

Lucid Air

Benchmark program



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FEV



Tech Nuggets

TECH-NUGGETS – Electric Drive Unit

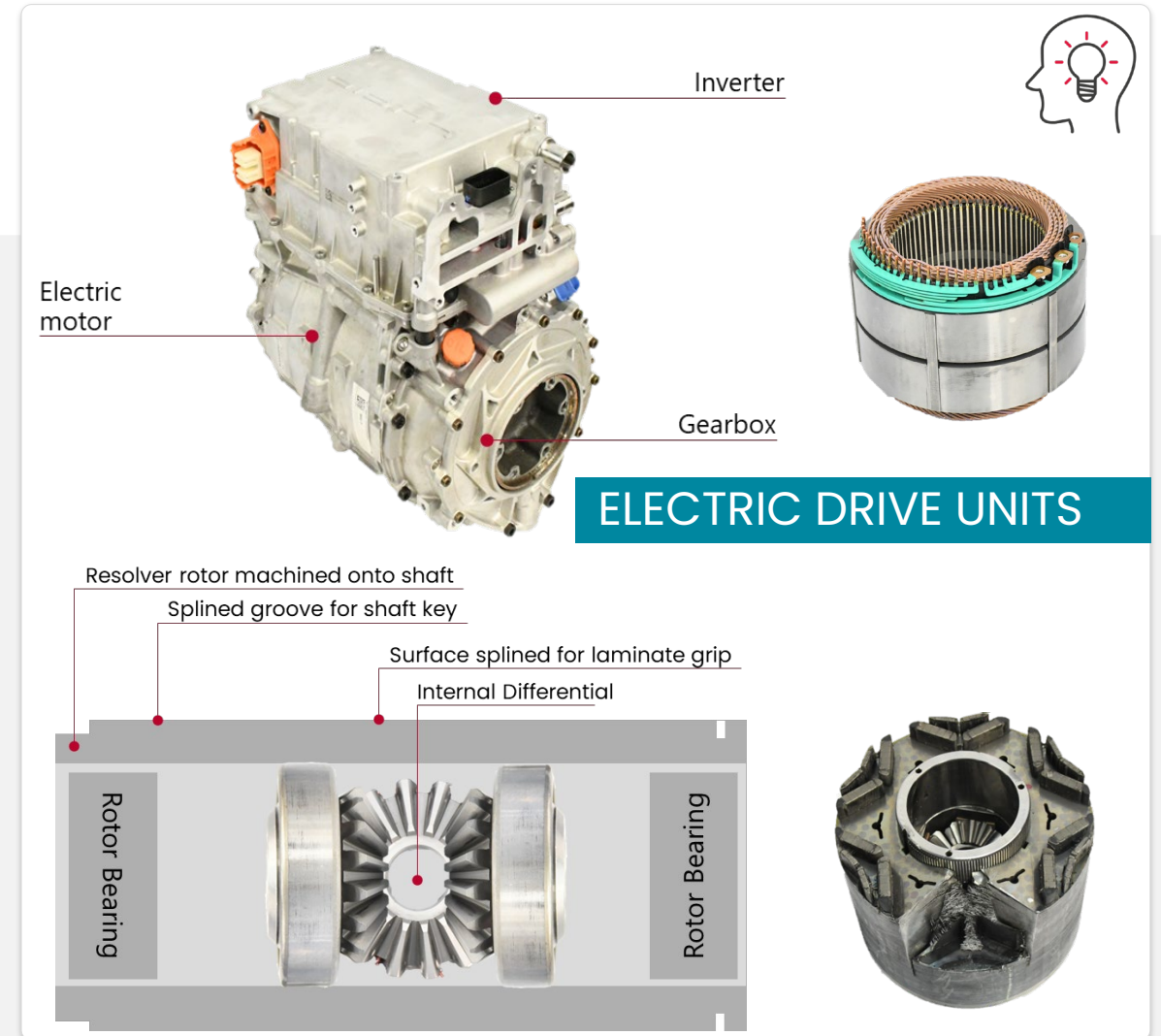
LUCID AIR – BENCHMARKING PROGRAM

Interested in further details
Contact benchmarking@fev.com !



INSIGHTS

- Lucid Air Dream Performance Edition is an all-wheel drive vehicle with a combined power of 828kW
- Power dense EDU package with pure focus to improve EDU efficiency with expensive **Cobalt Iron** laminations
- Same EDU for front and rear, increases economies of scale in manufacturing
 - Oil cooled gearbox and E-Motor ; Water-glycol cooled Inverter ;
 - Inverter uses SiC MOSFETS
 - Continuous wave wound stator and 6 pole permanent magnet rotor
- Single reduction planetary set gearbox
- Conventional differential downsized and incorporated within the rotor shaft
- Electromechanical park lock not included in the EDU



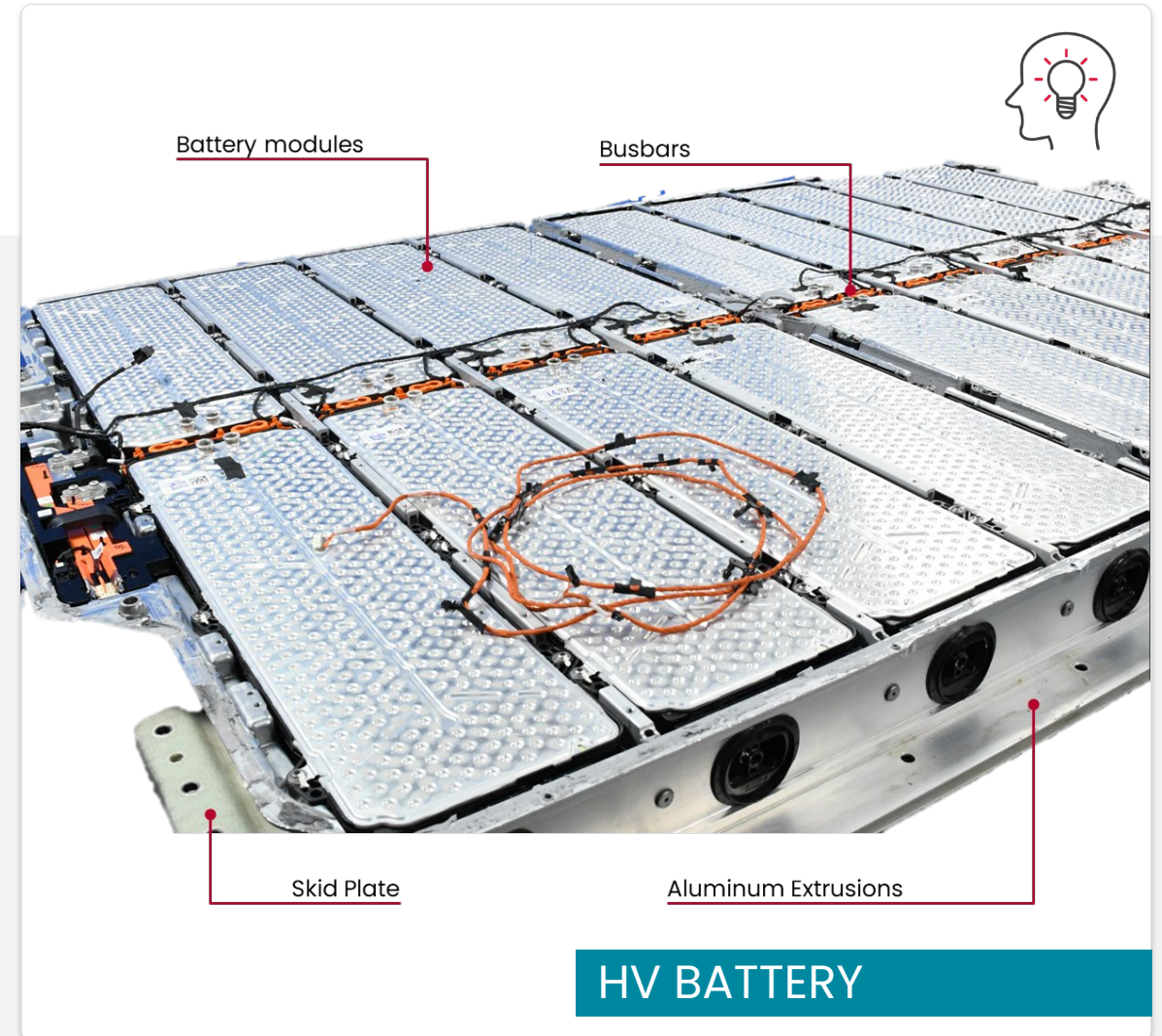
TECH-NUGGETS – HV Battery

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INSIGHTS

- Lucid Air Dream Performance Edition comes with 118 kWh battery capacity with 924 Volts nominal voltage
- Battery uses 21700 type cylindrical cells
- Battery pack consists of 22 cell modules connected in series with 6,600 cells in total
- Aluminum and copper busbars used in the pack
- Battery modules are liquid cooled (water-glycol mixture)
- Battery housing consists of
 - Sheet metal top cover
 - Aluminum extruded and die-cast cross members
 - Composite skid plate
- FEV benchmark data includes cost analysis and supply chain insights



TECH-NUGGETS – Wunderbox

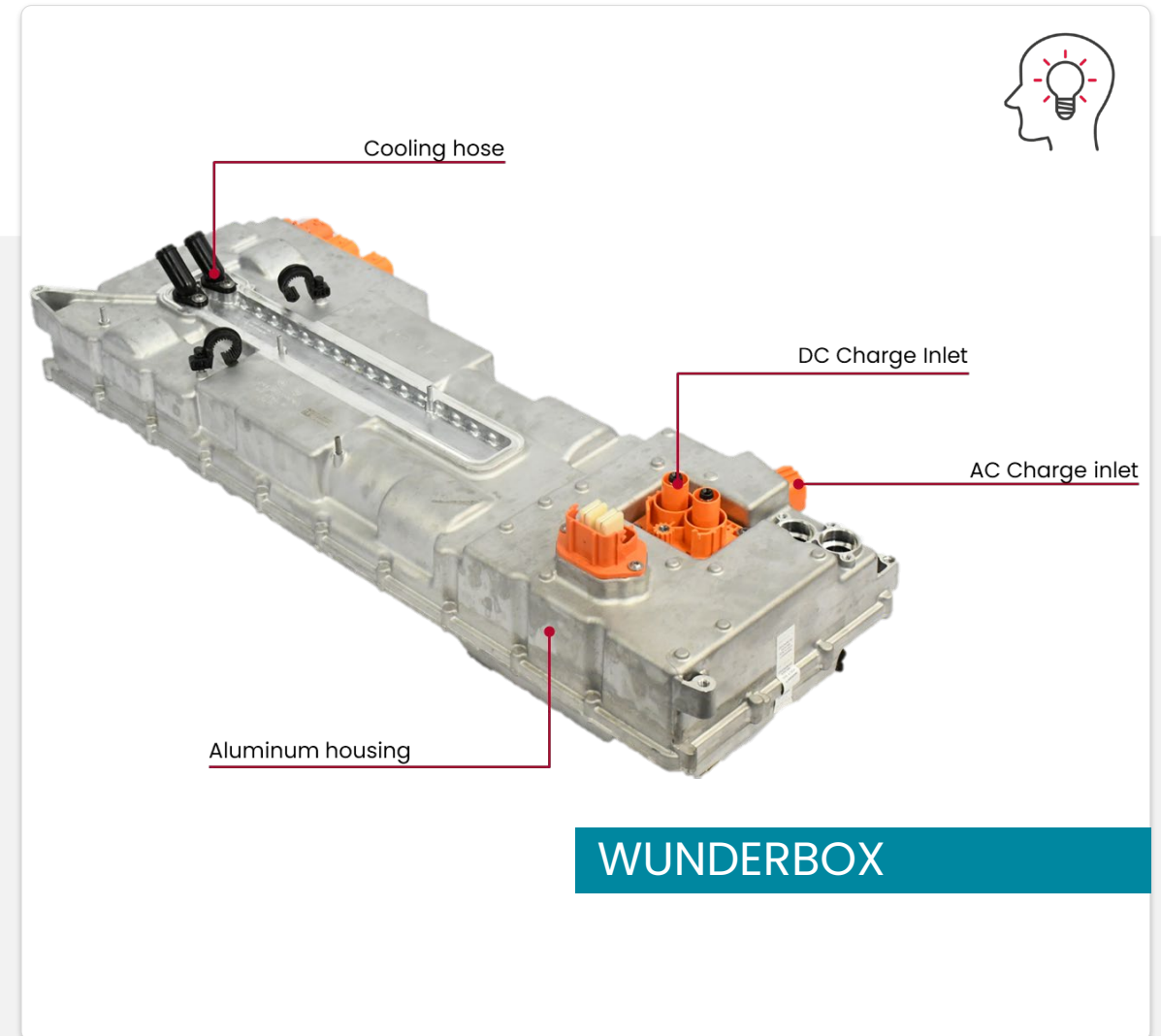
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INSIGHTS

- Lucid Air Dream Performance Edition comes with an integrated 19.2 kW OBCM¹⁾, DCDC (900V to 400V) and other power distribution functionalities in a single package called as “Wunderbox”
- SiC power chips used from multiple suppliers
 - Integrated into coolant circuit
- It has bi-directional functionality (V2X)
- **Does not** step down to 12V DC required for ancillary systems
- Wunderbox is liquid cooled (water-glycol mixture)
- Aluminum die cast and machined housing
- FEV benchmark data include HV schematics, documentation down to PCB level and cost analysis



1) OBCM : On board Charger Module