



## VTX 1 L 235 - Cell data sheet

### Classification

|                          |             |
|--------------------------|-------------|
| Brand                    | Alcad       |
| Cell type                | VTX 1 L 235 |
| Cell P/N                 | 310557884   |
| Capacity at 5 hours rate | 235 Ah      |
| IEC Designation          | KGL235P     |
| According to IEC 62259   |             |



Wiring principle

Normal

### Physical data

|                        |        |                        |        |
|------------------------|--------|------------------------|--------|
| Overall height         | 421 mm |                        |        |
| Cell height            |        |                        |        |
| Width                  | 195 mm | Weight per cell        | 9,9 Kg |
| Block length - 4 cells | 304 mm | Block length - 5 cells | 377 mm |
| Block length - 6 cells | 450 mm |                        |        |

### Construction

|                    |                 |                           |                                           |
|--------------------|-----------------|---------------------------|-------------------------------------------|
| Container material | Polypropylene   | No. of terminals/polarity | 1                                         |
| Separator type     | Felt            | Terminal material         | Steel                                     |
| Connection torque  | 30,0 +/- 3,0 Nm | Vent type                 | Low pressure flame arresting vent (large) |
| Terminal size      | M10 SW 16 mm    | Handle                    | Yes                                       |

### Plates

| Positive       |                         | Negative       |                         |
|----------------|-------------------------|----------------|-------------------------|
| Type of plates | Maintenance Free Pocket | Type of plates | Maintenance Free Pocket |

### Electrolyte

|                              |            |                   |       |
|------------------------------|------------|-------------------|-------|
| Electrolyte type: Renewal    | E13        | Max/Min           | 50 mm |
| Electrolyte type: Initial    | E22        | Vent oil quantity |       |
| Electrolyte per cell: Liquid | 2,3 liters |                   |       |

### Connection

|                                          |                    |                              |                    |
|------------------------------------------|--------------------|------------------------------|--------------------|
| Cable area of internal connection cables | 70 mm <sup>2</sup> | End-lug (and external cable) | 50 mm <sup>2</sup> |
|------------------------------------------|--------------------|------------------------------|--------------------|

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### Charging

|                      |             |                         |             |
|----------------------|-------------|-------------------------|-------------|
| Float voltage        | 1,42 V/Cell | High rate voltage (min) | 1,45 V/Cell |
| Single-level voltage | 1,42 V/Cell |                         |             |

### Resistance/Short circuit

|                     |           |                       |        |
|---------------------|-----------|-----------------------|--------|
| Internal resistance | 1,03 mOhm | Short circuit current | 1316 A |
|---------------------|-----------|-----------------------|--------|

### Performance data

#### Current discharge

After prolonged float charge of fully charged cells. Available amperes at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m  | 10m | 5m  | 1m  | 30s | 5s  | 1s  |
|--------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| 1      | 24,4 | 30,3 | 47,0 | 75,7 | 98,5 | 113  | 133  | 161  | 176  | 186  | 196 | 216 | 216 | 237 | 279 | 306 |
| 1,05   | 24,2 | 29,8 | 46,4 | 68,5 | 85,8 | 97,1 | 111  | 132  | 144  | 148  | 156 | 172 | 182 | 197 | 234 | 255 |
| 1,1    | 23,5 | 28,9 | 43,1 | 59,3 | 71,7 | 78,8 | 88,7 | 106  | 114  | 119  | 125 | 135 | 149 | 162 | 193 | 208 |
| 1,14   | 22,3 | 26,6 | 36,7 | 46,2 | 55,2 | 61,1 | 68,4 | 79,9 | 86,7 | 92,8 | 100 | 113 | 117 | 130 | 154 | 164 |

#### Power discharge

Available power (W), after prolonged float charged of fully charged cells at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m | 10m | 5m  | 1m  | 30s | 5s  | 1s  |
|--------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| 1      | 28,3 | 34,6 | 52,6 | 81,0 | 103  | 117  | 135  | 163  | 177  | 187 | 196 | 216 | 216 | 237 | 279 | 306 |
| 1,05   | 28,1 | 34,4 | 52,8 | 75,5 | 92,9 | 104  | 118  | 140  | 152  | 156 | 164 | 180 | 191 | 207 | 245 | 268 |
| 1,1    | 27,5 | 33,6 | 49,7 | 67,1 | 80,3 | 87,9 | 98,5 | 117  | 126  | 131 | 138 | 149 | 164 | 179 | 212 | 229 |
| 1,14   | 26,2 | 31,1 | 42,8 | 53,5 | 63,6 | 70,2 | 78,3 | 91,3 | 99,0 | 106 | 114 | 129 | 134 | 148 | 176 | 187 |



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### Kt Factor

#### Current discharge

After prolonged float charge of fully charged cells. Kt factor at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m  | 10m  | 5m   | 1m   | 30s  | 5s   | 1s   |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1      | 9,6  | 7,76 | 5,00 | 3,11 | 2,39 | 2,08 | 1,77 | 1,46 | 1,34 | 1,26 | 1,20 | 1,09 | 1,09 | 0,99 | 0,84 | 0,77 |
| 1,05   | 9,7  | 7,89 | 5,06 | 3,43 | 2,74 | 2,42 | 2,12 | 1,78 | 1,64 | 1,59 | 1,50 | 1,37 | 1,29 | 1,19 | 1,01 | 0,92 |
| 1,1    | 10,0 | 8,12 | 5,45 | 3,97 | 3,28 | 2,98 | 2,65 | 2,22 | 2,06 | 1,97 | 1,87 | 1,74 | 1,58 | 1,45 | 1,22 | 1,13 |
| 1,14   | 10,5 | 8,84 | 6,41 | 5,08 | 4,26 | 3,85 | 3,44 | 2,94 | 2,71 | 2,53 | 2,35 | 2,08 | 2,01 | 1,81 | 1,52 | 1,43 |

#### Power discharge

Kt factor power, after prolonged float charged of fully charged cells at +20°C +/- 5°C (+68°F +/- 9°F)

| V/Cell | 10h  | 8h   | 5h   | 3h   | 2h   | 1,5h | 1h   | 30m  | 20m  | 15m  | 10m  | 5m   | 1m   | 30s  | 5s   | 1s   |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1      | 8,30 | 6,79 | 4,47 | 2,90 | 2,28 | 2,01 | 1,73 | 1,44 | 1,33 | 1,26 | 1,20 | 1,09 | 1,09 | 0,99 | 0,84 | 0,77 |
| 1,05   | 8,35 | 6,84 | 4,45 | 3,11 | 2,53 | 2,25 | 1,99 | 1,68 | 1,55 | 1,51 | 1,43 | 1,30 | 1,23 | 1,14 | 0,96 | 0,88 |
| 1,1    | 8,55 | 6,98 | 4,72 | 3,50 | 2,93 | 2,67 | 2,39 | 2,01 | 1,87 | 1,79 | 1,70 | 1,58 | 1,44 | 1,32 | 1,11 | 1,03 |
| 1,14   | 8,97 | 7,55 | 5,49 | 4,40 | 3,70 | 3,35 | 3,00 | 2,57 | 2,37 | 2,22 | 2,06 | 1,83 | 1,76 | 1,59 | 1,34 | 1,26 |