



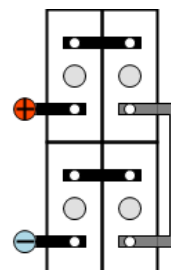
## LCE235P - Cell data sheet

### Classification

|                          |           |
|--------------------------|-----------|
| Brand                    | Alcad     |
| Cell type                | LCE235P   |
| Cell P/N                 | 310550151 |
| Capacity at 5 hours rate | 235 Ah    |
| IEC Designation          | KL235P    |
| According to             | IEC 60623 |



Wiring principle Normal



### Physical data

|                |        |                 |         |
|----------------|--------|-----------------|---------|
| Overall height | 413 mm |                 |         |
| Cell height    | 405 mm |                 |         |
| Width          | 192 mm | Weight per cell | 11,6 Kg |
| Length         | 93 mm  |                 |         |

### Construction

|                    |                 |                           |       |
|--------------------|-----------------|---------------------------|-------|
| Container material | Polypropylene   | No. of terminals/polarity | 1     |
| Separator type     | Grid            | Terminal material         | Steel |
| Connection torque  | 30,0 +/- 3,0 Nm | Vent type                 |       |
| Terminal size      | M10 SW 16 mm    |                           |       |
|                    |                 | Handle                    | No    |

### Plates

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

### Electrolyte

|                              |            |                   |       |
|------------------------------|------------|-------------------|-------|
| Electrolyte type: Renewal    | E13        | Max/Min           | 50 mm |
| Electrolyte type: Initial    | E22        | Vent oil quantity |       |
| Electrolyte per cell: Liquid | 3,7 liters |                   |       |

### Connection

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



## LCE235P - Cell data sheet

### Charging

|                      |             |                         |             |
|----------------------|-------------|-------------------------|-------------|
| Float voltage        | 1,42 V/Cell | High rate voltage (min) | 1,47 V/Cell |
| Single-level voltage | 1,43 V/Cell |                         |             |

### Resistance/Short circuit

|                     |           |                       |        |
|---------------------|-----------|-----------------------|--------|
| Internal resistance | 0,70 mOhm | Short circuit current | 1955 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      | 24,2 | 29,9 | 47,0 | 75,2 | 100  | 121  | 155  | 200  | 224  | 240 | 258 | 296 | 329 | 352 | 423 | 455 |
| 1,05   | 24,0 | 29,8 | 46,5 | 72,8 | 90,9 | 104  | 129  | 169  | 187  | 194 | 215 | 245 | 265 | 289 | 347 | 377 |
| 1,1    | 23,5 | 28,8 | 44,2 | 61,3 | 77,0 | 88,7 | 105  | 131  | 142  | 156 | 171 | 180 | 216 | 235 | 286 | 314 |
| 1,14   | 23,0 | 27,1 | 38,9 | 53,1 | 63,7 | 70,6 | 81,4 | 104  | 111  | 116 | 130 | 151 | 176 | 192 | 239 | 265 |
| 1,16   | 21,6 | 24,7 | 33,7 | 45,6 | 54,4 | 58,8 | 66,8 | 87,5 | 97,3 | 105 | 115 | 138 | 160 | 175 | 218 | 241 |

#### 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      | 28,1 | 34,2 | 52,6 | 80,5 | 105  | 125  | 158  | 202 | 225 | 241 | 259 | 296 | 329 | 352 | 423 | 455 |
| 1,05   | 28,0 | 34,4 | 52,8 | 80,2 | 98,5 | 112  | 138  | 178 | 197 | 204 | 226 | 258 | 278 | 304 | 365 | 396 |
| 1,1    | 27,5 | 33,5 | 51,0 | 69,4 | 86,3 | 99,0 | 116  | 145 | 157 | 172 | 189 | 198 | 237 | 259 | 315 | 345 |
| 1,14   | 27,0 | 31,7 | 45,5 | 61,5 | 73,4 | 81,1 | 93,2 | 119 | 127 | 132 | 148 | 172 | 200 | 219 | 273 | 302 |
| 1,16   | 25,4 | 29,0 | 39,6 | 53,3 | 63,4 | 68,5 | 77,7 | 102 | 113 | 122 | 134 | 160 | 186 | 203 | 253 | 280 |



## LCE235P - Cell data sheet

### 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      | 9,7  | 7,85 | 5,00 | 3,12 | 2,34 | 1,95 | 1,52 | 1,18 | 1,05 | 0,98 | 0,91 | 0,79 | 0,71 | 0,67 | 0,56 | 0,52 |
| 1,05   | 9,8  | 7,88 | 5,05 | 3,23 | 2,58 | 2,26 | 1,81 | 1,39 | 1,26 | 1,21 | 1,09 | 0,96 | 0,89 | 0,81 | 0,68 | 0,62 |
| 1,1    | 10,0 | 8,16 | 5,31 | 3,83 | 3,05 | 2,65 | 2,25 | 1,79 | 1,66 | 1,51 | 1,37 | 1,31 | 1,09 | 1,00 | 0,82 | 0,75 |
| 1,14   | 10,2 | 8,68 | 6,04 | 4,42 | 3,69 | 3,33 | 2,89 | 2,26 | 2,11 | 2,03 | 1,81 | 1,55 | 1,34 | 1,22 | 0,98 | 0,89 |
| 1,16   | 10,9 | 9,5  | 6,98 | 5,15 | 4,32 | 3,99 | 3,52 | 2,69 | 2,41 | 2,23 | 2,04 | 1,70 | 1,47 | 1,34 | 1,08 | 0,97 |

#### 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      | 8,38 | 6,87 | 4,47 | 2,92 | 2,24 | 1,88 | 1,49 | 1,17 | 1,04 | 0,97 | 0,91 | 0,79 | 0,71 | 0,67 | 0,56 | 0,52 |
| 1,05   | 8,41 | 6,83 | 4,45 | 2,93 | 2,38 | 2,11 | 1,70 | 1,32 | 1,19 | 1,15 | 1,04 | 0,91 | 0,85 | 0,77 | 0,64 | 0,59 |
| 1,1    | 8,55 | 7,01 | 4,60 | 3,39 | 2,72 | 2,37 | 2,02 | 1,62 | 1,50 | 1,37 | 1,24 | 1,19 | 0,99 | 0,91 | 0,75 | 0,68 |
| 1,14   | 8,71 | 7,41 | 5,17 | 3,82 | 3,20 | 2,90 | 2,52 | 1,98 | 1,85 | 1,78 | 1,58 | 1,36 | 1,17 | 1,07 | 0,86 | 0,78 |
| 1,16   | 9,27 | 8,09 | 5,94 | 4,41 | 3,71 | 3,43 | 3,03 | 2,31 | 2,08 | 1,93 | 1,76 | 1,47 | 1,26 | 1,16 | 0,93 | 0,84 |