**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*
**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)

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Maximum Torque [per wheel]</th>
<th>Maximum Speed [22.5&quot; wheel for HD / 16&quot; wheel for LV]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Duty single axe 4 WD</td>
<td>Continuous: 20 000 N.m</td>
<td>Continuous: 560 rpm [110km/h]</td>
</tr>
<tr>
<td></td>
<td>Peak (&lt;60 s): 50 000 N.m</td>
<td>Peak (&lt;60 s): 670 rpm [130km/h]</td>
</tr>
<tr>
<td>Heavy Duty tandem 6 WD - 8 WD</td>
<td>Continuous: 2 x 10 000 N.m</td>
<td>Continuous: 560 rpm [110km/h]</td>
</tr>
<tr>
<td></td>
<td>Peak (&lt;60 s): 2 x 40 000 N.m</td>
<td>Peak (&lt;60 s): 670 rpm [130km/h]</td>
</tr>
<tr>
<td>Off Road 4 WD</td>
<td>Continuous: 80 000 N.m</td>
<td>Continuous: 140 rpm</td>
</tr>
<tr>
<td></td>
<td>Peak (&lt;60 s): 200 000 N.m</td>
<td>Peak (&lt;60 s): 170 rpm</td>
</tr>
<tr>
<td>Light vehicle 4 WD</td>
<td>Continuous: 3 500 N.m</td>
<td>Continuous: 2 300 rpm [270km/h]</td>
</tr>
<tr>
<td></td>
<td>Peak (&lt;60 s): 5 000 N.m</td>
<td>Peak (&lt;60 s): 2 700 rpm [320km/h]</td>
</tr>
</tbody>
</table>

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/m² (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 m² section controlled by vehicle speed
Wind nozzle adjustable from 2 (180 km/h) to 10 m² (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 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** CO2 [20%]

**Pre-catalyst sampling**
- AVL AMA i60
  - THC [60.000ppmC], CH4 [20.000ppmC], NO [10.000ppm], NOx [10.000ppm], CO [10% / 5.000ppm], CO2 [20%], O2 [25%]
  - Microsot sensor AVL 483

**Post-catalyst sampling**
- AVL AMA i60
  - THC [60.000ppmC], CH4 [20.000ppmC], CO [5.000ppm], CO2 [20%]
- Horiba Mexa One QLNX
  - NO: 0-10ppm to 0-5000ppm
  - NO2: 0-5ppm to 0-2000ppm
  - N2O: 0-10ppm to 0-2000ppm
  - NH3: 0-5 to 0-2000ppm
  - Particle counter - AVL 489
  - Opacimeter - AVL 439