



CERTIFICATE OF CALIBRATION			
ISSUED BY:	JMW Limited	DATE OF ISSUE:	04/07/2014
CERTIFICATE SERIAL NUMBER:		4070061	
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Customer/Acc. No:	Example	M23097
Instrument:	Testo 327-1 flue gas analyser	
Instrument S/No:	02257762	
Instrument ID No:	N/A	
JMW Proc. No:	2922	

Location:	Post Code
Calibration Interval:	12 months
Calibration Date:	04/07/2014
Calibrated by (Op. No):	57
Approved by (Op. No):	29

Traceability:	Calibration was performed by applying known concentrations of test gas mixtures and recording the indicated values (gas ranges) and by applying nominal values at a number of points and recording the indicated values (temperature and pressure ranges). The test gas mixtures and equipment used, for which the company maintains traceability to international standards by means of certificates issued by the supplier, are listed below.
Allowances:	The allowance is based on the manufacturers published specification where available or recognised industry standards.
Limitations of Use:	The following results do not carry any implications as to the long term stability of the instrument.
Environmental Conditions:	The ambient temperature and humidity throughout the calibration period were uncontrolled and unmonitored but were, typically 20°C ±5°C and 50% RH ±20% RH.

CALIBRATION REFERENCE STANDARDS					
Reference	Description	Uncertainty	JMW Ref	Description	Uncertainty
036	Oxygen @ 0.000005%v/v	±2%	136	5.0%v/v (nom oxygen)	±2%
136	20ppm (nom) carbon monoxide	±2%	135	Reference thermometer	±1°C
014	500ppm (nom) carbon monoxide	±2%	052	100ppm (nom) carbon monoxide	±2%
023	Digital pressure calibrator	±0.05 mbar	041	Temperature indicator/simulator	±2%

ACCESSORIES								
	Present	Sound		Present	Sound		Present	Sound
Printer:	N	N/A	Battery charger:	Y	Y	Sampling line/probe:	Y	Y
Equipment case:	Y	Y	Diff. temp. set:	N	N/A	Diff. pressure set:	N	N/A

PRE-CALIBRATION FUNCTIONAL CHECKS									
Complete:	Y	Free from damage:	Y	Operational:	Y	Pump checked:	Y	Battery checked:	Y

RESULTS					
Range	Applied value	Allowance	As received		After adjustment
			Indicated reading	P/F	Indicated reading
Oxygen: 0-21% v/v	0% v/v	±0.2%v/v	0.1% v/v	P	
	Oxygen @ 5.0% v/v	4.8-5.2%v/v	5.0% v/v	P	
Carbon monoxide: 0-4000ppm	CO @ 20ppm	0-40ppm	21 ppm	P	
	CO @ 100ppm	80-120ppm	97 ppm	P	
	CO @ 500ppm	475-525ppm	492 ppm	P	500 ppm
Flue temperature (by simulation): -40 - +600°C	0°C	±0.5°C	0 °C	P	
	200°C	199-201°C	200 °C	P	
	400°C	398-402°C	399 °C	P	
	600°C	597-603°C	599 °C	P	
Pressure: ±200mbar	0.00mbar	±0.5mbar	0.0 mbar	P	
	5.00mbar	±0.5mbar	5.01 mbar	P	
	10.00mbar	±0.5mbar	9.96 mbar	P	
	20.00mbar	±0.5mbar	19.93 mbar	P	
	50.00mbar	±0.5mbar	49.86 mbar	P	
Range	Applied value	Indicated rdg.	Range	Applied value	Indicated rdg.
Ambient temperature:	24.8 °C	25.7 °C	Probe temperature:	200 °C	200 °C

The uncertainties are for a confidence probability of not less than 95%