

Appendix – I

Calibration Certificates

The calibration certificates of temperature sensors, tachometer and gas analyzer from the suppliers are enclosed in this Appendix.

The temperature sensors and tachometer are supplied by M/s global instruments, Baroda, India.

The gas analyzer is supplied by M/s Prima Equipment. The digital mass flow meter is manufactured by BRONKHORST, Netherland. Load cells are manufactured by ADI ARTECH Transducers, Baroda, India.

GLOBAL INSTRUMENTS

3rd Floor, "Sunrise", Opp. S.S.G. Hospital, Salatwada, BARODA - 390001
Ph : (0265) 2464172 Mobile : 99980 34826 93279 08347

CALIBRATION CERTIFICATE

NAME: Mechanical Engg. Dept.; The M.S. University, Baroda
TO ATTENTION: Duraid F. Maki
CERATIFICATE NO: GI/DN/TECHO CALIB DATE: 20.02.08
INSTRUMENT: TECHO METER
MAKE:
TYPE: NON CONTACT
SR NO: 40098
RANG: 0-9999 RPM TOLERENCE: ± 1 RPM

STD EQUIP-USED IS CONTACT DIGITAL TACHOMETER
SERIAL NO-SC-3995/KJ
RANG 0 TO 5000
DATE-27-1-2008

TRACEABLE TO NABL DELHI

STD INPUT	DESIRED VALUE	ACTUAL VALUE	ERROR	REMARK
RPM	RPM	RPM	RPM	
500	500	500	0.0	OK
1000	1000	1000	0.0	OK
1500	1500	1500	0.0	OK
2000	2000	2000	0.0	OK
2500	2500	2500	0.0	OK
3000	3000	3000	0.0	OK

CHECKED BY

CERTIFICATED BY
FOR GLOBAL INSTRUMENTS



Fig I-2 Tachometer Calibration Certificate

PRIMA EQUIPMENT

Multi Gas Analyzer System

PRIMA EQUIPMENT

An ISO 9001 : 2000 Company

Manufacturer & Representative

Environment & Ultrasonic Equipment

Total Services Oriented Management

Instruction Manual

PRIMA

प्रिमा

INSTRUMENTS

TEST CERTIFICATE

Customer name

The Head, Mechanical Engineering Department,
Faculty of Technology & Engineering
The Maharaja Sayajirao University of Baroda
Kalabhavan VADODARA 390 001

Purchase order no.

ME/PP/GA/XIth Plan/442 dtd 21/05/2009

INST. SERIAL NO

09086

MODEL NO

FEM-6

GASES MEASURED	O2	TEMP.	HC	CO	SO2	NO2	FEM-6 NO.
RANGE	0-25%	0-600 C	0-5%	0-2%	0-2000PPM	0-800PPM	0-2000PPM
RESOLUTION	0-1%	1 C	0.01%	0.001%	1PPM	1PPM	1PPM

DISPLAY

16X2 Alfa numeric

GAS USED (O2)	INST. READ	GAS USED (CO)	INST. READ	GAS USED (SO2)	INST. READ
ZERO GAS	Grade N2 0.0%	Air 0.0%	Co 0.0%	AIR 0.0%	SO2 0.0%

CABRATION GAS	GAS USED	INST. READ	GAS USED	INST. READ	GAS USED	INST. READ
ZERO GAS	Air	20.9% O2	1120 PPM CO	0.112% CO	1084PPM SO2	1084PPM SO2

CALIBRATION GAS	GAS USED	INST. READ	GAS USED	INST. READ	GAS USED	INST. READ
ZERO GAS	AIR	OPPMM	AIR	OPPMM	HYDRO CARBONS AIR	

SUPPLY TYPE	MAINS VAC	BATTERY TYPE	Sealed 12v
VOLTAGE	230 VAC 50Hz	CHARGE CURRENT	220 MA
CURRENT	1A	CHARGE TIME	15Hrs
PUMP	FLOW RATE	BATTERY VOLTAGE	12 V
	NOMINAL FLOW 2.5LIT/min	SUCTION INCHES MERCURY COLUMN	
	ACTUAL FLOW 1.5 L/min	NOMINAL FLOW	8"
Computer interface	RS 232 SERIAL INTERFACE	ACTUAL SUCTION	10" Hg
PRINTER PORT	CENTRONICS PRINTER PORT		

DATE 13/07/2009

SIGNATURE



Fig I-3 Gas Analyzer Calibration Certificate