

Vehicle and Emissions Testing – VTEC and HDDTC

In the UK, Millbrook offers two facilities ideally suited for a variety of vehicle and emissions tests on light and heavy duty vehicles - a Variable Temperature Emissions Chamber (VTEC) and a Heavy Duty Dynamometer Test Chamber (HDDTC). The table below offers a detailed comparison of the two chambers and their applications.

	VTEC (Variable Temperature Emissions Chamber)	HDDTC (Heavy Duty Dynamometer Test Chamber)
Dynamometer		
Dyno Type	2WD single axle	Double axle fixed separation (1,350mm)
Fully Transient	Yes	Yes
Inertia Range	454-20,000kg	4,500-40,000kg
Max Speed	200km/h	130km/h
Max Power	200kW above 118km/h	495kW above 50km/h
Max Torque	6,110N	36,000N
Roller Diameter	48"	48"
Cooling Fan	Twin large speed tracking fans	Fixed speed vehicle cooling fan
Drive Cycle Simulation	Yes	Yes
Climatic		
Temperature Range	Controlled -30°C to +50°C	No control External ambient air circulation
Temperature Control	+/-2°C Limitations below -20°C with high heat load	No control
Emissions		
Bag CVS	Yes (HC, CO, NO _x , CO ₂)	No
Raw Gas Sample	2 Streams (HC, CO, NO _x , NO, NO ₂ , CO ₂)	1 Stream (HC, CO, NO _x , CO ₂) - concentration only
Particle Mass	Yes 3 phase	No
Particle Number	Yes - Regulated and ELPI	No



Millbrook Proving Ground Ltd
Millbrook, Bedford, MK45 2JQ, UK
+44 1525 404 242 • info@millbrook.co.uk

www.millbrook.co.uk



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	VTEC (Variable Temperature Emissions Chamber)	HDDTC (Heavy Duty Dynamometer Test Chamber)
Fuel Consumption	Regulatory Carbon Balance	High-accuracy and fast-response fuel measurement equipment
Other emissions	FTIR - NO, NO ₂ , N ₂ O, Ammonia, Formaldehyde	None
Cell		
Size (L x W x H)	26m x 6m x 5m	19m x 9m x 5m
Background Noise Level	N/A	40dB Linear
Lower Cutoff Frequency	N/A	70Hz
Applications		
Approval Testing	Yes - TfL, LEB, LUB, CVRAZ	No
Climatic Testing	Yes	No
Shake Down Testing	Yes	No
Fuel Economy Comparison	Yes	Yes
Emissions Development	Yes	Limited
Cycle Development	Yes	Yes
Power Testing	Limited	Yes
Constant High Power Testing - Fuels Work	No	Yes
NVH Testing	No	Yes
Brake Tests	No	Type IIA endurance brake tests on M3, N3 and ADR (N2 and N3) vehicles in accordance with ECE R13
Vehicle Cooling Trials	Limited on Power	Yes at uncontrolled ambient temperature

