Diesel Smoke Meter

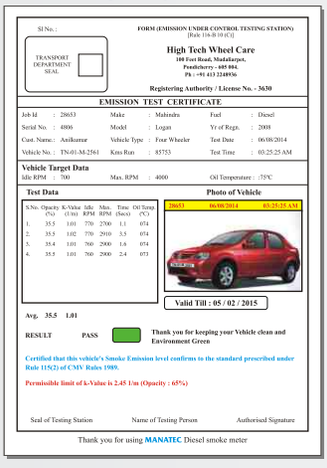
Model : Eco Smoke 100

ARAI Approved

- *DC Operation*
- *PC Interface*
- *Free Acceleration Test*

PC Interface (Optional)

Test Report (PC Printout)



FORM (EMISSION UNDER CONTROL TESTING STATION)
[Rule 116-B-10 (C)]

TRANSPORT DEPARTMENT SEAL

High Tech Wheel Care
100 Feet Road, Madallarpet,
Pondicherry - 605 004.
Ph : +91 413 2240936

Registering Authority / License No. - 3630

EMISSION TEST CERTIFICATE

Job Id	: 28653	Make	: Mahindra	Fuel	: Diesel
Serial No.	: 4806	Model	: Logan	Yr of Regn.	: 2008
Cust. Name.	: Anthuvan	Vehicle Type	: Four Wheeler	Test Date	: 06/08/2014
Vehicle No.	: TN-01-M-2561	Kms Run	: 85753	Test Time	: 03:25:25 AM

Vehicle Target Data
Idle RPM : 700 Max. RPM : 4000 Oil Temperature : 75°C

Test Data

S.No.	Opacity (%)	K-Value (1/m)	Idle RPM	Max. RPM	Time (Secs)	Oil Temp (°C)
1.	35.5	1.01	770	2700	1.1	074
2.	35.5	1.02	770	2910	3.5	074
3.	35.4	1.01	760	2900	1.6	074
4.	35.5	1.01	760	2900	2.4	073

Avg. 35.5 1.01

Photo of Vehicle

28653 06/08/2014 03:25:25 AM

Valid Till : 05 / 02 / 2015

RESULT PASS

Thank you for keeping your Vehicle clean and Environment Green

Certified that this vehicle's Smoke Emission level confirms to the standard prescribed under Rule 115(2) of CMV Rules 1989.

Permissible limit of k-Value is 2.45 1/m (Opacity : 65%)

Seal of Testing Station Name of Testing Person Authorised Signature

Thank you for using MANATEC Diesel smoke meter

Salient Features

- Conforms to IS : 14553 - derived from ISO 11614 : 1999
- Measures smoke opacity of diesel vehicles in % opacity and K value
- Measurement principle : Partial flow, optics based on folded geometry
- Suitable for free acceleration test
- Engine RPM measurement - vibration sensor based and Battery based ***(Optional)***
- Engine oil temperature measurement
- Operates on 230V AC (or) 12V DC power supply
- Portable, Compact & light weight design, suitable for "Road tests" using vehicle battery
- Low & High voltage indication for battery operation
- Automatic Zero and Span calibration
- Automatic Pressure regulation and moisture separation
- Handheld, Menu driven LCD remote control unit
- Pass / Fail indication and emission limit in printout
- Vehicle no., vehicle specification, operator name and test data in printout
- RS232C serial port for PC interface

Standard Accessories

Smoke sampling hose

Smoke sampling probe ID 16 mm

Oil temperature probe

Battery cable (for DC operation & Engine RPM measurement)

Optional Accessories

Smoke sampling probe - ID 22.5 mm
Smoke sampling probe - ID 10 mm
Vertical exhaust extension pipe

Smoke test software & RS232 Interface cable

Thermal printer*

* *To be ordered along with machine. Field implementation not possible.*

Technical Specification

Measurement Parameters	Range	Resolution
Opacity	0 – 99.9 %	0.10 %
K-value	0 – 9.99 m^{-1}	0.01 m^{-1}
Linearity	± 0.1 m^{-1}	
Repeatability	± 0.1 m^{-1}	
Zero & Span drift	± 0.1 m^{-1}	
Response time – Physical	< 0.4 seconds	
Response time – Electrical	< 1 millisecond	
Warm up time @ 25°C and above	< 7 minutes	
Engine RPM (Battery based)	400 - 9990 RPM	10 RPM
Oil Temperature	0 - 150° C	1° C
Operating Temperature	+ 5°C to + 50°C	
Smoke measuring cell length	215 mm (430 mm folded length)	
Power supply	12V DC ± 2V battery 100-265V AC, Single phase, 50-60 Hz	
Power	300W AC / 100W DC (without heater)	

ENGINE RPM METER (Optional) for Smoke Meter

Salient Features :

- Accelerometer based RPM measurement
- Compatible for Diesel vehicles
- The Engine RPM meter allows easy measurement of RPM
- Use of multiple acquisition systems

Technical Specification :

- RPM measurement range : 400 - 9990 RPM
- Resolution : 10 RPM
- Display : Four digit LED display