



| SOLAR RANGE Technology | 12V 100Ah Solar EFB | 12V 135Ah Solar EFB | 12V 165Ah Solar EFB | 12V 225 Ah Solar EFB | 12V 200 Ah Solar GEL | 12V 230 Ah Solar GEL |          |
|------------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------|
| <b>Capacity</b>        |                     |                     |                     |                      |                      |                      |          |
| <b>Vfinal=10,5V</b>    | K <sub>20</sub>     | 100,0 Ah            | 135,0 Ah            | 165,0 Ah             | 225,0 Ah             | 200,0 Ah             | 230,0 Ah |
|                        | K <sub>10</sub>     | 91,6 Ah             | 123,7 Ah            | 151,1 Ah             | 206,1 Ah             | 181,2 Ah             | 207,2 Ah |
|                        | K <sub>5</sub>      | 81,6 Ah             | 110,3 Ah            | 134,7 Ah             | 183,7 Ah             | 164,5 Ah             | 188,1 Ah |

### DIMENSIONS & WEIGHTS

| Technology     | Battery Type | Length (L) mm | Width (W) mm | Container Height (H) mm | Total Height (TH) mm | Battery Weight kg | IR, mΩ (Fully Charged) |
|----------------|--------------|---------------|--------------|-------------------------|----------------------|-------------------|------------------------|
| <b>Flooded</b> | 12V 100Ah    | 323           | 176          | 207                     | 228                  | 25,0              | 3,50                   |
|                | 12V 135Ah    | 513           | 186          | 195                     | 223                  | 35,5              | 3,25                   |
|                | 12V 165Ah    | 513           | 223          | 195                     | 223                  | 42,5              | 2,90                   |
|                | 12V 225Ah    | 518           | 273          | 216                     | 242                  | 56,5              | 2,55                   |
| <b>Gel</b>     | 12V 200Ah    | 518           | 273          | 216                     | 238                  | 67,0              | 2,65                   |
|                | 12V 230Ah    | 518           | 273          | 216                     | 242                  | 75,0              | 2,10                   |

### CHARGING INSTRUCTIONS (@25°C) for EFB SOLAR BATTERIES

|                               |  |
|-------------------------------|--|
| Maximum Charge Currents       | %15 C <sub>20</sub>  |
| Charge Voltage                | 15,30 - 15,50 V  |
| Float Charge Voltage          | 13,62 V  |
| Charging Voltage Compensation | +0,005V/cell for 1°C below 25°C<br>-0,005V/cell for 1°C above 25°C |

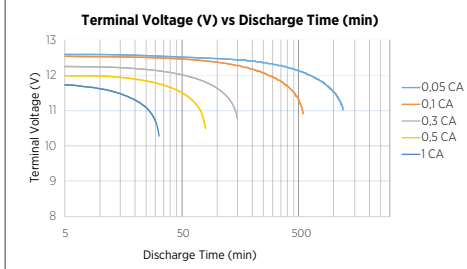
### CHARGING INSTRUCTIONS (@25°C) for GEL SOLAR BATTERIES

|                               |  |
|-------------------------------|--|
| Maximum Charge Currents       | %15 C <sub>20</sub>  |
| Charge Voltage                | 14,30 - 14,40 V  |
| Float Charge Voltage          | 13,62  |
| Charging Voltage Compensation | +0,004V/cell for 1°C below 25°C<br>-0,004V/cell for 1°C above 25°C |

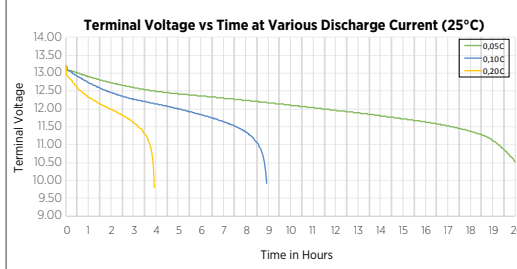
## DISCHARGE CHARACTERISTICS

| Constant Current            |        |        |        |        |       |       |       |       |
|-----------------------------|--------|--------|--------|--------|-------|-------|-------|-------|
|                             | V/Cell | 15 Min | 30 Min | 1Hr    | 3Hr   | 5Hr   | 10Hr  | 20Hr  |
| 12V 100Ah EFB Solar Battery | 1,80V  | 134,16 | 86,99  | 54,41  | 24,24 | 16,10 | 9,05  | 4,98  |
|                             | 1,75V  | 141,06 | 90,73  | 56,13  | 24,72 | 16,34 | 9,16  | 5,00  |
|                             | 1,70V  | 146,20 | 92,95  | 57,10  | 24,97 | 16,56 | 9,27  | 5,02  |
|                             | 1,65V  | 149,25 | 94,40  | 57,71  | 25,16 | 16,68 | 9,32  | 5,04  |
|                             | 1,60V  | 150,70 | 95,15  | 58,15  | 25,29 | 16,75 | 9,35  | 5,05  |
| 12V 135Ah EFB Solar Battery | 1,80V  | 181,11 | 117,43 | 73,46  | 32,72 | 21,74 | 12,22 | 6,72  |
|                             | 1,75V  | 190,96 | 122,48 | 75,78  | 33,38 | 22,06 | 12,37 | 6,75  |
|                             | 1,70V  | 197,37 | 125,48 | 77,09  | 33,71 | 22,36 | 12,51 | 6,78  |
|                             | 1,65V  | 201,49 | 127,44 | 77,91  | 33,97 | 22,52 | 12,58 | 6,80  |
| 12V 165Ah EFB Solar Battery | 1,80V  | 221,36 | 143,53 | 89,78  | 39,99 | 26,57 | 14,93 | 8,22  |
|                             | 1,75V  | 233,39 | 149,70 | 92,61  | 40,79 | 26,94 | 15,11 | 8,25  |
|                             | 1,70V  | 241,23 | 153,37 | 94,22  | 41,20 | 27,32 | 15,30 | 8,28  |
|                             | 1,65V  | 246,26 | 155,76 | 95,22  | 41,51 | 27,52 | 15,38 | 8,32  |
| 12V 225Ah EFB Solar Battery | 1,80V  | 301,86 | 195,72 | 122,43 | 54,53 | 36,23 | 20,37 | 11,21 |
|                             | 1,75V  | 318,26 | 204,14 | 126,29 | 55,63 | 36,74 | 20,61 | 11,25 |
|                             | 1,70V  | 328,95 | 209,14 | 128,48 | 56,18 | 37,26 | 20,86 | 11,30 |
|                             | 1,65V  | 335,81 | 212,40 | 129,85 | 56,61 | 37,53 | 20,97 | 11,34 |
| 12V 200Ah Gel Solar Battery | 1,80V  | 281,3  | 180,4  | 112,0  | 49,45 | 32,45 | 17,91 | 9,95  |
|                             | 1,75V  | 293,5  | 186,5  | 114,7  | 50,25 | 32,89 | 18,12 | 10,00 |
|                             | 1,70V  | 299,6  | 189,2  | 115,9  | 50,56 | 33,11 | 18,19 | 10,03 |
|                             | 1,65V  | 302,5  | 190,7  | 116,7  | 50,78 | 33,21 | 18,23 | 10,04 |
| 12V 230Ah Gel Solar Battery | 1,80V  | 314,3  | 201,9  | 126,6  | 56,26 | 37,01 | 20,47 | 11,46 |
|                             | 1,75V  | 328,4  | 210,4  | 130,4  | 57,44 | 37,61 | 20,72 | 11,50 |
|                             | 1,70V  | 339,1  | 215,4  | 132,5  | 58,05 | 38,00 | 20,93 | 11,54 |
|                             | 1,65V  | 346,1  | 218,5  | 133,9  | 58,40 | 38,25 | 21,01 | 11,58 |
|                             | 1,60V  | 349,4  | 220,2  | 134,8  | 58,65 | 38,36 | 21,06 | 11,60 |

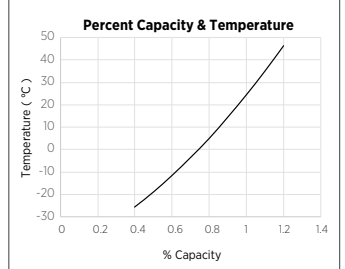
### TERMINAL VOLTAGE VS DISCHARGE TIME FOR SOLAR GEL BATTERIES



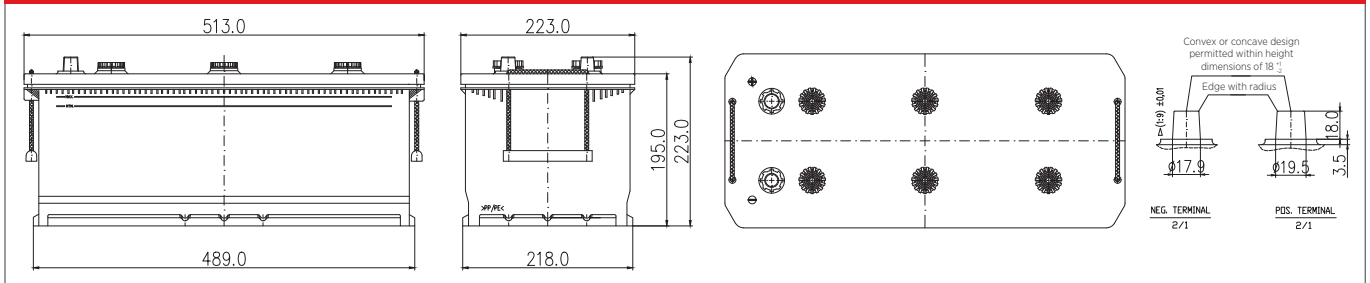
### TERMINAL VOLTAGE VS DISCHARGE TIME FOR EFB BATTERIES



### TEMPERATURE AND PERCENT CAPACITY RELATION



## DIMENSIONS



### TERMINAL TYPES



### RECOMMENDATIONS

For EFB Solar Batteries, electrolyte level should be checked periodically in every 3 - 6 months and distilled water should be added if necessary.

Temperature compensation should be applied during charging according to the instructions.