

Commercial Duty System Sizing

| Step 1 → Determine Watt-Hour/Day Energy Use | | | | | | | Step 2 → Determine System Size | | | | | |
|---|--|----------|----------|----------|----------|----------|---------------------------------|------------------|------------------|------------------|------------------|--------------------------|
| Design Ambient Deg F | Beverage Cooling Capacity (12 oz. Cans/Week) | | | | | | Sun-Hrs → Watt-Hours Per Day | 3 Rated Watts | 4 Rated Watts | 5 Rated Watts | 6 Rated Watts | 12 V Battery, Amp-Hrs |
| | 5.8 Cu.ft. | | | 8 Cu.ft. | | | | | | | | |
| | 200 Cans | 400 Cans | 600 Cans | 200 Cans | 400 Cans | 600 Cans | | | | | | |
| 70 | 175 | 264 | 350 | 202 | 306 | 405 | 100 | 63 | 48 | 38 | 32 | 75 |
| 72 | 186 | 281 | 372 | 218 | 329 | 435 | 120 | 76 | 57 | 46 | 38 | 90 |
| 74 | 200 | 302 | 399 | 235 | 355 | 470 | 140 | 89 | 67 | 53 | 44 | 105 |
| 76 | 215 | 325 | 430 | 254 | 384 | 508 | 160 | 102 | 76 | 61 | 51 | 120 |
| 78 | 233 | 351 | 465 | 275 | 416 | 551 | 180 | 114 | 86 | 69 | 57 | 135 |
| 80 | 252 | 381 | 504 | 299 | 451 | 597 | 200 | 127 | 95 | 76 | 63 | 150 |
| 82 | 273 | 413 | 547 | 324 | 489 | 648 | 220 | 140 | 105 | 84 | 70 | 165 |
| 84 | 297 | 449 | 594 | 351 | 530 | 702 | 240 | 152 | 114 | 91 | 76 | 180 |
| 86 | 322 | 487 | 645 | 380 | 574 | 760 | 260 | 165 | 124 | 99 | 83 | 195 |
| 88 | 350 | 529 | 700 | 411 | 621 | 823 | 280 | 178 | 133 | 107 | 89 | 210 |
| 90 | 379 | 573 | 759 | 444 | 671 | 889 | 300 | 190 | 143 | 114 | 95 | 225 |
| 92 | 411 | 621 | 822 | 479 | 724 | 959 | 350 | 222 | 167 | 133 | 111 | 263 |
| 94 | 444 | 671 | 889 | 516 | 780 | 1033 | 400 | 254 | 190 | 152 | 127 | 300 |
| 96 | 480 | 725 | 960 | 555 | 839 | 1111 | 450 | 286 | 214 | 171 | 143 | 338 |
| 98 | 517 | 782 | 1035 | 596 | 901 | 1193 | 500 | 317 | 238 | 190 | 159 | 375 |
| 100 | 557 | 842 | 1114 | 639 | 966 | 1278 | 550 | 349 | 262 | 210 | 175 | 413 |
| 102 | 598 | 904 | 1197 | 684 | 1034 | 1368 | 600 | 381 | 286 | 229 | 190 | 450 |
| 104 | 642 | 970 | 1284 | 731 | 1105 | 1462 | 650 | 413 | 310 | 248 | 206 | 488 |
| 106 | 687 | 1039 | 1375 | 780 | 1178 | 1560 | 700 | 444 | 333 | 267 | 222 | 525 |
| 108 | 735 | 1111 | 1470 | 831 | 1255 | 1661 | 750 | 476 | 357 | 286 | 238 | 563 |
| 110 | 785 | 1185 | 1569 | 883 | 1335 | 1767 | 800 | 508 | 381 | 305 | 254 | 600 |
| <p>The Design Ambient Temperature is the maximum average weekly temperature that the cabinet is expected to operate in. If during a warm week the daily high is 100F and the daily low is 80F, then then design ambient is 90F.</p> <p>Example: 8 cu.ft. refrigerator at 90F, 400 cans per week = 671 watt-hour/day In a 5 sun-hr/day region, you need at least a 250 Watt panel (rated) and a 500 amp-hr battery capacity (12 V).</p> | | | | | | | 850 | 540 | 405 | 324 | 270 | 638 |
| | | | | | | | 900 | 571 | 429 | 343 | 286 | 675 |
| | | | | | | | 950 | 603 | 452 | 362 | 302 | 713 |
| | | | | | | | 1000 | 635 | 476 | 381 | 317 | 750 |
| | | | | | | | 1050 | 667 | 500 | 400 | 333 | 788 |
| | | | | | | | 1100 | 698 | 524 | 419 | 349 | 825 |
| | | | | | | | 1150 | 730 | 548 | 438 | 365 | 863 |
| | | | | | | | 1200 | 762 | 571 | 457 | 381 | 900 |