# ACES Lithium LiFePO4 Batteries HFA series specifications

| MODEL NAME | AL12V24HFA | AL12V60HFA-BT | AL12V100HFA-BT | AL12V200HFA-BT | AL12V320HFA-BT | AL24V12HFA | AL24V30HFA-BT | AL24V50HFA-BT | AL24V84HFA-BT | AL24V100HFA-BT | AL24V160HFA-BT | AL48V80HFA-BT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| **ELECTRICAL** | | | | | | | | | | | | |
| Voltage (V) | 12 | 12 | 12 | 12 | 12 | 24 | 24 | 24 | 24 | 24 | 24 | 48 |
| Nominal voltage | 12,8 | 12,8 | 12,8 | 12,8 | 12,8 | 25,6 | 25,6 | 25,6 | 25,6 | 25,6 | 25,6 | 51,2 |
| Max. charge voltage | 14,6 | 14,6 | 14,6 | 14,6 | 14,6 | 29,2 | 29,2 | 29,2 | 29,2 | 29,2 | 29,2 | 57,6 |
| Capacity (AH) at 0.2C | 24 | 60 | 100 | 200 | 320 | 12 | 30 | 50 | 84 | 100 | 160 | 80 |
| Energy (Wh) | 307 | 768 | 1280 | 2560 | 4096 | 307 | 768 | 1280 | 2150 | 2560 | 4096 | 4096 |
| Operational Voltage range (V) | 11...14,6 | 11...14,6 | 11...14,6 | 11...14,6 | 11...14,6 | 22...29,2 | 22...29,2 | 22...29,2 | 22...29,2 | 22...29,2 | 22...29,2 | 44...58,4 |
| Floating voltage (V) | 13,6...13,8 | 13,6...13,8 | 13,6...13,8 | 13,6...13,8 | 13,6...13,8 | 27,2...27,6 | 27,2...27,6 | 27,2...27,6 | 27,2...27,6 | 27,2...27,6 | 27,2...27,6 | 54,4...55,2 |
| Cycle Life (80% DOD) 0.2C | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| Parallel connection | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 | Up to 4 |
| Series connection | no | no | no | no | no | no | no | no | no | no | no | no |
| **DISCHARGE** | | | | | | | | | | | | |
| Continuous current (A) | 24 | 60 | 100 | 150 | 150 | 12 | 30 | 50 | 84 | 100 | 150 | 80 |
| Peak current (A) | 100 | 200 | 350 | 360 | 360 | 80 | 140 | 220 | 220 | 350 | 400 | 220 |
| Overdischarge protection (V) | 10 | 10 | 10 | 10 | 10 | 20 | 20 | 20 | 20 | 20 | 20 | 40 |
| Fast short circuit protection | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Internal fuse | 60A | 150A | 250A | 400A | 400A | 40A | 80A | 125A | 200A | 250A | 400A | 200A |
| **CHARGE** | | | | | | | | | | | | |
| Max. charge current | 24 | 60 | 100 | 150 | 150 | 12 | 30 | 50 | 84 | 100 | 150 | 80 |
| Recommended charge cur. (A) | 3...12 | 6...30 | 10...50 | 20...60 | 20...100 | 1...6 | 3...15 | 5...25 | 8...42 | 10...50 | 15...75 | 8...40 |
| Charge Voltage to 100% (V) | 14,4...14,6 | 14,4...14,6 | 14,4...14,6 | 14,4...14,6 | 14,4...14,6 | 28,8...29,2 | 28,8...29,2 | 28,8...29,2 | 28,8...29,2 | 28,8...29,2 | 28,8...29,2 | 57,6...58,4 |
| Charging characteristic | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV | CC /CV |
| Recommended ACES charger | ABC150-1210LF | ABC300-1220LF | ABC300-1220LF | ABC750-1230LF | ABC750-1230LF | ABC150-2405LF | ABC150-2405LF | ABC300-2410LF | ABC700-2420LF | ABC1350-2425LF | ABC2000-2450LF | ABC1350-4825LF |
| **MECHANICAL** | | | | | | | | | | | | |
| Dimensions (mm) | 181 x 76 x 167 | 197 x 166 x 173 | 306 x 168 x 211 | 522 x 239 x 218 | 522 x 267 x 218 | 181 x 76 x 167 | 197 x 166 x 173 | 306 x 168 x 211 | 483 x 170 × 240 | 522 x 239 x 218 | 522 x 267 x 218 | 522 x 267 x 218 |
| Weight (kg) | 2,8 | 7,0 | 12,0 | 22,0 | 34,0 | 2,8 | 7,0 | 12,0 | 19,0 | 22,0 | 34,0 | 34,0 |
| Protection IP class | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| Terminals | M5 | M8 | M8 | M8 | M8 | M5 | M8 | M8 | M8 | M8 | M8 | M8 |
| Cell type (LiFePO4) | Cylindric | Cylindric | Cylindric | Prismatic | Prismatic | Cylindric | Cylindric | Cylindric | Cylindric | Prismatic | Prismatic | Prismatic |
| **TEMPERATURE** | | | | | | | | | | | | |
| Discharge Temperature | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C | -20...60°C |
| Charge Temperature | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C | 0...45°C |
| Recommended storage temp. | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C | 5...30°C |
| BMS Cut-Off temperature | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C | 65°C |