

High Power climatic test cell

Large dimension high powered vehicles

(Truck, Bus, Agricultural & Construction vehicle, Military vehicle, High powered light vehicle)

Direct 2 to 8 WD connection

Temperature range : -46°C to +55°C

GREENMOT has developed an innovative powerful climatic test cell for any kind of industrial vehicle. This test cell aims to provide new testing solutions to wide variety of climatic and loads testing needs. Equipped with the last emission measurement capabilities, the test cell can considerably assist vehicle development in present and future fuel & emissions challenges as well as new powertrain solutions.



Applications

**Performance – Emission – Combined load & climatic – Automatic testing
Energy flow mapping – Engine mapping – Vehicle applications – Traction control**

Technical specifications

Test cell dimensions	154 m² - 22 m (Length) x 7 m (Width) and 6 m (Height)	
Maximum vehicle size	18,5 m (Length) x 3,2 m (Width) x 4,5 m (Height)	
Maximum vehicle weight	20 T per axle	
Mechanical power	600 kW continuous – 1 MW peak (< 500s)	
Configuration	Maximum Torque [per wheel]	Maximum Speed [22.5" wheel for HD / 16" wheel for LV]
Heavy Duty single axe 4 WD	Continuous : 20 000 N.m Peak (<60 s) : 50 000 N.m	Continuous : 560 rpm [110km/h] Peak (<60 s) : 670 rpm [130km/h]
Heavy Duty tandem 6 WD - 8 WD	Continuous : 2 x 10 000 N.m Peak (<60 s) : 2 x 40 000 N.m	Continuous : 560 rpm [110km/h] Peak (<60 s) : 670 rpm [130km/h]
Off Road 4 WD	Continuous : 80 000 N.m Peak (<60 s) : 200 000 N.m	Continuous : 140 rpm Peak (<60 s) : 170 rpm
Light vehicle 4 WD	Continuous : 3 500 N.m Peak (<60 s) : 5 000 N.m	Continuous : 2 300 rpm [270km/h] Peak (<60 s) : 2 700 rpm [320km/h]
1 extra mobile loading machine up to 550 kW [3 000 N.m, 3 300 rpm]		
Thermal power	800 kW at 20°C <=> 300 kW at -30°C	
Temperature range	-46°C to +55°C	
Humidity	Controlled up to 75% of humidity	
Solar simulation	Up to 1 200 W/m ² (Frontal / Top / Lateral) - (Available 01/2017)	
Aeraulic system	360 000 m³/h available airflow	
Permanent Air motion	From 0.3 to 1.5 m/s on full test cell cross section	
Wind speed	Up to 90 km/h in a 4 m ² section controlled by vehicle speed Wind nozzle adjustable from 2 (180 km/h) to 10 m ² (35 km/h)	
Test cell mode	2 to 8 WD (with Front/Rear and Right/ Left synchronous or independent control)	
Control mode	Road Load, constant torque or speed, manual control	
Inertia simulation	Up to 40 T	

Fuel & Gas analysis

Fuel measurement system	AVL KMA Mobile (High accuracy dynamic mass flow meter)	
Combustion analysis	AVL Indimicro 4 channels	
Gas analysis	Raw gas analysis + Intake Air mass flow meter	
EGR	CO ₂ [20%]	
Pre-catalyst sampling	AVL AMA i60 THC [60.000ppmC], CH ₄ [20.000ppmC], NO [10.000ppm] , NO _x [10.000ppm], CO [10% / 5.000ppm], CO ₂ [20%], O ₂ [25%] Microsoot sensor AVL 483	
Post-catalyst sampling	AVL AMA i60 THC [60.000ppmC], CH ₄ [20.000ppmC], CO [5.000ppm], CO ₂ [20%] Horiba Mexa One QLNx NO: 0-10ppm to 0-5000ppm NO ₂ : 0-5ppm to 0-2000ppm Particle counter - AVL 489	N ₂ O: 0-10ppm to 0-2000ppm NH ₃ : 0-5 to 0-2000ppm Opacimeter - AVL 439