



**Controlled Power Technologies Ltd.**  
 Units 2-4 Westmayne Industrial Park  
 Bramston Way, Laindon, Essex, SS15 6TP UK  
 Tel: +44 (0) 1268 564800  
[info@cpowert.com](mailto:info@cpowert.com)  
[www.cpowert.com](http://www.cpowert.com)

# SpeedStart for Intelligent Electrification

## SpeedStart for Stop-Start Technology with a difference



The LC SuperHybrid vehicle has been developed in partnership with the Advanced Lead Acid Battery Consortium ([www.alabc.org](http://www.alabc.org)) With support from AVL, Valeo, Mubea'and Provector.



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Scan the QR code for further details on SpeedStart

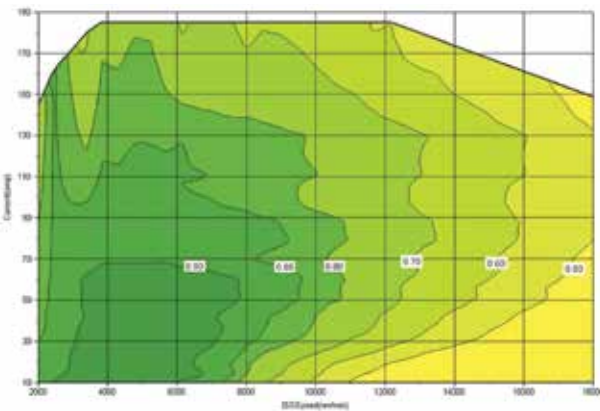
Delivering CO<sub>2</sub> Reduction Technologies



## 12V CPT SpeedStart® benefits

- Fast and refined stop-start
- Efficient thermally managed generation
- Resolves all driver 'change-of-mind' issues
- 5-20% CO<sub>2</sub> reduction\*
- 130g/km CO<sub>2</sub> in large family saloon\* reduced from 140g/km (NEDC)
- 8.7 seconds 0-100km/h\* improved from 11.1 seconds (NEDC)
- 7% benefits on NEDC

CPT SpeedStart Efficiency Plot (14.5V)



\*depending upon installation and drive cycle

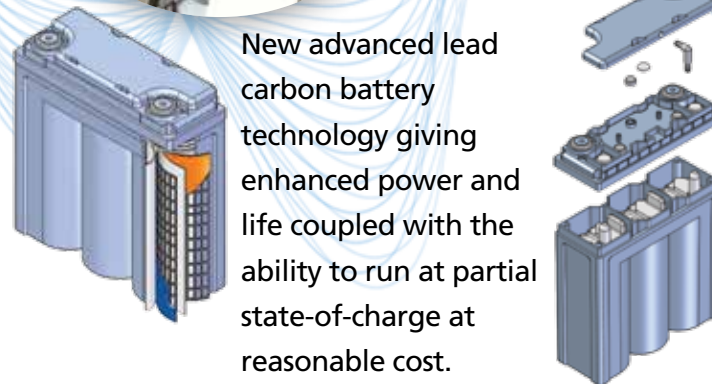
## CPT SpeedStart®

High power, fast response, belt integrated starter generator. Highly controllable and robust switched reluctance motor with no rare earth metal magnets. Water cooled for longer duration transient performance. Fully integrated control and power electronics.



## Lead-Carbon Battery

Installed Lead-Carbon Battery pack to VDA 48V standard in the LC Super Hybrid.



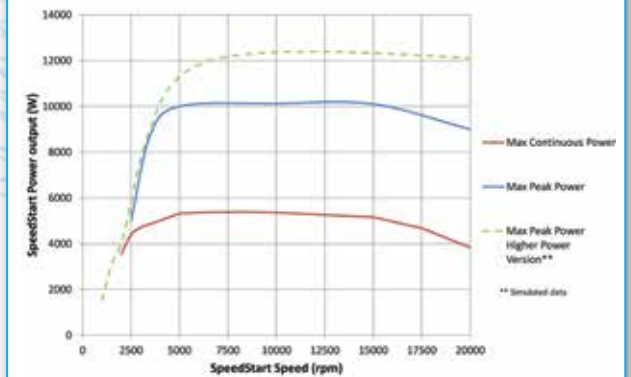
New advanced lead carbon battery technology giving enhanced power and life coupled with the ability to run at partial state-of-charge at reasonable cost.



## Additional 48V CPT SpeedStart® benefits

- 8-12kW kinetic energy recovery (KERS)
- 5-8kW motoring for engine power assist
- Additional 4-8% CO<sub>2</sub> reduction\*\*
- Simulated NEDC: 120g/km and 8.5s 0-100 kph vs measured baseline 140g/km and 11.1s
- 13% benefits on NEDC

Generating Performance



\*\*depending upon recuperation parameters and electrification of ancillaries