

# Hadron Electric Outboard Drives — HD-X02 & HD-X05

High-efficiency electric propulsion replacing petrol engines on sailboats, fishing boats, workboats and dinghies. Digital display with real-time power, remaining runtime, battery level and operating voltage; one-button electric start; adjustable maximum power output — safer for kids and rental fleets. Connected to the Hadron Marine App (GPS range visualisation, digital gauges, wireless OTA updates).

## Technical specification

| Parameter         | HD-X02       | HD-X05 · 20 HP     | HD-X05 · 90 HP     |
|-------------------|--------------|--------------------|--------------------|
| Voltage           | 12 / 24 V    | 48–72 V            | 144 V              |
| Power input       | 0.5–1.1 kW   | 15 kW              | 66 kW              |
| Equivalent output | 1–2 HP       | 20 HP              | 90 HP              |
| Max RPM           | —            | ≤ 6,000            | ≤ 5,500            |
| Cooling           | Water cooled | Fresh water cooled | Fresh water cooled |
| Control           | Back tiller  | —                  | —                  |
| Weight            | 8 kg         | 30 kg              | 115 kg             |

## Key features

- ◆ Zero-emission replacement for petrol engines
- ◆ Hadron Marine App: GPS range visualisation & digital gauges
- ◆ Wireless OTA updates
- ◆ Full datasheets, mounting options and battery pairing on request

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One-stop power solution: cell selection & grading, custom circuit & structural design, module & pack assembly, BMS integration, charger & connector accessories. Battery packs with non-Chinese components and cells (Japan / Korea / Malaysia cells, electronics assembled in Poland) available for supply-chain-sensitive projects.

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