



## Climatic Wind Tunnel

### Comprehensive Thermal Management Solutions

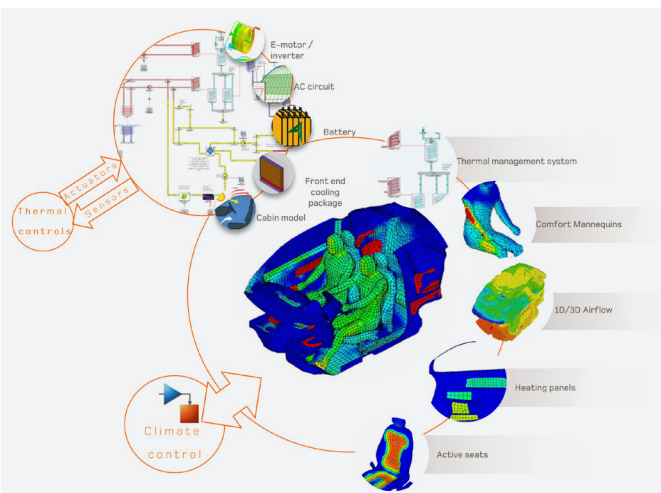
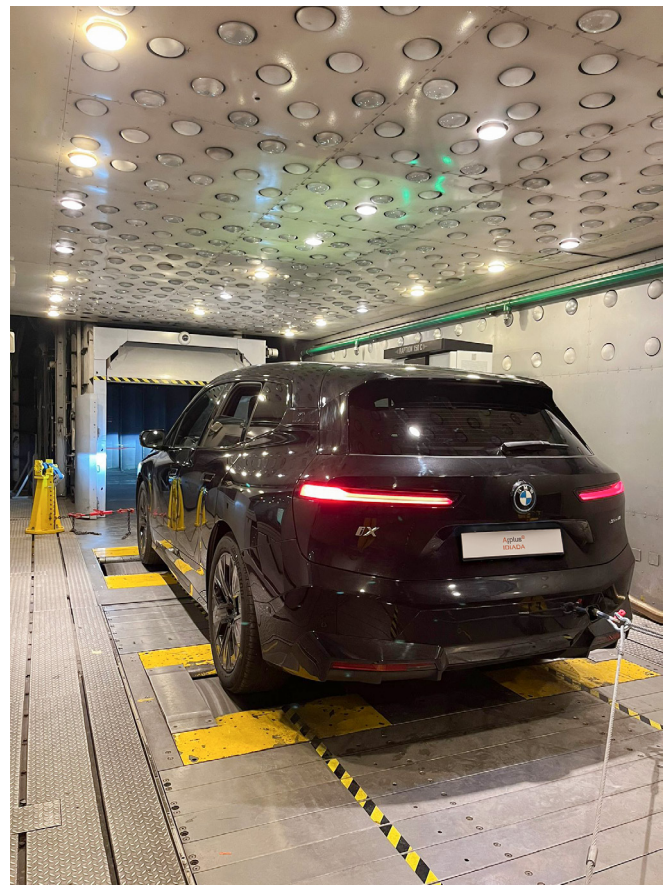
Applus+ IDIADA has invested in a high-performance climatic wind tunnel facility which allows to expand the thermal management services offered in-house and provide a valuable resource to our clients.

We can now provide end-to-end thermal management solutions, from concept development to validation, all under one roof. With this cutting-edge facility, we can simulate a wide range of real-world environmental and driving conditions, ensuring optimal Thermal performance and efficiency in any climate and running condition.

#### MAIN FEATURES

From enhancing electric vehicle battery performance to optimizing HVAC systems, our expanded capabilities enable us to meet the evolving needs of the automotive industry with precision and expertise.

- Our team of thermal management experts can help you address a wide range of challenges, including:
- Cooling & HVAC development by virtual and testing tools
- Thermal / CCU controls & calibration
- Energy Management optimization



# TECHNICAL SPECIFICATIONS



## CHASSIS DYNO

### ROLLING BENCH: 4WD - 330KW

- Max load per axle / total : 6.500 / 18.000 kg
- Max / min distance between axles:  
2,035 / 7,00 m
- Inertial range (4x2): 500 – 6.000 kg
- Inertial range (4x4): 1.000 – 12.000 kg
- Power (4x2): 250 kW (from 75 to 250 km/h)
- Force (4x2): 12.000N (from 0 to 75km/h)
- Power (4x4): 330 kW (from 50 to 250km/h)
- Force (4x4): 24.000N (from 0 to 45km/h)



## SOLAR SIMULATION LAMPS

- Solar simulation system: from 0 to 1.200 W/m<sup>2</sup>



## ROBOT DRIVER

- For control of vehicle gearshift, foot pedals, and ignition functions for specific drive cycles



## DATA ACQUISITION SYSTEM

- ETAS Modules: more than 118 Etas modules (temperature, voltage, frequency, CAN, LIN, ...)
- Vector with CANoe, CANape and CANalyzer)



## COOLANT TEST BECNH

- Fluid: different glycol mixtures
- Maximum temperature: 110°C
- Maximum flow: 9,000 l/h



## OPERATION TIME

- Testing operation time: 6am to 20pm
- Overnight soaking time: 20pm to 6am



## GENERAL SPECIFICACTIONS

### MAX AIR SPEED (550 KW Ø3M FAN)

- 7,20 m<sup>2</sup> nozzle 2,40 x 3,00m = 100 km/h
- 3,50 m<sup>2</sup> nozzle 2,00 x 1,75m = 170 km/h
- 2,29 m<sup>2</sup> nozzle 1,50 x 1,52m = 250 km/h

### CLIMATIC REGULATION (DEPENDING ON TEST CONDITIONS)

- Temperature : - 35°C to + 55°C
- Relative humidity : 10 to 98%

### MAXIMUM VEHICLE SPECIFICATIONS

- Maximum length : 12m
- Maximum height: 3,75m
- Maximum weight (axle / total) : 6,500 kg / 18.000kg

### EV CHARGER 150KW (CCS TYPE 1 AND 2 CONNECTORS)

At IDIADA, we're committed to shaping the future of mobility, and our enhanced thermal management capabilities are just one more step towards that vision.



### LOCATED AT NORTH OF PARIS:

- 99 Av. du Château - 95310 Saint-Ouen-l'Aumône
- 25min by car from Charles de Gaulle (CDG) airport

## CONTACT INFORMATION

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