | 0.599 | 0.436 |
| ES-29 | 3.578 | 3.425 | 3.285 | 3.156 | 3.039 | 2.932 | 2.833 | 2.740 | 2.652 | 2.568 | 2.485 | 2.141 | 1.893 | 1.696 | 1.312 | 1.075 | 0.805 | 0.654 | 0.479 |
| ES-31 | 3.792 | 3.630 | 3.483 | 3.347 | 3.224 | 3.110 | 3.006 | 2.907 | 2.815 | 2.724 | 2.637 | 2.274 | 2.009 | 1.800 | 1.390 | 1.137 | 0.848 | 0.686 | 0.501 |
| ES-33 | 4.001 | 3.831 | 3.677 | 3.535 | 3.406 | 3.285 | 3.175 | 3.071 | 2.974 | 2.878 | 2.786 | 2.405 | 2.125 | 1.903 | 1.467 | 1.198 | 0.890 | 0.718 | 0.521 |
| ES-35 | 4.221 | 4.042 | 3.881 | 3.731 | 3.595 | 3.468 | 3.351 | 3.242 | 3.140 | 3.038 | 2.942 | 2.540 | 2.244 | 2.010 | 1.547 | 1.262 | 0.935 | 0.753 | 0.545 |
| ES-37 | 4.434 | 4.246 | 4.078 | 3.920 | 3.778 | 3.645 | 3.522 | 3.409 | 3.300 | 3.192 | 3.092 | 2.672 | 2.360 | 2.113 | 1.625 | 1.324 | 0.978 | 0.784 | 0.566 |

Constant Power Discharge Performance Data Continued

1.215 Specific Gravity Discharge Rates (kW per cell*) to 1.65Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5 | 0.596 | 0.562 | 0.533 | 0.506 | 0.482 | 0.461 | 0.443 | 0.425 | 0.410 | 0.395 | 0.381 | 0.326 | 0.286 | 0.256 | 0.199 | 0.166 | 0.128 | 0.106 | 0.080 |
| ES-7 | 0.870 | 0.822 | 0.780 | 0.742 | 0.707 | 0.677 | 0.650 | 0.625 | 0.601 | 0.580 | 0.560 | 0.478 | 0.420 | 0.375 | 0.291 | 0.242 | 0.185 | 0.154 | 0.116 |
| ES-9 | 1.123 | 1.064 | 1.011 | 0.962 | 0.918 | 0.880 | 0.844 | 0.812 | 0.781 | 0.753 | 0.727 | 0.620 | 0.545 | 0.486 | 0.375 | 0.311 | 0.238 | 0.197 | 0.148 |
| ES-11 | 1.377 | 1.307 | 1.245 | 1.187 | 1.135 | 1.088 | 1.045 | 1.005 | 0.967 | 0.932 | 0.900 | 0.766 | 0.671 | 0.598 | 0.459 | 0.378 | 0.287 | 0.237 | 0.177 |
| ES-13 | 1.616 | 1.538 | 1.468 | 1.403 | 1.343 | 1.288 | 1.237 | 1.191 | 1.147 | 1.106 | 1.067 | 0.906 | 0.792 | 0.705 | 0.536 | 0.440 | 0.331 | 0.271 | 0.201 |
| ES-15 | 1.842 | 1.761 | 1.687 | 1.620 | 1.561 | 1.505 | 1.453 | 1.405 | 1.359 | 1.317 | 1.276 | 1.103 | 0.978 | 0.879 | 0.684 | 0.565 | 0.427 | 0.349 | 0.258 |
| ES-17 | 2.089 | 1.998 | 1.915 | 1.839 | 1.771 | 1.708 | 1.649 | 1.595 | 1.543 | 1.495 | 1.448 | 1.251 | 1.108 | 0.995 | 0.772 | 0.635 | 0.477 | 0.388 | 0.285 |
| ES-19 | 2.338 | 2.236 | 2.143 | 2.059 | 1.983 | 1.912 | 1.846 | 1.785 | 1.727 | 1.674 | 1.621 | 1.400 | 1.239 | 1.112 | 0.860 | 0.706 | 0.528 | 0.428 | 0.312 |
| ES-21 | 2.586 | 2.473 | 2.371 | 2.278 | 2.194 | 2.115 | 2.043 | 1.975 | 1.912 | 1.852 | 1.794 | 1.549 | 1.370 | 1.229 | 0.948 | 0.776 | 0.578 | 0.467 | 0.339 |
| ES-23 | 2.923 | 2.792 | 2.676 | 2.569 | 2.473 | 2.384 | 2.301 | 2.226 | 2.154 | 2.087 | 2.022 | 1.742 | 1.540 | 1.381 | 1.066 | 0.875 | 0.656 | 0.532 | 0.389 |
| ES-25 | 3.170 | 3.027 | 2.900 | 2.784 | 2.679 | 2.582 | 2.492 | 2.408 | 2.331 | 2.258 | 2.186 | 1.878 | 1.658 | 1.484 | 1.142 | 0.936 | 0.700 | 0.567 | 0.414 |
| ES-27 | 3.414 | 3.259 | 3.122 | 2.995 | 2.882 | 2.776 | 2.678 | 2.588 | 2.504 | 2.425 | 2.347 | 2.011 | 1.771 | 1.584 | 1.215 | 0.994 | 0.741 | 0.599 | 0.436 |
| ES-29 | 3.680 | 3.515 | 3.365 | 3.229 | 3.106 | 2.993 | 2.888 | 2.790 | 2.697 | 2.609 | 2.525 | 2.167 | 1.910 | 1.709 | 1.312 | 1.075 | 0.805 | 0.654 | 0.479 |
| ES-31 | 3.899 | 3.727 | 3.570 | 3.427 | 3.296 | 3.177 | 3.066 | 2.962 | 2.864 | 2.772 | 2.682 | 2.303 | 2.029 | 1.815 | 1.391 | 1.137 | 0.848 | 0.686 | 0.501 |
| ES-33 | 4.116 | 3.935 | 3.772 | 3.621 | 3.483 | 3.357 | 3.240 | 3.131 | 3.029 | 2.932 | 2.837 | 2.437 | 2.147 | 1.920 | 1.469 | 1.198 | 0.890 | 0.718 | 0.521 |
| ES-35 | 4.345 | 4.153 | 3.982 | 3.824 | 3.678 | 3.546 | 3.422 | 3.307 | 3.199 | 3.097 | 2.997 | 2.576 | 2.268 | 2.029 | 1.550 | 1.262 | 0.935 | 0.753 | 0.545 |
| ES-37 | 4.565 | 4.364 | 4.186 | 4.020 | 3.867 | 3.728 | 3.599 | 3.477 | 3.364 | 3.257 | 3.151 | 2.710 | 2.387 | 2.134 | 1.629 | 1.324 | 0.978 | 0.784 | 0.566 |

1.215 Specific Gravity Discharge Rates (kW per cell*) to 1.60Vpc at 77°F (25°C)**

| Battery Type | Minutes | | | | | | | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 20 | 25 | 30 | 45 | 60 | 90 | 120 | 180 |
| ES-5 | 0.626 | 0.588 | 0.554 | 0.524 | 0.497 | 0.472 | 0.450 | 0.432 | 0.415 | 0.400 | 0.385 | 0.327 | 0.286 | 0.256 | 0.199 | 0.166 | 0.128 | 0.106 | 0.080 |
| ES-7 | 0.919 | 0.863 | 0.814 | 0.771 | 0.731 | 0.695 | 0.664 | 0.637 | 0.612 | 0.589 | 0.567 | 0.480 | 0.420 | 0.375 | 0.291 | 0.242 | 0.185 | 0.154 | 0.116 |
| ES-9 | 1.192 | 1.122 | 1.060 | 1.003 | 0.953 | 0.906 | 0.867 | 0.831 | 0.798 | 0.768 | 0.739 | 0.625 | 0.545 | 0.486 | 0.375 | 0.311 | 0.238 | 0.197 | 0.148 |
| ES-11 | 1.465 | 1.383 | 1.309 | 1.242 | 1.181 | 1.125 | 1.076 | 1.032 | 0.991 | 0.953 | 0.918 | 0.774 | 0.673 | 0.598 | 0.459 | 0.378 | 0.287 | 0.237 | 0.177 |
| ES-13 | 1.724 | 1.632 | 1.548 | 1.471 | 1.401 | 1.337 | 1.280 | 1.227 | 1.179 | 1.134 | 1.092 | 0.919 | 0.796 | 0.705 | 0.536 | 0.440 | 0.331 | 0.271 | 0.201 |
| ES-15 | 1.947 | 1.852 | 1.768 | 1.691 | 1.620 | 1.556 | 1.498 | 1.445 | 1.396 | 1.349 | 1.306 | 1.122 | 0.988 | 0.884 | 0.684 | 0.565 | 0.427 | 0.349 | 0.258 |
| ES-17 | 2.207 | 2.100 | 2.005 | 1.919 | 1.840 | 1.768 | 1.702 | 1.642 | 1.586 | 1.533 | 1.483 | 1.274 | 1.121 | 1.002 | 0.772 | 0.635 | 0.477 | 0.388 | 0.285 |
| ES-19 | 2.468 | 2.350 | 2.244 | 2.148 | 2.060 | 1.980 | 1.907 | 1.839 | 1.776 | 1.717 | 1.662 | 1.426 | 1.254 | 1.120 | 0.860 | 0.706 | 0.528 | 0.428 | 0.312 |
| ES-21 | 2.729 | 2.599 | 2.482 | 2.377 | 2.280 | 2.192 | 2.111 | 2.036 | 1.966 | 1.901 | 1.839 | 1.579 | 1.387 | 1.238 | 0.948 | 0.776 | 0.578 | 0.467 | 0.339 |
| ES-23 | 3.070 | 2.922 | 2.789 | 2.668 | 2.560 | 2.461 | 2.371 | 2.287 | 2.210 | 2.137 | 2.069 | 1.774 | 1.556 | 1.388 | 1.066 | 0.875 | 0.656 | 0.532 | 0.389 |
| ES-25 | 3.330 | 3.167 | 3.022 | 2.891 | 2.772 | 2.664 | 2.566 | 2.474 | 2.390 | 2.311 | 2.237 | 1.913 | 1.675 | 1.492 | 1.142 | 0.936 | 0.700 | 0.567 | 0.414 |
| ES-27 | 3.585 | 3.409 | 3.253 | 3.110 | 2.982 | 2.864 | 2.757 | 2.658 | 2.567 | 2.481 | 2.401 | 2.048 | 1.790 | 1.592 | 1.215 | 0.994 | 0.741 | 0.599 | 0.436 |
| ES-29 | 3.889 | 3.697 | 3.526 | 3.372 | 3.229 | 3.099 | 2.980 | 2.871 | 2.770 | 2.675 | 2.587 | 2.207 | 1.928 | 1.716 | 1.312 | 1.075 | 0.805 | 0.654 | 0.479 |
| ES-31 | 4.126 | 3.924 | 3.744 | 3.582 | 3.432 | 3.296 | 3.171 | 3.055 | 2.947 | 2.847 | 2.753 | 2.349 | 2.052 | 1.825 | 1.391 | 1.137 | 0.848 | 0.686 | 0.501 |
| ES-33 | 4.359 | 4.148 | 3.960 | 3.789 | 3.633 | 3.490 | 3.358 | 3.236 | 3.123 | 3.017 | 2.918 | 2.489 | 2.174 | 1.932 | 1.469 | 1.198 | 0.890 | 0.718 | 0.521 |
| ES-35 | 4.602 | 4.381 | 4.183 | 4.003 | 3.840 | 3.690 | 3.552 | 3.423 | 3.303 | 3.191 | 3.087 | 2.633 | 2.300 | 2.042 | 1.550 | 1.262 | 0.935 | 0.753 | 0.545 |
| ES-37 | 4.838 | 4.608 | 4.400 | 4.212 | 4.042 | 3.883 | 3.739 | 3.604 | 3.479 | 3.361 | 3.251 | 2.774 | 2.423 | 2.150 | 1.629 | 1.324 | 0.978 | 0.784 | 0.566 |

Constant Current Performance Data

1.250 Specific Gravity Ampere Rating for Minutes to Specified End Voltage to 1.75Vpc at 77°F (25°C)

| Battery Type | Minutes | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 5 | 15 | 30 | 60 | 90 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| ES-5B | 386.4 | 313.8 | 216.4 | 151.5 | 99.17 | 75.77 | 61.92 | 46.87 | 37.88 | 32.34 | 28.49 | 25.60 | 23.32 |
| ES-7B | 546.9 | 460.4 | 319.2 | 223.2 | 145.6 | 111.0 | 90.44 | 68.22 | 55.22 | 47.10 | 41.40 | 37.12 | 33.74 |
| ES-9B | 674.3 | 594.3 | 414.7 | 289.5 | 187.6 | 142.6 | 115.9 | 87.09 | 70.41 | 59.92 | 52.55 | 47.00 | 42.64 |
| ES-11B | 795.2 | 723.6 | 506.6 | 353.4 | 227.7 | 172.4 | 139.7 | 104.4 | 83.69 | 71.00 | 62.20 | 55.62 | 50.46 |
| ES-13B | 904.4 | 846.6 | 594.2 | 413.7 | 265.0 | 199.6 | 161.5 | 119.8 | 95.22 | 80.43 | 70.29 | 62.77 | 56.90 |
| ES-15B | 1050 | 974.8 | 708.2 | 505.9 | 332.0 | 252.0 | 204.6 | 151.9 | 120.6 | 101.2 | 87.83 | 77.93 | 70.22 |
| ES-17B | 1183 | 1109 | 804.9 | 575.3 | 375.4 | 283.4 | 229.2 | 168.9 | 133.3 | 111.2 | 96.07 | 84.85 | 76.15 |
| ES-19B | 1319 | 1244 | 901.9 | 644.8 | 419.1 | 315.0 | 254.2 | 185.9 | 146.3 | 121.7 | 104.7 | 92.07 | 82.34 |
| ES-21B | 1455 | 1378 | 998.7 | 714.3 | 462.6 | 346.5 | 279.0 | 202.6 | 158.9 | 131.6 | 112.9 | 99.05 | 88.38 |
| ES-23B | 1732 | 1577 | 1124 | 793.9 | 514.4 | 387.6 | 312.8 | 228.0 | 179.6 | 149.7 | 129.2 | 114.1 | 102.3 |
| ES-25B | 1841 | 1706 | 1214 | 857.6 | 553.8 | 415.8 | 335.3 | 244.2 | 192.0 | 159.9 | 137.7 | 121.4 | 108.8 |
| ES-27B | 1962 | 1837 | 1306 | 922.6 | 594.1 | 444.8 | 358.7 | 260.7 | 203.5 | 168.8 | 145.1 | 127.7 | 114.3 |
| ES-29B | 2194 | 1958 | 1395 | 980.0 | 632.0 | 475.9 | 384.2 | 281.1 | 221.5 | 185.1 | 160.1 | 141.7 | 127.4 |
| ES-31B | 2299 | 2073 | 1481 | 1043 | 671.0 | 503.4 | 405.4 | 295.5 | 232.4 | 193.7 | 167.1 | 147.5 | 132.3 |
| ES-33B | 2393 | 2187 | 1565 | 1105 | 709.3 | 530.2 | 426.1 | 309.3 | 242.6 | 201.6 | 173.5 | 152.8 | 136.7 |
| ES-35B | 2504 | 2307 | 1652 | 1169 | 749.1 | 558.5 | 448.2 | 324.0 | 253.4 | 210.0 | 180.2 | 158.2 | 141.3 |
| ES-37B | 2606 | 2422 | 1738 | 1231 | 787.5 | 585.4 | 469.1 | 337.9 | 263.8 | 218.0 | 186.5 | 163.4 | 145.7 |

1.250 Specific Gravity Ampere Rating for Minutes to Specified End Voltage to 1.67Vpc at 77°F (25°C)

| Battery Type | Minutes | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 5 | 15 | 30 | 60 | 90 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| ES-5B | 511.2 | 375.5 | 240.2 | 158.6 | 99.75 | 75.77 | 61.92 | 46.87 | 37.88 | 32.34 | 28.49 | 25.60 | 23.32 |
| ES-7B | 735.2 | 552.1 | 356.4 | 235.1 | 146.7 | 111.0 | 90.44 | 68.22 | 55.22 | 47.10 | 41.40 | 37.12 | 33.74 |
| ES-9B | 903.9 | 714.3 | 467.1 | 307.6 | 189.8 | 142.6 | 115.9 | 87.09 | 70.41 | 59.92 | 52.55 | 47.00 | 42.64 |
| ES-11B | 1061 | 872.1 | 575.1 | 377.5 | 231.1 | 172.7 | 139.7 | 104.4 | 83.69 | 71.00 | 62.20 | 55.62 | 50.46 |
| ES-13B | 1201 | 1023 | 679.1 | 444.3 | 270.1 | 200.5 | 161.5 | 119.8 | 95.22 | 80.43 | 70.29 | 62.77 | 56.90 |
| ES-15B | 1405 | 1177 | 807.0 | 548.2 | 344.3 | 256.7 | 206.8 | 152.3 | 120.6 | 101.2 | 87.83 | 77.93 | 70.22 |
| ES-17B | 1571 | 1334 | 920.7 | 625.0 | 389.7 | 288.4 | 231.2 | 168.9 | 133.3 | 111.2 | 96.07 | 84.85 | 76.15 |
| ES-19B | 1739 | 1493 | 1034 | 702.0 | 435.2 | 320.5 | 256.0 | 185.9 | 146.3 | 121.7 | 104.7 | 92.07 | 82.34 |
| ES-21B | 1908 | 1652 | 1148 | 778.9 | 480.7 | 352.4 | 280.7 | 202.6 | 158.9 | 131.6 | 112.9 | 99.05 | 88.38 |
| ES-23B | 2313 | 1874 | 1276 | 858.8 | 529.0 | 390.8 | 312.8 | 228.0 | 179.6 | 149.7 | 129.2 | 114.1 | 102.3 |
| ES-25B | 2424 | 2024 | 1386 | 929.5 | 571.0 | 420.3 | 335.9 | 244.2 | 192.0 | 159.9 | 137.7 | 121.4 | 108.8 |
| ES-27B | 2562 | 2178 | 1497 | 1001 | 613.9 | 450.6 | 359.8 | 260.7 | 203.5 | 168.8 | 145.1 | 127.7 | 114.3 |
| ES-29B | 2923 | 2353 | 1592 | 1062 | 650.6 | 480.5 | 384.7 | 281.1 | 221.5 | 185.1 | 160.1 | 141.7 | 127.4 |
| ES-31B | 3047 | 2493 | 1698 | 1134 | 692.5 | 508.9 | 406.3 | 295.5 | 232.4 | 193.7 | 167.1 | 147.5 | 132.3 |
| ES-33B | 3170 | 2632 | 1802 | 1205 | 733.8 | 536.8 | 427.4 | 309.3 | 242.6 | 201.6 | 173.5 | 152.8 | 136.7 |
| ES-35B | 3307 | 2778 | 1908 | 1277 | 776.4 | 566.2 | 449.7 | 324.0 | 253.4 | 210.0 | 180.2 | 158.2 | 141.3 |
| ES-37B | 3433 | 2920 | 2010 | 1348 | 817.9 | 594.3 | 471.0 | 337.9 | 263.8 | 218.0 | 186.5 | 163.4 | 145.7 |

Constant Current Performance Data

1.215 Specific Gravity Ampere Rating for Minutes to Specified End Voltage to 1.75Vpc at 77°F (25°C)

| Battery Type | Minutes | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 5 | 15 | 30 | 60 | 90 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| ES-5B | 335.9 | 282.2 | 194.9 | 136.8 | 89.85 | 68.84 | 56.32 | 42.60 | 34.40 | 29.34 | 25.82 | 23.18 | 21.11 |
| ES-7 | 470.0 | 410.3 | 284.1 | 199.1 | 130.7 | 100.0 | 81.70 | 61.68 | 49.71 | 42.37 | 37.27 | 33.45 | 30.44 |
| ES-9 | 576.4 | 527.1 | 366.4 | 256.1 | 167.6 | 128.2 | 104.6 | 78.74 | 63.37 | 53.95 | 47.41 | 42.52 | 38.68 |
| ES-11 | 690.3 | 646.0 | 450.1 | 313.3 | 203.1 | 154.4 | 125.9 | 94.17 | 75.41 | 63.98 | 56.09 | 50.20 | 45.58 |
| ES-13 | 793.5 | 757.2 | 529.1 | 366.3 | 234.6 | 177.1 | 143.7 | 107.0 | 85.24 | 72.01 | 62.89 | 56.10 | 50.80 |
| ES-15 | 903.9 | 866.7 | 631.9 | 454.8 | 299.3 | 227.0 | 184.6 | 137.0 | 109.5 | 92.09 | 80.00 | 70.92 | 63.84 |
| ES-17 | 1025 | 985.5 | 715.8 | 513.1 | 335.5 | 253.3 | 205.1 | 151.1 | 120.3 | 100.7 | 86.88 | 76.66 | 68.73 |
| ES-19 | 1146 | 1105 | 800.1 | 571.9 | 372.2 | 279.9 | 226.0 | 165.6 | 131.5 | 109.5 | 94.12 | 82.72 | 73.89 |
| ES-21 | 1267 | 1224 | 884.1 | 630.4 | 408.6 | 306.4 | 246.7 | 179.9 | 142.2 | 117.8 | 101.0 | 88.53 | 78.91 |
| ES-23 | 1494 | 1405 | 1004 | 714.3 | 463.9 | 349.5 | 282.3 | 207.3 | 163.6 | 136.5 | 117.7 | 103.8 | 93.04 |
| ES-25 | 1609 | 1522 | 1082 | 765.7 | 495.3 | 372.4 | 300.3 | 220.3 | 174.0 | 144.9 | 124.8 | 109.8 | 98.27 |
| ES-27 | 1721 | 1638 | 1158 | 814.9 | 524.8 | 393.5 | 317.1 | 232.0 | 183.2 | 152.3 | 131.0 | 115.2 | 103.0 |
| ES-29 | 1895 | 1743 | 1246 | 881.8 | 569.8 | 428.8 | 346.6 | 255.4 | 201.9 | 168.7 | 145.9 | 128.9 | 115.8 |
| ES-31 | 1994 | 1844 | 1319 | 932.8 | 601.3 | 451.0 | 363.6 | 266.6 | 210.6 | 175.6 | 151.4 | 133.5 | 119.6 |
| ES-33 | 2081 | 1942 | 1390 | 982.8 | 631.7 | 472.2 | 379.7 | 277.2 | 218.8 | 182.0 | 156.5 | 137.7 | 123.1 |
| ES-35 | 2180 | 2047 | 1465 | 1036 | 664.4 | 495.7 | 398.1 | 289.5 | 227.8 | 188.8 | 161.9 | 142.1 | 126.7 |
| ES-37 | 2270 | 2146 | 1537 | 1086 | 695.2 | 517.3 | 414.6 | 300.5 | 236.1 | 195.1 | 166.9 | 146.1 | 130.0 |

1.215 Specific Gravity Ampere Rating for Minutes to Specified End Voltage to 1.67Vpc at 77°F (25°C)

| Battery Type | Minutes | | | | | | | | | | | | |
|--------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 5 | 15 | 30 | 60 | 90 | 120 | 180 | 240 | 300 | 360 | 420 | 480 |
| ES-5 | 465.4 | 342.5 | 217.6 | 143.6 | 90.68 | 68.88 | 56.32 | 42.60 | 34.40 | 29.34 | 25.82 | 23.18 | 21.11 |
| ES-7 | 660.2 | 500.2 | 319.3 | 210.5 | 132.1 | 100.1 | 81.70 | 61.68 | 49.71 | 42.37 | 37.27 | 33.45 | 30.44 |
| ES-9 | 814.1 | 646.0 | 414.2 | 273.0 | 170.1 | 128.4 | 104.6 | 78.74 | 63.37 | 53.95 | 47.41 | 42.52 | 38.68 |
| ES-11 | 965.6 | 793.3 | 512.5 | 335.7 | 207.1 | 155.3 | 125.9 | 94.17 | 75.41 | 63.98 | 56.09 | 50.20 | 45.58 |
| ES-13 | 1094.0 | 932.6 | 607.4 | 394.5 | 240.7 | 179.0 | 144.2 | 107.0 | 85.24 | 72.01 | 62.89 | 56.10 | 50.80 |
| ES-15 | 1238.0 | 1065 | 730.0 | 495.6 | 313.0 | 233.3 | 188.0 | 138.5 | 109.9 | 92.25 | 80.01 | 70.92 | 63.84 |
| ES-17 | 1407.0 | 1209 | 828.1 | 560.8 | 351.3 | 260.2 | 208.6 | 152.4 | 120.6 | 100.7 | 86.88 | 76.66 | 68.73 |
| ES-19 | 1573.0 | 1353 | 926.6 | 626.3 | 390.0 | 287.5 | 229.7 | 166.8 | 131.6 | 109.5 | 94.12 | 82.72 | 73.89 |
| ES-21 | 1740.0 | 1497 | 1025 | 691.6 | 428.4 | 314.6 | 250.6 | 180.9 | 142.2 | 117.8 | 101.0 | 88.53 | 78.91 |
| ES-23 | 2042.0 | 1695 | 1154 | 776.6 | 480.9 | 355.3 | 284.4 | 207.3 | 163.6 | 136.5 | 117.7 | 103.8 | 93.04 |
| ES-25 | 2200.0 | 1838 | 1247 | 834.0 | 514.9 | 379.5 | 303.3 | 220.5 | 174.0 | 144.9 | 124.8 | 109.8 | 98.27 |
| ES-27 | 2353.0 | 1979 | 1339 | 889.2 | 547.2 | 402.3 | 321.0 | 232.7 | 183.2 | 152.3 | 131.0 | 115.2 | 103.0 |
| ES-29 | 2580.0 | 2129 | 1441 | 959.9 | 591.5 | 436.8 | 349.7 | 255.5 | 201.9 | 168.7 | 145.9 | 128.9 | 115.8 |
| ES-31 | 2720.0 | 2256 | 1530 | 1019 | 625.9 | 460.3 | 367.3 | 267.1 | 210.6 | 175.6 | 151.4 | 133.5 | 119.6 |
| ES-33 | 2855.0 | 2382 | 1618 | 1078 | 659.5 | 483.0 | 384.2 | 278.0 | 218.8 | 182.0 | 156.5 | 137.7 | 123.1 |
| ES-35 | 2993.0 | 2514 | 1709 | 1139 | 695.0 | 507.6 | 403.2 | 290.5 | 227.8 | 188.8 | 161.9 | 142.1 | 126.7 |
| ES-37 | 3121.0 | 2641 | 1797 | 1197 | 729.0 | 530.6 | 420.5 | 301.7 | 236.1 | 195.1 | 166.9 | 146.1 | 130.0 |

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