

## Galaxy VS 400 V UPS for External Batteries

### Classic Battery Cabinet Runtimes for 400 V

Battery runtimes are listed in minutes at 100% load. Battery runtimes are estimated values based on battery manufacturer data for operation at 25 °C.

Please note that not all battery solutions are available for all UPS ratings due to:

- The number of battery blocks in the specific battery solution differs from the specific UPS requirements.
- The specific battery solution would provide less than 5 minutes runtime with the specific UPS.
- The battery breaker rating in the specific battery solution does not match the specific UPS rating.

Runtimes are given with Leoch battery type XP12-240 for GVSCBC7C and GVSCBC10A2. Previous versions of GVSCBC7C and GVSCBC10A2 with battery type XP12V1800 do not match the given runtimes.

Runtimes are given with Leoch battery type XP12-350 for GVSCBC10B2. Previous versions of GVSCBC10B2 with battery type XP12V3000 do not match the given runtimes.

| UPS rating     | 20 kW |      |      | 30 kW |      |      | 40 kW |      |      |
|----------------|-------|------|------|-------|------|------|-------|------|------|
|                | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    |
| GVSCBC7D       | 40.5  | 35   | 31   | 24.5  | 21   | 18.5 | 16.5  | 14.5 | 12.5 |
| GVSCBC7E       | 48    | 41.5 | 36.5 | 29    | 25   | 22   | 20    | 17.5 | 15   |
| GVSCBC7C       | 60.5  | 52.5 | 46.5 | 37    | 32   | 28.5 | 26    | 22.5 | 19.5 |
| GVSCBC10A2     | 84.5  | 73.5 | 65.5 | 52.5  | 45.5 | 40.5 | 37    | 32   | 28   |
| GVSCBC10B2     | 130   | 110  | 100  | 81    | 70.5 | 62   | 57.5  | 49.5 | 43.5 |
| 2 x GVSCBC7D   | 92    | 80.5 | 71.5 | 57.5  | 50   | 44   | 40.5  | 35   | 31   |
| 2 x GVSCBC7E   | 105   | 95   | 84   | 68    | 59   | 52   | 48    | 41.5 | 36.5 |
| 2 x GVSCBC7C   | 135   | 115  | 105  | 85    | 74   | 65.5 | 60.5  | 52.5 | 46.5 |
| 2 x GVSCBC10A2 | 185   | 160  | 145  | 115   | 100  | 91.5 | 85    | 74   | 65.5 |
| 2 x GVSCBC10B2 | 285   | 250  | 220  | 180   | 155  | 140  | 130   | 110  | 100  |

| UPS rating     | 50 kW |      |      | 60 kW |      |      | 80 kW |      |      | 100 kW |      |      |
|----------------|-------|------|------|-------|------|------|-------|------|------|--------|------|------|
| Power factor   | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    | 0.8    | 0.9  | 1    |
| GVSCBC7D       | 12.5  | 10.5 | 9    | 9.6   | NA   | NA   | NA    | NA   | NA   | NA     | NA   | NA   |
| GVSCBC7E       | 15    | 12.5 | 11   | 11.5  | 9.9  | 8.4  | 7.6   | 6.3  | 5.2  | 5.2    | NA   | NA   |
| GVSCBC7C       | NA    | NA   | NA   | 15.5  | 13   | 11.5 | 10.5  | 8.9  | 7.6  | NA     | NA   | NA   |
| GVSCBC10A2     | 28    | 24.5 | 21.5 | 22.5  | 19.5 | 17   | 15.5  | 13   | 11.5 | 11.5   | 9.8  | 8.3  |
| GVSCBC10B2     | 43.5  | 37.5 | 33   | 34.5  | 30   | 26   | 24    | 20.5 | 17.5 | 17.5   | 14.5 | 12.5 |
| 2 x GVSCBC7D   | 31    | 26.5 | 23   | 24.5  | 21   | 18.5 | 16.5  | 14   | 12.5 | 12.5   | 10.5 | 8.9  |
| 2 x GVSCBC7E   | 36.5  | 31.5 | 27.5 | 29    | 25   | 22   | 20    | 17   | 15   | 15     | 12.5 | 11   |
| 2 x GVSCBC7C   | NA    | NA   | NA   | 37    | 32   | 28.5 | 26    | 22.5 | 19.5 | NA     | NA   | NA   |
| 2 x GVSCBC10A2 | 65.5  | 56.5 | 50   | 52.5  | 45.5 | 40.5 | 37    | 32   | 28   | 28     | 24.5 | 21   |
| 2 x GVSCBC10B2 | 100   | 87.5 | 77   | 81    | 70.5 | 62   | 57.5  | 49.5 | 43.5 | 43.5   | 37.5 | 32.5 |

| UPS rating     | 120 kW |      |     | 150 kW |      |      |
|----------------|--------|------|-----|--------|------|------|
| Power factor   | 0.8    | 0.9  | 1   | 0.8    | 0.9  | 1    |
| GVSCBC10A2     | 8.9    | 7.4  | 6.3 | 6.3    | 5.2  | NA   |
| GVSCBC10B2     | 13.5   | 11   | 9.6 | 9.6    | 7.9  | 6.5  |
| 2 x GVSCBC7D   | 9.6    | 8    | 6.8 | 6.8    | 5.5  | NA   |
| 2 x GVSCBC7E   | 11.5   | 9.9  | 8.4 | 8.4    | 7    | 5.9  |
| 2 x GVSCBC10A2 | 22.5   | 19   | 17  | 17     | 14.5 | 12.5 |
| 2 x GVSCBC10B2 | 34.5   | 29.5 | 26  | 26     | 22   | 19   |

# Modular Battery Cabinet Runtimes for 400 V

Battery runtimes are listed in minutes at 100% load. Battery runtimes are estimated values based on battery manufacturer data for operation at 25 °C.

The runtimes listed here are for the Galaxy VS 9 Ah smart high capacity battery modules (GVSBTHU) used in the modular battery cabinet (GVSMODBC6 or GVSMODBC9). The GVSMODBC6 can contain up to six modular battery strings and the GVSMODBC9 can contain up to nine modular battery strings. A maximum of four modular battery cabinets can be connected to the UPS.

Due to the battery breaker capabilities in the modular battery cabinet the following applies:

- For a UPS rated 20-50 kW a minimum of one GVSMODBC6 or one GVSMODBC9 must be installed.
- For a UPS rated 60-100 kW a minimum of **two GVSMODBC6** or **one GVSMODBC9** must be installed.
- For a UPS rated 120-150 kW a minimum of **three GVSMODBC6** or **two GVSMODBC9** must be installed.

The modular battery strings must be distributed evenly among the modular battery cabinets in the UPS system.

**NOTE:** Runtimes for UPS models with N+1 power module are similar to or a little lower than the runtimes for the standard UPS models with the same power rating.

| UPS rating                        | 20 kW |      |      | 30 kW |      |      | 40 kW |      |      |
|-----------------------------------|-------|------|------|-------|------|------|-------|------|------|
| Power factor                      | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    |
| Number of modular battery strings |       |      |      |       |      |      |       |      |      |
| 1                                 | 5.5   | NA   | NA   | NA    | NA   | NA   | NA    | NA   | NA   |
| 2                                 | 14.5  | 12.5 | 11   | 8.5   | 7.2  | 6.1  | 5.6   | NA   | NA   |
| 3                                 | 24.5  | 21.5 | 18.5 | 14.5  | 12.5 | 11   | 10    | 8.5  | 7.3  |
| 4                                 | 35.5  | 31   | 27   | 21.5  | 18.5 | 16   | 14.5  | 12.5 | 11   |
| 5                                 | 47    | 41   | 35.5 | 28.5  | 24.5 | 21.5 | 19.5  | 17   | 14.5 |
| 6                                 | 58.5  | 51   | 45   | 36    | 31   | 27   | 25    | 21.5 | 18.5 |
| 7                                 | 71    | 61.5 | 54   | 43.5  | 37.5 | 32.5 | 30.5  | 26   | 23   |
| 8                                 | 83    | 72.5 | 63.5 | 51    | 44   | 38.5 | 36    | 31   | 27   |
| 9                                 | 96    | 83.5 | 73.5 | 59    | 51   | 45   | 41.5  | 35.5 | 31.5 |
| 10                                | 105   | 95   | 83.5 | 67    | 58   | 51   | 47    | 41   | 36   |
| 11                                | 120   | 105  | 94   | 75.5  | 65.5 | 57.5 | 53    | 46   | 40.5 |
| 12                                | 135   | 115  | 100  | 84    | 72.5 | 63.5 | 59    | 51   | 45   |
| 13                                | 145   | 130  | 115  | 92.5  | 80   | 70.5 | 65    | 56.5 | 49.5 |
| 14                                | 160   | 140  | 125  | 100   | 87.5 | 77   | 71.5  | 61.5 | 54.5 |
| 15                                | 175   | 155  | 135  | 110   | 95.5 | 83.5 | 77.5  | 67   | 59   |
| 16                                | 190   | 165  | 145  | 115   | 100  | 90.5 | 84    | 72.5 | 64   |
| 17                                | 205   | 180  | 155  | 125   | 110  | 97.5 | 90    | 78   | 69   |
| 18                                | 220   | 190  | 165  | 135   | 115  | 100  | 96.5  | 83.5 | 74   |
| 19                                | 235   | 205  | 180  | 145   | 125  | 110  | 100   | 89.5 | 79   |
| 20                                | 250   | 215  | 190  | 155   | 135  | 115  | 110   | 95   | 84   |
| 21                                | 265   | 230  | 200  | 160   | 140  | 125  | 115   | 100  | 89   |
| 22                                | 280   | 245  | 215  | 170   | 150  | 130  | 120   | 105  | 94   |
| 23                                | 295   | 255  | 225  | 180   | 155  | 140  | 130   | 110  | 99.5 |
| 24                                | 310   | 270  | 235  | 190   | 165  | 145  | 135   | 115  | 100  |

| UPS rating                        | 20 kW |     |     | 30 kW |     |     | 40 kW |     |     |
|-----------------------------------|-------|-----|-----|-------|-----|-----|-------|-----|-----|
| Power factor                      | 0.8   | 0.9 | 1   | 0.8   | 0.9 | 1   | 0.8   | 0.9 | 1   |
| Number of modular battery strings |       |     |     |       |     |     |       |     |     |
| 25                                | 325   | 285 | 250 | 200   | 175 | 150 | 140   | 120 | 110 |
| 26                                | 340   | 295 | 260 | 210   | 180 | 160 | 150   | 130 | 115 |
| 27                                | 355   | 310 | 275 | 220   | 190 | 165 | 155   | 135 | 120 |
| 28                                | 370   | 325 | 285 | 230   | 200 | 175 | 160   | 140 | 125 |
| 29                                | 385   | 340 | 300 | 240   | 210 | 185 | 170   | 145 | 130 |
| 30                                | 405   | 350 | 310 | 250   | 215 | 190 | 175   | 155 | 135 |
| 31                                | 420   | 365 | 325 | 260   | 225 | 200 | 185   | 160 | 140 |
| 32                                | 435   | 380 | 335 | 270   | 235 | 205 | 190   | 165 | 145 |
| 33                                | 450   | 395 | 350 | 280   | 245 | 215 | 200   | 170 | 150 |
| 34                                | 470   | 410 | 360 | 290   | 250 | 220 | 205   | 180 | 155 |
| 35                                | 485   | 425 | 375 | 300   | 260 | 230 | 215   | 185 | 160 |
| 36                                | 500   | 440 | 385 | 310   | 270 | 235 | 220   | 190 | 170 |

| UPS rating                        | 50 kW |      |      | 60 kW |      |      | 80 kW |      |      |
|-----------------------------------|-------|------|------|-------|------|------|-------|------|------|
| Power factor                      | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    |
| Number of modular battery strings |       |      |      |       |      |      |       |      |      |
| 1                                 | NA    | NA   | NA   | NA    | NA   | NA   | NA    | NA   | NA   |
| 2                                 | NA    | NA   | NA   | NA    | NA   | NA   | NA    | NA   | NA   |
| 3                                 | 7.3   | 6.2  | 5.2  | 5.6   | NA   | NA   | NA    | NA   | NA   |
| 4                                 | 11    | 9.4  | 8    | 8.5   | 7.2  | 6.1  | 5.6   | NA   | NA   |
| 5                                 | 14.5  | 12.5 | 11   | 11.5  | 9.9  | 8.5  | 7.8   | 6.5  | 5.6  |
| 6                                 | 18.5  | 16   | 14   | 14.5  | 12.5 | 11   | 10    | 8.5  | 7.3  |
| 7                                 | 23    | 19.5 | 17   | 18    | 15.5 | 13.5 | 12    | 10.5 | 9.2  |
| 8                                 | 27    | 23.5 | 20   | 21.5  | 18.5 | 16   | 14.5  | 12.5 | 11   |
| 9                                 | 31.5  | 27   | 23.5 | 25    | 21.5 | 18.5 | 17    | 14.5 | 12.5 |
| 10                                | 36    | 31   | 27   | 28.5  | 24.5 | 21.5 | 19.5  | 17   | 14.5 |
| 11                                | 40.5  | 35   | 30.5 | 32    | 27.5 | 24   | 22.5  | 19   | 16.5 |
| 12                                | 45    | 39   | 34   | 36    | 31   | 27   | 25    | 21.5 | 18.5 |
| 13                                | 49.5  | 43   | 37.5 | 39.5  | 34   | 30   | 27.5  | 23.5 | 20.5 |
| 14                                | 54.5  | 47   | 41   | 43.5  | 37.5 | 33   | 30.5  | 26   | 23   |
| 15                                | 59    | 51   | 45   | 47    | 41   | 36   | 33    | 28.5 | 25   |
| 16                                | 64    | 55.5 | 48.5 | 51    | 44   | 39   | 36    | 31   | 27   |
| 17                                | 69    | 59.5 | 52   | 55    | 47.5 | 42   | 38.5  | 33.5 | 29   |
| 18                                | 74    | 64   | 56   | 59    | 51   | 45   | 41.5  | 36   | 31.5 |
| 19                                | 79    | 68   | 60   | 63    | 54.5 | 48   | 44.5  | 38.5 | 33.5 |
| 20                                | 84    | 72.5 | 63.5 | 67    | 58   | 51   | 47    | 41   | 36   |
| 21                                | 89    | 77   | 67.5 | 71.5  | 62   | 54   | 50    | 43.5 | 38   |
| 22                                | 94    | 81.5 | 71.5 | 75.5  | 65.5 | 57.5 | 53    | 46   | 40.5 |
| 23                                | 99.5  | 86   | 75.5 | 79.5  | 69   | 60.5 | 56    | 48.5 | 42.5 |
| 24                                | 100   | 90.5 | 79.5 | 84    | 72.5 | 64   | 59    | 51   | 45   |
| 25                                | 110   | 95   | 83.5 | 88    | 76.5 | 67   | 62    | 54   | 47   |
| 26                                | 115   | 100  | 87.5 | 92.5  | 80   | 70.5 | 65    | 56.5 | 49.5 |
| 27                                | 120   | 100  | 92   | 96.5  | 84   | 74   | 68    | 59   | 52   |

| UPS rating                        | 50 kW |     |     | 60 kW |      |      | 80 kW |      |      |
|-----------------------------------|-------|-----|-----|-------|------|------|-------|------|------|
| Power factor                      | 0.8   | 0.9 | 1   | 0.8   | 0.9  | 1    | 0.8   | 0.9  | 1    |
| Number of modular battery strings |       |     |     |       |      |      |       |      |      |
| 28                                | 125   | 105 | 96  | 100   | 87.5 | 77   | 71.5  | 62   | 54.5 |
| 29                                | 130   | 110 | 100 | 105   | 91.5 | 80.5 | 74.5  | 64.5 | 56.5 |
| 30                                | 135   | 115 | 100 | 110   | 95.5 | 84   | 77.5  | 67   | 59   |
| 31                                | 140   | 120 | 105 | 110   | 99   | 87.5 | 80.5  | 70   | 61.5 |
| 32                                | 145   | 125 | 110 | 115   | 100  | 90.5 | 84    | 72.5 | 64   |
| 33                                | 150   | 130 | 115 | 120   | 105  | 94   | 87    | 75.5 | 66.5 |
| 34                                | 155   | 135 | 120 | 125   | 110  | 97.5 | 90    | 78   | 69   |
| 35                                | 160   | 140 | 125 | 130   | 115  | 100  | 93.5  | 81   | 71.5 |
| 36                                | 170   | 145 | 130 | 135   | 115  | 100  | 96.5  | 84   | 74   |

| UPS rating                        | 100 kW |      |      | 120 kW |      |      | 150 kW |      |      |
|-----------------------------------|--------|------|------|--------|------|------|--------|------|------|
| Power factor                      | 0.8    | 0.9  | 1    | 0.8    | 0.9  | 1    | 0.8    | 0.9  | 1    |
| Number of modular battery strings |        |      |      |        |      |      |        |      |      |
| 1                                 | NA     | NA   | NA   | NA     | NA   | NA   | NA     | NA   | NA   |
| 2                                 | NA     | NA   | NA   | NA     | NA   | NA   | NA     | NA   | NA   |
| 3                                 | NA     | NA   | NA   | NA     | NA   | NA   | NA     | NA   | NA   |
| 4                                 | NA     | NA   | NA   | NA     | NA   | NA   | NA     | NA   | NA   |
| 5                                 | 5.6    | NA   | NA   | NA     | NA   | NA   | NA     | NA   | NA   |
| 6                                 | 7.3    | 6.2  | 5.2  | 5.6    | NA   | NA   | NA     | NA   | NA   |
| 7                                 | 9.2    | 7.7  | 6.6  | 7      | 5.9  | 5    | 5      | NA   | NA   |
| 8                                 | 11     | 9.4  | 8    | 8.5    | 7.2  | 6.1  | 6.1    | 5.1  | NA   |
| 9                                 | 12.5   | 11   | 9.5  | 10     | 8.5  | 7.3  | 7.3    | 6.2  | 5.2  |
| 10                                | 14.5   | 12.5 | 11   | 11.5   | 9.9  | 8.5  | 8.5    | 7.2  | 6.1  |
| 11                                | 16.5   | 14   | 12.5 | 13     | 11   | 9.7  | 9.7    | 8.3  | 7.1  |
| 12                                | 18.5   | 16   | 14   | 14.5   | 12.5 | 11   | 11     | 9.4  | 8    |
| 13                                | 20.5   | 18   | 15.5 | 16.5   | 14   | 12   | 12     | 10.5 | 9    |
| 14                                | 23     | 19.5 | 17   | 18     | 15.5 | 13.5 | 13.5   | 11.5 | 10   |
| 15                                | 25     | 21.5 | 18.5 | 19.5   | 17   | 14.5 | 14.5   | 12.5 | 11   |
| 16                                | 27     | 23.5 | 20   | 21.5   | 18.5 | 16   | 16     | 13.5 | 12   |
| 17                                | 29     | 25   | 22   | 23     | 20   | 17   | 17     | 15   | 13   |
| 18                                | 31.5   | 27   | 23.5 | 25     | 21.5 | 18.5 | 18.5   | 16   | 14   |
| 19                                | 33.5   | 29   | 25.5 | 26.5   | 23   | 20   | 20     | 17   | 15   |
| 20                                | 36     | 31   | 27   | 28.5   | 24.5 | 21.5 | 21.5   | 18.5 | 16   |
| 21                                | 38     | 33   | 28.5 | 30.5   | 26   | 22.5 | 22.5   | 19.5 | 17   |
| 22                                | 40.5   | 35   | 30.5 | 32     | 27.5 | 24   | 24     | 21   | 18   |
| 23                                | 42.5   | 37   | 32   | 34     | 29.5 | 25.5 | 25.5   | 22   | 19   |
| 24                                | 45     | 39   | 34   | 36     | 31   | 27   | 27     | 23.5 | 20   |
| 25                                | 47     | 41   | 35.5 | 37.5   | 32.5 | 28.5 | 28.5   | 24.5 | 21.5 |
| 26                                | 49.5   | 43   | 37.5 | 39.5   | 34   | 30   | 30     | 26   | 22.5 |
| 27                                | 52     | 45   | 39.5 | 41.5   | 36   | 31   | 31     | 27   | 23.5 |
| 28                                | 54.5   | 47   | 41   | 43.5   | 37.5 | 32.5 | 32.5   | 28.5 | 24.5 |
| 29                                | 56.5   | 49   | 43   | 45.5   | 39   | 34   | 34     | 29.5 | 26   |
| 30                                | 59     | 51   | 45   | 47     | 41   | 35.5 | 35.5   | 31   | 27   |

| UPS rating                        | 100 kW |      |      | 120 kW |      |      | 150 kW |      |      |
|-----------------------------------|--------|------|------|--------|------|------|--------|------|------|
| Power factor                      | 0.8    | 0.9  | 1    | 0.8    | 0.9  | 1    | 0.8    | 0.9  | 1    |
| Number of modular battery strings |        |      |      |        |      |      |        |      |      |
| 31                                | 61.5   | 53   | 46.5 | 49     | 42.5 | 37   | 37     | 32   | 28   |
| 32                                | 64     | 55.5 | 48.5 | 51     | 44   | 38.5 | 38.5   | 33.5 | 29   |
| 33                                | 66.5   | 57.5 | 50.5 | 53     | 46   | 40   | 40     | 35   | 30.5 |
| 34                                | 69     | 59.5 | 52   | 55     | 47.5 | 41.5 | 41.5   | 36   | 31.5 |
| 35                                | 71.5   | 61.5 | 54   | 57     | 49.5 | 43   | 43     | 37.5 | 32.5 |
| 36                                | 74     | 64   | 56   | 59     | 51   | 44.5 | 44.5   | 39   | 34   |